CARMAT

2022 Universal Registration Document

Including the Annual Financial Report

GENERAL REMARKS

In this Universal Registration Document, the terms “Carmat” or the “Company” shall mean Carmat.

This Universal Registration Document contains information on the Company’s objectives and its development priorities. This information is sometimes identified by the usage of the future, the conditional or terms such as “consider”, “anticipate”, “think”, “aim”, “expect”, “understand”, “should”, “seek”, “estimate”, “believe”, “wish”, “can” or, where applicable, the negative form of these same terms, or any other variants or similar terminology.

The reader’s attention is drawn to the fact that these objectives and development priorities are dependent on circumstances or facts that cannot be certain to occur or materialize.

These objectives and development priorities are not historical data and should not be interpreted as a guarantee that the facts or data will occur, that the assumptions will be proven correct or that the objectives will be achieved.

By their very nature, the objectives and development priorities contained in this Universal Registration Document could be affected by known and unknown risks, or by uncertainties linked specifically to the very nature of clinical trials, the regulatory, economic, financial and competitive environment or by other factors which could lead to the Company’s future results, performance and achievements being significantly different from the objectives that have been formulated or suggested here.

In particular, these factors may include those set out in Chapter 2 “Risk factors” of this Universal Registration Document. It is therefore possible that these objectives and development priorities may not be achieved, and the statements or information in this Universal Registration Document may be erroneous. As such, the Company will under no circumstances be required to provide updates, subject, that is, to the applicable regulations and in particular the General Regulations for the French Financial Markets Authority (*Autorité des marchés financiers* – AMF).

This Universal Registration Document also contains information relating to the Company’s business operations, as well as the market and industry in which it operates. This information specifically comes from studies carried out by internal and external sources (analysts’ reports, specialist studies, sector publications and any other information published by market research companies, private companies, public bodies and learned societies).

The Company considers that this information presents a faithful picture of the market and the industry in which it operates, and that it faithfully reflects its competitive position. However, although this information is considered to be reliable, it has not been verified by an independent expert, and the Company cannot guarantee that a third party using different methods to gather, analyze or calculate data on the markets would obtain the same results.

Investors are invited to consider carefully the risk factors described in Chapter 2 “Risk factors” of this Universal Registration Document. If some or all of the risks materialize, this could have a negative impact on the Company’s business, its position, its financial performance or its objectives.

In addition, other risks, not currently identified or considered as non-material by the Company, could have the same negative effect.

Drawings, images, charts and photographs used in this document are purely for illustration purposes, and shall in no case constitute a commitment of any kind on the part of Carmat. The reproduction in any form of any part of this document is strictly prohibited.

To assist the reader’s understanding, this Universal Registration Document has a glossary attached. Words identified by an asterisk “*” when they first appear can be found in this glossary.

The original version of this Universal Registration Document in French was filed on April 21, 2023 with the French financial markets authority (*Autorité des marchés financiers* – AMF) as competent authority under Regulation (EU) 2017/1129 without prior approval pursuant to Article 9 of said Regulation.

The English version of the Universal Registration Document has been prepared for the convenience of English-speaking readers, and is a free translation of the original French. It is intended for general information only and in the event of discrepancies, the French original shall prevail.

The Universal Registration Document may be used for the purposes of an offer to the public of securities or admission of securities to trading on a regulated market if approved by the AMF, together with any amendments, if applicable, and a securities note and summary approved in accordance with Regulation (EU) 2017/1129.

CONTENTS

Items included in the Annual Financial Report are clearly identified in the table of contents by an asterisk "*".
Items included in the Corporate Governance Report are available in sections 4.1, 4.6, 5.2.6 and 4.4.3.

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MESSAGES FROM THE CHAIRMAN AND THE CEO

ALEXANDRE CONROY

" I am proud and delighted to take over as Chairman of Carmat at a genuine turning point for the Company.

Patients are at the heart of all our decisions and stand as the ultimate driving force for our teams. Choosing to suspend our implants at the end of 2021 was a difficult but responsible decision. Driven by this same spirit of responsibility, and after obtaining the necessary regulatory approvals, we decided to resume implants in the fourth quarter and to steadily ramp them up over the coming months and years, under completely safe conditions for our patients.

Going forward, I have every confidence that our fundamental transformation of the management of patients with advanced biventricular heart failure will be a success, as we take further steps towards commercial success and profitability.

Of course, there is no shortage of challenges ahead, from clinical development and industrialization to market access. In parallel with the clinical studies that will continue in Europe and the United States, in 2023 we will take the necessary steps to expand our production capacity in partnership with our suppliers. This is essential if a growing number of patients are able to benefit from our unrivaled therapy, which I see as a genuine groundbreaking innovation.

I would also like to extend my thanks and support to the entire Carmat team for its hard work, and warmly thank all our shareholders for their support and confidence in the Company. "

STÉPHANE PIAT

" 2022 was a singular year for Carmat. The overriding objective of the entire team was to resume implants of our Aeson® artificial heart, and I am very proud that they were able to resume, as we had announced, in the fourth quarter.

With the changes we have made to the Aeson® production processes and the keen interest of healthcare professionals in our therapy, I am confident that we will be able to ramp up our production volumes over the coming months, that we will see the first signs of commercial success of our artificial heart in 2023, and that Aeson® will ultimately become the benchmark treatment in advanced heart failure.

We will also roll out the EFICAS clinical study in France this year, which is the largest clinical trial we have ever undertaken. EFICAS will allow us to confirm the efficacy and safety of our therapy, but will also provide us with critical medico-economic data that can be used to support applications for the reimbursement of our therapy, particularly in France.

Finally, we will hopefully continue our EFS clinical study in the United States, the first step on the road to obtaining authorization to market Aeson® in the country within the next few years.

We are working more closely than ever with healthcare professionals to provide a credible and safe solution to the many patients suffering from end-stage biventricular heart failure, many of whom have already exhausted all treatment options. "

OUR VISION AND OUR ARTIFICIAL HEART, AESON®

OUR VISION

- Make the Aeson® artificial heart the primary alternative to heart transplantation.
- Provide a therapeutic solution to patients suffering from advanced biventricular heart failure who, in particular, have no access to an available donor heart.

Each year, 200,000 patients in need of a heart transplant

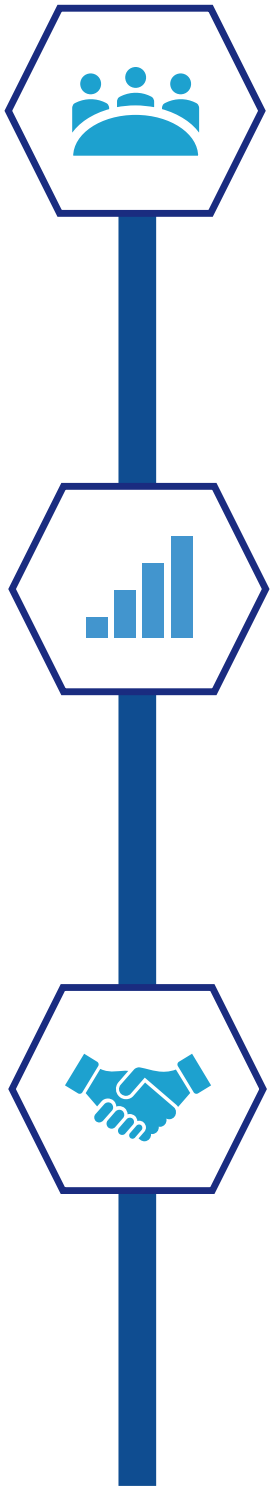
ONLY 5,500 DONOR HEARTS AVAILABLE PER YEAR

OUR ARTIFICIAL HEART, AESON®

- The only physiologic artificial heart in the world to be at once:
  - Highly hemocompatible
  - Pulsatile
  - Autoregulated
- Giving the patient autonomy and quality of life.
- Easily implantable by a heart surgeon.
- Currently commercially available in Europe, for the bridge-to-transplant indication.
- Undergoing clinical trials in the United States.

Aeson® comprises an implantable prosthesis and a portable, ergonomic external power and control system to which the implantable prosthesis is permanently connected.

CARMAT FACTS & FIGURES



- Company founded in 2008
- Multidisciplinary team of over 200 highly specialized employees
- 100% of research and offices in France:
  - Headquarters and research center in Vélizy
  - Production site in Bois d'Arcy
- Resolutely aimed internationally:
  - Carmat targets European and American markets
  - Aeson® implants have already been performed in eight countries: Czech Republic, Denmark, France, Germany, Italy, Kazakhstan, Netherlands, USA
- Company listed on Euronext Growth (Paris) since 2010
- Since the beginning, financing of around €480 million

OUR HISTORY

2008
- Foundation of Carmat

2010
- Initial public offering (Euronext Growth Paris)

2013
- First implant of the Aeson® artificial heart in a feasibility study in France

2016
- Start of pivotal study in Europe

2018
- Certification and commissioning of Bois d'Arcy production site (France)

2020
- **CE marking obtained for Aeson® for the bridge-to-transplant indication**

2021
- First sales in Europe
- Start of feasibility study in the United States
- Voluntary suspension of Aeson® implants on a temporary basis, following the identification of quality issues

2022
- Sales resume in Europe
- EFICAS clinical study starts in France

SIGNIFICANT EVENTS IN 2022

March

- Production resumes*
- €41 million in funding raised

October

- Regulatory approvals received allowing sales to resume
- Regulatory approvals received allowing the EFICAS study to be launched in France
- Carmat announces three publications about Aeson® in peer-reviewed scientific journals

November

- **Sales effectively resume (first post-suspension implant in a German hospital)**

December

- €31 million in funding raised
- Blended funding of up to €17.5 million awarded as a winner of the European Innovation Council (EIC) Accelerator**
- 1st implant under the EFICAS study in France

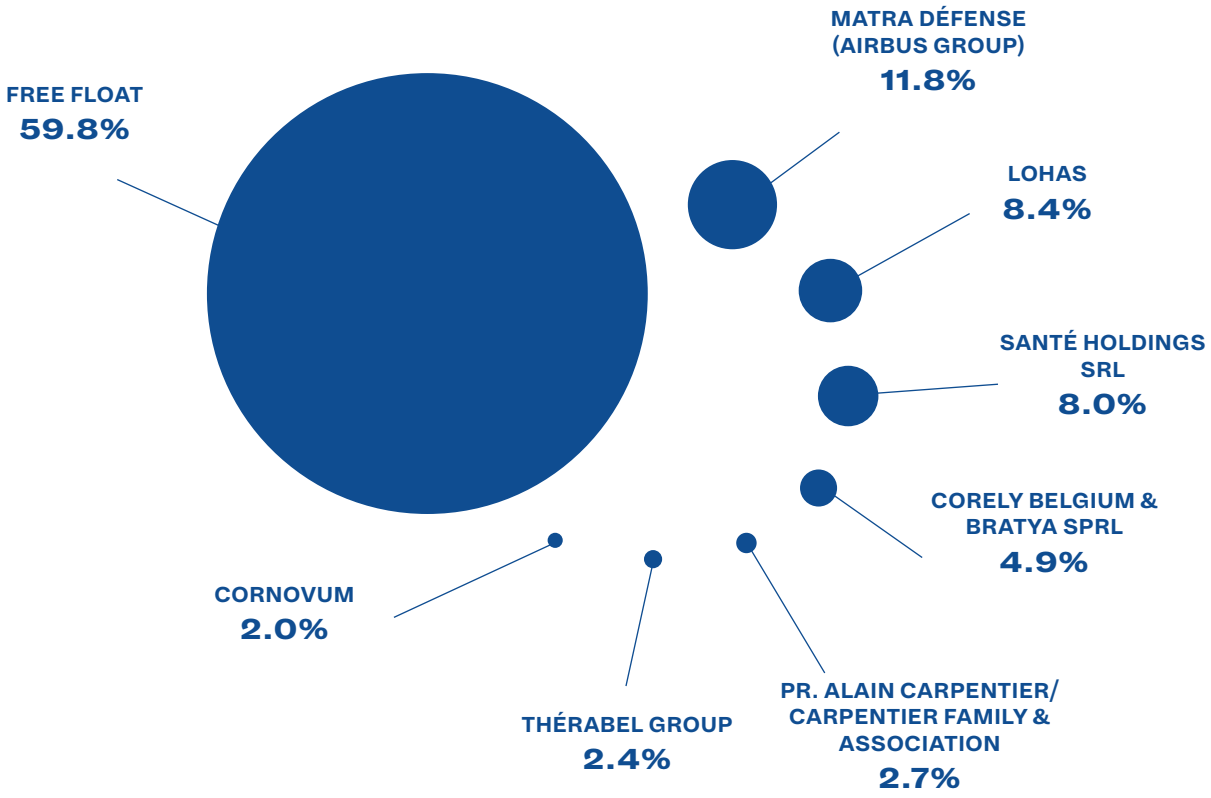
* Following the voluntary temporary suspension of implants, as decided by the Company in December 2021.

** Subject to completion of the ongoing contractualization process.

CARMAT AND ITS SHAREHOLDERS

SHAREHOLDERS AT DECEMBER 31, 2022

(to the knowledge of the Company)



ANALYSTS' COVERAGE

Broker/Analyst	Opinion	Target share price	Date of opinion
Gilbert Dupont	Buy	€22.00	January 24, 2023
Portzamparc	Buy	€28.20	February 23, 2023
Oddo BHF	Outperformance	€28.00	February 23, 2023
Degroof-Petercam	Buy	€20.20	February 23, 2023
H.C. Wainwright	Buy	€26.00	March 7, 2023
Ladenburg-Thalmann	Buy	€32.00	January 24, 2023

INFORMATION ON THE CARMAT SHARE

Market	Number of shares outstanding (December 31, 2022)	Ticker & ISIN code	Share price & market capitalization (December 31, 2022)	Average trading volume (in 2022, over 12 months)	Status
Euronext Growth	22,641,279	ALCAR FR0010907956	€10.43/share €236.2 million	54,916 shares/day	ELIGIBLE PEA PME

CONTACTS

Chairman	Chief Executive Officer	Chief Financial Officer and Head of Investor Relations	Registered office	Website
Alexandre Conroy	Stéphane Piat	Pascale d'Arbonneau +33 1 39 45 64 50 contact@carmatsas.com	36, avenue de l'Europe 78140 Vélizy-Villacoublay (France).	www.carmatsa.com

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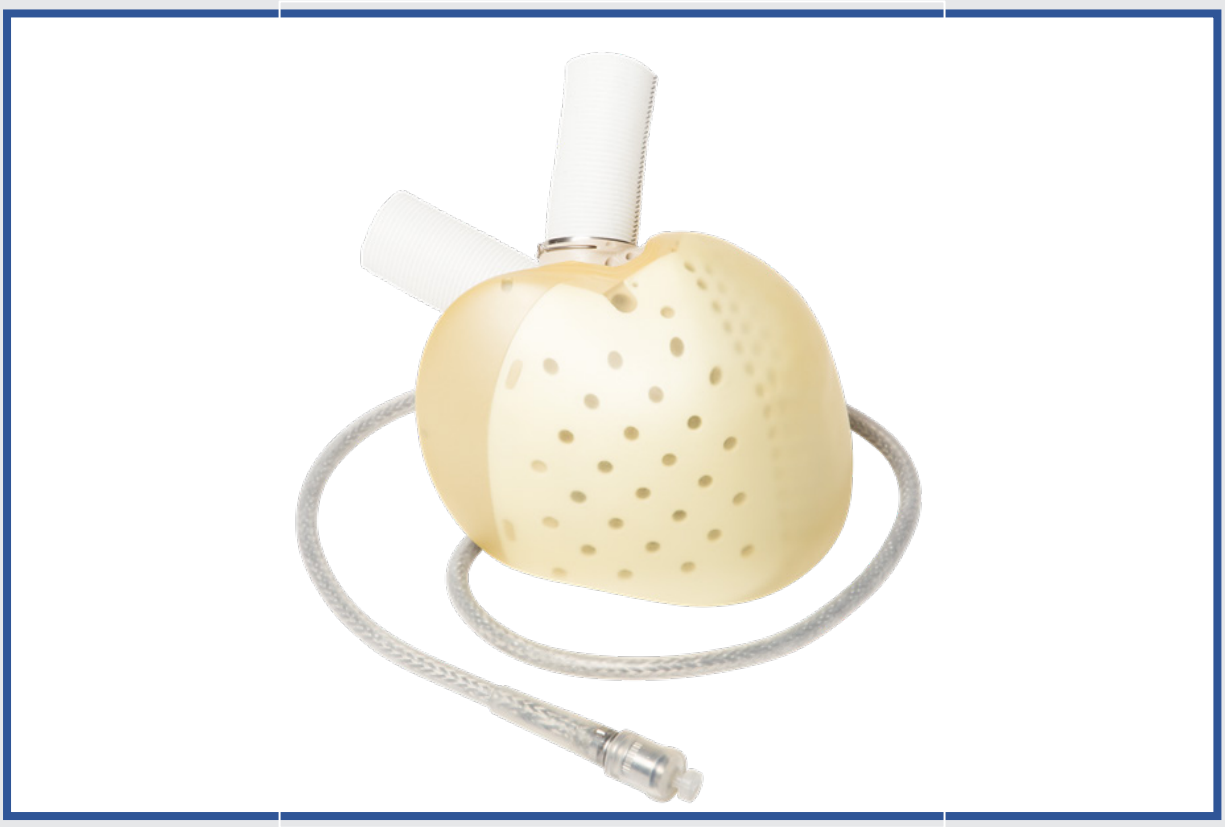
BUSINESS OVERVIEW



1.1 AESON®, THE FIRST PHYSIOLOGIC HEART REPLACEMENT THERAPY

1.1.1 OVERVIEW

Carmat sees its Aeson® artificial heart as the primary alternative to heart transplantation.

Aeson® is currently sold in Europe (and other countries recognizing the CE marking[01]) for the bridge-to-transplant (BTT) indication for patients suffering from terminal biventricular heart failure (Intermacs levels 1-4) and unable to benefit from a maximum medical therapy or a left ventricular assist device (LVAD), and who are likely to be given a heart transplant within 180 days of receiving the implant.

Carmat will eventually be seeking the destination therapy (DT) indication, enabling the patient to live durably with the Aeson® heart, without a subsequent heart transplant. Carmat considers that this indication could come through in a few years' time.

01 Aeson® obtained CE marking approval for the bridge-to-transplant indication on December 20, 2020.

To counter the disadvantages of existing mechanical assist devices (see section 1.2.1), the Aeson® artificial heart was developed with particular emphasis on **hemocompatibility**, to reduce thrombotic and hemorrhagic complications, **pulsatility**, and **autoregulation**, for real-time adaptation to the patient's activity level.

Aeson® differs from other existing artificial hearts (or TAH – total artificial hearts) in its unique combination of three features: pulsatility,[02] autoregulation[03] and hemocompatibility.[04] With Aeson®, Carmat is creating a new therapeutic class of "physiologic heart replacement therapy".[05]

02 Bizouarn P et al.; Effects of pre-load variations on hemodynamic parameters with a pulsatile autoregulated artificial heart during the early post-operative period. J Heart Lung Transplant. 2018; 37(1):161-3.

03 Bizouarn P et al.; Effects of pre-load variations on hemodynamic parameters with a pulsatile autoregulated artificial heart during the early post-operative period. J Heart Lung Transplant. 2018; 37(1):161-3.

04 JACC 2017 Smadja, Bioprosthetic total artificial heart induces a profile of acquired hemocompatibility with membranes recellularization, July 2017:403-9.

05 PHRT.

1.1.2 DETAILED DESCRIPTION OF AESON®

As presented in the diagram below, the Aeson® system essentially consists of:

- an implantable device, the Aeson® artificial heart (or prosthesis) itself;
- a portable external system for powering and monitoring its operations;
- a hospital console for setting the prosthesis parameters on implant, then monitoring the patient during check-up visits at the hospital.

IMPLANTABLE PROSTHESIS

The Aeson® prosthesis replaces the two ventricles of the patient's heart and operates as a pump circulating blood throughout the body. This prosthesis, developed to replicate a natural heart as closely as possible in size and function, primarily comprises two ventricles, two electrohydraulic pumps, and embedded electronics. It is partially surrounded by a flexible polyurethane bag that contains an actuator fluid (silicone oil) in which the two pumps are housed.

Schematically, rotation of the two pumps produces motion in the silicone oil, which in turn moves the membranes to enable blood to enter and then leave the ventricles.

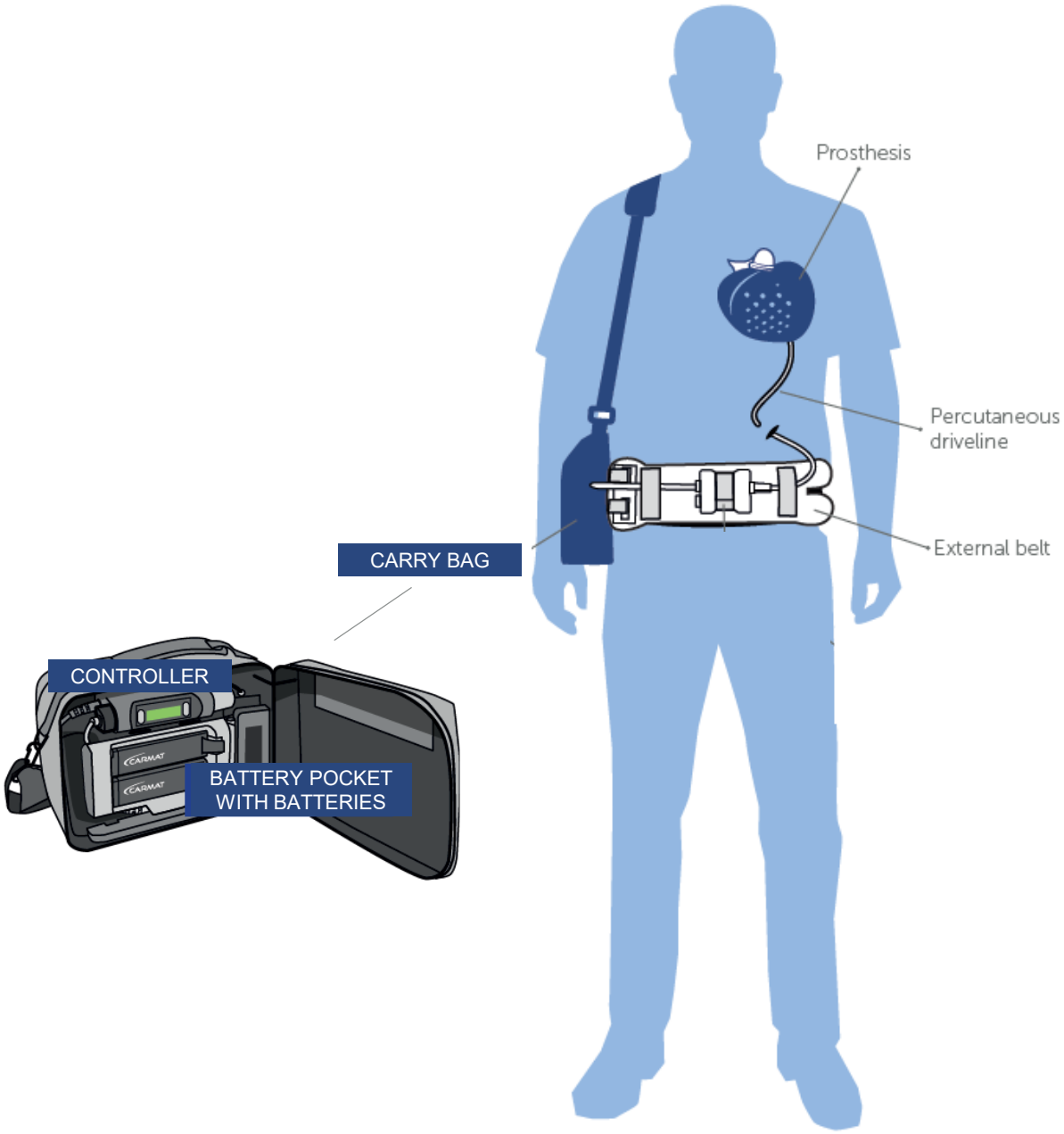
More specifically:

Each ventricle of the prosthesis has two compartments, separated by a flexible hybrid membrane. This is made of treated bovine pericardial tissue for the surface in contact with the blood, and of a polyurethane layer for the surface in contact with the actuator fluid.

Two electrohydraulic rotary pumps create systolic and diastolic phases by rapidly reversing the direction of the actuator fluid, which alternately "pushes and pulls" the membranes.

Four Carpentier-Edwards® bioprosthetic valves (Edwards Lifesciences, Irvine, CA, US) are located at the inlet and outlet of each ventricle to ensure unidirectional flow.

Once the patient is stable after the Aeson® implant, the embedded electronics and sensors of the prosthesis regulate the patient's blood flow consistent with his or her physiologic needs, responding to intake pressure changes automatically in real time.

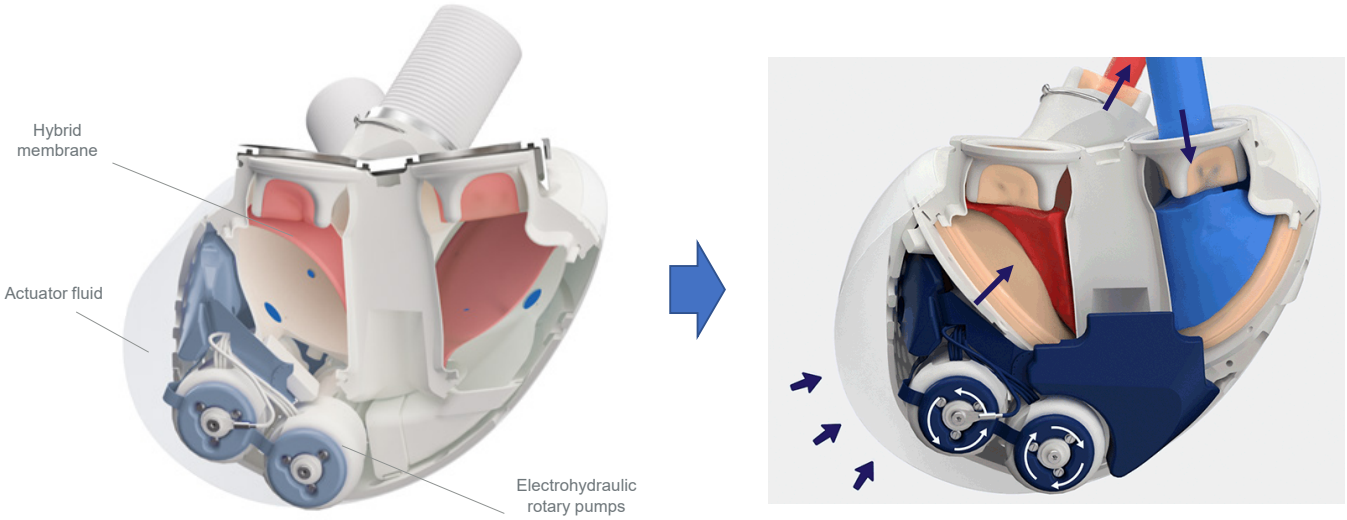


Source: Carmat – The complete Carmat system

Physiologic pressure and blood-flow profiles are obtained from the combination of membrane and hydraulic actuation characteristics.

A percutaneous driveline passing through the patient's abdomen permanently connects the implanted prosthesis to the external portable system to power the prosthesis and carry signals between the prosthesis and the external equipment.

Source: Carmat – Overview of the full prosthesis



EXTERNAL EQUIPMENT

The prosthesis is powered and monitored by portable external equipment, the main items in which are the controller and two battery holders. This is held in a transport bag that enables the patient to have the mobility needed to live a life close to normal and to return home after the Aeson® implant.

Before patients return home after the implant, they undertake a rigorous training and observation program to ensure they and their entourage fully understand the principles for safely operating the system.

More specifically, the external equipment comprises:

- a controller displaying operating data on the Aeson® device;
- two battery units each containing two batteries (i.e., a total of four batteries);
- a carry bag specially designed by Carmat to hold all the external equipment.

The full external system weighs about 4 kg and the battery life is at least 4 hours at a blood flow of 6 liters/minute.

Source: Carmat – External equipment

THE HOSPITAL CARE CONSOLE

The hospital care console (HCC) is only used in Aeson® implantation centers (hospitals) by Carmat-certified medical personnel. It allows the medical team to configure and operate the prosthesis during implantation, and then to monitor the patient during periodic check-ups. It also enables new features or versions of prosthesis software to be downloaded.

Source: Carmat – The hospital care console

1.1.3 AESON®'S MAIN INNOVATIONS AND COMPETITIVE ADVANTAGES

HEMOCOMPATIBILITY, PULSATILITY AND AUTOREGULATION

The Aeson® heart includes three innovative design features (hemocompatibility, pulsatility, autoregulation) which, to Carmat's knowledge, are not brought together in any other MCS system on the market or under development, which has enabled Carmat to create a new therapeutic class known as physiologic heart replacement therapy (PHRT).

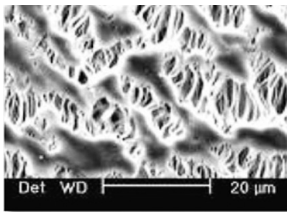
Hemocompatibility[06]

The most original feature of the Aeson® prosthesis is the use of bioprosthetic materials for the surfaces in contact with blood, including bovine pericardium and polytetrafluoroethylene, a material used in vascular surgery. Carpentier-Edwards® bioprosthetic heart valves are used for ventricle inflow and outflow. Use of these highly hemocompatible materials avoids damage to blood cells and significantly reduces the thromboembolic risk known to be encountered with existing devices.

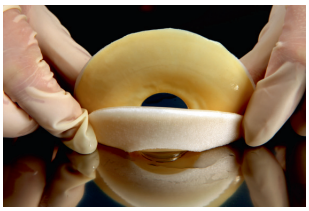
This means patients can be treated with minimum anticoagulant therapy, which Carmat believes can be reduced even further in the future.

Biosynthetic membrane

Ventricle in microporous PTFE



Biosynthetic interface with the atria



Carpentier-Edwards® pericardial valve

Source: Carmat – Hemocompatible materials

06 JACC 2017 Smadja, Bioprosthetic total artificial heart induces a profile of acquired hemocompatibility with membranes recellularization, July 2017:403-9.

Pulsatility[07]

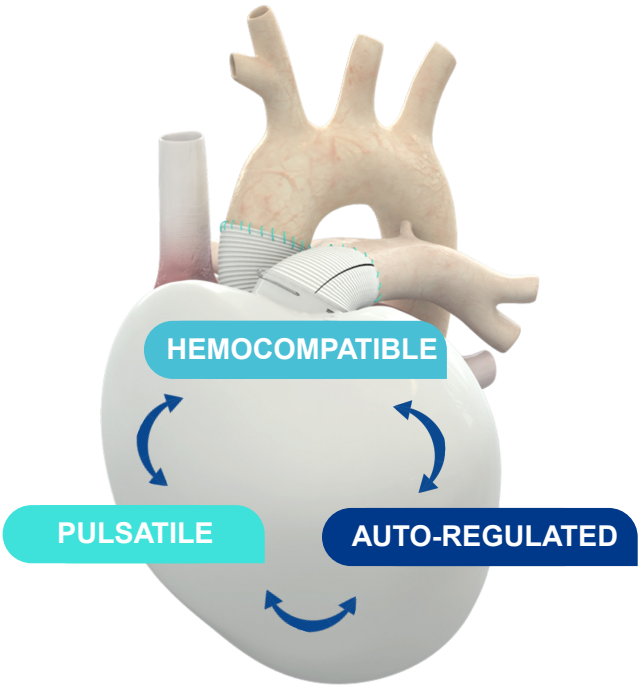
The pumping action of the two ventricles is achieved by a viscoelastic movement driven by the embedded electo-hydraulic pumps. This produces blood flow and pressure profiles that closely mimic those of the natural heart and reproduce diastole (when the ventricle fills) and systole (when the ventricle empties to supply the arteries). This also preserves valve durability and ensures optimal ventricular flow characteristics, avoiding damage to blood cells and proteins.

Autoregulation[08]

The device's embedded electronics, microprocessors and sensors ensure precise control and specific response to the patient's changing physiologic needs. In addition, they maintain an optimum balance between right and left pump flows. This means Aeson® can automatically adapt blood flow to the patient's needs and activities, in real time.

Key points:

- All surfaces that come into contact with blood are covered by proven biocompatible materials.
- The pumping action closely mimics human heart dynamics.
- Damage to blood cells is prevented.
- Aeson® adapts automatically to changes in patient activity levels.



Source: Carmat

07 Bizouarn P et al.; Effects of pre-load variations on hemodynamic parameters with a pulsatile autoregulated artificial heart during the early post-operative period. J Heart Lung Transplant. 2018; 37(1):161-3.

08 Bizouarn P et al.; Effects of pre-load variations on hemodynamic parameters with a pulsatile autoregulated artificial heart during the early post-operative period. J Heart Lung Transplant. 2018; 37(1):161-3.

OTHER COMPETITIVE ADVANTAGES

Anatomical compatibility

The shape and size of the Aeson® prosthesis are adapted to the anatomy of the human thorax, for compatibility with the largest number of patients, and to ensure ejection of a normal volume of blood with each beat, while occupying a minimum of thoracic space.

Using a 3D virtual implantation system, compatibility of the prosthesis with the patient's thorax can be checked prior to Aeson® implantation.

3D virtual transplant simulator

Segmentation of CT image sections → 3D organ reconstruction → Insertion of the Carmat 3D model → Assessment of compatibility

Source: Carmat – 3D virtual transplant simulator

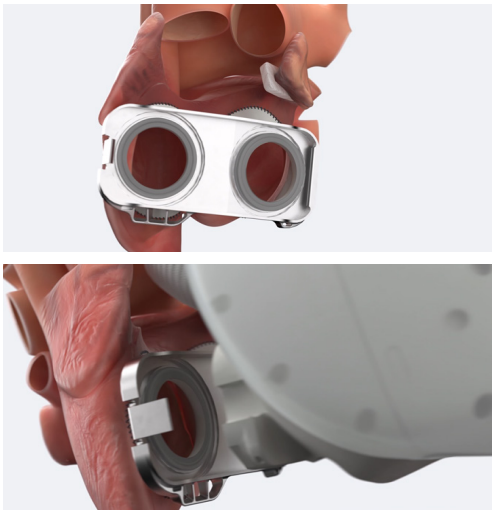
Surgical experience

An implantable device can only be a valid therapeutic solution if the implantation is simple and reproducible. Under the supervision of Professor Carpentier, the Carmat teams have therefore worked in close collaboration with many surgeons, anesthesiologists, perfusionists and nursing personnel, to design and develop a procedure that any experienced heart surgery team can perform, even in emergency situations.

Aeson®'s original interface with the patient's atria (upper heart chambers) makes for a much less restrictive operation space for the surgeon during the implantation operation, and ensures optimum alignment of the prosthesis. Once this interface is sutured to the atria, the prosthesis can simply be "clicked" into place.

Experience from the pivotal study (see section 1.3.3) also shows that implantation times for the Aeson® prosthesis are similar to those for heart transplantation, and that Aeson® can be readily explanted when the patient subsequently receives a heart transplant. The explantation procedure is greatly facilitated by the fact that there is no adhesion of tissues to the prosthesis.

In the pivotal study (see section 1.3.3), the Aeson® implantation procedure was successful in 100% of cases, with no patient death in surgery.



Source Carmat – Interface systems with the patient's atria

Recovery, autonomy and quality of life

Once the patient is stabilized post-implant surgery, Aeson® offers good quality of life, with a possible return home, where the patient can enjoy mobility and autonomy. The portable external system is connected to the implantable part, providing permanent power and control of Aeson®.

Experience from the pivotal study (see section 1.3.3) shows that post-implantation patients recover quickly, enabling them to return home and, if there is a subsequent heart transplant, to face this major operation in better conditions.

1.2 AESON® AND THE MARKET FOR HEART FAILURE THERAPY

1.2.1 HEART FAILURE AND ITS CHALLENGES

1.2.1.1. PATHOLOGY AND ETIOLOGY*

Major causes of heart failure

Heart failure occurs when the myocardium (cardiac muscle) can no longer carry out its essential function as a "pump" and provide a sufficient cardiac output to satisfy the metabolic needs of the organism. Failure of the left ventricle is called left ventricular failure; failure of the right ventricle is called right ventricular failure; failure of both ventricles is called biventricular heart failure.

Essentially, the heart is unable to keep up with its workload. It tries to make up for this by enlarging in an effort to pump faster and more vigorously to increase the blood flow. The body also tries to compensate for the failure, by narrowing blood vessels and diverting the blood flow from less important organs to favor essential organs such as the brain and kidneys.

These compensatory measures mask the problem, but the cardiac muscle failure continues, at varying rates, until such measures are no longer effective. The patient then begins to experience build-up of the classic heart failure symptoms (see table on next page: NYHA classification).

The above is a description of the more common chronic condition, but heart failure can also occur acutely, most commonly as a result of a heart attack caused by coronary artery disease (CAD), or related to other causes, listed in the table below.

Condition	Description
Ischemic heart disease	A buildup of fatty deposits on the walls of the coronary arteries that limits the supply of blood to heart muscle.
High blood pressure	A condition that increases the work that the heart needs to do, which leads to increased muscle mass and a need for more blood supply.
Cardiomyopathy	A group of heart muscle diseases leading to functional and structural damage. Various causes including hereditary diseases, infections, some cancer treatments and substance abuse.
Rhythm problems	Abnormal heart rhythms cause the heart to pump inefficiently. Types vary from relatively mild atrial (upper chamber) to disruptions of the ventricular (main pumping chamber). Heart rhythm problems can be treated by medication and/or pacemaker and automatic defibrillator devices. They are often secondary to coronary disease.
Damage to heart valves	Valves can become stenosed (narrowed) or regurgitant (leaky) due to older age, infections, coronary disease, congenital defects, high blood pressure and diabetes. Consequently, heart function is compromised to an extent depending on the number and degree of valvular defects.
Congenital heart disease	Structural defects that develop in the womb before a baby is born. These can vary from a small "hole in the heart" to major structural deformities. Most can be partially or fully repaired but may cause problems in later life.
Substance abuse	Tobacco, alcohol and recreational drugs all cause damage to heart muscle and the vascular system. Some prescription drugs also have toxic side effects on the heart, depending on dosage and length of use.

Heart failure can affect the heart in different ways:

- The most common failure affects the left ventricle (the main pumping chamber), which can fail in two ways: it may lose its ability to contract forcefully enough (systolic failure) or it may not relax enough to fill properly (diastolic failure).

- In the event of right heart failure, the weaker right ventricle is unable to pump enough blood through the lungs and since the left side relies on receiving blood from the right side, the entire pumping action of the heart is compromised. The right ventricle has much less resilience than the left and can therefore fail more easily. Right heart failure is most often secondary to left heart failure. Right heart failure may also be secondary to lung disease or an acute event such as an allergic reaction, infection or a blood clot that lodges in the lungs. Up to 30% of patients whose left heart failure is treated with a left ventricular assist device (LVAD) develop right heart failure.[09/10/11/12]

Practitioners distinguish the severity of heart failure or extent of the impairment using the New York Heart Association (NYHA) Classification based on symptoms and including four classes (see table below).

There is also a number of other guidelines published by the various professional bodies such as the *European Society of Cardiology: Guidelines for the Diagnosis and Treatment of Acute and Chronic Heart Failure.*

As heart failure is a progressive disease, the prognosis is poor: less than 50% survival five years after diagnosis,[13] and more than 40% of deaths within a year following initial hospitalization.[14]

A shift to class III (NYHA) is a decisive moment[15]:

- for the patient: it marks the shift from a virtually normal life to considerably reduced activity, very often involving a loss of autonomy;

- clinically, this translates to more aggressive therapies, a dependence on drugs, and, with class IV, the start of repeated hospitalization;

- for society as a whole, this represents an explosion in costs, particularly due to hospitalization: a class IV patient costs the community up to 15 times more than a class II patient.[16]

Class III and class IV patients represent between 20 and 35% of the total number of patients, with class IV representing up to 5% of heart failures.

NYHA	Class I	Class II	Class III	Class IV
Symptoms	No symptoms	Tiredness, palpitations, shortness of breath after a sustained effort	Symptoms and discomfort during minimal exertion	Symptomatic even at rest
Activity	No limitation	Slight limitation	Marked reduction	Inability to perform any activity, permanently confined to bed

09 Dang NC et al. Right heart failure after left ventricular assist device implantation in patients with chronic congestive heart failure. J Heart Lung Transplant 2006; 25: 1-6.

10 Boyle AJ et al. Predictors of poor RV function following LVAD implantation. J Heart Lung Transplant. 2003; 22: S205.

11 Kormos RL et al. Right ventricular failure in patients with the HeartMate II continuous-flow left ventricular assist device: incidence, risk factors, and effect on outcomes. The Journal of thoracic and cardiovascular surgery. 2010; 139(5):1316-24.

12 Cordtz J et al. Right ventricular failure after implantation of a continuous-flow left ventricular assist device: early haemodynamic predictors. European Journal of Cardio-Thoracic Surgery. 2014; 45(5):847-53.

13 Blackledge HM et al. Prognosis for patients newly admitted to hospital with heart failure: survival trends in 12,220 index admissions in Leicestershire 1993-2001. Heart. 2003; 89:615-620.

14 Stewart S et al. More 'malignant' than cancer? Five-year survival following a first admission for heart failure. Eur J Heart Fail. 2001; 3:315-322.

15 Launois R et al. Coût de la sévérité de la maladie ; le cas de l'insuffisance cardiaque. Journal d'économie médicale. 1990, T. 8, n° 7-8, p. 395-412.

16 Kulbertus HE et al. What has long medical treatment to offer and what does it cost? Eur Heart J 1987 (suppl F) 26-28.

1.2.1.2. EPIDEMIOLOGY, PREVALENCE AND INCIDENCE

The prevalence* of heart failure is rising sharply in developed countries.

Prevalence can be estimated at 1% to 2% in the Western world while incidence* is between 5 and 10 per 1,000 persons per year.[17] However, both prevalence and incidence vary by country[18] (see Table 1 below).

17 Mosterd A, Hoes AW. Clinical epidemiology of heart failure. Heart 2007; 93:1137-1146.

18 Global public health burden of heart failure. Card Fail Review 2017 Apr; 3(1):7-11. Doi: 10.15420/cfr.2016:25:2.

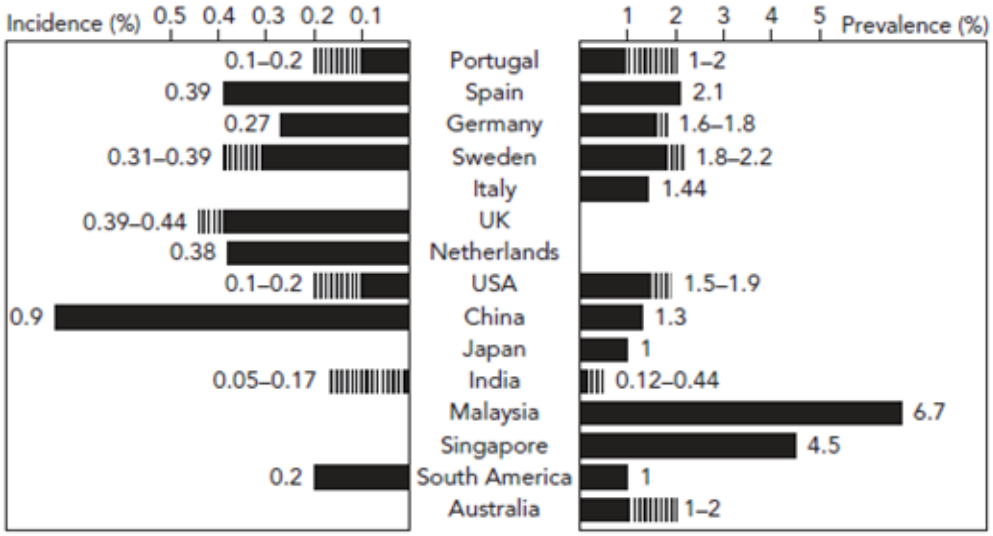


Table 1 – Savarese G Global Public Health Burden of Heart Failure. Cardiac Failure Review 2017; 3(1):7–11. DOI: 10.15420/cfr.2016:25:2.

In Europe, the disease affects approximately 2% of the general population,[19/20] i.e., some 15 million people in Europe.[21/22] Prevalence increases greatly with age.[23] A French epidemiological study has shown that it can affect nearly 12% of patients over the age of 60.[24]

In the United States, over 5.8 million people were suffering from heart failure in 2012, with an annual incidence* of more than 550,000 new patients each year. According to a new study published by a working group within the American Heart Association in May 2013, the prevalence of heart failure in the United States is expected to increase by 46% between 2010 and 2030,[25] bringing the affected population to more than 8 million people.

A more recent publication in 2017 predicts the number of new cases of heart failures to reach 772,000 in the United States in 2040 (see Table 2 on the following page).

In addition, terminal chronic heart failure with impaired ejection fraction*, which is a target market for Carmat, is reported to affect 4.1 million people in Europe and the United States[26/27] (people under 75 only).

19 Cowie MR, et al. The epidemiology of heart failure. Eur Heart J 1997; 18:208-225.

20 Davies MK et al. Prevalence of left ventricular systolic dysfunction and heart failure in the Echographic Heart of England Screening Study: a population based study. Lancet 2001; 358:439-444.

21 Remme WJ et al. Public awareness of heart failure in Europe: first results from SHAPE. Eur Heart J 2005; 26:2413-2421.

22 McMurray JJ et al. ESC Guidelines for the diagnosis and treatment of acute and chronic heart failure 2012. Eur Heart J 2012; 33:1787-1847 (number including the 51 member countries of the European Society of Cardiology).

23 Conrad N, et al. Temporal trends and patterns in heart failure incidence: a population-based study of 4 million individuals. The Lancet. 2018; 391(10120):572-80.

24 Saudubray T et al. Prévalence et prise en charge de l'insuffisance cardiaque en France : enquête nationale auprès des médecins généralistes du réseau Sentinelles. La revue de médecine interne 26 (2005) 845-850.

25 Heidenreich PA et al. Forecasting the impact of heart failure in the United States: a policy statement from the American Heart Association. Circ Heart Fail. 2013; 6:606-619.

26 The ECHOES study, Midlands, UK: Davies M, Hobbs F, Davis R, et al. Prevalence of left-ventricular systolic dysfunction and heart failure in the Echocardiographic Heart of England Screening study: a population based study. Lancet. 2001 Aug 11; 358(9280):439-44.

27 CARLA study, Sachsen-Anhalt, Germany: Tiller D, Russ M, Greiser KH, Nuding

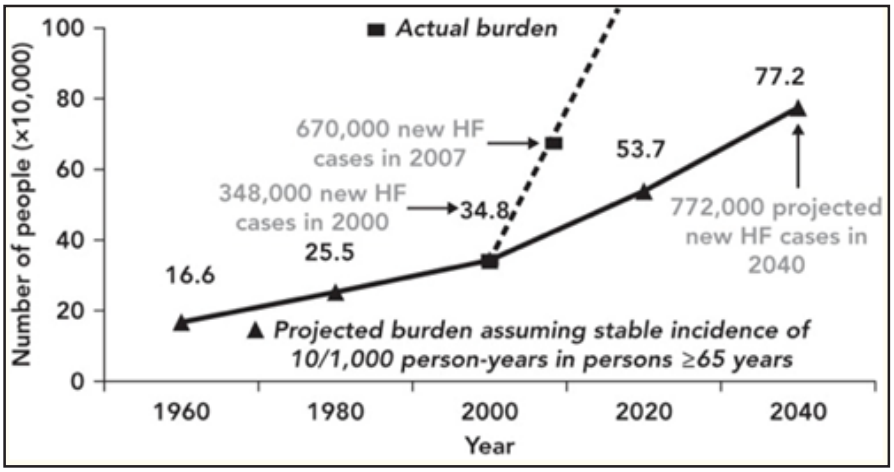


Table 2 – Savarese G Global Public Health Burden of Heart Failure. Cardiac Failure Review 2017; 3(1):7–11. DOI: 10.15420/cfr.2016:25:2.

This change in the epidemiology is linked to the aging population, but also, for advanced heart failure, to improvements in survival after a heart attack and to the progress made in medicinal treatments for heart disease, such as beta blockers* and diuretics*,[28] or coronary stents.

The paradox is that the availability of these therapies has enabled more effective treatment of acute coronary syndromes and thus considerably increased patient survival after a heart attack, the strongest predictor of left systolic dysfunction and the risk of heart failure. Patients no longer die immediately but receive long-term treatment, during which time the disease continues to develop. Consequently, the total number of people living with compromised heart function and with clinical heart failure will increase considerably in the coming decades.[29] This change also leads to a population of older heart failure patients, suffering from various comorbidities, who are therefore even less likely to have access to transplants.[30] Out of the 8.5 million American people suffering from heart failure by 2030, as predicted by the AHA, only 2.5 million or so of these individuals will be under 65 years old.

Heart transplants are currently only available to some 5,500 patients[31] per year, and durable Mechanical Circulatory Support (MCS) devices offer treatment to a further 8,000 patients, with variable results. This means that we currently do not have an effective therapy for the majority of patients. More than 30% of patients supported by a durable MCS device require biventricular support.

1.2.1.3. ECONOMIC CHALLENGES

Heart failure is also a real public health challenge set to increase. In Western countries, the cost of heart failure is now one of the largest of all chronic diseases.

According to a study published by a working group within the American Heart Association in May 2013, the total cost of heart failure, which amounted to US$31 billion in the United States in 2012, is estimated to be US$70 billion by 2030. The direct costs (medical costs) of patient treatment are expected to increase by 250% between 2012 and 2030. Taking account of all the direct costs from resulting comorbidities, the cost could reach US$160 billion by 2030. In addition, this study reveals that 80% of medical expenses are attributable to hospitalization.

There are no recent studies dealing with the cost of heart failure on a European level. But as an example, the direct cost of advanced chronic heart failure in France amounted to some €1.5 billion[32] (€3.3 billion for the long-term condition class combining serious cardiovascular diseases – ALD 5 – in 2009, for the French health insurance system alone) and was reported to affect over 730,000 people in 2011 (a 9% increase compared to the previous year).

S, Ebelt H, et al. (2013) Prevalence of Symptomatic Heart Failure with Reduced and with Normal Ejection Fraction in an Elderly General Population.

28 Évaluation de l'assistance ventriculaire en attente ou en alternative à la transplantation cardiaque. Rapport de l'ANAES (Agence nationale d'accréditation et d'évaluation de santé) – Avril 2001 – E.

29 Tendera M. Epidemiology, treatment, and guidelines for the treatment of heart failure in Europe. European Heart Journal Supplements (2005) 7 (Supplement J), J5-J9.

30 Croft JB et al. Heart failure survival among older adults in the United States: a poor prognosis for an emerging epidemic in the Medicare population. Arch Intern Med 1999; 159:505-510.

31 J Heart Lung Transplant 2019; 38:1056-66.

32 Régime général de l'Assurance maladie (French health insurance system) – www.ameli.fr/l-assurance-maladie/statistiques-et-publications/donnees-statistiques/affection-de-longue-duree-ald/.

In a statement released on May 7, 2010 for the European Heart Failure Awareness Day, the French Society of Cardiology and the French Federation of Cardiology announced the following figures. In France, there were more than 100,000 new cases a year. 10% of these patients were hospitalized, the average length of hospitalization exceeding ten days and the rate of re-admission within six months being 20%. In 2008, heart failure was the main diagnosis for 195,800 hospital stays in France, for which the daily cost of hospitalization in cardiac intensive care was over €2,000.

Overall, heart failure represents 2.5% of total healthcare expenditure in Western countries, with costs linked to hospitalization alone representing more than 70% of the total cost of the disease.[33] Due to repeated hospitalizations, class IV chronic heart failure represents between 61% and 92% of the total cost of heart failure.[34]

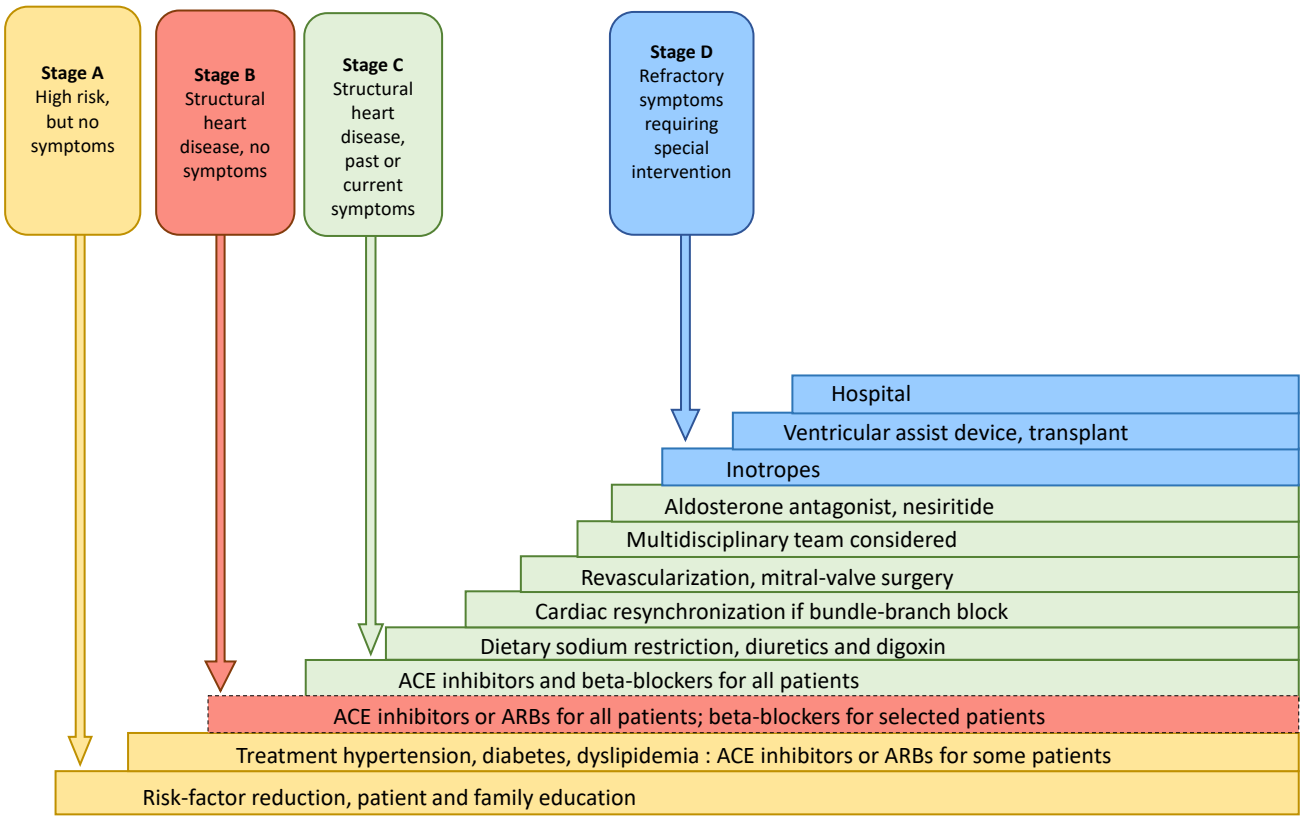
1.2.1.4. AVAILABLE TREATMENTS

The onset of heart failure may be prevented or delayed by a certain number of measures, including treating high blood pressure. However, once this disease reaches the chronic phase, it is essentially incurable and the objectives of treatment are to improve clinical condition, functional capacity, quality of life, minimize hospital admissions and reduce mortality.

Heart failure can be classified based on its severity and associated treatment plans. In the chart below, four stages are identified, ranging from Stage A (high risk of developing heart failure) to Stage D (advanced heart failure).[35]

Various national regulatory and professional bodies also produce guidelines and recommendations.

The four stages of heart failure and associated treatment plans



From Yancy, C. W., et. al. "2013 ACCF/AHA Guideline for the Management of Heart Failure: A Report of the American College of Cardiology."

33 McMurray JJ, Stewart S. Epidemiology, aetiology, and prognosis of heart failure. Heart 2000; 83:596-602.

34 Clegg AJ et al. Clinical and cost effectiveness of LVAD for end-stage heart failure – Health Technology Assessment NHS – 2005.

35 Cardiac Failure Review 2017; 3(1):7–11. DOI: 10.15420/cfr.2016:25:2.

From Stage B onwards, treatment involves a personalized combination of medication and is known as Optimal Medical Therapy (OMT). Unfortunately, because of the many drug-related side effects, one of the constraints of OMT is compliance, with an estimated 40% of patients not respecting their treatment plans.

Stage C patients may be suitable for surgical procedures including coronary stenting, coronary artery bypass surgery, valve repair or replacements and surgical re-modeling of the heart. Patients with heart rate problems can be treated with a variety of pacemaker-like devices, including those incorporating a defibrillator function.

Patients in Stage D typically require strong heart-stimulating intravenous drugs (inotropes), and become candidates for assist devices or heart replacement therapy through a transplant or an artificial heart.

Patients in Stages C & D often develop a number of comorbidities (other medical conditions) as a result of a chronic inadequate blood supply.

MEDICATION

At early stages (typically classes I and II of the NYHA classification), treatment is essentially drug-based[36] and, depending on the severity and symptoms, combines:

- anticoagulants* and platelet agglutination inhibitors* to prevent blood clots;
- angiotensin-converting enzyme inhibitors* to reduce vascular resistance;
- beta blockers, which reduce the heart rate and cardiac output to decrease blood pressure;
- diuretics to remove excess fluids and lighten the burden on the heart to prevent pulmonary edema;
- vasodilators*, which relax the blood vessels to increase the flow of blood and oxygen to the heart without increasing its workload;
- various other medications.

The complexity of treatment and the need for frequent adjustments leads to low patient compliance: 40% of patients do not take their treatment correctly after three months.[37]

Positive inotropes* are generally also introduced at the most advanced stage of the disease. These drugs, administered intravenously in hospitals, increase cardiac contractility and allow, at least temporarily, critical situations of low cardiac output in episodes of acute decompensated heart failure* or cardiogenic shock* to be resolved.

Dependence on inotropes marks the terminal phase of heart failure with a mean survival of three and a half months.[38]

MEDICAL DEVICES[39]

From class III in the NYHA classification, surgical options are considered, including the implantation of medical devices such as:

- mono or biventricular pacemakers to prevent arrhythmias;
- implantable defibrillators to treat ventricular tachycardia and prevent sudden death;
- left ventricular reconstruction;
- restrictive mitral annuloplasty*;
- implantable and non-implantable mechanical ventricular assist devices, and artificial hearts.

For the most part, these options seek to recover the native heart's function. For example, biventricular pacemakers aim to rehabilitate the ventricles by synchronizing their contractions.

Restrictive mitral annuloplasty aims to rehabilitate the left ventricle by helping to remodel its geometry. However, although these approaches temporarily provide relief to some patients, they do face major difficulties in terms of patient selection[40] or technical implementation,[41] which restrict their scope of application and do not stop the progression of the disease.

Finally, the use of stem cells to regenerate damaged heart muscle is a promising research approach, but remains marginal and relatively controversial,[42] in particular due to difficulties in collection, generation, administration (a large number of cells "die" during the injection), and the current lack of a clinical demonstration of long-term regeneration of the myocardium.

Mechanical left or right ventricular assist devices (LVAD, RVAD)

Patients with chronic or acute heart failure who cannot be stabilized with optimal medical therapy (OMT) are candidates for mechanical circulatory support (MCS), most

36 American Heart Association – Heart Failure Medications – http://www. heart.org/HEARTORG/Conditions/HeartFailure/PreventionTreatmentofHeartFailure/Heart-Failure-Medications_UCM_306342_Article.jsp.

37 Benner JS et al. Long-term persistence in use of statin therapy in elderly patients. JAMA. 2002; 288:455-61.

38 Hershberger RE et al. Care processes and clinical outcomes of continuous outpatient support with inotropes (COSI) in patients with refractory end-stage heart failure. J Card Fail. 2003; 9(3):180–7.

39 The information given in this document on devices other than Aeson® comes solely from public sources such as the cited companies' websites, publicly accessible investor presentations and referenced scientific publications. Readers are encouraged to conduct their own research to form their own opinions. Carmat accepts no liability concerning the accuracy of this information.

40 Marwick TH. Restrictive Annuloplasty for Ischemic Mitral Regurgitation: Too Little or Too Much? J Am Coll Cardiol. 2008; 51(17):1702-1703.

41 Strickberger SA et al. Patient Selection for Cardiac Resynchronization Therapy, Circulation. 2005; 111:2146-2150.

42 Garbern J et al. Cell Stem Cell, Volume 12, Issue 6, 689-698, June 6, 2013.

often left-sided (LVAD) but also potentially right-sided (RVAD). These devices are used to unload the failing ventricle and maintain an adequate blood supply to key organs. The support periods can vary in length. Typically, patients with acute cardiogenic shock*, for example, are initially treated with a short-term assist device to enable a full assessment to be carried out before definitive therapy can be decided on and administered.

These decisions are guided by a categorization established by INTERMACS (Interagency Registry for Mechanically Assisted Circulatory Support), which distinguishes seven levels of disease, the first four of which can be treated with MCS therapy (see table below).

INTERMACS level	NYHA Classification	Description	Device
1. Cardiogenic shock	IV	Unstable despite maximum drug support and/or short-term MCS	ECLS* LVAD** TAH***
2. Progressive decline despite inotropic support	IV	Acceptable blood pressure but rapid deterioration of kidney function and nutritional state	ECLS* LVAD** TAH***
3. Stable but inotrope dependent	IV	Blood pressure stable but requiring intermittent inotropes	LVAD**
4. Symptomatic at rest	IV	Temporary cessation of inotropes but frequent treatment required for fluid overload	LVAD**

* ECLS: extracorporeal life support (short-term system connected to patient by tubes).

** LVAD: left ventricular assist device.

*** TAH: total artificial heart.

The Criteria Committee of the New York Heart Association. Nomenclature and Criteria for Diagnosis of Diseases of the Heart and Great Vessels. 9th ed. Boston, Mass: Little, Brown & Co; 1994:253-256.

Mechanical assist devices can be used for a variety of purposes, depending on factors such as the desired support duration:

Acronym	Description	Application
CPR	Cardio-pulmonary resuscitation	Short-term devices used to resuscitate and buy time
BTD	Bridge to decision	Short- or medium-term devices used to evaluate best therapeutic way forward
BTR	Bridge to recovery	Medium-term devices used to attempt functional heart muscle recovery
BTT	Bridge to transplant	Medium- to long-term devices used to support a patient awaiting a heart or artificial heart transplant
DT	Destination therapy	Long-term device used for permanent heart replacement therapy

Basically, medium- and/or long-term support is required in two cases: bridge to transplant (BTT) and destination therapy (DT):

- BTT: The device is implanted temporarily until a human organ is available or until the patient's condition improves sufficiently to tolerate a transplant. Given the thromboembolic or infectious complications of the available devices, they were, until recently, used mostly for this temporary indication.

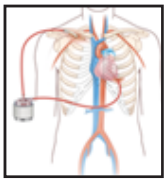
- DT: The device is implanted permanently. This indication was, until recently, reserved for patients ineligible for a transplant, or who did not wish to have one. However, under the pressure of fast increasing prevalence and an organ shortage, many patients with temporary implants actually become destination therapy patients.

The aim of bridge-to-transplant and destination therapy is to offer a system providing real quality of life to the patient. This should include reasonable autonomy, returning to a home environment, and even normal social life and returning to work. Complications and the burden of system management should be minimal. In terms of symptoms, this would represent an improvement of at least two NYHA classes.

To date, ventricular assist devices are varied but can be categorized according to their connection to the patient's vascular system (extra-corporeal, para-corporeal, or intra-corporeal):

- extra- and paracorporeal devices are used for short- to medium-term applications such as rescue therapy (RT), bridge to decision (BTD) and possibly, post-surgical bridge-to-recovery;

- modern VADs used for BTT or DT applications are intracorporeal and "durable", and implanted inside the body.



Extracorporeal:
- Pump connected by long tubes
- Short-term support

Paracorporeal:
- Pump located outside body
- Medium-term support

Intracorporeal:
- Long-term support
- Intraventricular/Intrapericardial/Abdominal pouch

The historical leader in long-term VADs is Thoratec® (now Abbott), with its HeartMate II® and HeartMate III® devices. Their competitor, the HeartWare®, is owned by Medtronic, which in June 2021 announced market discontinuation.

Thoratec® announced more than 18,000 implants for its HeartMate II® in 2014 (just five years after its FDA approval for definitive treatment), and it was on this basis in particular that the company was acquired in mid-2015 by Saint Jude Medical, which was in turn acquired by Abbott in 2016. Abbott is positioned as a global leader in medical devices, with applications in the cardiac field, diabetes treatment and vision disorders.

Thoratec® obtained the first approval for the use of their HeartMate II in destination therapy in 2010. The use of these devices as a permanent solution has increased considerably in the United States and in Europe, such as in Germany, and in 2015, more than 50% of LVAD implants were for destination therapy.

Although an LVAD implant is the most frequently recommended MCS intervention, up to 30% of these patients will suffer from a failure of both ventricles (biventricular failure), thus giving rise to suboptimal outcomes. In practice, some practitioners therefore implant two LVADs, one for the right ventricle and the other for the left. However, to date, no implantable device is approved for biventricular application. Given the imperfections of this option, known as "BIVAD", the number is very limited. For example, only 14 BIVADs were implanted in Germany in 2019.[43]

Moreover, unlike artificial hearts, which replace both ventricles, RVADs and LVADs simply provide support to the diseased heart, which, left in place, can continue to deteriorate. This leaves the patients with the option of an artificial heart or a heart transplant from a donor.

Total artificial hearts (TAH)

Developing an artificial heart has long been the holy grail of medicine, and the first attempts date back to the 1930s in Russia, and then a series of developments in the United States in the 1960s. The first artificial heart (for the BTT indication) was used by Cooley in Texas in 1969, when an early device (Liotta Heart) successfully provided 64 hours of support. But the various programs over time were abandoned when it became apparent that the therapy entailed too many complications, and that the equipment hindered a decent quality of life.

43 ISHLT 2020 BVAD Virtual.

Attention then turned primarily to a simpler univentricular approach, when it appeared that a significant number of heart failure patients could be supported by just unloading onto the left or right ventricle. This explains the development of LVAD and RVAD devices (see previous paragraph).

Similar to the heart transplant procedure, total artificial hearts (TAHs) replace both failing ventricles. Placement of the artificial heart is called "orthotopic" to distinguish it from grafts or implants placed elsewhere than in the position of the native heart in the thorax. The native ventricles are removed and the TAH is connected to the remaining atria of the human heart, the blood of which fills the device, and to the main blood vessels carrying blood to the lungs (pulmonary artery) and the rest of the body (aorta) by two conduits.

SynCardia

Until Carmat obtained CE marking for its Aeson® heart in December 2020, the only total artificial heart marketed in Europe and the United States was manufactured by the eponymous private company SynCardia.[44]

This means that the only TAH on the market was designed more than 40 years ago. The two polyurethane ventricles are actuated by pneumatic pressure, and air pressure actuates the internal flexible membranes separating each ventricle into blood and air compartments. Forward flow is achieved with the use of four mechanical heart valves: two percutaneous plastic pipes approximately 2 meters long connect the device to the external compressor, whose portable driver version, Freedom™, weighs 13.5 pounds (6.12 kilograms), excluding carrying accessories such as a backpack or carry case. It has a life of three hours.[45]

SynCardia announced the 1,000th implantation of its artificial heart in February 2012, 19 years after the first implant in December 1982. Annual implants of SynCardia have been low in recent years, on account of the system's shortcomings (about 50 to Carmat's knowledge, including about 15 in Germany in 2019, for example).

In December 2021, the ANSM was informed of supply disruptions for the SynCardia artificial heart in France, as of January 2022, and the suspension of its CE marking owing to quality management noncompliances.[46] This was still the state of play at the end of 2022 and the information available to date suggests that it could continue over the long term.

The following paragraph provides some additional information on the SynCardia heart and the company that markets it:

The SynCardia® device was designed in the 1970s and implanted for the first time in 1982 under the name Jarvik 7. This first patient lived 112 days. In 1985, a patient reached the transplant stage for the first time after surviving for nine days with the artificial heart. In 1990, the FDA closed Symbion, Inc., which held the rights for Jarvik 7 and stopped the ongoing clinical study due to regulation breaches. The technology was taken up again by the Health Sciences Center at University of Arizona under the name CardioWest™. A new clinical study restarted in 1992 in the United States and lasted ten years, resulting in FDA approval in 2004 for a bridge-to-transplant (BTT) indication and CE marking. Meanwhile, a new privately funded company, SynCardia Systems, Inc., was created in 2001 to prepare and market the product.[47] After being backed since 2016 by the private-equity fund Versa Capital Management, the company was acquired by Picard Medical in September 2021 for an undisclosed amount.

A summary comparative table of Aeson® and its main competitors in the advanced heart failure therapy market appears in section 1.2.2 of this document.

TRANSPLANTS

Patients with NYHA IV can currently only be definitively treated by heart replacement therapy (transplant or artificial heart).

Unfortunately, mechanical assist systems have not achieved results equivalent to those of heart transplantation, which remains the "gold standard" for these patients.

Professor Christian Bernard performed the first heart transplant in South Africa on December 3, 1967. The first transplant patients, with few exceptions, did not survive more than a few weeks after the operation, notably due to rejection (the host body's reaction against the transplant, which it considered as a foreign biological substance).

Several major advances have increased survival among transplant patients:

- the preservation of donor hearts thanks to refrigeration, allowing the removal at a distance from the place of transplantation;
- endomyocardial biopsy for early diagnosis of rejection;
- finally, and above all, the discovery of the potential of ciclosporin, an immunosuppressant*, whose use was a great leap forward in organ transplants from the early 1980s by preventing acute rejection.

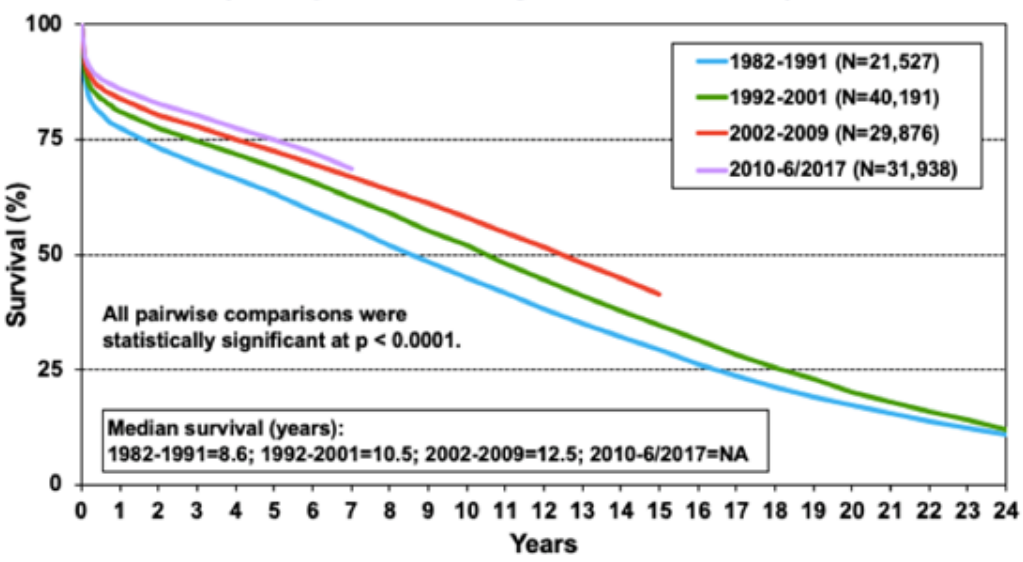
44 www.syncardia.com.

45 Jaroszewski et al. The SynCardia freedom driver: a portable driver for discharge home with the total artificial heart. J Heart Lung Transplant 2011 Jul 30(7):844-845.

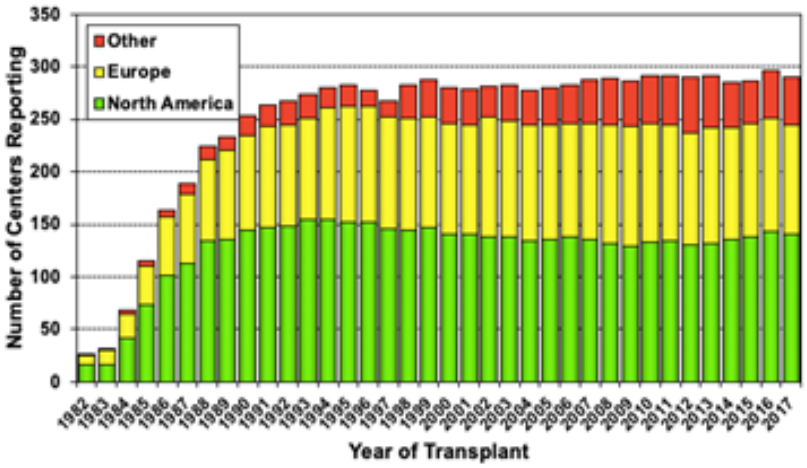
46 ANSM website: https://ansm.sante.fr/disponibilites-des-produits-de-sante/dispositifs-medicaux/CŒUR-total-artificiel-syncardia-tah-t-et-ses-Équipements-externes.

47 Historical information on Jarvik 7 can be found on the Jarvik Heart website www.jarvikheart.com.

Today, some 5,500 transplants are carried out across the globe, with survival rates of 85% at one year and 69% at five years, in nearly 300 centers (see tables below). However, attrition rates do not improve significantly.



Survival rate after transplantation: ISHLT Registry 2018



Number of transplant centers worldwide: ISHLT Registry 2018

The hopes raised for more widespread application of heart transplantation continue to face major problems, most importantly the lack of donor hearts. Only 5,000 to 6,000 human donor hearts are available each year in the world. This figure shows little sign of increasing, whereas needs are constantly growing, estimated at around 200,000 per year today.

There are a number of reasons for this shortage. The first reason can be found in the very strict eligibility criteria both for harvesting the organ and the transplant. In theory, the donor[48] must be under the age of 61, brain dead, not a carrier of certain viruses such as HIV or hepatitis B and C, not be a drug addict or have a cancer and, of course, not be suffering from heart disease. This therefore mainly limits the possibility of donation to trauma deaths (in particular road accidents, which are constantly decreasing). Only 435 hearts were therefore harvested in France in 2012 and 397 were implanted.[49]

In France, 41% of donors were over 60 years old in 2011 compared to 22% in 2007, which explains why not all of the organs harvested can be used.

In light of this organ shortage, the eligibility criteria of the recipient are even stricter[50] in order to ensure the greatest chance of success with each transplant. Blood groups must be identical, weight and size equivalent. Irreversible pulmonary hypertension, an active infection or a cancer are formal contraindications. Other relative contraindications are also taken into account, such as diabetes, advanced lung or liver disease, kidney failure and morbid obesity.

A psychological assessment of the potential recipient is carried out to ensure that the patient understands and undertakes to adhere to complex life-long medical treatment. Patients with psychiatric disorders, or alcohol or drug addictions are not considered.

A particularly discriminating criterion, patients must be under 65, even if there is no particular legislation. Organs are therefore reserved for the youngest patients, while the vast majority of chronic heart failure patients are over 60 or suffering from comorbidities, which mean they are ineligible.

In addition, post-transplant survival decreases significantly with age. Only 80% of patients over 60 are still alive after one month, and 67% after one year.[51]

As a result, the number of transplants has been stable or declining in all developed countries for over ten years, while the prevalence of heart failure has considerably increased.

Heart transplant waiting lists therefore do not reflect treatment needs, but simply the number of patients satisfying all the eligibility criteria, particularly age. The low diffusion of heart transplantation as treatment of choice for terminal heart failure is shown in the following table, which shows the small number of patients eligible for such treatment.

48 Latrémouille C et al. Transplantation cardiaque. EMC – ©Elsevier, Techniques chirurgicales – Thorax, 42-748, 2006.

49 Agence de la biomédecine – Synthèse nationale de prélèvement et de greffe 2012 et annexe au bilan 2012.

50 Mehra MR et al. Listing Criteria for Heart Transplantation: International Society for Heart and Lung Transplantation Guidelines for the Care of Cardiac Transplant Candidates. J Heart Lung Transplant 2006; 25:1024-42.

51 Agence de la biomédecine – Rapport d'information au Parlement et au Gouvernement – septembre 2013 et bilan 2013: http://www.agence-biomedecine.fr/annexes/bilan2013/donnees/organes/03-CŒUR/synthese.htm.

	France	United States	Germany	United Kingdom******
Transplants	450*	3,244***	312*****	177
Patients on waiting list	900**	3,782****	700*****	246

* 2018 – Agence de la biomédecine.

** https://rams.agence-biomedecine.fr.

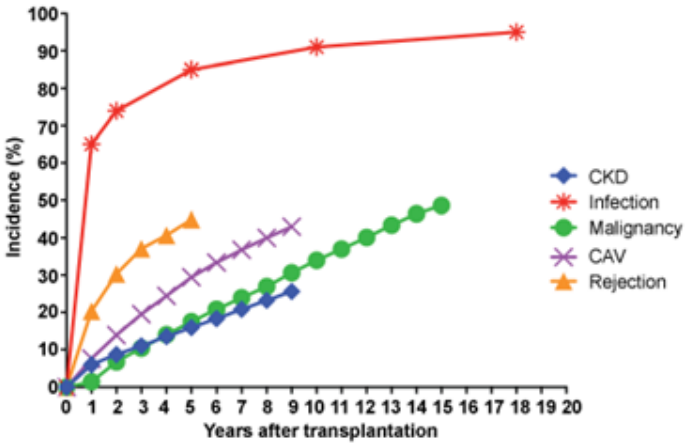
*** 2017 – UNOS.

**** At January 17, 2019 – UNOS.

***** statistics.eurotransplant.org: 9023P_2019.

****** 2017 – NHS Organ Donation Annual Report.

There are also a number of serious complications associated with transplants.



Post-transplant complication rate:
Alba A Int J Tx Res and Med 2016.
CKD = chronic kidney disease; CAV = cardiac allograft vasculopathy.

As patients require lifelong immunosuppression, they are susceptible to a range of side effects including an increased incidence of infection and cancer, chronic rejection, development of graft coronary artery disease, hypertension and kidney disease.

Lastly, heart transplants are invasive treatments at a very high price. The Milliman Institute has published a detailed report in 2014 on the estimated cost of organ transplants in the United States. Its findings indicate a cost of US$1,242,200 for heart transplants, including 30 pre-transplant days and 180 post-transplant days.

It is difficult to make international financial comparisons given the very wide differences in health funding systems and reporting methods.

Despite all of these issues, heart transplants are regarded as the gold standard in heart replacement therapy, so any potentially successful alternatives need to match or surpass their results.

In January 2022, doctors at the Maryland School of Medicine in the United States announced that they had transplanted a pig heart into a patient who was ineligible for transplantation. [52] The patient died two months later. Although the transplantation of animal organs into humans is a potentially promising approach, many obstacles remain to be overcome (increased risk of rejection, risk of disease transmission from animals to humans, very short life span of animals compared to humans, ethical considerations, etc.), reducing the probability of this being a viable short or medium-term solution.

52 https://www.umms.org/ummc/news/2022/first-successful-transplant-of-porcine-heart-into-adult-human-heart?__cf_chl_jschl_tk__=j_7aMbCgpZVFIgkb53RhO0WfO2ItBlOPbwvCl0ASE4Y-1641901476-0-gaNycGzNCH0

1.2.2 AESON® AND THE MARKET FOR ADVANCED BIVENTRICULAR HEART FAILURE THERAPY

1.2.2.1. POSITIONING IN THE MARKET FOR ADVANCED BIVENTRICULAR HEART FAILURE THERAPY

Aeson®'s intention is to offer a therapeutic solution for patients suffering from advanced biventricular heart failure, confronted with the shortage of available human donor hearts, and therefore, in many instances, at the end of their therapeutic options.

As discussed in section 1.2.1, the sickest patients, i.e., those at NYHA stages III and IV (or INTERMACS levels 1 to 7), if they cannot benefit from a heart transplant with a human graft, have only two options: either a mechanical ventricular assist system (VAD), or a total artificial heart, which has the advantage of treating both parts of the heart (right and left), unlike the VAD.

NYHA Class	INTERMACS Patient Profiles	Time to intervene	Prevalence*
IV	1 – Critical cardiogenic shock	Hours	14%
	2 – Progressive decline	Days	41%
	3 – Stable, inotrope dependent	Weeks	28%
	4 – Resting symptoms	Months	12%
	5 – Exertion intolerant		
	6 – Exertion limited		5%
III	7 – Advanced NYHA Class III		

Artificial Heart

VAD

* Source: J Heart Lung Transplant, 2015; 34: 1495-1504

However, to date:

- The only other artificial heart available on the market, SynCardia, is based on old technology. Annual implants of SynCardia are very low (around 50 to Carmat's knowledge) and the number has been decreasing sharply for several years now. In addition, in December 2021, the ANSM announced suspension of its CE marking and unavailability in France as of January 2022.[53] The information available to date suggests that this situation could continue over the long term.

- Following Medtronic's June 2021 announcement that it would discontinue sale of its "Heartware" VAD, the only durable VAD on the market is Abbott's "Heartmate III".

The therapeutic options for patients with advanced biventricular heart failure thus appear limited, and cannot be considered wholly satisfactory solutions given the relatively high extent of complications (see sections 1.3.3 and 1.2.2.2).

1.2.2.2. MARKED DIFFERENTIATION WITH RESPECT TO COMPETING SOLUTIONS

Aeson®, the only pulsatile, autoregulating and highly hemocompatible biventricular solution

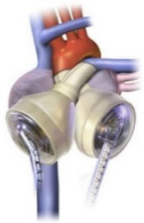
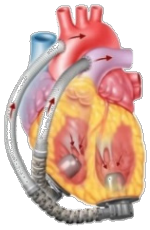
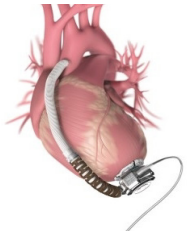
It is scientifically accepted[54] that mechanical assistance for patients with advanced biventricular heart failure must combine the following characteristics if it is to provide satisfactory physiologic support free of complications:

- Biventricular
- Pulsatile
- Autoregulating
- Highly hemocompatible.

53 ANSM website: https://ansm.sante.fr/disponibilites-des-produits-de-sante/dispositifs-medicaux/CŒUR-total-artificiel-syncardia-tah-t-et-ses-Équipements-externes.

54 Rogers JC et al. N Engl J Med 2017; Money L et al. ASAIO J 2020; Lai JV et al. ASAIO J 2020; Mehra M. Eur Heart J 2017; Murase S et al. J Heart Lung Transplant 2020.

Aeson® is the only solution on the market today to have these four characteristics:

	Aeson®	SynCardia TAH	BIVAD	LVAD
Biventricular support	✓	✓	✓	✗
Pulsatility	✓	✓	✗	✗
Autoregulation	✓	✗	✗	✗
High hemocompatibility	✓	✗	✗	✗

A highly favorable safety profile

Aeson® accordingly presents a highly favorable safety profile compared to competing solutions.

Among the first 15 patients in the European pivotal clinical study there were no instances of stroke, gastrointestinal bleeding or percutaneous driveline infection.[55]

Device	Survival rate at 6 months	Stroke	Bleeding/ Reintervention	Gastrointesti-nal bleeding	Percutane-ous driveline infection
Carmat Feasibility study (n=4)	50%	0%	75%	0%	0%
Carmat Pivotal study (n=15)	73%	0%	20%	0%	0%
SynCardia (1) (2)	54%-63%	21%-23%	15%-41%	20%	22%
BIVAD (3) (n=14)	46%-68%	7%	N/A	7%	7%

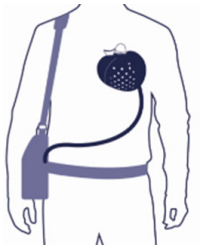
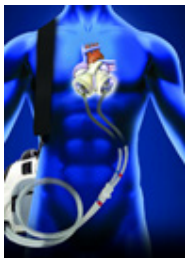
(1) Arabia F et al, J Heart Lung Transplant, 2018; 37; 1304-1312 (n=450).
Demondion P et al, Eur J Cardiothorac Surg. 2013 Nov: 44(5):843-8 (n=27).
(2) Carrier M. et al, J Heart Lung Transplant 2021; 40(3): 220-228
(3) Lavee J et al, J Heart Lung Transplant 2018; 37; 1399-1402.

Source Carmat – Intermediate results, pivotal study Europe (first 15 patients – follow-up at 6 months)

55 See section 1.2.3 for more details on this study and its findings.

As well as favoring rapid recovery of patients following implantation, and subsequent quality of life, this is also a major medico-economic advantage, since the low extent of complications with Aeson® makes for lower costs for healthcare systems.

Comparative table of Aeson® competitor products on the market for advanced heart failure therapy

	Carmat artificial heart (Aeson®)	Syncardia®	Thoratec ventricular assist device (HeartMate III®)
Visual of the system			
Corporate information	Listed company €72 million raised in last fund-raising in 2022	Non-listed company acquired by Picard Medical in September 2021	Abbott Group (listed)
Market access	CE marking (bridge to transplant) obtained in December 2020 Feasibility study underway in the United States	Bridge to transplant approval: 2004 (USA) and 1995 (CE marking)* Study for destination therapy: pending	Bridge to transplant approval: 2017 (USA) and 2015 (CE marking) Destination therapy approval: 2015 (CE marking) and 2018 (USA)
Technology	Bioprosthetic artificial heart, hemocompatible, pulsatile, auto-regulating (hydraulic activation)	Pneumatic and pulsatile artificial heart with limited automatic function	Ventricular assist device (LVAD), with centrifugal pump
Advantages	Biventricular support Hemocompatible materials reducing risk of strokes and hemorrhages Autoregulation matching patient physiologic needs Pulsatility	Biventricular support Relatively simple technology Pulsatility 2 sizes (50 cc and 70 cc) Product marketed for several years	Small device High anatomical compatibility Simple implantation
Disadvantages	Some patient size restrictions	Older technology Relatively high complication rates Limited automatic function Noisy	Left support only Relatively high complication rates Non-pulsatile Minimal autoregulation

* CE marking suspended in December 2021

Other products under development

Research into TAH products is a dynamic area within the medical devices sector, with, to Carmat's knowledge, at least five other significant projects (ReinHeart, RealHeart, SmartHeart, biVACOR and OregonHeart), most of which were launched in the second half of the 2000s. However, as of December 31, 2022, only two of these projects were still in progress (RealHeart and biVACOR), with the others having been discontinued, primarily for financial reasons.

Company	Realheart	BiVACOR
Location	Vâsteras, Sweden	LA/Houston, USA
Development stage	Animal studies	Validation and verification
Visual of the prosthesis		

Carmat welcomes this investment by potential competitors as it highlights the belief in the potential of the market and demonstrates the benefits of total artificial hearts. Based on the information available to it, Carmat considers Aeson® significantly more technically and functionally mature than all of these other ongoing projects, and that it has a head start of several years on market access. None of these other projects has yet reached the stage of human clinical trials.

The information given in this document on devices other than Aeson® comes solely from public sources such as the cited companies' websites, publicly accessible investor presentations and referenced scientific publications. Readers are encouraged to conduct their own research to form their own opinions on these projects. Carmat accepts no liability concerning the accuracy of this information.

1.2.2.3. A VERY SIGNIFICANT ADDRESSABLE MARKET

The total addressable market represents around €40 billion per annum.[56] More than 26 million people worldwide are permanently affected by heart failure.[57] In Europe and the United States, more than 700,000 patients are eligible at any time for a left ventricular assist device (LVAD), but only 5,500 LVADs are actually implanted[58] and only 5,500 human donor hearts are available each year.[59] About 5,300 people are on a waiting list for a transplant at any given time.[60]

As noted in section 1.2.1, around 150,000 to 200,000 people in Europe and the United States need a human heart each year, while only 5,000 to 6,000 human donor hearts are available.[61] Demand is constantly on the increase, owing in particular to the aging of the population, and the mortality rate for people diagnosed is 55% to 77% after one year.[62] This means that, as things stand, only a small proportion of patients (around 3%[63]) needing a transplant will actually be treated.

With its Aeson® artificial heart, Carmat addresses the market for therapy in chronic class IV (NYHA classification) end-stage heart failure or heart failure resulting from ischemic cardiomyopathy, for both the bridge-to-transplant indication (i.e., awaiting transplantation) and, ultimately, destination therapy (definitive treatment) (see section 1.2.1.4).

Bridge to transplant indication

At this stage, Carmat has obtained CE marking for its artificial heart as a bridge to transplant. At end-2019, in the European Union alone, more than 2,000 patients were on the waiting list for a heart transplant, including some 700 in Germany,[64] 900 in France[65] and 700 in Italy,[66] while for example only 14 BiVADs and 15 Syncardia® artificial hearts were implanted in Germany in 2019[67] (with similar figures in France).

56 https://www.cnn.com/2021/03/25/business/carmat-artificial-heart-spc-intl/index.html (cardiovascular disease technology market)

57 Source: World Heart Federation Roadmap for Heart Failure.

58 Journal of the American Heart Association (ahajournals.org).

59 J Heart Lung Transplant 2019; 38:1056-66.

60 US, French and German data only. Sources: for US: H.C. Wainwright Initiation Report for Carmat (07/14/2021), page 21; for France and Germany: Statistics. eurotransplant.org: 9023P_2019.

61 J Heart Lung Transplant 2019; 38; 1056-66.

62 Cir Heart Fail. 2009; 2: 320-324.

63 Global data, Carmat estimates.

64 statistics.eurotransplant.org: 9023P_2019.

65 https://rams.agence-biomedecine.fr.

66 Source: Ministero della Salute – 2020

67 ISHLT 2020 BVAD Virtual.

Only a fraction of the patients potentially eligible for a heart transplant are registered on the waiting lists, chiefly owing to the notorious shortage of human donor hearts. This means that the actual number of patients needing a transplant is actually much higher.

Destination therapy indication

Chronic heart failure affects approximately 15 million European patients[68] and 5.8 million patients in the United States,[69] i.e., a total of approximately 20.8 million patients in this geographical area.

Referring to the indications obtained by similar devices, the Aeson® artificial bioprosthetic heart could be indicated for patients under 70 suffering from acute or chronic terminal heart failure who cannot receive a transplant, without obvious contraindications such as cancer that reduce their life expectancy to less than six months.

Considering that:

- each year, 2.3% of these patients will reach the terminal stage of the disease, involving the first hospitalization, i.e., approximately 478,400 patients (including around 130,000 in Europe);[70]
- 38% of these people are under 70 years old, i.e., approximately 182,000 patients (including around 49,000 in Europe);[71/72]
- some 5,500 eligible patients receive transplants each year; and
- the anatomical compatibility of the Aeson® artificial heart for men and women is 86% and 14%, respectively (with a weighting of 80/20 between men and women). Note that the available clinical data indicate that these compatibility rates should gradually increase.

There are approximately 125,000 potential patients (including 33,000 in Europe) for the indication class IV terminal chronic heart failure.

68 ESC Guidelines for the diagnosis and treatment of acute and chronic heart failure 2008. European Heart Journal (2008) 29, 2388-2442 (out of the 900 million inhabitants of the 51 member countries of the European Society of Cardiology).

69 Heart Disease and Stroke Statistics – 2010 Update at a glance – American Heart Association and American Stroke Association.

70 Jhund PS et al. Long-term trends in first hospitalization for heart failure and subsequent survival between 1986 and 2003: a population study of 5.1 million people. Circulation 2009; 119:515-523.

71 ESC Guidelines for the diagnosis and treatment of acute and chronic heart failure 2008. European Heart Journal (2008) 29, 2388-2442 (out of the 900 million inhabitants of the 51 member countries of the European Society of Cardiology).

72 Heart Disease and Stroke Statistics – 2010 Update at a glance – American Heart Association and American Stroke Association.

1.3 CARMAT AND ITS STRATEGY

Carmat sees its Aeson® artificial heart as the primary alternative to heart transplantation: a therapeutic solution for patients suffering from advanced biventricular failure, confronted with the notorious lack of available human donor hearts.

As the world's first physiologic artificial heart that is highly hemocompatible, pulsatile and autoregulating, Aeson® could ultimately save thousands of patients awaiting heart transplants every year.
On obtaining CE marking in December 2020, Aeson® became commercially available for the bridge-to-transplant indication in the European Union and all other countries that recognize CE marking. Aeson® is also being evaluated in the United States under a clinical feasibility study (EFS).

From a sales perspective, Carmat primarily addresses two markets: in Europe and the United States.
As regards therapeutic indications, in addition to the bridge-to-transplant indication it holds in the European Union, Carmat is also aiming at destination therapy (DT) indication, which would allow patients to live with the Aeson® heart on a long-term basis without the need for a subsequent heart transplant. Carmat considers that this indication could come through in a few years' time.

1.3.1 MARKETING STRATEGY

EUROPE

Having obtained CE marking on December 22, 2020, the Company can now market its product as a bridge to transplant throughout the European Union, subject to the extent to which the national health systems cover the cost of the device (see section 2 of this document for a description of the risks associated with social security reimbursement and coverage).

The Company effectively started selling its prosthesis in July 2021, with Aeson®'s first commercial location at a hospital in Naples (Italy), followed by other locations in Italy and Germany.

Carmat markets its device through an in-house team of sales representatives and clinical specialists in the main European countries. When relevant, this may later be expanded to carefully selected distributors or agents in countries deemed lower priority, or where this method appears more appropriate to local context.

The choice of a direct team was based on two factors:

- the need for strong technical and clinical support, especially for initial training at each center, and for the first implants;
- a concentric strategy on market approach, involving an initial focus on the core target, i.e., active heart transplant and cardiac assistance centers, then followed by less active centers.

The sales force will therefore initially consist of very clinical profiles to ensure the training and adoption of therapy by the medical and surgical community.

This approach is expected to enable progressive investments. The number of truly active centers – i.e., those that perform a sufficient number of procedures to keep teams available and trained – is in fact very low; in a large country such as Germany, for example, there are only around 20 such centers.

The Company therefore considers that, to cover this target made up solely of centers of excellence, a direct team is the most appropriate response in the first phases of commercial development (three to five years after commercial launch in Europe). In the longer term, when the Company has a larger clinical and medico-economic data base and once implantation centers have adopted its product(s), Carmat's several centers may be gradually expanded.

Carmat considers training and support for centers implanting its Aeson® heart to be a key success factor.

This means that rigorous training and certification by the Company are required for each center prior to any Aeson® implantation. This initial training process includes an animal implant of Aeson®, on a calf (the main objective being to train the surgeon on the implantation procedure), plus training for the whole of the center's team (doctors, nurses, anesthetists, etc.) on the Aeson® system (system operation, patient care before, during and after the implant), and training and information for the patient and his or her entourage.

To complete this training and ensure optimal patient care, several members of the Carmat team systematically accompany the center during its first three to five implantations. The patients themselves are trained by the center's team.

This training is renewed regularly as necessary (for example, in the event of modifications to Aeson® or to a procedure), and systematically if a center has not performed an implantation for 12 months.

With regard to the pricing policy, the price targets for the Carmat artificial heart are consistent with current reimbursement practices for available devices. For example, an implantable device for left mono-ventricular assistance is currently reimbursed in Europe for between around €60,000 and €110,000 excluding taxes (approximately €90,000 excluding taxes in France).[73] Because the Carmat heart treats both parts of the heart, and because Carmat also offers pre- and post-operative services, the price of the Aeson® system is about twice that of a single ventricular assist device (LVAD), and Carmat intends to apply consistent pricing in all countries where the Company has a commercial presence.

There are multiple and varying reimbursement procedures in each country. For that reason, the Company calls upon the services of local reimbursement experts, where necessary, to optimize and accelerate the management of its device. It provides appropriate assistance to hospitals on managing administrative take-up for Aeson®. It also collates the medico-economic data necessary to support the reimbursement and care procedures.

The Company considers that no reimbursement or no coverage would not be synonymous with no sales or income, in particular insofar as hospitals in certain countries have their own budgets to finance innovation, but would not allow the development of sales in line with its financial objectives. Since the launch of Aeson®, satisfactory reimbursement rates have already been achieved in some countries, which is very encouraging. In Germany, for example, two regions have granted reimbursements of up to €240,000 per implant.

Initial target markets: Germany and Italy

In the Aeson® launch phase, the Company plans to focus on Germany as its target market, this being the largest market for mechanical circulatory support (MCS) devices in the European Union.[74] It will also approach the Italian market pragmatically.

In the coming months and years, the Company will progressively approach other markets in the European Union, and potentially non-European markets that recognize CE marking. The order in which the various European countries will be addressed will depend on market size and the extent to which the cost of the device will be covered by their local health systems.

We should note that Carmat's Chief Executive Officer, Stéphane Piat, holds considerable experience in the field of medical devices marketing, gained, in particular, with the companies Johnson & Johnson Cordis and Abbott.

UNITED STATES

The development of a commercial approach to the American market is premature at this stage. However, Carmat currently intends to apply the same fundamentals as in Europe, both in terms of commercial structure and development, reimbursement and prices.

73 List of reimbursable products and services – LPP (ameli.fr): regulated unit price (decision of 11/29/2012) of the monoventricular HeartMate II® is €87,565.

74 GlobalData: EU5 Cardiac Assist Devices Market Outlook To 2025 – Intra-Aortic Balloon Pumps, Mechanical Circulatory Support Devices And Short-Term Circulatory Support Devices (Report GDMECR1561DB).

1.3.2 REGULATORY STRATEGY

As an active implantable device, the Carmat artificial heart must gain approval from the competent authorities of the various countries where Carmat wishes to sell it. The regulatory pathways differ from one country to another, but in all cases, for such a critical device, the manufacturer is required to demonstrate its safety and efficacy via evidence collected in laboratory testing and clinical studies.

Carmat was seeking first to obtain CE marking, notably to allow it to market its prosthesis in the European Union, and second to obtain pre-market-approval (PMA), to enable the Company to market its prosthesis in the United States.

CE marking (Europe)

CE marking for the bridge-to-transplant (BTT) indication was obtained on December 22, 2020.

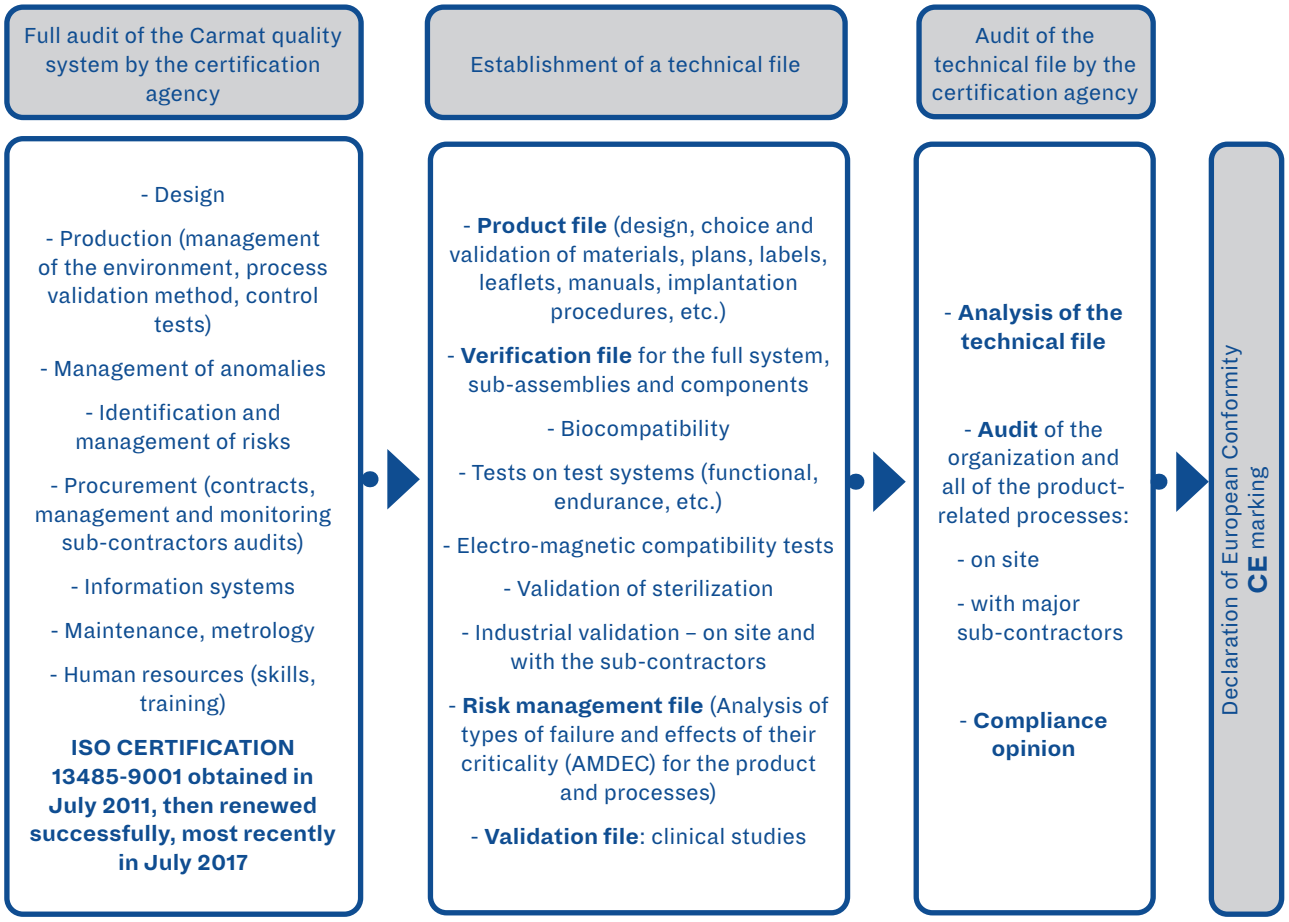
Carmat could subsequently apply for other indications for its artificial heart. More particularly, it aims to obtain approval for the DT indication, which would enable Carmat to treat patients who are not eligible for a heart transplant and would therefore rely on the device for a longer period (the current BTT indication is a temporary solution). In order to obtain additional indications, Carmat will have to provide the certification agency with further information including clinical data and bench testing results.

PMA (United States)

The process for obtaining PMA and Carmat's progress in this matter are described below. At this stage, Carmat estimates that it could obtain PMA for its artificial heart by 2026.

SUMMARY OF THE PROCESS FOR ACCESSING THE EUROPEAN MARKET

Until May 2021, Council Directive 90/385/EEC relating to active implantable medical devices, modified by Directive 2007/47/EC, defined the requirements to be met in order for the device to obtain CE marking. The relevant process is described in the chart below.



Source: Carmat – CE marking procedure

CE marking allows the product to be marketed throughout the European Union (EU) and in some other non-EU countries that also recognize CE marking. However, certain EU Member States have put in place additional conditions, such as registration or notification of market introduction.

Following the submission of its technical file to the certification agency Dekra, and Dekra's review of the file, **the Aeson® artificial heart obtained CE marking on December 22, 2020 as a bridge to transplant for patients suffering from terminal biventricular heart failure (Intermacs 1-4), who are unable to benefit from a maximum medical therapy or a left ventricular assist device (LVAD) and who are likely to be given a heart transplant within 180 days of receiving the implant.**

In accordance with this directive, evidence of safety and efficacy of the device is compiled in a technical file (TF), reviewed and audited by a certification agency. CE marking is granted by the certification agency once the TF has been successfully reviewed and audited.

The European Medical Device Directive ("MDD") has been replaced by the Medical Device Regulation ("MDR") from May 2021. This regulation strengthens the requirements to be met for a device to be granted CE marking. Nevertheless, if CE marking was granted before May 2021, which is the case for Aeson®, it will remain valid until 2027[75] provided there are no significant changes in the design or intended purpose of the device during this "grace period", and the company complies fully with the requirements of the new medical device regulation on post-market surveillance, vigilance, and registration of economic operators and devices.

Carmat could subsequently apply for indications other than bridge-to-transplant indication for its artificial heart. More particularly, it aims to obtain approval for the DT indication, which would enable Carmat to treat patients who are not eligible for a heart transplant and would therefore rely on the device for a longer period (the current BTT indication is a temporary solution). In order to obtain additional indications, Carmat will have to provide the certification agency with further information including clinical data and bench testing results.
Section 1.3.3 of this document outlines the clinical studies conducted as part of the CE marking process, and the results obtained at this stage.

(See Chapter 2 of this Universal Registration Document for a description of the risks associated with obtaining CE marking in Europe.)

SUMMARY OF THE PROCESS FOR ACCESSING THE U.S. MARKET

Market release of Aeson® in the United States requires pre-market approval (PMA) from the FDA (Food & Drug Administration).

In order to submit a PMA application to the FDA, Carmat is required to supplement its existing clinical evidences with additional clinical results from a new multicentric clinical study performed on a larger population. To carry out this study in the United States, an Investigational Device Exemption (IDE) must be obtained from the FDA following a successful review of all of the pre-clinical data (technical studies, animal studies, etc.) and clinical data obtained in other countries.

In October 2013, the FDA published a guidance document on early feasibility studies (EFS). This approach to feasibility studies was designed to allow for acquisition of initial clinical knowledge when additional non-clinical testing methods are not available or are not sufficient to initiate a pivotal study. These studies may be initiated before the design of the device is finalized and may be justified on the basis of less evidence than for other types of clinical studies. This EFS approach was chosen by Carmat.

Having applied to the FDA in August 2018 for authorization to conduct an early feasibility study (EFS), Carmat obtained conditional approval in September 2019 followed by full approval on February 5, 2020 to conduct a clinical feasibility study on ten patients in the United States. The study involves two successive cohorts of three and seven patients. An interim report on the first three patients is submitted at 60 days post-implantation, and the study continues with the second cohort upon FDA go-ahead after examination of this interim report.

The EFS study began in July 2021, with enrollment of the first cohort of three patients finalized in September, and the 60-day interim report submitted to the FDA on November 20, 2021. The Company is continuing talks with the FDA with the aim of obtaining approval to launch the second cohort of seven patients (see section 1.3.3 for more details on this study).

In May 2020, Carmat also obtained approval from the Centers for Medicare and Medicaid Services (CMS) for reimbursement of the device and associated services within the framework of this EFS.

If successful, the EFS will be followed by a broader pivotal study, for which a new application will be made to the FDA. The results of the pivotal study would be used to support Carmat's application for PMA. This strategy would allow for the integration into the PMA application of certain clinical data obtained in Europe, thereby limiting the size of the pivotal study to be conducted in the United States.
Subject to reaching the clinical and regulatory milestones

75 At the date of publication of this document, the European Union has decided to postpone the date of transition from the MDD to the MDR from 2024 to 2027. This gives Carmat more time and flexibility to prepare, submit and obtain validation of its MDR application from Dekra, the certification body.

described above, the Company believes that it could start marketing its artificial heart in the United States in 2026. Given the highly innovative nature of Aeson® and the absence of equivalent therapeutic alternatives, a shorter time-frame cannot be ruled out, but this is not the Company's baseline scenario at this stage.

(See Chapter 2 of this Universal Registration Document for a description of the risks associated with obtaining a PMA from the FDA.)

1.3.3 STRATEGY AND CLINICAL RESULTS

CLINICAL PLAN

Carmat intends to implement a robust clinical plan, aiming to:

- generate additional safety and performance data for its artificial heart, particularly over the longer term;
- generate medico-economic data to support Aeson®'s value proposition.

These data should promote acceptance of the product with its current bridge-to-transplant indication, support Aeson®'s value proposition (to facilitate take-up and in particular to obtain social security reimbursement for the product in France) and, ultimately obtain indication for use as destination therapy (DT) and obtain PMA in the United States.

Carmat's clinical plan is summarized in the table below:

	Name of study	Purpose	Sample size	Status	Objectives
European studies	Europe pivotal study	Safety and performance data	Indicative target of 20 patients (eligible or not for heart transplant)	Study in progress (17 patients treated at December 31, 2022)	Support the clinical evaluation report for CE marking
	EFICAS (France)	Safety and performance data, medico-economic data	52 patients eligible for a heart transplant	Study in progress (December 2022 launch)	Encourage Aeson® acceptance, support the value proposition and obtain social security reimbursement in France
	PMS (post-market surveillance)	Safety and performance data surveillance for the bridge-to-transplant indication	Target of 95 patients	Study in progress (5 patients included at December 31, 2022)	Long-term data (more than 1 year) to support extension of the indication to destination therapy (DT) for the most seriously ill patients
US study	Early feasibility study (EFS)	Safety and performance data	10 patients eligible for a heart transplant	Study in progress (first cohort of three patients finalized September 2021)	Support application to conduct a pivotal trial in the US and ultimately PMA*

* If successful, the EFS would be followed by a broader pivotal study in the United States.

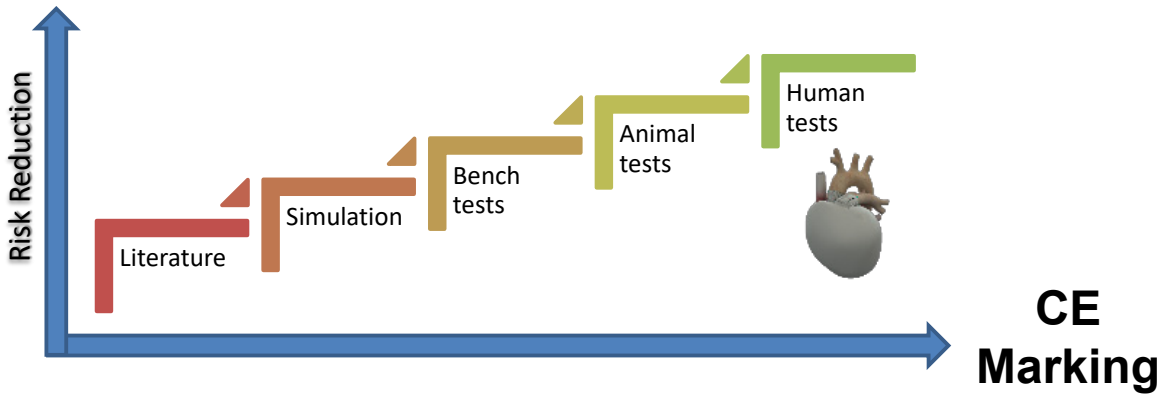
STUDIES IN THE PROCESS OF OBTAINING CE MARKING IN EUROPE (INCLUDING THE PIVOTAL STUDY EUROPE)

This section describes the clinical studies carried out and the results so far obtained by Carmat as part of the CE marking process.

Preparation of clinical trials

Before clinical trials, the potential benefit of the Carmat heart was assessed by literature research, aimed at comparing the device to existing therapies for terminal heart failure. Then, a series of simulation tests, bench tests to assess device reliability, and animal implants were performed to identify and reduce potential risks for the patient prior to clinical trials.

Before initiation, clinical trials in Europe must be pre-approved by the relevant authority in each participating country, and by local ethics/patient protection committees.



Clinical trials are the last step in demonstrating device safety and performance.

Feasibility study (Europe)

A first-in-man (FIM) study was conducted in France between 2013 and 2016 with a small cohort of four sick and elderly patients. During this early clinical stage, the surgical technique for device implantation was validated and the anatomic compatibility of the device confirmed. Technical improvements to the prosthesis were implemented following device failures in the first two patients receiving implants. The Carmat artificial heart was capable of providing adequate blood flows, with cumulative support of 618 days, allowing two patients to return home and regain an almost normal quality of life. Results of the FIM study have been published in peer-reviewed medical journals such as *The Lancet*,[76] *The Journal of the American College of Cardiology*[77] and *The Journal of Heart and Lung Transplantation*.[78]

Europe pivotal study

The feasibility study was followed by a pivotal study initially covering 20 patients (two cohorts of ten patients), a number that could be adjusted up or down during the study. The primary objective of the pivotal study, which is still in progress, is the patient's survival for six months with the Carmat heart or a successful transplant within six months of the device being implanted. The study aims to demonstrate the safety and performance of the Carmat artificial heart in patients suffering from irreversible biventricular heart failure. The results are analyzed in a Clinical Evaluation Report (CER), which is an integral part of the Technical File for the CE marking file. Neither a specific number of implants nor a predetermined success rate for the project was required to obtain CE marking under the pivotal study.

The inclusion of patients in this study (ClinicalTrials.gov – Identifier: NCT02962973) began enrolling patients in 2016 with authorizations obtained in France (2016), Kazakhstan (2017), the Czech Republic (2017), Denmark (2018) and the Netherlands (2021). At December 31, 2022, 17 patients had received implants as part of the study. In 2023, the Company plans to carry out three additional implantations and thereby to complete the study with 20 patients treated, as initially planned.

76 Carpentier A, Latrémouille C, Cholley B, et al. First clinical use of a bioprosthetic total artificial heart: report of two cases. Lancet. 2015 Oct 17; 386(10003):1556-63.

77 Smadja DM, Bioprosthetic Total Artificial Heart Induces a Profile of Acquired Hemocompatibility With Membranes Recellularization. Journal of the American College of Cardiology 2017; 70:404-6.

78 Latrémouille C, et al. A bioprosthetic total artificial heart for end-stage heart failure: Results from a pilot study. J Heart Lung Transplant. 2018 Jan; 37(1):33-37.

Interim results of the Europe pivotal study

In accordance with good clinical practice and subject to any regulatory requirements or special circumstances, Carmat has said that it will not systematically report on individual implants or the health of individual patients, but will only report when significant milestones in its clinical trials have been achieved.

The most recent findings presented by Carmat in November 2019 concerned the first 15 patients in the study, enrolled between August 2016 and December 2020.

The survival rate for these 15 patients one month after implantation of Carmat's total artificial heart was 93%. In all, 73% of these patients (i.e., a total of 11) reached the primary objective of the study, seven patients having survived for at least six months with the device, and four having received a successful heart transplant within six months of the Aeson® device being implanted.

Of the seven patients surviving for more than six months with the device, three ultimately received a successful heart transplant and one survived with the device for more than 24 months, bearing in mind that in bench tests, the longest period that the device has functioned without failure is more than five years.

Of the 15 patients included in the intermediate results, seven patients eligible for transplants received donor hearts after 96, 109, 121, 155, 243, 304 and 308 days of support with the Carmat device, respectively, without any procedure-related complications. In particular, there was no tissue adhesion around the device, a known procedural issue with other mechanical circulatory support devices. In addition, analysis of the Aeson® explants confirmed the early findings of ongoing endothelialization of all of the surfaces coming into contact with blood, which attests to the utility of using particular biocompatible materials. The results of this bridge-to-transplant experience were published in the *Journal of Heart and Lung Transplantation*[79] in December 2020. In October 2021, an article on the Aeson® autoregulating system was also published in the ASAIO Journal.

The experiment and the results of this cohort of 15 patients in the pivotal study have also demonstrated a positive safety and performance profile, particularly in terms of the absence of hemocompatibility-related complications. The Carmat artificial heart compares favorably with the SynCardia® TAH in terms of survival rate at six months (73% versus 54-63%), stroke (0% versus 21-23%), gastrointestinal bleeding (0% versus 20%), percutaneous driveline infection (0% versus 22%), and surgery-related bleeding requiring further surgery (20% versus 15-41%).

The table below summarizes the results obtained on the 15 initial patients enrolled in Carmat's study compared with other therapies (monitored at six months):

79 Netuka I, Pya Y, Bekbossynova M, et al. Initial bridge-to-transplant experience with a bioprosthetic autoregulated artificial heart. J Heart Lung Transplant. 2020 Dec; 39(12):1491-1493.

Device	Survival rate at 6 months	Stroke	Bleeding/ Reintervention	Gastrointestinal bleeding	Percutaneous driveline infection
Carmat Feasibility study (n=4)	50%	0%	75%	0%	0%
Carmat Pivotal study (n=15)	73%	0%	20%	0%	0%
SynCardia (1) (2)	54%-63%	21%-23%	15%-41%	20%	22%
BIVAD (3) (n=14)	46%-68%	7%	N/A	7%	7%

(1) Arabia F et al, J Heart Lung Transplant, 2018; 37; 1304-1312 (n=450).
Demondion P et al, Eur J Cardiothorac Surg. 2013 Nov: 44(5):843-8 (n=27).
(2) Carrier M. et al, J Heart Lung Transplant 2021; 40(3): 220-228
(3) Lavee J et al, J Heart Lung Transplant 2018; 37; 1399-1402.

Source Carmat – Interim data for pivotal study Europe (first 15 patients)

EFICAS CLINICAL STUDY IN FRANCE

EFICAS is a clinical study involving a total of 52 patients eligible for a heart transplant. Conducted exclusively in France, it will allow Carmat to collect additional data on the efficacy and safety of its Aeson® heart, as well as medico-economic data that can be used to support the value proposition and obtain reimbursement of the device, particularly in France.

The primary objective of the study is patient survival at six months post-implantation, or a successful transplant performed within the same time frame without the patient suffering a stroke.

The first Aeson® implant as part of the EFICAS study was performed during the last week of December 2022, by Prof. André Vincentelli and his team at Lille University Hospital. Five other centers are participating in this study (Pitié Salpêtrière University Hospital and Georges Pompidou European Hospital in Paris, Rennes University Hospital, Strasbourg University Hospital, and Lyon University Hospital - *Hospices Civils de Lyon*), which should run for about two years.

Carmat has received €13 million in funding from the French National Innovation Fund to partially finance this study.

EARLY FEASIBILITY STUDY (EFS) UNITED STATES

The EFS study in the United States is a feasibility study of ten patients eligible for heart transplants. The study involves two successive cohorts of three and seven patients. An interim report on the first three patients is submitted at 60 days post-implantation. The study continues with the second cohort upon FDA go-ahead after examination of this interim report.

The primary objective of the study is patient survival at six months post-implantation, or a successful transplant performed within the same time frame.

The EFS study began in July 2021, with enrollment of the first cohort of three patients finalized in September, and the 60-day interim report submitted to the FDA on November 20, 2021. The Company is continuing talks with the FDA with a view to obtaining approval to launch the second cohort of seven patients.[80]

If successful, the EFS study in the United States will be followed by a broader pivotal study, the results of which would be used to support Carmat's application for PMA, i.e., authorization to market Aeson® in the United States (see section 1.3.3 for a summary of the process for accessing the US market).

In May 2020, Carmat also obtained approval from the Centers for Medicare and Medicaid Services (CMS) for reimbursement of the device and associated services within the framework of the EFS, underlining the groundbreaking and unrivaled technology behind the Aeson® heart.

POST-MARKET SURVEILLANCE (PMS)

PMS aims to monitor the safety and performance data of Aeson® in the "real-life" bridge-to-transplant indication. It initially monitored 95 patients during a two-year post-implantation period, all of whom were implanted in a commercial setting.

As of December 31, 2022, five patients had already been enrolled in this study, in Germany and Italy.

More generally, Carmat intends to use this monitoring to collect long-term data (covering more than one year) on its device, which in due course could allow it to obtain a destination therapy (DT) indication for its artificial heart.

80 Following the voluntary suspension of all implants on a temporary basis, decided by Carmat in December 2021 following the identification of quality issues affecting some of its prostheses.

1.3.4 INDUSTRIAL STRATEGY

CHOICE OF INTEGRATION MODEL

The Company designs or specifies all of the components in the Carmat artificial heart, including its external components as well as all the ancillary tools, packaging, systems and methods intended for the validation (bench testing) and production of components, sub-assemblies and systems (clean room). It has also developed strong intellectual property rights for all of these components. Nevertheless, considering the very high number of specialties and expertise involved in the system component and sub-assemblies, it was impossible to produce them all internally.

The Company has therefore adopted the following model of integration: it designs and specifies, but entrusts the manufacturing of most of the components to specialized subcontractors, recognized in their field and selected following rigorous consultation. These components are then assembled at its own production site.

Carmat integrates the components and sub-assemblies provided by manufacturers of very different sizes, methods and areas of expertise. The Company thus works with hundreds of component manufacturers and service providers.

The challenge for a company such as Carmat involves federating these companies with different origins and methods (some are large sub-contracting groups in the aerospace industry and others are very small specialist companies) with common strict processes as are required in the field of medical technologies and by regulatory authorities. This coordination relates to technical aspects, logistics and in particular, quality. The Company devotes substantial resources to validating and qualifying these suppliers, so that each one of them complies with the very high quality standards required for active implantable medical devices.

Carmat's means of operating, methods and integration process are therefore identical to those of a large group.

In this context, the Company actively pursues a supply security strategy. To this end, a multi-annual plan for double-sourcing, modification of sourcing and/or quality- and capacity-building at critical suppliers has been drawn up and is gradually being implemented. Initiating a new source involves selecting a new supplier, providing assistance on initial production startup, then qualifying the supplier to ensure that each part complies with specifications and that the accompanying documentation meets quality and traceability requirements. This is an important task for ensuring that Carmat has materials and components in sufficient volumes and of the required quality to meet its needs during both development and sale phases for its prosthesis, especially in the context of the Covid-19 crisis, which has weakened a number of the Company's suppliers. The Company also takes steps to gradually build up safety inventories to ensure uninterrupted production even in the event of temporary disruptions to the supply of one or more components or materials.

INTERNAL ASSEMBLY AND PRODUCTION CAPACITIES

The Company has opted for in-house production of the biosynthetic components of the prosthesis (ventricular biomembrane, ventricular coverings and atrial connection interfaces), protected by numerous patents and by industrial secret. This also applies to the whole of the Aeson® assembly process as such.

2017 was marked by the construction of a new dedicated production site ultimately intended to manufacture around 250 units per year. The site was opened and certified in 2018, has an area of 1,600 square meters, is located in Bois-d'Arcy in Greater Paris, and has a clean room of roughly 200 square meters in compliance with ISO 7 standards. The manufacture, integration and sterilization of prostheses are carried out in a controlled environment, by specialized and highly qualified staff. Prostheses are now entirely produced at this site.

Source Carmat – Bois d'Arcy production site

Manufacturing a device as complex as the Aeson® heart remains a challenge, particularly on a large scale. Industrially, in addition to its actions to secure supplies, the Company continually seeks to improve its information systems, and adapt and progressively automate its production processes with an objective of reliability and better replicability, and, in particular, quality. These improvements also aim to increase production capacities, in particular with a view to sales development for the prosthesis.

Over the period 2021-2024, Carmat will thus convert its Bois d'Arcy production site from a prototyping facility producing a few dozen artificial hearts per year into a 'large-scale' manufacturing plant capable of producing several hundred hearts per year.

Source Carmat – Bois d'Arcy production site

At the same time, the Company has already begun a review and has identified the different steps that will enable it to gradually increase production over the next five years to above 250 hearts, in response to expected demand. It is aiming to raise production capacity to 500 hearts per year by the end of 2023, and 1,000 hearts per year by 2027.

1.3.5 RESEARCH AND DEVELOPMENT

UNIQUE KNOW-HOW

Carmat was founded in the early 1990s when Professor Alain Carpentier, the father of modern heart valve surgery and designer of the world's most widely used biological valves (Carpentier-Edwards® valves), met Jean-Luc Lagardère, then President of Matra-Défense (Airbus Group), a company with special expertise in embedded systems.

Carmat thus benefits from an exceptional and unique two-fold know-how stemming from dozens of years of development and collaboration between the medical and aerospace fields in the implementation of biomaterials and advanced technologies applied to the artificial heart field. The Aeson® artificial heart developed by Carmat's teams in Vélizy-Villacoublay (France) obtained CE marking (see section 1.3.2 of this document) in December 2020 and has been on the European market since July 2021.

Over the coming years, the Company will continue to assign very substantial resources to its research and development operations, in order to ensure continuous improvement and to optimize Aeson® operations and production, as well as to develop future product configurations. Carmat also assertively protects its intellectual property and performs a permanent watch of technologies and methods in its areas of expertise.

At this stage, Carmat has no plans to assign resources to projects other than its artificial heart, although the Company could eventually develop new applications of its know-how in the cardiovascular or more general medical fields.

INTELLECTUAL PROPERTY

Patents and other intellectual property rights are of fundamental importance in the medical devices sector. Carmat regularly files patent applications to protect its innovations.

- Patents

Carmat's portfolio of patents is made up of several patents held in the Company's name and classified in two categories: firstly, patents associated with the architecture of the bioprosthetic artificial heart project and secondly, patents linked to the hemocompatible materials and sub-assemblies of the prosthesis.

Details of these patents are set out below:

Title	Geographical area	Submission/ Publication no.	Date of submission	Status
"Quick-connection device between a completely implantable artificial heart and natural atria"	France	FR0605331 FR2902343	June 15, 2006	Granted on Sept. 5, 2008 Expiring on June 15, 2026
	Europe	EP07290723.1 EP1867350	June 11, 2007	Granted on Sept. 24, 2008 Expiring on June 11, 2027
	International	PCT/FR2007/000959 WO2007/144495	June 11, 2007	Published on Dec. 21, 2007
"Connection device between an artificial heart and the natural atria"	France	FR0605332 FR2902344	June 15, 2006	Granted on Sept. 5, 2008 Expiring on June 15, 2026
	Europe	EP07290724.9 EP1867351	June 11, 2007	Granted on Sept. 24, 2008 Expiring on June 11, 2027
	International	PCT/FR2007/000960 WO2007/144496	June 11, 2007	Published on Dec. 21, 2007
"Method of manufacturing a haemocompatible object with complex configuration and object thus obtained"	France	FR0703339 FR2915903	May 10, 2007	Granted on June 4, 2010 Expiring on May 10, 2027
	Europe	EP08290405.3 EP1992369	April 28, 2008	Granted on May 6, 2015 Expiring on April 28, 2028
	International	PCT/FR2008/000607 WO2008/145870	April 28, 2008	Published on Dec. 4, 2008
"Process to form an hemocompatible composite material and material obtained"	France	FR1001724 FR2959134	April 22, 2010	Granted on July 13, 2012 Expiring on April 22, 2030
	Europe	EP11161291.7 EP2380608	April 6, 2011	Granted on Sept. 12, 2012 Expiring on April 6, 2031
	International	PCT/FR2011/050768 WO2011/131887	April 6, 2011	Published on Oct. 27, 2011
"Prosthesis for connecting an anatomical canal"	France	FR1152364 FR2972919	March 22, 2011	Granted on July 4, 2014 Expiring on March 22, 2031
	Europe	EP12158011.2 EP2502577	March 5, 2012	Granted on Nov. 2, 2016 Expiring on March 5, 2032
	International	PCT/FR2012/050449 WO2012/127145	March 5, 2012	Published on Sept. 27, 2012
"Anatomically implantable prosthesis in one piece"	France	FR0605333 FR2902345	June 15, 2006	Granted on Sept. 5, 2008 Expiring on June 15, 2026
	Europe	EP07290725.6 EP1867352	June 11, 2007	Granted on July 15, 2009 Expiring on June 11, 2027
	International	PCT/FR2007/000962 WO2007/144497	June 11, 2007	Published on Dec. 21, 2007
"Implantable single-piece artificial heart"	France	FR0800184 FR2926223	Jan. 14, 2008	Granted on Jan. 22, 2010 Expiring on Jan. 14, 2028
	Europe	EP09290009.1 EP2078533	Jan. 7, 2009	Granted on Jan. 12, 2011 Expiring on Jan. 7, 2029
	International	PCT/FR2009/000008 WO2009/112662	Jan. 7, 2009	Published on Sept. 17, 2009

Title	Geographical area	Submission/Publication no.	Date of submission	Status
"Hemocompatible composite material and its process of manufacture"	France	FR0511430 FR2892939	Nov. 10, 2005	Granted on Jan. 22, 2010 Expiring on Nov. 10, 2025
	Europe	EP06291657.2 EP1785154	Oct. 25, 2006	Granted on Sept. 23, 2009 Expiring on Oct. 25, 2026
	International	PCT/FR2006/002471 WO2007/054637	Nov. 7, 2006	Published on May 18, 2007
"Rotary positive displacement pump with reduced radial space requirement"	France	FR0604206 FR2900988	May 12, 2006	Granted on Jan. 1, 2010 Expiring on May 12, 2026
	Europe	EP7290571.4 EP1855005	May 7, 2007	Granted on Jan. 28, 2009 Expiring on May 7, 2027
	International	PCT/FR2007/000778 WO2007/135261	May 7, 2007	Published on Nov. 29, 2007
"Device for connecting an implantable cardiac prosthesis to the patient's vascular network, and cardiac prosthesis fitted with such a connecting device"	France	FR2103482 FR3121348	April 6, 2021	Published on Oct. 7, 2022
	Europe	EP22160696.5 EP4070848	March 8, 2022	Published on Oct. 12, 2022
	International	PCT/FR2022/050413 WO2022/214744	March 8, 2022	Published on Oct. 13, 2022

- Exclusive license agreements

Exclusive license agreements with Pierre and Marie Curie University

Under the terms of an exclusive license agreement dated June 17, 1993, modified by amendment no. 1 of June 27, 1995 and amendment no. 2 of November 12, 1997, Pierre and Marie Curie University gave Matra Défense the rights to use patent no. 8800381 to plan studies and further development with a view to creating prototype artificial hearts implantable into human beings.

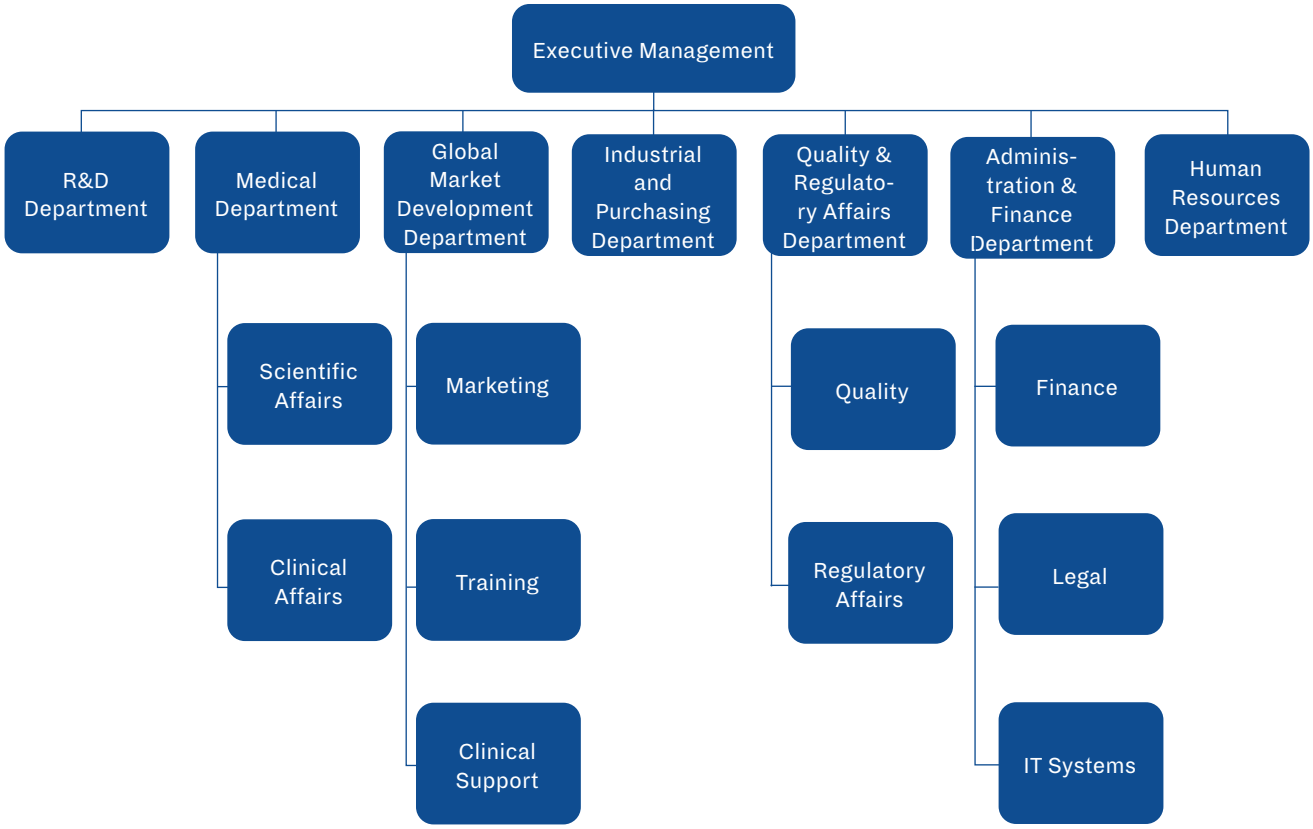
Although Matra Défense initially used the intellectual property rights granted, the benefit of this license was subsequently assumed by Carmat, to which Pierre and Marie Curie University consented by way of an agreement duly signed by Pierre and Marie Curie University, Matra Défense, the Scientific Research Association of the Alain Carpentier Foundation and Carmat. Under this agreement, (i) Pierre and Marie Curie University expressly waived any benefit from all intellectual property rights linked to or resulting directly or indirectly from the work on the bioprosthetic artificial heart project and acknowledged that Carmat was the sole owner of all intellectual property rights that could have been attributed to Pierre and Marie Curie University; and (ii) in return, the Scientific Research Association of the Alain Carpentier Foundation granted at no cost, on its behalf and account and in the interest of Matra Défense, 400 Carmat shares (equivalent to 10,000 Carmat shares following the 25:1 stock split) to the benefit of Pierre and Marie Curie University.

Patent No. 8800381 expired in 2008. However, the exclusive license agreement stipulates that it will be valid for five years from the date of the first marketing of the product implementing the patent claims for the European countries as well as other countries and will be tacitly renewable for two successive five-year periods, unless one or the other party cancels one year before each deadline.

1.3.6 HUMAN RESOURCES

OVERALL ORGANIZATION

The Company's functional organization is shown in the chart below:



WORKFORCE

At December 31, 2022, the Company headcount totaled 179 (19 more than a year earlier), with the large majority of employees on permanent contracts. The average employee age was 38.7, and there were 111 men and 68 women.

Headcount	Dec. 31, 2022	Dec. 31, 2021	Dec. 31, 2020
Managers	132	126	96
Non-management	47	34	23
TOTAL	179	160	119

The Company also regularly uses various outside service providers for specific services. As at December 31, 2022, there were 35 outside service providers, plus one temporary staff member.

The total workforce (including external resources) of 215 people at December 31, 2022 broke down as 76 in industrial operations, 62 in research and 19 in quality.

HUMAN RESOURCES POLICY

Human resources management is of major importance to the Company, as a qualified, highly-skilled workforce is essential to its business. In 2022, the Company financed approximately 2,016 hours of training.

The Company applies the following French National Collective Agreements: "Metallurgical Industries: workers, administrative employees, technicians and supervisors" and "Metallurgical Industries: engineers and managers". It also applies the French Regional Collective Agreement "Metallurgical Industries: workers, administrative employees, technicians and supervisors in the Paris Region".

Working times at the Company are 35 hours per week for non-managers, and 218 days per year for non-executive managers.

All Company employees benefit, in addition to their fixed salary, from a potential annual bonus subject to achieving quantitative and qualitative targets set in advance. The amount of this potential bonus corresponds to a predetermined percentage of the fixed annual salary.

In 2021, the Company also set up a discretionary profit-sharing agreement for its employees. At the date of this Universal Registration Document, there was no statutory profit-sharing contract.

Some employees are beneficiaries of Company founder share warrants ("BCE"), performance shares ("AGAP") and free shares ("AGA"), as outlined in section 5.2.5.

Table 9 in section 4.5.1 specifies the number of stock options granted to the top ten employees who are not corporate officers, and the options exercised by these beneficiaries during the 2022 financial year.

Table 10 ter in section 4.5.1 specifies the number of free shares (including those subject to performance conditions) awarded to the top ten employees who are not corporate officers, and the free shares that vested to them during the 2022 financial year.

At December 31, 2022, to the Company's knowledge, Carmat employees held 142,508 Company shares (i.e., 0.63% of the share capital).

1.3.7 PROVISIONAL PROJECT SCHEDULE

HIGHLIGHTS OF 2022

It should be recalled that, in December 2021, Carmat announced that it would be voluntarily suspending all Aeson® implants on a temporary basis after quality issues had emerged affecting certain prostheses.

In the wake of this announcement, the main events shaping 2022 were:

- definition and implementation of preventive and corrective actions within the supply chain to resolve these quality issues;
- procurement in October of the necessary regulatory approvals to resume implants in a commercial setting and as part of the EFICAS study;
- effective resumption of Aeson® sales as from November;
- Start of the EFICAS study in France, including a first implant in December.

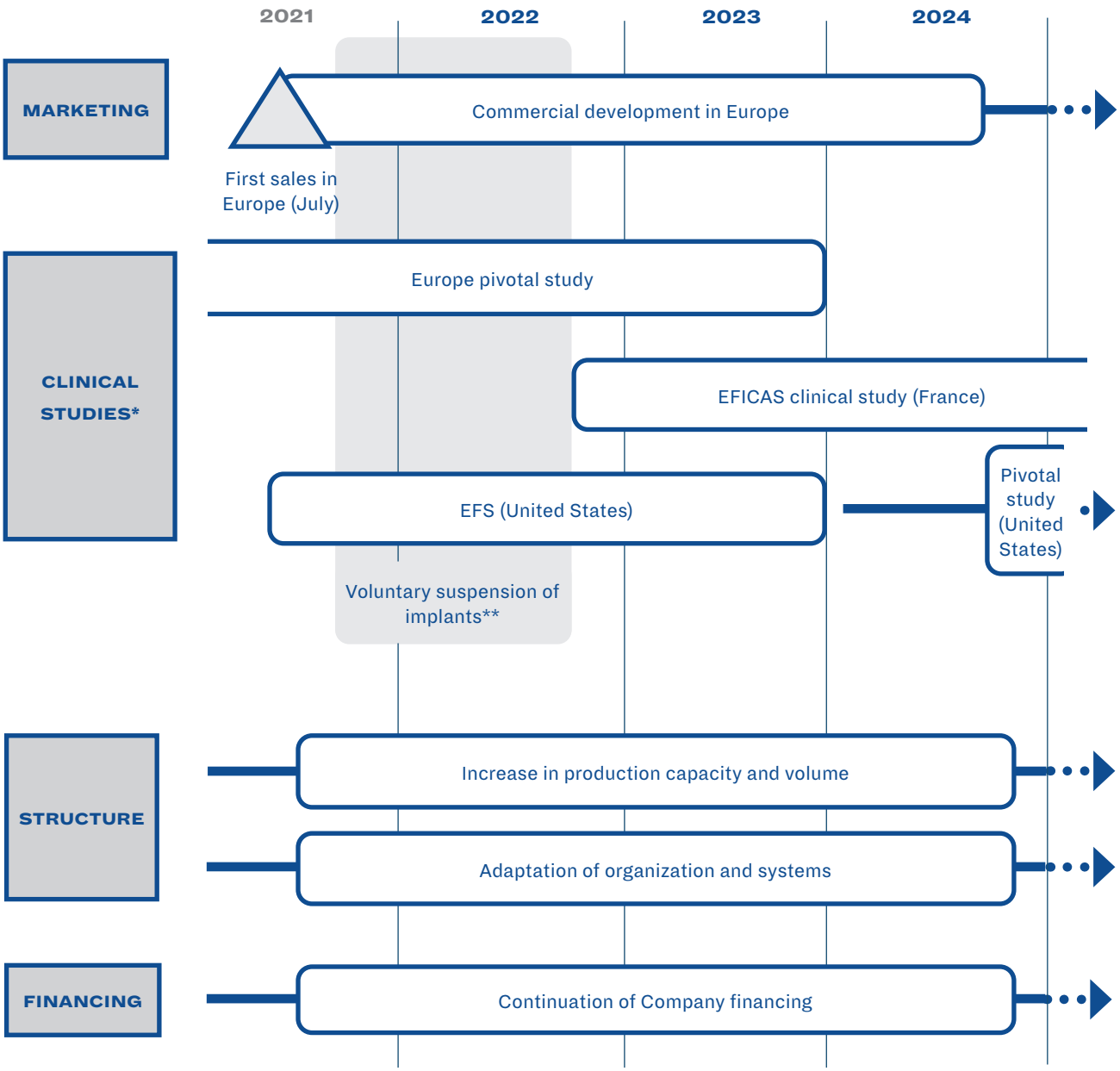
Readers are invited to refer to the introductory pages of this document (Highlights of 2022) and sections 3.1.1 and 3.1.2 (commentary on activity and results in 2022) for a more comprehensive view of Carmat's performance and business development in 2022.

NEXT STEPS

The timeline on the next page shows the next key milestones for Carmat.

Readers are also invited to refer to sections 3.1.3 and 3.1.4 of this document for a fuller view of the Company's prospects, in 2023 in particular.

Readers should also refer to section 2 (Risk Factors), and Carmat's regular press releases for informed insights with regard to this timeline.



Source: Carmat – Expected timeline

* See section 1.3.3 of this document for details on these studies.

** Voluntary suspension of implants decided in December 2021. Effective resumption of implants in November 2022. See section 3.1 of this document for more details.

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RISK FACTORS

Note
Investors are invited to consider all information contained in this Universal Registration Document, including the risks and uncertainties described in this chapter.

When preparing this Universal Registration Document, the Company carried out a review of the risks likely to have a significant unfavorable impact on its business, financial position, performance, development or prospects, and it considers that there are no other material and specific risks than those presented.

However, investors' attention is drawn to the fact that other risks, which are either unknown or not considered material and specific at the date of filing this document, can and could exist.

2.1 METHODOLOGICAL APPROACH

2.1.1 PREAMBLE

In accordance with the Prospectus Regulation effective since July 21, 2019 ("PD III"), this chapter only presents risks that are material and specific to the Company.

2.1.2 RISKS IDENTIFICATION AND CLASSIFICATION

In 2022, the Company updated the identification and ranking of its risks. The results of this analysis were reviewed by the Audit Committee in February 2023 and are reflected in this Universal Registration Document.

Methodology and risk assessment

The risks were identified and assessed with the assistance of all members of the management team. The risks fall into six categories:

- financial risks;
- industrial risks (supply chain);
- market access risks;
- IT, data and transaction risks;
- human, organizational and regulatory non-compliance risks;
- risks related to the Covid-19 pandemic.

The level of criticality of a risk is assessed using two criteria:

- Likelihood (i.e., probability of occurrence), estimated on a scale from 1 to 4:
  - 1 – Very low
  - 2 – Moderate
  - 3 – High
  - 4 – Very high

- Impact, estimated on a scale from 1 to 5:
  - 1 – Not material
  - 2 – Minor
  - 3 – Moderate
  - 4 – Major
  - 5 – Critical

The combination of these two criteria makes it possible to give each risk a score and therefore classify the risks into four levels of criticality (criticality = impact x probability):

- Score of 6 or less: Minor risk
- Score of 7-9: Moderate risk
- Score of 10-15: Major risk
- Score of 16 or more: Critical risk

The level of criticality is a "net" level, i.e., after taking into account the measures implemented by the Company to prevent and mitigate the risk.

Carmat also assessed the trend for each risk, which can be positive, negative or neutral, depending on whether Carmat considers that the risk score decreased, increased, or remained more or less the same, between the end of the year in question and the end of the previous year.

Following this analysis, Carmat considered 14 risks to be material and specific, which are summarized in section 2.2.

Impact of the Covid-19 pandemic on risks:

The Covid-19 pandemic has had a direct impact on some material and Company-specific risks. In these cases, the impact has been directly taken into account and reflected in the evaluation of the risks considered in sections 2.2 and 2.3.
Furthermore, the pandemic in itself is a risk for Carmat, with potentially many aspects to consider that will depend on developments in the situation over the next few months. The Company has therefore decided to keep a separate Covid-19 risk in this document to provide readers with a holistic view of the risk this pandemic represents for Carmat.

2.2 SUMMARY OF MATERIAL AND SPECIFIC RISKS

The table below summarizes the Company's material and specific risks, presented by category. Within each category, the most material risk, if applicable, is mentioned first.

The name, probability and potential impact levels, criticality (from the two previous elements) and trend are mentioned for each risk.

Each risk is presented in more detail in section 2.3.

(Part 1 of the table)	Probability	Potential impact	Risk score	Criticality				Trend*
				Critical risk	Major risk	Moderate risk	Minor risk	
Financial risks								
Funding risk	2	5	10		Major risk			=
Risk of operational and financial unviability (particularly in the event that the clinical results are not satisfactory)	2	5	10		Major risk			=
Risk related to foreign investment control rules in France	2	3	6				Minor risk	=
Industrial risks (supply chain)								
Risk associated with production quality	3	5	15		Major risk			=
Risk associated with the supply of materials and components	3	4	12		Major risk			=
Risk associated with production volumes	2	4	8			Moderate risk		+
Market access risks								
Risk associated with obtaining PMA in the United States	2	5	10		Major risk			=
Risks associated with CE marking in Europe	2	5	10		Major risk			=
Risk associated with the reimbursement of the prosthesis on the American market (assuming Carmat obtains the PMA)	2	5	10		Major risk			=
Risk associated with the reimbursement of the prosthesis on European markets	2	4	8			Moderate risk		=

* The "+" sign indicates a favorable trend, i.e., a decrease in risk.

(Part 2 of the table)	Probability	Potential impact	Risk score	Criticality				Trend*
				Critical risk	Major risk	Moderate risk	Minor risk	
IT, data and transaction risks								
IT, data and unauthorized transaction risks	3	4	12		Major risk			=
Human, organizational and regulatory non-compliance risks								
Organizational and regulatory non-compliance risks	3	3	9			Moderate risk		=
Human resources risks	3	3	9			Moderate risk		=
Risks related to the Covid-19 pandemic**	-	-	-					

* The "+" sign indicates a favorable trend, i.e., a decrease in risk.

** Given the continued uncertainty as to how the pandemic and measures designed to control it will evolve, Carmat is unable to accurately measure the level of Covid-19 risk or its potential impact on the Company in 2023 and beyond.

2.3 DETAILED PRESENTATION OF MATERIAL AND SPECIFIC RISKS

2.3.1 FUNDING RISK

Financial risks	Description of risk	Potential impacts
Funding risk	Risk that the Company does not have the financial resources required to carry out its development project at the desired pace or to the point of self-financing.	Requirement to slow down or temporarily interrupt all or part of the Company's operations. In the final stage, requirement to terminate the Company's operations.

MAJOR RISK

Given its stage of development, Carmat is not yet cash-flow positive, and based on its current business plan, does not expect to be self-financing for several years yet. At this stage, it is therefore dependent on external financing (capital increases, bonds and loans, subsidies and other types of financing).

Based in particular on its updated business plan and its €51 million in cash and cash equivalents at December 31, 2022 (including the gross €31.1 million in new funds raised in December 2022), the Company can fund its operations until mid-October 2023 without any additional financing and without taking into account the equity component (€15 million) of the funding from the European Union EIC Accelerator,[01] insofar as this component is unconfirmed.

01 As a winner of the European Union's EIC Accelerator program, in December 2022 Carmat was awarded blended funding of up to €17.5 million (including a non-dilutive grant of €2.5 million and optional equity financing of €15 million). The terms and conditions of the optional equity financing are to be defined at a later date. An initial €1.3 million of the grant will be received in May 2023 at the latest, with the remainder expected in 2024.

If the Company had no access to any additional financing, under its current business plan it would have a funding shortfall starting October 2023, which could represent some €15 million by the end of the year.

Based on the progress of its project, the results of its clinical trials, the CE marking obtained in December 2020, its first sales in July 2021, the effective resumption of implants in November 2022[02] and all other information in its possession, particularly concerning its financing options[03], the Company considers that, as things stand, the probability that it will be unable to source the funds it needs to continue operating to be fairly low, although it cannot be ruled out. In the short term, factors such as the economic crisis, the war in Ukraine, and to some extent the ongoing Covid-19 health crisis, could make it more difficult for Carmat to secure the funding it needs.

The Company has an ongoing active investor relations policy targeting both French and international investors, and is constantly on the lookout for new financing opportunities (equity, subsidies and other types of financing). It believes that it can also count on the support of some of its main existing shareholders. It is also able, if necessary, to temporarily reduce its cash burn by implementing appropriate cost-saving measures.

The Company has also specifically assessed its liquidity risk and believes it will be able to meet its obligations until the end of September 2023.

02 Following the voluntary temporary suspension of implants, as decided by the Company in December 2021.

03 Including the equity component of the EIC Accelerator funding (see note 01).

2.3.2 RISK OF OPERATIONAL AND FINANCIAL UNVIABILITY (particularly in the event that the clinical results are not satisfactory)

Financial risks	Description of risk	Potential impacts
Risk of operational and financial unviability (particularly in the event that the clinical results are not satisfactory)	Risk that the Company's development may be slowed or even halted by possible significant adverse events such as unsatisfactory clinical data or production or quality issues. Risk that the Company will not be profitable (or will be profitable later than expected) and/or reach the point of self-financing. This could be due to unfavorable events such as those mentioned below or, in the absence of such events, to lower-than-expected sales growth trends, expenses or investments that exceed the Company's budget, or higher-than-expected prosthesis production costs.	Negative impact on the market valuation of the Company. Requirement to slow down or temporarily interrupt all or part of the Company's operations. Requirement to find additional funding (fundraising, loans, etc.). Ultimately, the need to abandon marketing the artificial heart and, where appropriate, to terminate the Company's operations.

MAJOR RISK

Carmat's ability to continue its development and to deliver positive cash flow and net income going forward notably requires satisfactory clinical results (in the context of ongoing and future trials and in a commercial capacity), good control of production, the achievement of a certain level of sales, and sound control of its expenses and investments, as well as a reduction in Aeson® production costs. The occurrence of major unexpected events (such as unsatisfactory clinical results, quality issues or production problems) could significantly slow the Company's development and/or the marketing of its product, and could ultimately lead to the termination of its activities.

The Company's artificial heart obtained CE marking for its bridge-to-transplant (BTT) indication on December 22, 2020, and began to be marketed in Europe from July 2021.

In 2023, the Company notably plans to continue marketing Aeson® in Europe along with its EFICAS study launched in France at the end of 2022. It also intends to resume the EFS study in the United States with the second cohort. However, Carmat does not currently expect to obtain approval to market its device in the United States for another few years (see sections 2.3.7 and 2.3.9).

The Company cannot, however, guarantee that the clinical trials will have the expected results, and/or that problems will not arise in respect of the clinical trials or implants

of the artificial hearts sold by Carmat, for example relating to the device itself or to the implant procedure. Nor can it guarantee that it will not face production difficulties. For example, the Company announced the voluntary suspension of its Aeson® implants on a temporary basis in December 2021 following the identification of quality issues, resuming them only in November 2022.

The device also represents an expensive therapy, and there is no guarantee that it will be reimbursed in all countries at the levels expected by the Company (see sections 2.3.7 and 2.3.10). Furthermore, since the Carmat heart is a unique and innovative therapy, there is no guarantee that adoption by healthcare professionals and patients will be in line with Company forecasts.

Finally, Carmat's profitability requires it to produce its device at a competitive cost despite the sophistication of the product and the level of quality required. It is possible that Carmat may have to face expenses and investments not anticipated to date, for example in the event that the authorities ask for additional clinical studies.

At this stage, therefore, there is still a significant degree of uncertainty as to Carmat's continued development and the effective rollout of its business plan. This risk is further accentuated by the fact that Carmat's development is based entirely on one product at this stage (namely its Aeson® artificial heart) and is therefore fully dependent on its success.

2.3.3 RISK RELATED TO FOREIGN INVESTMENT CONTROL RULES IN FRANCE

Financial risks	Description of risk	Potential impacts
Risk related to foreign investment control rules in France	Risk that the Company's business activities will be considered as sensitive within the meaning of the regulations on foreign investment in France.	These regulations could discourage investments from outside the European Economic Area and could therefore limit the Company's access to sources of funding and/or delay or discourage a purchaser from making a public offer for the Company.

MINOR RISK

Under the foreign investment control rules currently applicable in France, prior authorization from the Minister of the Economy is required for any investment:

- made by (a) a foreign individual, (b) a French individual not resident in France within the meaning of article 4B of the French Tax Code (*Code général des impôts*), (c) a foreign-law entity or (d) a French-law entity controlled by one or more of the individuals or entities referred to in (a), (b) or (c);
- that would have the effect of (a) obtaining control (within the meaning of Article L. 233-3 of the French Commercial Code) of a French-law entity, (b) acquiring all or part of a branch of activity of a French-law entity or (c) in the case of individuals that are not nationals of a European Union Member State or a State party to the agreement on the European Economic Area that has entered into an administrative assistance agreement with France and/or is not resident in one of those States or entities of which at least one of the members of the chain of control is not subject to the laws of or is not a national of and/or is not a resident of one of those States, obtaining more than 25% of the voting rights in a French-law entity; and whose activities involve, even on an occasional basis, research and development in "critical" technologies such as medical devices or goods and services essential for the protection of public health.

The Company believes that its business could fall within the scope of those rules.
Accordingly, any proposed investment in Carmat that meets the above criteria must first be authorized by the Minister of the Economy. Authorization may be granted subject to certain conditions to ensure that the investment will not be detrimental to the national interests.
These regulations could potentially discourage investors outside the European Economic Area from making large investments in Carmat or from acquiring control or taking over the Company in the same conditions.
However, the Company does not, at this stage, believe that these regulations, in and of themselves, will prevent it from raising the funding required for its development in the short or medium term.

2.3.4 RISK ASSOCIATED WITH PRODUCTION QUALITY

Financial risks	Description of risk	Potential impacts
Risk associated with production quality	Risk that the Company will not be able to routinely manufacture prostheses that meet the required quality standards, in particular due to sub-optimal production processes and procedures, a lack of competent resources, an inadequate IT system or organization, or quality issues affecting materials and components provided by suppliers and sub-contractors.	Carmat's inability to manufacture prostheses meeting the required quality criteria, which may cause a delay or an interruption in its development, and/or an inability to respond to market needs, therefore constituting a negative financial impact. Potentially endangering the patient's life in the event of an unexpected failure of an implanted prosthesis, leading to a potential financial risk for Carmat.

MAJOR RISK

Carmat complies with the highest quality requirements and set up a quality management system (QMS) certified ISO 13485-9001 in July 2011. The certification has been successfully renewed regularly since, most recently in 2021. Based in particular on its internal audit results and the audits carried out by Dekra, the Company considers that this system enables it in particular to quickly identify any critical quality defects and implement appropriate preventive and corrective actions. The Company is therefore committed to a continuous quality improvement process.

Following the quality issues identified at the end of 2021 leading the Company to voluntarily suspend all Aeson® implants on a temporary basis as from December of that year, Carmat has implemented changes in its production chain, including at some of its suppliers, in order to improve the quality of its production and ultimately of its prosthesis. Implants resumed in November 2022.

However, taking into account in particular the sophistication of its artificial heart, the large number (several hundred) of materials and components used in its manufacture, the number of operations necessary for the manufacture of the heart, the very high degree of precision required, and the large number of suppliers and sub-contractors involved in the chain of production, it cannot be excluded on the one hand that the Company will face quality challenges likely to temporarily slow down its production, and on the other hand have to occasionally deal with a product incident due to a quality defect. The Company is currently ramping up production and this phase involves an increased risk that defects may be identified and new quality challenges arise that could not be identified during small-scale production.

2.3.5 RISK ASSOCIATED WITH THE SUPPLY OF MATERIALS AND COMPONENTS

Industrial risks (supply chain)	Description of risk	Potential impacts
Risk associated with the supply of materials and components	Risk that the Company will not be able to obtain from its suppliers, in sufficient quantities or within the required time or to required quality standards, the various materials or components necessary for the manufacture of prostheses. In particular, this may be due to the fragility of certain suppliers and/or the limited capacity of certain suppliers, and/or the fact that Carmat sources certain components or materials from one single supplier, and/or the obsolescence of sourced products. This may also be due to an insufficient quality of Carmat's forecasts.	Carmat's inability to manufacture prostheses in sufficient quantities, which could lead to a delay or an interruption in its development, and/or an inability to meet the needs of the market, therefore constituting a negative financial impact.

MAJOR RISK

As indicated in section 1.3.4 of this Universal Registration Document, to manufacture its device, the Company depends on a large number of suppliers and sub-contractors of extremely diverse sizes, some more financially solid than others, some able to ramp up production more quickly than others, and some more familiar than others with the quality standards required in the medical field. For a number of materials and components, the Company is dependent on one single supplier. It cannot be excluded that certain components or materials will need to be substituted or modified for reasons of obsolescence or in the context of continuous improvement of the artificial heart. In addition, validating new suppliers or sub-contractors is a long and costly operation, and the quality requirements imposed by Carmat are high.

In order to secure its supplies, Carmat regularly conducts a review of its supplier portfolio and has strengthened the process it uses to assess its needs in terms of materials and components.

In this context, a multi-annual "Suppliers" plan (introduction of double-sourcing, modification of sourcing and/or capacity building plan at critical suppliers, etc.) has been drawn up and is gradually being implemented. However, despite the implementation of this policy, which has already produced some results but will take several years, the risk of temporary shortages of certain components or materials (e.g., electronics) remains a highly significant risk for Carmat, especially as the volume of devices required to meet the needs of clinical trials and the commercial phase is growing. Furthermore, the Covid-19 crisis has weakened the position of some of the Company's suppliers and sub-contractors, thus increasing the level of risk in the short term, and could force the Company to step up its mitigation plan.

In light of this, the Company is also taking steps to gradually build up safety inventories in order to be able to continue production, even in the event of temporary disruptions to the supply of one or more components or materials.

2.3.6 RISK ASSOCIATED WITH PRODUCTION VOLUMES

Industrial risks (supply chain)	Description of risk	Potential impacts
Risk associated with production volumes	Risk that the Company, despite having the requisite high-quality equipment needed, will not be able to manufacture a sufficient number of prostheses to meet its needs, in particular due to sub-optimal production processes and procedures, and/or a lack of production capacities and resources, as well as to the unavailability of the sole production site (owing to damage for example).	Carmat's inability to manufacture prostheses in sufficient quantities, which could lead to a delay or an interruption in its development, and/or an inability to meet the needs of the market, therefore constituting a negative financial impact.

MODERATE RISK

In the medical technology sector as a whole, and more particularly for a product as sophisticated as the Aeson® artificial heart, producing large series remains a challenge. Although the Company has an industrial facility (Bois d'Arcy production site) allowing it to manufacture several hundred devices per year, the production process remains complex and relies partly on very high precision manual operations (along with appropriate supplies of materials and components from Carmat's suppliers and sub-contractors (see section 2.3.5)).

Over the past few years in particular, the Company has already made several dozen modifications to its production processes. Going forward, it will continue its ongoing improvement and automation efforts to secure and scale up production operations.

The Company is investing heavily in its production tools (including IT), and will step up these investments over the next few years. It has established a robust, phased capacity expansion plan that will enable it to meet expected demand and its business plan's implantation targets. Likewise, Carmat is also endeavoring to secure and appropriately train all of the staff necessary to its business development plan.

However, the Company believes that the rate of ramp-up in production may, occasionally or for a significant period, be insufficient to prevent demand from exceeding its production capacities, particularly in the short term, while production volumes will have to increase considerably not only to meet the needs of the broader clinical trials (including the EFICAS study in France) but also to meet commercial demand following the resumption of implants as from November 2022. The Company may have to reduce or even halt production for a certain period of time in the event of a serious incident at its sole assembly site in Bois d'Arcy and/or at the premises of a critical supplier or sub-contractor.

2.3.7 RISK ASSOCIATED WITH OBTAINING PMA IN THE UNITED STATES

Market access risks	Description of risk	Potential impacts
Risk associated with obtaining PMA in the United States	Risk that the Company will not obtain (or obtain later than expected) PMA, i.e., authorization to market its prosthesis in the United States. This may in particular be due to clinical data deemed insufficient, and/or to a technical file and/or audits deemed unsatisfactory.	Inability for Carmat to market its prosthesis in the United States (or delayed marketing compared to forecasts) resulting in the absence of sales (or delayed or lower sales compared to forecasts) in this region and, consequently, a negative financial impact.

MAJOR RISK

In order to market its artificial heart in the United States, Carmat must first obtain pre-market approval (PMA), issued by the FDA (Food & Drug Administration). The process to obtain PMA is described in section 1.3.2 of this document.

In September 2019, the FDA gave the Company conditional approval to conduct an early feasibility study (EFS) in the United States. This ten-patient study effectively began in 2021 with the preparation and subsequent finalization of the enrollment of the first cohort of three patients. This study is expected to be continued with a second cohort of seven patients in 2023, pending FDA approval.

The EFS is the first step in the process potentially leading to obtaining PMA. Given, in particular, this progress, its positive clinical results (see section 1.3.3) and its discussions with the FDA, Carmat considers it reasonable to obtain PMA in the United States by 2026, in line with its business plan.

However, obtaining PMA is a very stringent and potentially lengthy process, which has only just begun. The decision to issue PMA is in the hands of the FDA and, while Carmat is confident it will obtain approval, it cannot guarantee that this will happen within a few years or even at all.

2.3.8 RISKS ASSOCIATED WITH CE MARKING IN EUROPE

Market access risks	Description of risk	Potential impacts
Risks associated with CE marking in Europe	Risk that the Company may not retain the CE marking obtained on December 22, 2020, in particular due to a failure to comply with Medical Device Regulation ("MDR") requirements. Incidental risk that the Company will not ultimately obtain an extension of its current CE marking indication (and more specifically, the "destination therapy" indication).	Temporary or permanent impossibility for Carmat to sell its Aeson® artificial heart in Europe, leading to a negative financial impact and even potentially to the termination of the Company's activities. Smaller than initially expected potentially addressable market, which could lead to lower sales or slower growth in sales than initially forecast.

MAJOR RISK

CE marking was granted on December 22, 2020 for Carmat's artificial heart system as a bridge to transplant for patients suffering from terminal biventricular heart failure (Intermacs 1-4), who are unable to benefit from a maximum therapy or a left ventricular assist device (LVAD) and who are likely to be given a heart transplant within 180 days of receiving the implant. CE marking allows the Company to market Aeson® in all countries that recognize this symbol, including the whole of the European Union.

CE marking was obtained under the Medical Device Directive ("MDD") applicable at that time and will remain valid until 2027,[04] provided that there is no significant change in the design or intended use of Aeson® up to that date, and that Carmat duly complies with the Medical Device Regulation ("MDR") requirements relating to post-market surveillance, vigilance and registration of the relevant stakeholders. In May 2021, the MDD was replaced by the MDR, which strengthens the requirements to be met for a device to receive CE marking.

In any event, to retain its CE marking beyond 2027, Carmat will have to resubmit an MDR-compliant file to a notified body and receive its approval.

Carmat takes care to ensure it complies with the MDR requirements that are now applicable to it, and has already begun to prepare its new MDR application to ensure that Aeson® retains its CE marking up to and beyond 2027.

The Company believes that the current indication of its CE marking (bridge to transplant) gives it access to a major market that should enable it to achieve its sales targets over the next few years. Going forward however, Carmat will continue to target broader indications, including destination therapy ("DT"), which requires the Company to compile appropriate clinical data and submit new applications with a notified body.

04 In early 2023, the European Union decided to postpone the date of transition from the MDD to the MDR from 2024 to 2027. This give Carmat more time and flexibility to prepare, submit and obtain validation of its MDR application from Dekra, the certification body, thereby reducing the criticality of this risk.

While Carmat is confident that it will be able to maintain its CE marking and later obtain broader indications, it cannot guarantee this, in particular because these decisions depend on independent external authorities.

2.3.9 RISK ASSOCIATED WITH THE REIMBURSEMENT OF THE PROSTHESIS ON THE AMERICAN MARKET (assuming Carmat obtains the PMA)

Market access risks	Description of risk	Potential impacts
Risk associated with the reimbursement of the prosthesis on the American market (assuming Carmat obtains the PMA)	Risk that, assuming the Company obtains PMA from the FDA, Carmat's device will not be reimbursed or covered by social security in the United States, or that the level of reimbursement obtained will be lower than forecast by the Company.	Prosthesis sales levels may be much lower than forecast on the American market, with a potential impact on the economic viability of the Company.

MAJOR RISK

The Company's ability to generate turnover with its artificial heart depends in part on the conditions of coverage and reimbursement in the countries where it intends to market its products, since the large majority of patients will not be able to self-fund this relatively expensive therapy.

The Aeson® artificial heart is, in terms of price, at the top of the range of all cardiological medical devices. The Company's ability to reach acceptable levels of reimbursement from government authorities, private health insurers and any other organization will therefore have an impact on its ability to successfully market its products.

Based on various factors, including the results of its current clinical trials (see section 1.3.3) and reimbursement for existing devices and therapies in the same area, Carmat considers it reasonable to assume that its level of reimbursement and coverage in the United States will be in line with its assumptions. The approval obtained by Carmat in May 2020 for reimbursement of its artificial heart as part of the EFS launched in the United States in the first quarter of 2021 is also a highly encouraging sign.

However, the Company cannot be sure of obtaining and maintaining optimal reimbursement in this country, in which Carmat intends to start marketing its prosthesis in a few years, and which will represent its largest market.

2.3.10 RISK ASSOCIATED WITH THE REIMBURSEMENT OF THE PROSTHESIS ON EUROPEAN MARKETS

Market access risks	Description of risk	Potential impacts
Risk associated with the reimbursement of the prosthesis on European markets	Risk that despite having obtained CE marking, Carmat will not obtain reimbursement for its prosthesis in one or more of the targeted European markets, or that the level of reimbursement obtained will be lower than forecast by the Company.	Prosthesis sales levels may be much lower than forecast on the markets considered, with a potential impact on the economic viability of the Company.

MODERATE RISK

The Company's ability to generate turnover with its artificial heart depends in part on the conditions of coverage and reimbursement in the countries where it intends to market its products, since the large majority of patients will not be able to self-fund this relatively expensive therapy.

The Aeson® artificial heart is, in terms of price, at the top of the range of all cardiological medical devices. The Company's ability to reach acceptable levels of reimbursement from government authorities, private health insurers and any other organization will therefore have an impact on its ability to successfully market its products. In Europe, the processes for obtaining reimbursement and support, as well as their levels differ in each country.

Based on various factors, including the results of its current clinical trials (see section 1.3.3), reimbursement for existing devices and therapies in the same area (see section 1.3.1), and the level of reimbursements already obtained in 2021 in certain hospitals in Germany and Italy where Carmat has begun to market Aeson®, the Company considers it reasonable to assume that its level of reimbursement and coverage in the European countries in which it intends to market its prosthesis (note that Europe is the biggest market for Carmat's Aeson®, and will remain so for several years) will be in line with its assumptions.

However, the Company cannot be sure of obtaining and maintaining optimal reimbursement or coverage in all of the European countries concerned, owing particularly to (i) the constant economic, regulatory and political pressure to limit healthcare costs, and (ii) the fact that reimbursement and coverage may partly depend on the as-yet unknown results of Aeson® clinical trials.

2.3.11 IT, DATA AND UNAUTHORIZED TRANSACTION RISKS

IT, data and unauthorized transaction risks	Description of risk	Potential impacts
IT, data and unauthorized transaction risks	Risk of vulnerability of the IT system to cyber attacks, risk of loss, theft, alteration or destruction of sensitive data, risk of unauthorized transactions or operations (carried out internally or externally), risk of temporary unavailability of the IT system.	Financial losses which may be direct (e.g., in the case of fraud) or indirect (e.g., in the case of unauthorized use of sensitive research or production data, or temporary interruption of various activities). Potentially negative consequences on the reputation of the Company.

MAJOR RISK

The Company is highly dependent on its IT systems to conduct its different businesses, and it manages a large amount of data relating to its research, clinical trials, intellectual property, financial and production data, etc., some of which are particularly sensitive and are stored physically and/or electronically.

Access to the Company's IT resources is granted to employees depending on their needs, but also, where appropriate, to external service providers or consultants working for the Company, some of which are based remotely (for example, hubs located overseas where clinical trials are conducted).

The loss or theft of sensitive and/or confidential data for unauthorized purposes, the carrying out of unauthorized transactions and the alteration of data or systems rendering them unfit for use, temporarily or definitive, are all events likely to cause operational (for example temporary production stoppage) and financial (for example in the event of a fraudulent transaction) damage to Carmat. The impacts of such an event could also be accentuated by the media exposure of Carmat, in particular if patient data were at stake.

The Company has implemented a systems & data security, access and protection policy and measures to limit the above risks. These measures have been significantly reinforced since 2021, and will continue to be strengthened as needed, particularly amid the widespread rise in corporate cyber attacks.

However, Carmat cannot fully exclude the risk of external cyber attacks or malicious acts, carried out internally or externally.

2.3.12 ORGANIZATIONAL AND REGULATORY NON-COMPLIANCE RISKS

Human, organizational and regulatory non-compliance risks	Description of risk	Potential impacts
Organizational and regulatory non-compliance risks	Risk that the Company will fail to set up or maintain a sufficiently adapted and robust organization, resources, processes and systems (including IT systems) to support its objectives and growth and meet legal and regulatory requirements.	Difficulty for Carmat to achieve some of its objectives on time, with a possible negative financial impact. Failure to meet all legal and regulatory obligations, which may result in the delay in achieving certain objectives (for example obtaining PMA in the United States, or even impossibility for the Company to be listed on the desired market), and/or financial penalties.

MODERATE RISK

The Company plans to grow significantly, and is gradually expanding its activities, initially limited to R&D and clinical trials, to production, marketing and sale of its artificial heart. It is also broadening its geographic presence and will continue to do so in terms of both clinical trials and sales.

Carmat must therefore constantly adapt its structure, organization, procedures and processes, as well as its systems, which is a challenge for a company of its size and may potentially mobilize a significant amount of resources. At the same time, the Company is subject to strong operational pressure associated with the delivery of its objectives, and to a binding and constantly evolving legal and regulatory framework (regulatory obligations for obtaining CE marking and PMA in the United States, regulatory obligations related to conducting clinical trials, quality-related regulations, obligations as a listed company, GDPR regulations, "Transparency" law in France, tax rules, etc.).

The Company strives to meet all of these imperatives by mobilizing the appropriate resources and systems. Carmat ensures constant legal and regulatory monitoring and calls on external consultants and specialists to assist it on those matters and implement appropriate measures. Since 2020, its compliance system has been strengthened. However, it cannot be excluded that Carmat, on an ad hoc basis, will experience organizational defects and/or not comply with all of its legal and regulatory obligations, which could have an adverse impact (albeit limited based on estimations) on the achievement of its operational and financial objectives.

2.3.13 HUMAN RESOURCES RISKS

Human, organizational and regulatory non-compliance risks	Description of risk	Potential impacts
Human resources risks	Risk that the Company will fail to hire or retain critical people necessary to achieve its objectives. This can in particular result from people deemed to be key or difficult to replace leaving the Company, and/or the difficulty in acquiring certain skills or levels of experience due to the characteristics of the Company (for example, 'start-up' considered potentially risky).	Difficulty for Carmat to achieve some of its objectives on time, with a potential adverse financial impact.

MODERATE RISK

Carmat's success is largely based on the quality of its management and teams, which means being able to attract and retain the appropriate talent and human resources. Carmat strives to take the necessary actions in terms of its hiring, compensation, employer brand and other policies to continue to be an attractive employer. The Company also uses the services of external resources, particularly consultants, as and when necessary.

However, in terms of talent acquisition and retention, Carmat competes with many other companies, some of whom have greater financial resources or certain potential advantages (i.e., in terms of career development possibilities, compensation packages, work environment, the company's proven long-term viability, etc.), which Carmat is not in a position to guarantee.
Certain skills (e.g., production technicians) are also in high demand on the job market.

Finally, given the size of the Company, certain skills are provided by a very limited number of employees, sometimes just one person.

In this context, it is possible that the Company may temporarily face difficulties in attracting talent for certain positions, including key management positions, or retaining the people necessary to achieve Carmat's objectives.

2.3.14 RISKS RELATED TO THE COVID-19 PANDEMIC

Covid-19 pandemic risks	Description of risk	Potential impacts
Risks related to the Covid-19 pandemic	Risk that the Covid-19 pandemic and/or measures taken to control it (e.g., lockdowns) will disrupt the Company's various business activities.	Slowdown, postponement or temporary interruption in various activities (regulatory approvals, clinical trials, production, sales, etc.) that could lead to a delay in achieving the Company's various objectives, thus having an adverse financial impact.

A new strain of coronavirus was detected at the end of 2019. Known as Covid-19, the virus has since resulted in a global pandemic, disrupting the world economy and putting unprecedented pressure on healthcare systems worldwide. In an attempt to contain the pandemic, the impacts of which have waned but have not disappeared entirely, governments have imposed restrictive measures including lockdowns, travel restrictions and increased use of home working arrangements.

Consequently, there is a risk that the Company's various activities could be disrupted by this situation to varying degrees. The main impacts for Carmat could be as follows:

- A delay in regulatory processes that could, for example, lead to a slowdown in talks with the FDA in the United States.
- A delay in or slower than expected enrollment of patients in the Company's various clinical trials (pivotal study in Europe, EFICAS in France, EFS in the United States) or due to begin (EFICAS in France), particularly in the event of travel restrictions, or should various hospitals be either unavailable to Carmat or less available due to the influx of Covid-19 patients.
- A slowdown or temporary shutdown in production at the Bois d'Arcy facility, which could be due either to the simultaneous absence of key people in the production team or, more probably, to disruptions in the supply of raw materials and components from the Company's suppliers. The health crisis has already weakened a number of these Carmat suppliers.
- Slower than expected growth in sales, mainly due to hospitals' lack of availability, their potential financial difficulties or a slowdown in the production of the prosthesis.
- Greater difficulties in raising funds, as some potential investors may themselves be suffering from the impacts of the crisis or may have become more cautious about investing until the pandemic is fully under control, or due to the impossibility of meeting potential new investors in person.

In 2022, Carmat continued to feel the effects of this crisis through disruptions in its supply chain, with suppliers reducing output. However, the impact of Covid-19 was generally less felt than in 2020 and 2021.

Given the continued uncertainty as to how the pandemic and measures designed to control it will evolve, and whether there will be another breakout, Carmat is unable to accurately measure the level of Covid-19 risk or its potential impact on the Company in 2023 and beyond. However, it considers that should this risk materialize, the most likely impacts would be a disruption in its supply chain (and therefore in production) and a potential slowdown in implants (in both a clinical and commercial setting). Furthermore, the Company remains confident that its business model and medium- to long-term prospects will not be jeopardized by this risk.

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FINANCIAL INFORMATION

3.1 COMMENTS ON THE COMPANY'S RESULTS, ACTIVITY AND OUTLOOK

3.1.1 COMMENTS ON THE RESULTS AND FINANCIAL POSITION

SELECTED FINANCIAL INFORMATION

Income statement (in millions of euros)	Year ended Dec. 31, 2022	Year ended Dec. 31, 2021	Year ended Dec. 31, 2020
Revenue	0.3	2.2	0
Net operating income (expense)	(51.9)	(60.4)	(36.4)
Net financial income (expense)	(3.8)	(3.3)	(2.5)
Net non-recurring income (expense)	0.0	0.0	0.2
Research and innovation tax credits	2.1	1.9	1.7
NET PROFIT (LOSS)	**(53.7)**	**(61.9)**	**(37.0)**

Balance sheet (in millions of euros)	Year ended Dec. 31, 2022	Year ended Dec. 31, 2021	Year ended Dec. 31, 2020
Total assets	85.2	69.1	59.8
Total equity	2.0	(13.5)	(6.7)
(Net cash) Net debt*	3.9	12.8	3.0

* Long-term financial liabilities plus short-term financial liabilities less cash and cash equivalents

Cash flow statement (in millions of euros)	Year ended Dec. 31, 2022	Year ended Dec. 31, 2021
CASH AND CASH EQUIVALENTS AT BEGINNING OF YEAR	39.2	36.0
Net cash from (used in) operating activities	(54.4)	(60.1)
Net cash from (used in) investing activities	(2.0)	(1.8)
Net cash from (used in) financing activities	68.6	65.0
CASH AND CASH EQUIVALENTS AT END OF YEAR	**51.4**	**39.2**

PROFIT (LOSS) FOR THE YEAR

Sales

Revenue totaling €0.3 million corresponds to the sale of two Aeson® artificial hearts over the period November-December 2022: one in a commercial setting in Germany and the other within the scope of the EFICAS clinical study in France.

It should be recalled that, in December 2021, Carmat voluntarily decided to suspend all implants of its Aeson® artificial heart on a temporary basis, and that these resumed in November 2022, which is why no revenues were earned in the period January-October 2022.

Net operating income (expense)

The net operating expense for 2022 amounted to €51.9 million, down €8.5 million year on year.

This improvement reflects a tight rein on expenditure while implants were suspended for most of the year, and the fact that operating expenses for 2021 included a non-recurring expense of €8.1 million linked to the quality issues identified at the end of that year.

The main focuses of Carmat's efforts and resources in 2022 were:

- defining and implementing preventive and corrective actions in its supply chain to address the quality issues that emerged at the end of 2021;
- gradually resuming production following implementation of these actions;

- securing the necessary regulatory approvals to resume implants;
- working with its suppliers to increase production volumes;
- training and educating hospitals and physicians, and providing them with assistance regarding coverage of the therapy, so that they are prepared once implants resume.

Net profit (loss)

After taking into account the net financial expense (€3.8 million) along with non-recurring items and the research tax credit (income of €2.1 million), the net loss for 2022 came in at €53.7 million, an €8.2 million improvement on the 2021 figure.

CASH AND FINANCIAL POSITION

Cash and cash equivalents

At December 31, 2022, the Company's cash position stood at €51.4 million, up €12.2 million on December 31, 2021.

Cash flow from (used in) operating and investing activities represented a cash outflow of €56.4 million, an improvement of €5.5 million compared to 2021 (€61.9 million outflow).

(in millions of euros)	2022	2021
Net cash from (used in) operating activities	(54.4)	(60.1)
Net cash from (used in) investing activities	(2.0)	(1.8)
Net cash from (used in) financing activities	68.6	65.1
CHANGE IN CASH AND CASH EQUIVALENTS	**12.2**	**3.2**

The Company obtained the following funds in 2022:

- a gross amount of €40.5 million and €31.1 million, respectively, through successive fundraising rounds in April and December involving (i) healthcare and strategic investors and (ii) retail investors (via the PrimaryBid platform);

- an amount of €0.7 million by drawing on its equity financing line put in place with Kepler Cheuvreux, which expired on March 27, 2022.

Net debt

At December 31, 2022, Carmat's net debt breaks down as follows:

(in millions of euros)	Dec. 31, 2022	Dec. 31, 2021
+ Long-term financial liabilities	52.7	51.9
+ Short-term financial liabilities*	2.6	0.1
- Cash and cash equivalents	(51.4)	(39.2)
NET DEBT	**3.9**	**12.8**

* Due within one year.

Financial liabilities comprise the principal (€30 million) and interest due on the loan from the European Investment Bank (EIB), the principal (€10 million) and interest due on the government-guaranteed loans, and the interest due on the €14.5 million repayable advance obtained from Bpifrance. The characteristics and terms of these various loans and the Bpifrance repayable advance are described in section 3.1.7 of this document (material contracts).

Funding horizon

Based on its updated business plan, the confirmed financial resources available to Carmat (excluding any additional financing) are sufficient for it to fund its operations until mid-October 2023.

These resources include in particular:

- €51.4 million of available cash and cash equivalents at December 31, 2022;

- the first portion (€1.3 million) of the EIC Accelerator grant[01], receivable in May 2023 at the latest;

- €2.1 million in research tax credits for 2022 (half of which receivable as an advance payment in the first half of 2023, and the remainder in October 2023).

Carmat has an ongoing active investor relations policy targeting both French and international investors, and is constantly on the lookout for new financing opportunities (equity, public funding and any other type of dilutive or non-dilutive financing). It believes that it can also count on the support of some of its main existing shareholders. It is also able, if necessary, to temporarily reduce its cash burn by implementing appropriate cost-saving measures.

In addition, as a winner of the European Union's EIC Accelerator program,[01] the Company was awarded optional equity financing of up to €15 million in December 2022, subject to an agreement between the parties. As the optional equity financing is not yet confirmed, it has not been factored into the Company's funding horizon. Receipt of the €15 million in equity financing at the end of

01 As a winner of the European Union's EIC Accelerator program, in December 2022 Carmat was awarded blended funding of up to €17.5 million (including a non-dilutive grant of €2.5 million and optional equity financing of €15 million). The terms and conditions of the optional equity financing are to be defined at a later date. An initial €1.3 million of the grant will be received in May 2023 at the latest, with the remainder expected in 2024.

September 2023 at the latest would extend Carmat's funding horizon until the end of December 2023.

3.1.2 2022 BUSINESS TRENDS

AESON® IMPLANTS RESUME

On December 2, 2021, following the occurrence of quality issues affecting certain components of its prosthesis, Carmat decided to voluntarily suspend all implants of its Aeson® artificial heart on a temporary basis, both commercially and in clinical trials.

As expected, the Company met its objective of resuming implants in the fourth quarter of 2022, having secured the necessary regulatory approvals. It also resumed productions of its artificial hearts – both at its own Bois d'Arcy facility and at its suppliers' facilities – incorporating modifications to the production processes in order to avoid the recurrence of the quality issues identified.

In November 2022, Carmat performed a first post-suspension commercial implant of Aeson® in a German hospital, followed in December by a first implant within the framework of the EFICAS study in France.

Implementation of corrective and preventive action and relaunch of production

As from December 2021, the Company focused on characterizing the various quality issues identified, concerning the prothesis' electronic chip and its pump. Following this, Carmat devised and then implemented corrective and preventive actions for each of the issues, both at the Bois d'Arcy production site, where all the prostheses are assembled, and at the various suppliers and subcontractors concerned, as needed, under Carmat's control. These actions continue to be evaluated.

The restart of production incorporating all of these changes was effective by the end of the first quarter of 2022, and then continued in a phased manner.

Ramping up production remains Carmat's major challenge, especially since the Company depends on a large number of very different suppliers and sub-contractors with varying scale-up capabilities, some of whom are less experienced in meeting the level of quality required in the healthcare sector.[02]

Regulatory processes

In October 2022, Carmat obtained approval from Dekra, the certification body, of the "notification of change" that it had submitted in August, thereby allowing the Company to resume its implants in a commercial setting.

At the end of October, the Company also received authorization from the French National Drug and Health Product Safety Agency (*Agence Nationale de Sécurité des Médicaments et des produits de Santé* – ANSM) to resume its EFICAS clinical study in France.

For implants to resume within the framework of the EFS (early feasibility study) in the United States, approval is required from the Food & Drug Administration (FDA). In this respect, several files were submitted by Carmat in the second half of 2022 and are still being reviewed. Based on its exchanges with the FDA, the Company expects to resume implants (second cohort of seven patients) under this study in 2023.[03]

Prospecting, training and support for hospitals

To perform Aeson® implants, each hospital must be rigorously trained and certified upstream by Carmat. In response to the strong interest shown by hospitals in Aeson®, and to ensure implants are performed at a sustained pace in 2023, the Company continued and stepped up training at various centers in 2022, particularly in the two countries that Carmat is targeting at this stage, namely Germany and Italy.

At the end of 2022, 23 centers had been trained (including 12 in Germany, four in Italy, one in Greece; and six in France in connection with the launch of the EFICAS study).

Carmat also continued to support the various centers in their attempts to secure reimbursement for therapy from the various paying agents.

EFICAS CLINICAL STUDY STARTS IN FRANCE

After obtaining the necessary regulatory approvals to initiate this study in October, a first implantation of an Aeson® heart as part of the EFICAS study was performed during the last week of December 2022, by Prof. André Vincentelli and his team at Lille University Hospital.

02 See section 2 of this document for a detailed description of the risks associated with the supply chain.

03 As a reminder, the EFS protocol calls for the enrollment of a total of ten patients eligible for a heart transplant. It is a staged study with a first cohort of three patients, followed by a second of seven patients. The study of the first cohort of three patients was begun and completed in the second half of 2021, and the report on these three patients at 60 days was filed with the FDA, as provided for in the study protocol. The seven patients in the second cohort will be enrolled once FDA approval is obtained.

In addition to Lille University Hospital, five other centers are participating in this study (Pitié Salpêtrière University Hospital and Georges Pompidou European Hospital in Paris, Rennes University Hospital, Strasbourg University Hospital, and Lyon University Hospital (*Hospices Civils de Lyon*).

This prospective study will involve a total of 52 patients eligible for a heart transplant in France and will allow Carmat to collect additional data on the efficacy and safety of its artificial heart, as well as medico-economic data that can be used to support the value proposition and obtain reimbursement of the device, particularly in France. The primary study endpoint is patient survival at 180 days post-implant without the patient suffering a debilitating stroke, or a successful cardiac transplantation within 180 days post-implant.

Note that Carmat has received €13 million in funding from the French National Innovation Fund[04] to partially finance this study.

ADAPTING GOVERNANCE

The Combined Shareholders' Meeting of May 11, 2022 approved the reduction of the term of office of the Company's directors from six to three years. At the date of publication of this Universal Registration Document, the Board of Directors comprised 11 directors, eight of whom are independent. The terms of office of all directors expire in 2025 at the close of the Shareholders' Meeting to be held to approve the financial statements for the year ending December 31, 2024.

On December 21, 2022, Alexandre Conroy was appointed as Chairman of Carmat's Board of Directors. He succeeds Jean-Pierre Garnier, who resigned for personal reasons.

On July 1, 2022, Francesco Arecchi, previously Global Market Development Director, expanded his responsibilities to include all of the Company's marketing, sales and training activities. This development follows the departure of Eric Richez, Sales Director, as planned at the end of the first half of the year.

IMPACT OF THE COVID-19 SITUATION AND THE CONFLICT IN UKRAINE

Covid-19 generally had a minimal impact on Carmat's activities in 2022, aside from a number of disruptions that affected its production supplies. However, the Company continues to closely monitor the pandemic's development and the measures taken to manage it, and may be compelled to adjust its outlook accordingly.

Likewise, the Ukraine conflict did not have a material impact on Carmat's operations in 2022. The Company does not anticipate any further direct impacts in 2023 besides inflation and increases in the prices of energy and certain components and materials. This will not, however, substantially affect its activities or performance.

04 The funds will be received as and when patients receive their implants during the study.

3.1.3 OUTLOOK AND SIGNIFICANT EVENTS AFTER THE REPORTING DATE

OUTLOOK AND NEXT STEPS

Medium-term vision and goals

Carmat's vision is to make its Aeson® artificial heart the first alternative to heart transplantation.

Currently, Aeson® can be marketed and sold in Europe and in all countries recognizing CE marking, for the bridge-to-transplant (BTT) indication.

Carmat also aims to obtain PMA in the next few years, which would allow it to market its device in the United States, where Aeson® is currently undergoing clinical evaluation as part of a feasibility study.

Carmat will eventually be seeking the destination therapy (DT) indication, enabling the patient to live durably with the Aeson® heart without a subsequent heart transplant.

Key next steps

Carmat's main goals for 2023 are to:
- successfully develop Aeson® sales in Europe;
- continue implants under the EFICAS study in France;
- complete its EFS study in the United States;
- double annual production capacity to 500 hearts by the end of 2023; and
- continue its financing initiatives.

However, the Company wishes to underline that implants in a commercial setting and within the framework of clinical studies will continue to resume gradually, depending on the pace at which it can replenish its inventories of implantable prostheses.

SIGNIFICANT EVENTS AFTER THE REPORTING DATE AND MAIN TRENDS SINCE THE END OF THE 2022 FINANCIAL YEAR

No events occurred after the reporting date that are liable to alter the presentation or the valuation of the financial statements as approved by the Board of Directors.

The Company is continuing discussions as part of the EIC Accelerator program to receive equity financing of up to €15 million from the EU innovation fund. It expects these talks to conclude before the end of first-half 2023.

A €15 million investment would extend Carmat's funding horizon to the end of December 2023.

PROFIT FORECASTS OR ESTIMATES

For 2023, Carmat expects to produce more than 100 artificial hearts and forecasts sales of between €10 million to €13 million.

In addition, the Company announced in a press release on January 23, 2023 that it expects to break even as from 2027.

3.1.4 LEGAL AND ARBITRATION PROCEEDINGS

To the best of the Company's knowledge, there is no confirmed litigation, arbitration, governmental or judicial procedure likely to have or having had in the last 12 months significant effects on Carmat's financial position or profitability.

However, it should be recalled that, in December 2021, the Company voluntarily decided to suspend Aeson® implants on a temporary basis following the identification of quality issues affecting some of its prostheses. It recognized a non-recurring expense of €8.1 million in its 2021 financial statements in this respect, mainly reflecting the write-down of its inventories. Implants resumed in November 2022 and the Company does not anticipate any further significant associated expenses.

3.1.5 COMPLETED OR FUTURE INVESTMENTS

MAIN INVESTMENTS COMPLETED IN THE LAST THREE FINANCIAL YEARS

The Company invested €1.7 million in fiscal 2022, mainly in production at its Bois d'Arcy facility and with certain suppliers,

Investments totaled €1.3 million and €2.2 million in 2021 and 2020, respectively.

MAIN NON-CURRENT ASSETS IN PROGRESS

Non-current assets in progress at the end of 2022 amounted to €1.5 million. They consist solely of property, plant and equipment, mainly equipment in the process of being tested before it can be brought into service.

MAIN PLANNED INVESTMENTS

In the coming years, the Company intends to step up its investments in order to expand its production capacity, improving efficacy and reliability and reducing Aeson® production costs. The Company is targeting annual production of 500 hearts as from 2024, and 1,000 by 2027.

It also intends to continue making the appropriate investments to adapt information systems to the needs of the Company.

3.1.6 PREMISES AND ENVIRONMENTAL ISSUES

The Company operates at two sites, both located in the Paris region:

- its historical Vélizy-Villacoublay site, which serves as the Company's headquarters and is home to its R&D and all other non-production activities;

- its Bois d'Arcy site, where all production activities are carried out.

Carmat does not own any property. The Company carries out its activities in the premises it rents under leases entered into at market prices and conditions with companies which have no direct or indirect link with its executives.

ENVIRONMENTAL ISSUES

For the design, manufacture and distribution of the Aeson® artificial heart, the Company is subject to chemical and biological risks. Both in this respect and when explanting its artificial heart, Carmat also has to manage various types of waste, including biological and electronic waste.

Carmat therefore takes all necessary measures to protect its staff and other people exposed to these risks, and to efficiently manage waste in accordance with the regulations in force.

As needed, Carmat entrusts specialized sub-contractors with this waste management, including the traceability of processed materials. In addition, a risk analysis is updated annually. Each risk situation is assessed according to quantified criteria of occurrence and severity, which gives rise to the implementation of appropriate prevention measures. Specific training is given to those concerned.

Carmat is also committed to reducing its environmental impact, notably through its projects to expand its capacity and upgrade its production processes.

Lessee	Address	Nature of premises	Surface area	Lease start date	Lease expiration date
Carmat SA	36, avenue de l'Europe Immeuble l'Étendard Energy III 78140 Vélizy-Villacoublay France	Business premises	2,243 sq.m	Aug. 3, 2022	Aug. 2, 2031
Carmat SA	9, rue René Clair Bâtiment G Sis parc Spirit Meliès III 78390 Bois d'Arcy France	Business premises	1,558 sq.m	Dec. 6, 2017	Dec. 5, 2027
Carmat SA	9, rue René Clair Lots F1 & F2 Sis parc Spirit Meliès III 78390 Bois d'Arcy France	Business premises	1,345 sq.m	March 10, 2020	Dec. 5, 2027

3.1.7 MATERIAL CONTRACTS

The material contracts to which the Company is a party are as follows:

- a royalties agreement signed on June 24, 2008 and amended on February 5, 2010, between Carmat, Professor Alain Carpentier and Matra Défense (owned by Airbus Group): please refer to section 4.6 "Related-party agreements";
- an exclusive license agreement with the Pierre and Marie Curie University relating to patent no. 8800381: please refer to section 1.3.5 "Research and development";
- an agreement with Edwards Lifesciences (initially concluded in the fourth quarter of 2010 and most recently amended in 2022) between Carmat and Edwards Lifesciences, world leader in the segment of heart valves and in hemodynamic monitoring, for the use and the supply of Carpentier-Edwards biological heart valves for the Carmat artificial heart;
- a 12-year agreement with Invibio Limited concluded in the third quarter of 2012 between Carmat and Invibio Limited for the supply and use of PEEK-OP-TIMA® polymeric material. This material is used by Carmat for its biocompatibility characteristics, which are certified as long-lasting implantable, and for its mechanical properties. Structural subsets of the prosthesis are processed with this material;
- a framework aid agreement for the Carmat Industrial Strategic Innovation (ISI) project and an agreement in support of the Carmat project entered into on July 24, 2009 for a total sum of €33 million granted by Bpifrance;
- a non-dilutive financing agreement concluded in December 2018 with the European Investment Bank for an amount of €30 million;
- a government-guaranteed loan agreement with BNP Paribas signed in the fourth quarter of 2020 for an amount of €5 million and subsequently amended in July 2021;
- a government-guaranteed loan agreement with Bpifrance signed in the fourth quarter of 2020 for an amount of €5 million and subsequently amended in September 2021.

These last four agreements are detailed below.

FRAMEWORK AGREEMENT WITH BPIFRANCE

Initial conditions of the agreement

On July 24, 2009, the Company signed a framework agreement with Bpifrance to secure aid for the Carmat Industrial Strategic Innovation (ISI) project. Under the terms of this agreement, Bpifrance undertook to pay a total amount of €33 million, of which €18.5 million as subsidies and €14.5 million as repayable advances, payable upon achievement of the key milestones set out in the agreement.

The total amount of €33 million has already been collected by the Company, as the remaining €1.5 million of the repayable advance was received in June 2019.

Accounting and financial conditions

The subsidies accrue to the Company as of right and so will not be repayable in the event of the project's success.

Accordingly, they were accounted for in the "Operating subsidies" line of the income statement.

Repayable advances will have to be repaid by Carmat according to the arrangement set out in the paragraphs below. Repayable advances are therefore accounted for on the liabilities side of the balance sheet under the "Other equity – Conditional advances" line. The corresponding interest is shown on the liabilities side of the balance sheet under the "Sundry loans and borrowings" line.

By addendum to the initial contract, signed in September 2013, the Parties agreed to calculate the amount of the financial returns due by Carmat based on thresholds of revenue generated by the products and services created by the project (reference products and services).

Threshold S1 (cumulative sales of reference products and services) is set at €38 million.

Threshold S2 (cumulative sales of reference products and services) is set at €2 billion.

If threshold S1 (as defined above) is reached, Carmat will pay Bpifrance the following flat fees by June 30 of each year following the reference year:

Year 1	€184,000
Year 2	€368,000
Year 3	€1,472,000
Year 4	€2,784,000
Year 5	€8,316,000
Year 6	€11,300,000

Should threshold S1 not be reached, Carmat will not pay Bpifrance the amounts above.

From year 2 and for the remaining years, in case of a fall in revenue exceeding 20% of the updated forecasts (in 2013), as defined in the amendment signed in September 2013, these amounts would be then capped.

In this scenario, Carmat will generate new forecasts allowing it to draw up a new timetable for the reimbursements to Bpifrance.

Conversely, should sales of the reference products and services be in excess of the forecasts, the flat fees defined above will not be affected.

In any case, in the event that no reimbursement is due pursuant to this article over a period of 10 years from payment of the last subsidy as set out in the agreement providing for a repayable advance, Carmat will be released from any obligation to pay financial returns, provided that Carmat has complied with all its obligations.

If the advance payment has been reimbursed in accordance with the provisions above, Carmat will pay Bpifrance during the year after the date said reimbursement is completed and provided sales of the reference products and services (excluding taxes) have reached at least €2 billion, 2.5% of the yearly revenue generated the previous year by sales of the project's products and services.

The corresponding amounts will be payable on any generated revenue, subject to a maximum financial return of €50 million at nominal value, if achieved within 8 years.

EUROPEAN INVESTMENT BANK (EIB) FINANCING AGREEMENT

The financing agreement signed with the EIB allows Carmat to borrow up to €30 million in three €10 million tranches.

The first tranche was drawn down on January 31, 2019, the second on May 4, 2020, and the third and final tranche on October 29, 2021.

The amounts borrowed bear an average fixed interest rate of 8% for the first tranche, 8% for the second tranche and 5% for the third tranche. The reimbursement of each tranche will take place at the end of the loan period (bullet payment), i.e., five years from the date of the drawdown on this specific tranche. The loan contract provides for certain information and operational commitments (such as limits on authorized debt, approval for external growth operations, etc.). Failure to comply with these conditions would give the EIB the right, if deemed necessary, to demand an early reimbursement of the loan.

The occurrence of certain changes in the shareholding structure or a change in management not approved beforehand by the EIB would also allow the latter, if deemed necessary following discussions with the Company, to demand an early repayment of the loan.

The loan is not secured. Any new Group subsidiary becoming material with respect to the financial agreement would be personally liable for the Company. To date, Carmat has no subsidiaries.

In addition, the Company has signed a royalties agreement with the EIB providing for the payment of additional compensation to the EIB depending on the commercial performance of the Company. This agreement is valid for 13 years from the year during which the cumulative sales of Carmat reach €500,000. The Company can decide to terminate the royalties agreement at any time by paying a lump sum (net of any royalties already paid), based on the amount borrowed and the year during which the decision is taken.

Upon the occurrence of certain events (in particular should the EIB demand the early repayment of the loan or should a new shareholder reach 33% of the voting rights of Carmat), the EIB could, if deemed necessary, demand from Carmat an advance payment of royalties up to a certain percentage of the amount of the loan effectively used (this percentage would range from 100% of the borrowed amount if the event occurs during the first four years of the financial agreement to 160% if the event occurs after the eleventh year).

BNP PARIBAS GOVERNMENT-GUARANTEED LOAN

BNP Paribas has granted Carmat a €5 million government-guaranteed loan, which was drawn down on October 27, 2020. It was a bullet loan with an initial term of 12 months, bearing interest at a fixed rate of 0.25%.

In July 2021, the Company signed an amendment extending the initial 12-month repayment period by an additional five years. The amendment also provides that repayment of principal will not begin until two years after the original start date of the loan. The amended loan bears interest at a fixed rate of 0.75% over the revised five-year period.

The loan is 90% guaranteed by the French government and is not secured.

BPIFRANCE GOVERNMENT-GUARANTEED LOAN

Bpifrance granted Carmat a €5 million government-guaranteed loan, which was drawn down on November 12, 2020. It was a bullet loan with an initial term of 12 months, bearing interest at a fixed rate of 1.75%.

In September 2021, the Company signed an amendment

extending the initial 12-month repayment period by an additional five years. The amendment also provides that repayment of principal will not begin until two years after the original start date of the loan. The amended loan bears interest at a fixed rate of 2.25% over the revised five-year period.

The loan is 90% guaranteed by the French government and is not secured.

3.1.8 FIVE-YEAR FINANCIAL SUMMARY

(in euros)	2022	2021	2020	2019	2018
Share capital at year end					
Share capital (in euros)	907,018.76	622,622.08	520,499.36	504,385.96	371,036.76
Number of existing ordinary shares	22,641,279	15,531,787	12,980,789	12,592,539	9,275,919
Number of existing preference shares	34,190	33,765	31,695	17,110	-
Maximum number of future shares to be created					
- by conversion of bonds	-	-	-	-	-
- by exercise of subscription or conversion rights	1,885,970	1,164,025	1,032,285	1,314,700	1,246,750
Operations and earnings (in thousands of euros)					
Revenue excluding tax	345	2,229	0	0	0
Net profit (loss) before tax, profit-sharing, depreciation/amortization and provisions	(57,253)	(55,298)	(30,257)	(43,339)	(42,785)
Income tax	2,062	1,863	1,711	1,636	1,984
Employee profit-sharing for the year	-	-	-	-	-
Net profit (loss) after tax, profit-sharing, depreciation/amortization and provisions	(53,681)	(61,873)	(36,963)	(42,649)	(41,729)
Distributed earnings	-	-	-	-	-
Earnings per share					
Earnings (loss) after tax and profit-sharing, but before depreciation/amortization and provisions	(2.44)	(3.43)	(2.19)	(3.31)	(4.40)
Earnings (loss) after tax, profit-sharing, depreciation/amortization and provisions	(2.37)	(3.97)	(2.84)	(3.38)	(4.50)
Dividend per share		-	-	-	-
Personnel					
Headcount at year-end	179	160	119	103	87
Total payroll for the year (in thousands of euros)	14,713	12,161	10,185	8,365	6,820
Total payroll taxes for the year (in thousands of euros)	6,187	5,598	4,832	4,454	3,907

3.1.9 DIVIDEND PAYMENT HISTORY

No dividends have been paid in the last three years.

There are no plans to adopt a policy of paying dividends in the short term, taking into account the Company's stage of development.

3.1.10 INFORMATION ON PAYMENT TERMS

INFORMATION ON PAYMENT TERMS FOR ACCOUNTS RECEIVABLE

At December 31, 2022, there was a single trade receivable for €0.1 million, not yet due at the reporting date.

INFORMATION ON PAYMENT TERMS FOR ACCOUNTS PAYABLE

In accordance with the provisions of Articles L.441-6-1 and D.441-4 of the French Commercial Code, we bring your attention to the following information concerning supplier payment terms.

At December 31, 2022, trade payables totaled €2.0 million:

(in thousands of euros)	Dec. 31, 2022	Dec. 31, 2021
Trade notes and accounts payable shown under liabilities	6,526	8,387
Less: Amounts receivable from suppliers shown under assets	-	-
Less: Accrued expenses included in this item	(4,502)	(6,565)
Amounts payable on non-current assets and other	-	-
Less: Translation differences	(32)	-
TOTAL	**1,991**	**1,822**

The breakdown of this amount by maturity date is shown below, based on the payment terms negotiated with suppliers:

(in thousands of euros)	Dec. 31, 2022	Dec. 31, 2021
Due (including amounts receivable from suppliers)	203	92
Falling due in January	1,522	1,730
Falling due in February	102	-
Falling due in or after March	165	-

BREAKDOWN OF PAYABLES DUE AT THE REPORTING DATE:

Article D.441 I.-1°: Invoices received and due but not settled at the end of the period						
(in thousands of euros)	**0 days**	**1 to 30 days**	**31 to 60 days**	**61 to 90 days**	**91 days and more**	**Total (1 day and more)**
(A) Days late						
Number of invoices and credit notes concerned	**386**	10	3	16	122	**151**
Total amount of invoices and credit notes concerned (incl. taxes)	**1,788**	(5)	13	7	18	**33**
Percentage of total purchases for the period (incl. taxes)	**5.43%**	-0.01%	0.04%	0.02%	0.06%	**0.10%**
(B) Invoices due excluded from (A) relating to contested payables						
Number of invoices concerned			**3**			
Total amount of invoices concerned (incl. taxes)			**170**			
(C) Reference payment terms used (contractual or statutory terms – Article L.441-6 or Article L.443-1 of the French Commercial Code)						
Payment terms used for the calculation of late payments	☒ Contractual terms: depending on the supplier ☐ Statutory terms					

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3.2 2022 FINANCIAL STATEMENTS

3.2.1 FINANCIAL STATEMENTS FOR THE YEAR ENDED DECEMBER 31, 2022

INCOME STATEMENT

Income statement	Year ended Dec. 31, 2022			Year ended Dec. 31, 2021
(in thousands of euros)	France	Export	Total	Total
OPERATING INCOME				
Sale of goods for resale	7		7	
Production sold – goods (note 3.2.2.5)	133	205	338	2,229
Production sold – services				
NET REVENUE	140	205	345	2,229
Inventoried production			(3,094)	7,223
Capitalized production				
Operating subsidies (note 3.2.2.5)			132	8
Reversals of impairment, depreciation/amortization and provisions, expense transfers			11,587	7,110
Other income			27	109
TOTAL OPERATING INCOME (I)			8,997	16,679
OPERATING EXPENSES				
Purchases of goods for resale			3,148	3,542
Change in inventories (goods for resale)			(2,948)	(2,302)
Purchases of raw materials and other supplies			7,504	6,980
Change in inventories (raw materials and other supplies)			(1,238)	(35)
Other purchases and external expenses			22,353	34,663
Taxes, duties and other levies			471	392
Wages and salaries			14,713	12,161
Social security contributions			6,187	5,598
Depreciation/amortization and impairment				
- of non-current assets: depreciation/amortization (note 3.2.2.4.2)			1,680	1,323
- of non-current assets: impairment				
- of current assets: impairment			7,786	12,281
Additions to provisions (note 3.2.2.4.4)			611	1,944
Other expenses			652	541
TOTAL OPERATING EXPENSES (II)			60,919	77,088
1 - NET OPERATING INCOME (EXPENSE) (I - II)			(51,922)	(60,408)
SHARE IN INCOME FROM JOINT VENTURES				
Income allocated or loss transferred (III)				
Loss incurred or income transferred (IV)				
FINANCIAL INCOME				
Investment income				
Income from other marketable securities and non-current asset receivables				
Other interest income				
Reversals of impairment and provisions, expense transfers				
Foreign exchange gains			25	11
Net income on sales of marketable securities				
TOTAL (V)			25	11

Income statement	Year ended Dec. 31, 2022			Year ended Dec. 31, 2021
(in thousands of euros)	France	Export	Total	Total
FINANCIAL EXPENSES				
Depreciation/amortization, impairment and provisions				
Interest expense			3,820	3,316
Foreign exchange losses			52	12
Net expenses on sales of marketable securities				
TOTAL (VI)			3,872	3,328
2 - NET FINANCIAL INCOME (EXPENSE) (V - VI)			(3,848)	(3,317)
3 - RECURRING INCOME (EXPENSE) BEFORE TAX (I-II+III-IV+V-VI)			(55,770)	(63,725)
NON-RECURRING INCOME (NOTE 3.2.2.5)				
Non-recurring income on management transactions			92	5
Non-recurring income on corporate actions			142	41
Reversals of impairment and provisions, expense transfers				
TOTAL (VII)			234	46
NON-RECURRING EXPENSES (NOTE 3.2.2.5)				
Non-recurring expenses on management transactions			50	
Non-recurring expenses on corporate actions			90	57
Depreciation/amortization, impairment and provisions			67	
TOTAL (VIII)			208	57
4 - NET NON-RECURRING INCOME (EXPENSE) (VII-VIII)			27	(10)
Employee profit-sharing (IX)				
Income tax (X) (note 3.2.2.5)			(2,062)	(1,863)
TOTAL INCOME (I+III+V+VII)			9,255	16,736
TOTAL EXPENSES (II+IV+VI+VIII+IX+X)			62,937	78,609
5 - NET PROFIT (LOSS) (total income - total expenses)			(53,681)	(61,873)

BALANCE SHEET

Assets	Dec. 31, 2022			Dec. 31, 2021
(in thousands of euros)	Gross	Depreciation, amortization and impairment	Net	Net
UNCALLED SUBSCRIBED CAPITAL (TOTAL I)				
Non-current assets				
Intangible assets (notes 3.2.2.4.1 and 3.2.2.4.2)				
- Start-up costs				
- Development costs				
- Licenses, patents and similar rights	2,073	2,073		88
- Goodwill*				
- Intangible assets not yet available for use				
- Advances and downpayments				
Property, plant and equipment (notes 3.2.2.4.1 and 3.2.2.4.2)				
- Land				
- Buildings				
- Technical plant, equipment and tooling	12,807	8,905	3,903	3,992
- Other property, plant and equipment	3,415	2,127	1,288	1,362
- Property, plant and equipment in progress	1,508		1,508	1,429
- Advances and downpayments				
Financial assets** (notes 3.2.2.4.1 and 3.2.2.4.2)				
- Equity-accounted investments				
- Other equity interests				
- Other long-term investments				
- Loans				
- Other financial assets	738		737	533
TOTAL II	20,540	13,104	7,436	7,404
Current assets				
Inventories and work in progress (note 3.2.2.4.3)				
- Raw materials, supplies	5,920	358	5,562	4,232
- Work in progress – goods	807	500	307	1,405
- Semi-finished and finished goods	15,147	9,775	5,372	5,459
- Goods for resale	6,195		6,195	3,246
Advances and downpayments on orders	3,994		3,994	3,694
Receivables***				
- Trade notes and accounts receivable	394	254	140	464
- Other receivables (note 3.2.2.4.5)	3,585	66	3,520	3,365
- Share capital subscribed, called and unpaid				
Marketable securities				
Cash instruments				
Cash	51,427		51,427	39,192
Prepaid expenses*** (note 3.2.2.4.11)	1,248		1,248	610
TOTAL III	88,717	10,953	77,764	61,668
ACCRUAL ACCOUNTS				
Deferred loan issuance costs (IV)				
Bond redemption premiums (V)				
Unrealized foreign exchange losses (VI)	37		37	8
GRAND TOTAL (I+II+III+IV+V+VI)	109,295	24,058	85,237	69,080
* Including lease rights.				
** Of which are due in less than one year.			344	167
*** Of which are due in more than one year.				

Equity and liabilities (in thousands of euros)	Dec. 31, 2022	Dec. 31, 2021
EQUITY (note 3.2.2.4.6)		
Share capital (of which paid-up: €907,018)	907	623
Additional paid-in capital	69,730	84,608
Revaluation adjustments		
Reserves		
- Legal reserve		
- Statutory or contractual reserves		
- Untaxed reserves		
- Other reserves	87	56
Retained earnings (losses carried forward)	(15,228)	(36,963)
Net profit (loss) for the year	(53,681)	(61,873)
Investment subsidies	154	
Tax-driven provisions		
TOTAL I	1,969	(13,549)
OTHER EQUITY		
Proceeds from issues of equity securities		
Conditional advances (note 3.2.2.4.11)	14,507	14,507
TOTAL II	14,507	14,507
PROVISIONS		
Provisions for contingencies	140	1,594
Provisions for losses (notes 3.2.2.4.4 and 3.2.2.5)	1,029	939
TOTAL III	1,168	2,533
LIABILITIES*		
Debt		
- Convertible bonds		
- Other bonds		
- Bank loans and borrowings	46,098	44,017
- Bank overdrafts		
- Sundry loans and borrowings (note 3.2.2.4.5)	9,260	8,002
Advances and downpayments received on orders in progress		
Accounts payable (note 3.2.2.4.5)		
- Trade notes and accounts payable	6,526	8,387
- Tax and social security payables	5,704	5,177
Amounts payable on non-current assets and other		
Other payables		
ACCRUAL ACCOUNTS		
Prepaid income*		
TOTAL IV	67,587	65,583
Unrealized foreign exchange gains	6	5
TOTAL V	6	5
GRAND TOTAL (I+II+III+IV+V)	85,237	69,080
* Liabilities and prepaid income due in less than one year.	14,867	13,714

CASH FLOW STATEMENT

Cash flow statement (in thousands of euros)	Year ended Dec. 31, 2022	Year ended Dec. 31, 2021
NET OPERATING INCOME (EXPENSE)	(51,922)	(60,408)
ELIMINATION OF INCOME AND EXPENSES WITH NO CASH IMPACT		
Depreciation/amortization and provisions	10,077	15,548
Reversals of depreciation/amortization and provisions	(11,561)	(7,110)
Change in expenses on share-based payment plans		
Gains or losses on disposals of assets		
Operating items with no cash or financial impact	5	1,868
NON-OPERATING INCOME WITH AN IMPACT ON CASH OR CASH FLOW FROM OPERATIONS	2,074	
CASH FLOW FROM OPERATIONS BEFORE CHANGE IN WORKING CAPITAL	(51,327)	(50,102)
CHANGE IN WORKING CAPITAL	(3,047)	(10,047)
NET CASH FROM (USED IN) OPERATING ACTIVITIES	(54,375)	(60,149)
Acquisitions of property, plant and equipment and intangible assets	(1,748)	(1,763)
Proceeds from disposals of property, plant and equipment and intangible assets		
Other changes in non-current assets	(242)	(2)
NET CASH FROM (USED IN) INVESTING ACTIVITIES	(1,990)	(1,765)
Capital increase	69,046	54,940
Increase in repayable advances		
Repayment of repayable advances (including interest)		
New borrowings		10,000
Repayment of bank loans and borrowings (including interest)	(481)	(255)
Subscription of BSA share warrants		72
Subsidies received		349
Dividends paid		
Purchase/disposal of treasury shares*	37	15
NET CASH FROM (USED IN) FINANCING ACTIVITIES	68,601	65,121
CHANGE IN CASH AND CASH EQUIVALENTS	12,237	3,206
CASH AND CASH EQUIVALENTS AT BEGINNING OF YEAR	39,191	35,984
CASH AND CASH EQUIVALENTS AT END OF YEAR	51,427	39,191

* Under the liquidity agreement.

3.2.2 NOTES TO THE 2022 FINANCIAL STATEMENTS

Notes to the balance sheet for the year ended December 31, 2022, which shows total assets of €85.237 million, and to the income statement for the year ended December 31, 2022, presented in list form and showing total revenue of €0.345 million resulting in a net loss of €53.681 million.

The financial statements cover the 12-month period to December 31, 2022, and the comparative 12-month period to December 31, 2021.

The notes and tables presented below are an integral part of the financial statements for the year ended December 31, 2022 as approved by the Board of Directors on April 17, 2023. They are presented in thousands of euros unless otherwise stated.

3.2.2.1 SIGNIFICANT EVENTS DURING THE YEAR

Activity

On December 2, 2021, following the occurrence of quality issues affecting certain components of its prosthesis, Carmat decided to voluntarily suspend all implants of its Aeson® artificial heart on a temporary basis, both commercially and in clinical trials.

As expected, the Company achieved its objective of resuming implants in the fourth quarter of 2022, after having obtained in October the necessary regulatory approval to resume implants in a commercial setting and launch its EFICAS clinical study in France. It also resumed its production of artificial hearts at the end of the first quarter – both at its Bois d'Arcy facility and at its suppliers' facilities – incorporating modifications to the production process in order to avoid the recurrence of the quality issues identified. The Company also continued to prospect and train hospitals during the year, particularly in Germany and Italy (its two main target markets in the short term), so that they would be ready when implants resumed.
In November 2022, Carmat in fact performed its first post-suspension commercial implant of Aeson® in a German hospital, followed in December by a first implantation as part of the EFICAS study in France.

The Company is also continuing its talks with the FDA with a view to obtaining authorization to resume its early feasibility study (EFS) in the United States in 2023.

As a general remark, it should be noted that implants in a commercial setting and as part of clinical studies will resume gradually, as the Company's inventory of implantable prostheses is gradually replenished.

Net financial income (expense)

Sales amounted to €0.345 million in 2022, corresponding to the billing for two prostheses in November-December, including one in Germany in a commercial setting, and one in France within the framework of the EFICAS study. No revenue was recorded from January to October 2022 owing to the Company's decision to suspend Aeson® implantations in December 2021.

The net operating loss for the year came to €51.922 million, €8.486 million less than in 2021. This improvement reflects a tight rein on operating expenditure while implants were suspended for most of the year, along with a non-recurring expense of €8.1 million recorded in 2021 linked to the quality issues mentioned above.

The net financial expense of €3.848 million consists mainly of interest due on the bank loans and on the conditional advance received from Bpifrance. The research tax credit (CIR) for 2022 amounts to €2.062 million.

Overall, the net loss for the year was €53.681 million, compared with a net loss of €61.873 million in 2021.

Cash and financing

The Company had €51.427 million in cash and cash equivalents at December 31, 2022.

In 2022, Carmat completed two successive rounds of financing aimed at specialized and strategic investors as well as retail investors: one in April for a gross amount of €40.543 million and the other in December for a gross amount of €31.087 million. The Company also drew €0.700 million from the equity financing line put in place with Kepler Cheuvreux, which expired on March 27, 2022.

Operating activities generated a net cash outflow of €54.375 million in the year, while investing activities generated a net cash outflow of €1.990 million.

Based on its updated business plan and confirmed financial resources, the Company will be able to finance its operations until mid-October 2023 (for more details on the going concern assumptions adopted by the Board of Directors, see section 3.2.2.3).

The table below summarizes relevant changes in the Company's capital in 2022:

	Number of preference shares	Number of ordinary shares	Total number of shares	Change in share capital (€)
At December 31, 2021	**33,765**	**15,531,787**	**15,565,552**	**622,622.08**
Exercise of Kepler-Cheuvreux BSA share warrants		50,000	50,000	2,000.00
Vesting of AGAP 2020-01 free preference shares (March)	*120*		120	4.80
Vesting of AGAP 2019-02 free preference shares (April)	*400*		400	16.00
Vesting of AGAP 2019-03 free preference shares (April)	*200*		200	8.00
Fundraising (April)		*4,054,282*	4,054,282	162,171.28
Vesting of AGA 2021-01 free preference shares (June)		*39,000*	39,000	1,560.00
Conversion of AGAP 2018-02 free preference shares	*(550)*	*5,500*	4,950	198.00
Vesting of AGAP 2019-02 free preference shares (Sept.)	*220*		220	8.80
Vesting of AGAP 2019-03 free preference shares (Sept.)	*35*		35	1.40
Fundraising (December)		*2,960,710*	2,960,710	118,428.40
At December 31, 2022	***34,190***	***22,641,279***	**22,675,469**	**907,018.76**

3.2.2.2 SIGNIFICANT EVENTS AFTER THE REPORTING DATE

No events occurred after the reporting date that are liable to alter the presentation or the valuation of the financial statements as approved by the Board of Directors.

3.2.2.3 SIGNIFICANT ACCOUNTING POLICIES

General principles and conventions

The Company's financial statements have been prepared in accordance with French generally accepted accounting rules and principles as set out in the French General Chart of Accounts (ANC Standard 2014-03 on the Chart of Accounts issued by the French accounting standards-setter – *Autorité des Normes Comptable* [ANC]). The historical cost method is used as the basis for measuring accounting items.

The accounting conventions have been applied in accordance with the provisions of the French Commercial Code (*Code de commerce*), the Accounting Decree of November 29, 1983 and the CRC regulations concerning the new French General Chart of Accounts applicable at the end of the reporting period.

The financial statements for the 12 months ended December 31, 2022 have been prepared in accordance with French generally accepted accounting principles, including the principles of prudence and accrual-based accounting. They are presented on a going concern basis and accounting methods have been applied consistently from one period to the next.

- Going concern basis:

Given its stage of development, Carmat is not yet cash-flow positive, and based on its current business plan, does not expect to be self-financing for several years yet. At this stage, it is therefore dependent on external financing (capital increases, bonds and loans, subsidies and other types of financing).

Based on its updated business plan and its confirmed financial resources only, the Company can fund its operations until mid-October 2023 without any additional financing.[05]

Its confirmed financial resources notably include:

- €51.427 million in cash and cash equivalents available at December 31, 2022;
- €2.1 million in research tax credits for 2022 (half of which receivable as an advance payment in first-half 2023, and the remainder in October 2023);

05 Note that the flexible equity financing arrangement put in place with Kepler Cheuvreux in September 2018 expired on March 27, 2022.

- the initial portion (€1.3 million) of the EIC Accelerator grant[06], receivable in May 2023 at the latest.

Carmat's updated business plan for 2023 assumes that the Company will:
- meet all contractual maturities of its loans and repayable advances, and more generally all maturities of its operating payables;
- face no major disruptions in its production chain, resulting in the production and availability of enough implantable prostheses to ensure sales and the continuity of the planned clinical trials.

If the Company had no access to any additional financing, under its current business plan it would have a funding shortfall starting in October 2023, which could total around €15 million at December 31, 2023.

Based on the progress of its project, the results of its clinical trials, the CE marking obtained in December 2020, the resumption of implants in November 2022[07], the positive feedback it has received and the interest shown by the medical community in Aeson®, as well as all other information in its possession, the Company considers that, as things stand, there is a low probability that it will be unable to source the funds it needs to continue operating. However, given the current geopolitical, economic and financial environment, this funding risk cannot be totally ruled out. In the short term, the geopolitical and economic situation, and to some extent the ongoing Covid-19 health crisis, could make it more difficult for Carmat to secure the funding it needs.

The Company has an ongoing active investor relations policy targeting both French and international investors, and is constantly on the lookout for new financing opportunities (equity, government support and other types of financing). It believes that it can also count on the support of some of its main existing shareholders. It is also able, if necessary, to temporarily reduce its cash burn by implementing appropriate cost-saving measures.

In addition, as a winner of the European Union's EIC Accelerator program,[06] the Company was awarded optional equity financing of up to €15 million in December 2022, subject to an agreement between the two parties. As the optional equity financing is not yet confirmed, it has not been factored into the Company's funding horizon. This investment remains the subject of active discussions between Carmat and the EIC, which are expected to conclude before the end of first-half 2023. Receipt of the €15 million would extend Carmat's funding horizon until the end of December 2023.
Based on these factors, the Board of Directors believes that the going concern basis is appropriate.

Additional information

- Applied research and development costs

Research and development costs are recognized as expenses in the year in which they are incurred.

- Intangible assets

Patents, licenses and other intangible assets have been measured at their cost of acquisition, excluding the expenses incurred in acquiring them. The methods and periods of amortization used are as follows:

Category	Method	Useful life
Licenses and software	Straight line	1 to 3 years
Patents	Straight line	15 years

- Property, plant and equipment

The gross value of property, plant and equipment corresponds to their initial book value, inclusive of any expenditure required to render the items usable but excluding costs incurred in their acquisition.

The methods and periods of amortization used are as follows:

Category	Method	Useful life
Fixtures and fittings	Straight line	9 to 10 years
Technical plant	Straight line	3 to 10 years
Equipment and tooling	Straight line	2 to 6 years
Furniture	Straight line	8 years
IT equipment	Straight line	3 years

- Financial assets

OTHER LONG-TERM INVESTMENTS

Treasury shares acquired through the implementation of the liquidity agreement in force with Société Générale are recorded under financial assets at their purchase price. If necessary, an impairment loss is recognized based on the last official stock market price known prior to the end of the reporting period.

The gains or losses on disposals of treasury shares are recognized in non-recurring income or expense.

OTHER FINANCIAL ASSETS

These comprise:

- guarantee deposits paid, which are shown at face value;

06 As a winner of the European Union's EIC Accelerator program, in December 2022 Carmat was awarded blended funding of up to €17.5 million (including a non-dilutive grant of €2.5 million and optional equity financing of €15 million). The terms and conditions of the optional equity financing are to be defined at a later date. An initial €1.3 million of the grant will be received in May 2023 at the latest, with the remainder expected in 2024.

07 Following the voluntary temporary suspension of Aeson® implants, decided by the Company in December 2021.

- the unused balance of sums made available under the liquidity agreement for the acquisition of treasury shares.

- Receivables and payables

Receivables and payables are measured at face value. Where applicable, receivables are impaired via provisions to take into account any collection difficulties they may potentially face. Any provisions for impairment are determined by comparison between the acquisition value and the probable realizable value.

- Revenue

Sales are recognized when ownership is transferred to the customer.

- Translation differences and foreign exchange gains and losses

Payables and receivables in foreign currencies are valued at the year-end exchange rate. Any resulting translation differences are recorded in the balance sheet under "Unrealized foreign exchange gains" or "Unrealized foreign exchange losses", as appropriate. A provision is booked for the full amount of any unrealized foreign exchange losses. Unrealized gains are not recorded in the income statement.
Foreign exchange gains and losses on trade receivables and payables are recognized in operating income.

- Inventories

According to the French Commercial Code and Chart of Accounts (Article 211-7), inventories are assets that meet the following criteria:

- they are identifiable items that will generate future economic benefits, are controlled by the company, and their cost can be measured reliably;

- they are held for sale in the ordinary course of business or in the form of materials or supplies to be consumed in the production process or in the rendering of services.

The Company's inventories and work in progress comprise goods, raw materials and other supplies, semi-finished and finished goods, and work in progress in the production process.

Inventories and work in progress were recognized as an asset on Carmat's balance sheet for the first time on December 31, 2020. They were previously expensed in the year in which they were purchased or produced, as the Company was still in the clinical phase and could not expect them to generate any future economic benefits.

Inventories and work in progress are measured at the reporting date using the methods set out in the French Chart of Accounts. Items are monitored individually and are clearly identifiable. An impairment provision is taken if their realizable value falls below their carrying amount.

Impairment is calculated taking the following factors into account:

- the life cycle of items of inventory and work in progress (obsolete or short shelf-life items, damaged items or items that do not meet the requisite quality standards, etc.);

- the different outlook for inventory items, distinguishing between items intended for sale and items intended for other, non-revenue-generating activities (e.g., clinical trials, training, tests, etc.). Inventories intended for other activities are fully impaired.

When the recoverable amount at year-end (market value for finished goods and goods for resale and value in use for work in progress and raw materials) is less than the carrying amount, a provision for impairment is recognized for the difference.
Impairment provisions are recognized by inventory category. A breakdown is provided in note 3.2.2.4.3.

- Cash in euros

Cash on hand or at bank is recorded at face value.

- Cash in foreign currencies

Cash in foreign currencies is converted into euros at the exchange rate prevailing at the reporting date. Translation differences are recognized directly in profit or loss for the period as foreign exchange gains and losses.

- Cash and cash equivalents

For the purposes of the cash flow statement, cash and cash equivalents are defined as being:
- the asset items "Cash instruments" and "Cash and cash equivalents";
- less the "Bank overdrafts" liability item, to the extent that cash instruments are available in the very short term and do not present a risk of a loss in value in the event of a change in interest rates. An analysis of cash according to this definition is provided in the footnote of the cash flow statement.

- Repayable advances made by public bodies

Advances received from public bodies to finance the Company's operations and which are subject to repayment are shown under liabilities under "Other equity – Conditional advances". The corresponding interest is shown in balance sheet liabilities under "Sundry loans and borrowings".

- Subsidies

Subsidies received are included in balance sheet liabilities

at the time of payment under "Tax and social security payables".

When the milestones defined in the relevant contracts are achieved, they are recorded:
- either directly in income for the period as an operating subsidy for the portion covering operating expenses;
- or in the balance sheet as an investment subsidy for the portion relating to investments; a portion will then be recorded as non-recurring income as and when the investments concerned by the subsidy are amortized.

- Retirement benefits

Future payments in respect of benefits granted to employees are measured according to an actuarial method (method 2 based on IAS 19 as amended published in June 2011, in compliance with ANC recommendation no. 2013-02 dated November 7, 2013), taking account of assumptions concerning changes in salaries, retirement age and mortality. The resulting amounts are then discounted to present value and entitlement capped according to the collective bargaining agreement for the metallurgy industry. These obligations are covered by provisions in the balance sheet liabilities.

- Provisions for losses

In addition to the legal guarantee of conformity provided for in Article 1604 of the French Civil Code and the warranty against hidden defects provided for in Article 1641 of said Code, the Company may grant customers, within the framework of its commercial offer, a commercial warranty which consists of the free supply of a certain number of replacement components, under certain limited contractually defined terms and for a contractually defined limited period of time.
The Company therefore records a provision for losses at the time the product is sold, in accordance with the matching principle for income and expenses set out in the French Chart of Accounts. The amount of the provision is based on the contractually defined terms of the guarantee and statistical considerations.
The provision is subsequently written back as necessary, to the extent of the expenses actually incurred in connection with the implementation of the guarantee and/or when the guarantee is extinguished.

A 20% social security levy on the value of the free shares is payable by the Company when the shares are fully vested by their beneficiaries. The Company therefore records a provision for expenses prorated over the vesting period (i.e., the period between the provisional grant date and the final vesting date of the shares). The provision is reversed when the social security levy is paid.

- Sub-contracting expenses

The progress of third-party sub-contract agreements for certain research services is assessed at the end of each reporting period in order to allow the cost of services already rendered to be recorded under accrued expenses.

- Share issue costs

In application of the reference method (ANC 2018-01), share issue costs are recorded in the balance sheet as deductions from the share premium.

- Borrowing costs

Borrowing costs are expensed as incurred.

3.2.2.4 ADDITIONAL INFORMATION ON THE BALANCE SHEET

- 3.2.2.4.1 Movements in non-current assets

(in thousands of euros)	Gross value at start of period	Increases	
		Line to line transfers	Acquisitions
Licenses, patents and similar rights*	2,073		
Intangible assets not yet available for use			
TOTAL	2,073		
Technical plant, equipment and industrial tooling**	12,244	749	504
General plant, sundry fixtures and fittings	2,647	223	
Office and IT equipment, furniture	526	19	
Property, plant and equipment in progress	1,429		1,243
TOTAL	16,846	991	1,748
Other financial assets***	533		3,313
TOTAL	533		3,313
GRAND TOTAL	19,451	991	5,061

(in thousands of euros)	Decreases		Gross value at end of year	Revaluation of original value at end of year
	Line to line transfers	Disposals		
Licenses, patents and similar rights*			2,073	
Intangible assets not yet available for use				
TOTAL			2,073	
Technical plant, equipment and industrial tooling**		691	12,807	
General plant, sundry fixtures and fittings			2,870	
Office and IT equipment, furniture			545	
Property, plant and equipment in progress	991	174	1,508	
TOTAL	991	864	17,730	
Other financial assets***		3,109	737	
TOTAL		3,109	737	
GRAND TOTAL	991	3,973	20,540	

* This item includes a sum of €411,284, recognized in respect of the share of the contribution in kind of €960,000 made on September 30, 2008, corresponding to the contribution of patents.
** The item includes a sum of €548,716 recognized in respect of the share of the contribution in kind of €960,000 made on September 30, 2008, corresponding to the contribution of equipment and tooling.
*** This item includes the 8,103 treasury shares held in connection with the liquidity agreement, valued at €0.085 million, the liquidities not invested in treasury shares as at the end of the period under the liquidity agreement for €0.045 million, and guarantee deposits of €0.608 million, comprising deposits under premises lease contracts.

- 3.2.2.4.2 Movements in depreciation and amortization

Positions and movements for the year (in thousands of euros)	Value at start of period	Additions for the period	Decreases Reversals	Value at end of period
Licenses, patents and similar rights	1,985	88		2,073
TOTAL	1,985	88		2,073
Technical plant, equipment and industrial tooling	8,253	1,343	691	8,905
General plant, sundry fixtures and fittings	1,424	248		1,672
Office and IT equipment, furniture	387	67		455
TOTAL	10,063	1,659	691	11,031
GRAND TOTAL	12,048	1,747	691	13,104

- 3.2.2.4.3 Movements in inventories

Inventories – gross value (in thousands of euros)	Value at start of period	Increases	Decreases	Value at end of period
Raw materials, supplies	4,682	3,629	2,391	5,920
Work in progress – goods	2,273	7,227	8,693	807
Semi-finished and finished goods	16,775	1,891	3,518	15,147
Goods for resale	3,246	3,206	258	6,195
TOTAL	26,976	15,953	14,860	28,069

Inventories – impairment[1] (in thousands of euros)	Value at start of period	Additions for the period	Decreases Reversals	Value at end of period
Raw materials, supplies	450	353	445	358
Work in progress – goods	868	500	868	500
Semi-finished and finished goods	11,316	6,669	8,209	9,775
Goods for resale	-	-	-	-
TOTAL	12,633	7,522	9,521	10,634

(1) Impairment in 2022 breaks down by as follows by type:
- impairment related to the life cycle of items of inventory (€6.6 million);
- residual impairment on that recognized in 2021 following quality issues (€1.1 million);
- impairment related to intended use (€2.9 million).*

* A 10-point change in the portion of inventories intended for non-revenue-generating activities (clinical trials, training, R&D tests) would have a €0.9 million impact on the amount of impairment related to estimated intended use.

- 3.2.2.4.4 Movements in provisions

Provisions (in thousands of euros)	Value at start of period	Increases Additions	Decreases Utilized amounts	Decreases Surplus amounts	Value at end of period
Sundry risks*	1,816	21	1,235	498	102
Foreign exchange losses	8	37	8		37
Pension and similar obligations**	475		16	123	336
Payroll taxes on AGAP free preference shares***	234	553	81	13	693
TOTAL	2,533	611	1,341	635	1,168
Impairment of inventories and work in progress	12,633	7,522	2,638	6,883	10,634
Impairment of other receivables	119	264		63	319
TOTAL	12,752	7,786	2,638	6,947	10,953
GRAND TOTAL	15,285	8,397	3,979	7,582	12,121
Of which operational additions and reversals:		8,397	3,979	7,582	
Of which financial additions and reversals:					

* In 2022, this amount essentially comprised: provisions for employee disputes, provisions for bad debt, the provision for commercial guarantees (see note 3.2.2.4.11).
** See note 3.2.2.6.
*** See note 3.2.2.4.11.

- 3.2.2.4.5 Receivables and payables by maturity

Receivables by maturity (in thousands of euros)	Gross amount	Due within 1 year	Due beyond 1 year
Trade receivables	394	394	
TOTAL	394	394	

Other receivables (in thousands of euros)	Gross amount	Due within 1 year	Due beyond 1 year
Social security receivables	80	80	
Income tax[1]	2,070	2,070	
Value-added tax	1,222	1,222	
Other taxes, duties and levies			
Sundry receivables	212	212	
TOTAL	3,585	3,585	

[1] Income tax receivable corresponds to the research tax credit for 2022.

Payables by maturity (in thousands of euros)	Gross amount	Due within 1 year	Due in 2 to 5 years	Due beyond 5 years
Bank loans and borrowings[1]	46,097	2,641	43,456	
Interest due on current account	1	1		
Sundry loans and borrowings[2]	9,260		1,538	7,722
Trade notes and accounts payable	6,526	6,526		
Staff and related payables	3,330	3,330		
Social security payables	2,231	2,231		
Value-added tax				
Other taxes, duties and levies	138	138		
TOTAL	67,582	14,867	44,994	7,722

[1] This amount corresponds to bank loans (see details below) and accrued interest payable to banks.
[2] This amount corresponds to the accrued interest expected at year-end on the repayable advances from Bpifrance (details in section 3.2.2.6).

Breakdown of bank loans (in thousands of euros)[3]	Gross amount	Due within 1 year	Due beyond 1 year*
EIB loan – principal	30,000		30,000
EIB loan – accrued interest	5,966	111	5,856
Bpifrance government-guaranteed loan – principal[4]	5,000	1,250	3,750
Bpifrance government-guaranteed loan – accrued interest[4]	9	9	
BNP Paribas government-guaranteed loan – principal[4]	5,115	1,264	3,850
BNP Paribas government-guaranteed loan – accrued interest[4]	6	6	
TOTAL	46,097	2,641	43,456

[3] Loan from the European Investment Bank (EIB): the EIB loan contract provides for certain information and operational commitments (such as limitations on authorized debt, authorized external growth operations, transfers of assets, etc.), the non-compliance of which would allow the EIB, if it deemed it necessary, to demand an early repayment of the loan. The occurrence of certain changes in the shareholding structure or a change in management not approved beforehand by the EIB would also allow the latter, if deemed necessary following discussions with the Company, to demand an early repayment of the loan. To date, Carmat complies with all of the commitments required by the EIB.

[4] In view of the fact that maturity has been extended for a further five years from the initial 12-month repayment period.

* Including €13.520 million due in January 2024 under the first tranche of the EIB loan.

- 3.2.2.4.6 Share capital

Composition of the share capital

Classes of shares	Par value in euros	Number of shares				
		Opening	Created	Canceled	Redeemed	Closing
Ordinary shares	0.04	15,531,787	7,109,492			22,641,279
Preference shares	0.04	33,765	975	550		34,190
TOTAL		15,565,552	7,110,467	550		22,675,469

The capital increases further to the exercise of share warrants (BSA) by Kepler-Cheuvreux in 2022 resulted in the creation of 50,000 ordinary shares, with a par value of €0.04.

The increase in capital resulting from the April 2022 fundraising for €40.5 million led to the creation of 4,054,282 ordinary shares, with a par value of €0.04 per share.

The capital increases resulting from the conversion in 2022 of 550 AGAP 2018-02 free preference shares led to the creation of 5,500 ordinary shares with a par value of €0.04 per share, and to the cancellation of 550 preference shares, also with a par value of €0.04 per share.

The capital increases resulting from the vesting during the year of 120 AGAP 2020-01, 400 AGAP 2019-02, 200 AGAP 2019-03, 39,000 AGA 2021-01 and 255 AGAP 2019 (breaking down as 220 AGAP 2019-02 and 35 AGAP 2019-03) gave rise to the issuance of 39,000 ordinary shares and 975 preference shares, each with a par value of €0.04.

The increase in capital resulting from the December 2022 fundraising for €31.1 million led to the creation of 2,960,710 ordinary shares, with a par value of €0.04 per share.

Changes in equity

Changes in equity	Number of shares	Capital	Additional paid-in capital	Expenses	Reserves	Retained earnings (losses carried forward)	Profit (loss)	Investment grants	Equity
At December 31, 2021	15,565,552	622,622	88,250,752	(3,642,461)	56,077	(36,963,432)	(61,872,664)		(13,549,107)
Allocation of 2021 net loss			(61,872,664)				61,872,664		
Transfer of retained earnings (losses carried forward) to additional paid-in capital(1)			(21,735,626)			21,735,626			
Net profit (loss) for the period							(53,681,491)		(53,681,491)
Exercise of Kepler-Cheuvreux BSA share warrants*	50,000	2,000	700,316						702,316
Vesting of AGAP 2020-01 free preference shares*(2)	120	5			(5)				
Vesting of AGAP 2019-02 free preference shares*(2)	400	16			(16)				
Vesting of AGAP 2019-03 free preference shares*(2)	200	8			(8)				
Settlement of previous fundraisings expenses			6,000	6,000					12,000
Fundraising (April)*	4,054,282	162,171	40,380,649	(1,716,020)					38,826,800
AGA 2022 June award – reserves			(12,800)		12,800				
AGA 2022 February award – reserves			(1,392)		1,392				
AGAP 2022 June award – reserves			(18,616)		18,616				
Vesting of AGA 2021-01 free shares*(2)	39,000	1,560			(1,560)				
Capital subsidy								242,464	242,464
Investment subsidy recognized in income								(88,787)	(88,787)
Conversion of AGAP 2018-02 free preference shares*	4,950	198			(198)				
Vesting of AGAP 2019-02 free preference shares*(2)	220	9			(9)				
Vesting of AGAP 2019-03 free preference shares*(2)	35	1			(1)				
Fundraising (December)*	2,960,710	118,428	30,969,027	(1,583,019)					29,504,436
At December 31, 2022	22,675,469	907,019	76,665,645	(6,935,501)	87,088	(15,227,807)	(53,681,491)	153,677	1,968,631

* Capital increase.

(1) Allocation of losses carried forward of €21,735,626 to additional paid-in capital, decided at the Shareholders' Meeting of May 11, 2022.

(2) See details in section 5.

- 3.2.2.4.7 Stock options

2018 stock options

On the authorization of the Combined Shareholders' Meeting of April 5, 2018, the Board of Directors decided, on December 3, 2018, to grant 46,000 options to subscribe to ordinary shares, breaking down as follows: 23,000 A options and 23,000 B options. These options entitle holders to subscribe to 46,000 new shares, following the achievement of attendance and/or performance criteria, representing 0.20% of the existing capital as of December 31, 2022, at a price of €20.35 per share, share premium included.

These options expire on December 3, 2028.

2019 stock options

On the authorization of the Combined Shareholders' Meeting of March 28, 2019, the Board of Directors decided, on April 1, 2019, to grant 46,000 options to subscribe to ordinary shares. These options entitle holders to subscribe to 46,000 new shares, following the achievement of attendance and/or performance criteria, representing 0.20% of the existing capital as of December 31, 2022, at a price of €22.70 per share, share premium included.

These options expire on April 1, 2029.

- 3.2.2.4.8 Preference shares (AGAP)

The tables in section 5.2.5 summarize the AGAP and AGA awarded, lapsed, vested and yet to vest, as well as the AGAP already converted into ordinary shares, those not yet converted and the maximum number of new ordinary shares that could be issued upon their conversion.

The performance conditions associated with each class of AGAP and AGA are also described in that section.

Table of AGAP free preference shares and AGA free shares

	AGAP/AGA awarded	AGAP/AGA expired	AGAP/AGA vested	AGAP vested and already converted into ordinary shares	AGAP to be converted into ordinary shares	Number of ordinary shares issued	Maximum number of ordinary shares yet to be issued*	Net number of new shares that may be created**
AGAP 2017-01 (SM of April 27, 2017)	320		320	320		32,000		
AGAP 2017-02 (SM of April 27, 2017)	2,000		2,000	2,000		40,000		
AGAP 2017-03 (SM of April 27, 2017)	3,490		3,490	2,230	1,260	116,950	59,400	58,320
AGAP 2018-01 (SM of April 5, 2018)	580		580	200	380	20,000	38,000	37,620
AGAP 2018-02 (SM of April 5, 2018)	11,500	200	11,300	1,150	10,150	14,500	151,750	141,600
AGAP 2018-03 (SM of April 5, 2018)	740		740		740		55,500	54,760
AGAP 2019-01 (SM of March 28, 2019)	8,000	120	7,260		7,880		78,800	71,540

	AGAP/AGA awarded	AGAP/AGA expired	AGAP/AGA vested	AGAP vested and already converted into ordinary shares	AGAP to be converted into ordinary shares	Number of ordinary shares issued	Maximum number of ordinary shares yet to be issued*	Net number of new shares that may be created**
AGAP 2019-02 (SM of March 28, 2019)	8,000	120	7,880		7,880		78,800	70,920
AGAP 2019-03 (SM of March 28, 2019)	3,600	60	3,540		3,540			
AGAP 2020-01 (SM of March 30, 2020)	2,360		2,160		2,360		236,000	233,840
AGAP 2020-02 (SM of March 30, 2020)	900		820		900		90,000	89,180
AGA 2021-01 (SM of May 12, 2021)	39,000		39,000	N/A	N/A	39,000		
AGA 2021-02 (SM of May 12, 2021)	58,500			N/A	N/A		58,500	58,500
AGA 2021-03 (SM of May 12, 2021)	117,500			N/A	N/A		117,500	117,500
AGA 2022-01 (SM of May 12, 2022)	5,980			N/A	N/A		5,980	5,980
AGA 2022-02 (SM of May 12, 2022)	8,970			N/A	N/A		8,970	8,970
AGA 2022-03 (SM of May 12, 2022)	19,850			N/A	N/A		19,850	19,850
AGAP 2022 (SM of May 11, 2022)	4,654				4,654		465,400	465,400
AGA June 22-01 (SM of May 11, 2022)	97,587			N/A	N/A		97,587	97,587
AGA June 22-02 (SM of May 11, 2022)	97,587			N/A	N/A		97,587	97,587
AGA June 22-03 (SM of May 11, 2022)	124,816			N/A	N/A		124,816	124,816
TOTAL	615,934					262,450	1,784,440	1,753,970

* For AGAP: assuming that all AGAP provisionally allocated and not yet expired are converted into ordinary shares, and that all AGAP not yet convertible will meet all performance criteria. For AGA: assuming that all AGA provisionally allocated are vested by their beneficiaries. The shares already issued are deducted in both cases.
** Representing a maximum dilution of 7.7% compared to the existing capital.

- 3.2.2.4.9 Share warrants (BSA)

Summary table of BSA share warrants

	Issued	Sub-scribed	Expired	Reserve	Exer-cised	Balance	% of existing share capital	Expiry date
Kepler-Cheuvreux BSA (Sept. 2018 contract – second tranche – SM of March 30, 2020)	650,000	650,000	460,000		190,000			March 27, 2022
BSA 2017 (SM of April 27, 2017)	12,000	12,000				12,000	0.05%	May 15, 2027
BSA 2018 (SM of April 5, 2018)	10,000	10,000				10,000	0.04%	June 11, 2028
BSA 2019 (SM of March 28, 2019)	6,000	6,000				6,000	0.03%	June 24, 2029
BSA 2021 (SM of May 12, 2021)	12,000	12,000				12,000	0.05%	June 14, 2031

- 3.2.2.4.10 Company founder share warrants (BCE)

Summary table of BCE share warrants

	Issued	Sub-scribed	Expired	Reserve	Exer-cised	Balance	% of existing share capital	Expiry date
BCE 2012-1 SM of April 26, 2012	56,500	56,500	56,500	0	0	0		June 27, 2022
BCE 2012-2 SM of April 26, 2012	6,700	6,700	6,700	0	0	0		Nov. 8, 2022

- 3.2.2.4.11 Other balance sheet details

Conditional advances

The conditional advances item comprises repayable advances received from Bpifrance, the total amount of which was €14.507 million as at the end of the financial year. Note 3.2.2.6 below specifies the repayment conditions of these advances.

They are interest-bearing at the contracted rate of 5.59%. The interest accrued, calculated using the capitalization method, stood at €9.260 million at the period-end and appears in liabilities under “Sundry loans and borrowings”.

Accrued income

Amount of accrued income included in the following balance sheet items (in thousands of euros)	Value
Other receivables	246
Subsidies receivable	20
Total	**266**

Accrued expenses

Amount of accrued expenses included in the following balance sheet items (in thousands of euros)	Value
Royalties	5
Bank loans and borrowings	6,098
Sundry loans and borrowings	9,260
Trade notes and accounts payable	4,497
Tax and social security payables	4,709
Total	**24,569**

Prepaid expenses and deferred income

Prepaid expenses (in thousands of euros)	Value
Operating expenses	1,248
Total	**1,248**

Prepaid expenses comprise rent, software license fees and insurance premiums for the period after December 31, 2022.

Prepaid income (in thousands of euros)	Value
Operating income	None
Total	**None**

Information on related companies

The following balance sheet items include sums in connection with related companies:

Trade notes and accounts payable* (in thousands of euros)	246

* Corresponding to invoices not received.

The following related company is taken into account:

- Matra Électronique.

Provisions for losses

- AGA/AGAP

The preference share plan (AGAP 2022) of June 27, 2022 provided for the provisional allocation of 4,654 preference shares with a vesting date of June 27, 2023.

The free share plan (AGA 2022-01, AGA 2022-02 and AGA 2022-03) of February 14, 2022 provided for the provisional allocation of 34,800 ordinary shares. The vesting dates for these ordinary shares are set at February 14, 2023 for the AGA 2022-01, February 14, 2024 for the AGA 2022-02, and February 14, 2025 for the AGA 2022-03.

The free share plan (AGA 2022-01, AGA 2022-02 and AGA 2022-03) of June 27, 2022 provided for the provisional allocation of 319,990 ordinary shares. The vesting dates for these ordinary shares are set at June 27, 2023 for the AGA 2022-01, June 27, 2024 for the AGA 2022-02, and June 27, 2025 for the AGA 2022-03.

At December 31, 2022, the Company booked a provision for losses relating to the AGA 2021 plan (€0.202 million), the AGA 2022 plan (€0.205 million) and the AGAP 2022 plan (€0.286 million), representing the employer contribution of 20% pro rata over the vesting period and based on the estimated value of the ordinary shares able to be converted at the end of the vesting period.

The calculation assumptions made were as follows:
- determination of an estimated percentage of achievement for each of the performance criteria (for the AGAP 2022 plan);
- value of an ordinary share: €10.43;
- employer contribution rate: 20%.

- Commercial warranty

As part of its commercial offer, the Company may grant customers a one-year “commercial warranty” (free replacement of a certain number of replacement components), under certain limited contractually defined conditions.

The corresponding provision amounts to €0.022 million at December 31, 2022.

3.2.2.5 ADDITIONAL INFORMATION ON THE INCOME STATEMENT

- Sales

The Company recorded revenue of €0.345 million in 2022, This corresponds to the commercial sale of an Aeson® system and to the sale of an Aeson® system within the framework of the EFICAS clinical study (innovation package).

Revenue (in thousands of euros)	Value
Net revenue	345
Total	**345**

- Operating subsidies

The Company recognized €0.132 million in operating subsidies, corresponding to:
- €0.025 million in subsidies received in respect of employer apprenticeship programs;
- €0.107 million representing the operating portion of the first tranche of the €1.4 million "CAP 23" subsidy awarded as a winner of the "Industrial Recovery Plan – Strategic Sectors" call for projects. This non-dilutive funding contributes to the "CAP 23" industrialization program, designed to scale up production of the Aeson® heart for its commercial launch.

- Investment subsidies

The Company recognized a gross amount of €0.242 million corresponding to investments under the "CAP 23" subsidy. The Company transferred €0.089 million to income in the year.

- Applied research and development costs

Research and development costs are recognized under expenses, and amounted to €14.923 million in 2022.

- Research tax credit and innovation tax credit

The income statement for the year shows a tax credit of €2.062 million corresponding to the amount of the research tax credit calculated for 2022.

- Statutory Auditor's fees

The total amount of Statutory Auditor's fees for the year was €0.254 million excluding taxes and disbursements, breaking down as:

Total amount excl. taxes (in thousands of euros)	PwC
Statutory Auditor's fees	114
Non-audit services fees	
- Non-audit services required by law	23
- Other non-audit services	117
Total	**254**

- Non-recurring income and expenses

Description (in thousands of euros)	Dec. 31, 2022	Dec. 31, 2021
Non-recurring income		
- Various adjustments	92	5
- Disposal of assets		
- Disposal of treasury shares	142	41
Total	234	46
Non-recurring expenses		
- Various adjustments	50	
- Disposal of treasury shares	90	57
- Fines and penalties		
- Non-recurring depreciation	67	
Total	**208**	**57**

Net non-recurring income (expense) results mainly from disposals of treasury shares carried out under the liquidity agreement.

- Information on related companies

The following income statement items include sums in connection with related companies:

Other purchases and external charges (in thousands of euros)	626

The following related company is taken into account:

- Matra Électronique.

3.2.2.6 FINANCIAL COMMITMENTS AND OTHER INFORMATION

- Financial commitments

Commitments given

- Bpifrance repayable advance

A repayable advance totaling €14.507 million was received

from Bpifrance, of which the final €1.451 million tranche was received in June 2019. The corresponding accrued interest amounts to €9.260 million at the end of the financial year. This amount is repayable subject to achieving cumulative revenue of at least €38.000 million. The Bpifrance agreement provides for supplementary payments if certain conditions are met, so that the total amount repayable could exceed the amount of the advance initially granted, up to a ceiling of €50.000 million.

- Royalties agreement with Professor Alain Carpentier and Matra Défense

On June 24, 2008 the Company signed a royalties agreement with Professor Alain Carpentier and Matra Défense, who still held shares at December 31, 2022. Under this Agreement, the Company undertakes to pay to Professor Alain Carpentier and Matra Défense 2% of the net sales proceeds of the Carmat artificial heart manufactured and distributed by Carmat SA, this amount to be divided between the two beneficiaries in proportion to their respective share in the capital of the Company on the date of its creation. These royalties will be payable every six months within 30 days of the end of each six-month period, commencing after the first marketing of the Carmat artificial heart post-CE marking in Europe and FDA marketing authorization in the United States, and ending upon expiration of the patents shown in the appendices to the agreement.

The Company is also authorized to repurchase at any time the right to benefit from these royalties for a sum of €30.000 million less any royalties already paid under the agreement, with this total sum being shared between the two beneficiaries in proportion to their respective shares in the share capital of the Company on the date it was established. This amount of €30.000 million is indexed to the Producer Price Index of the Business Services Industry – euro zone orthopedic and orthopedic equipment.

The rights allocated to Professor Alain Carpentier and to Matra Défense in this way are non-transferable.

No royalties were paid by the Company or are due in respect of 2022 under this Agreement.

- Royalties agreement with the European Investment Bank (EIB)

In addition, the Company has signed a royalties agreement with the EIB providing for the payment of additional compensation to the EIB depending on the commercial performance of the Company. This agreement is valid for 13 years from the year during which the cumulative sales of Carmat reach €500,000. The royalty rate varies from 0.25% to 1.50% depending on the Company's annual sales. The Company can decide to terminate the royalties agreement at any time by paying a lump sum (net of any royalties already paid), based on the amount borrowed and the year during which the decision is taken.

Upon the occurrence of certain events (in particular should the EIB demand the early repayment of the loan or should a new shareholder reach 33% of the voting rights of Carmat), the EIB could, if deemed necessary, demand from Carmat an advance payment of royalties up to a certain percentage of the amount of the loan effectively used (this percentage would range from 100% of the borrowed amount if the event occurs during the first four years of the financial contract to 160% if the event occurs after the eleventh year).

An amount of €0.005 million due for 2022 under this royalties agreement was recognized in 2022.

Commitments received

None.

Pension and retirement obligations

The Company has not signed a specific agreement on retirement obligations. These are therefore limited to the statutory retirement indemnity, taking into account the cap on entitlement pursuant to the collective bargaining agreement for the metal industry.
In application of the reference method 2 in ANC recommendation 2013-02, the provision for retirement obligations has been booked at December 31, 2022.

The calculation assumptions made were as follows:

- for each employee, the actuarial value of future benefits (AVFB) was allocated evenly over the vesting period. The AVFB is the one-off premium payable at the valuation date which, capitalized at the discount rate used, would allow the future benefit obligations to be paid were the actuarial assumptions to be met;

- retirement on the initiative of the member of staff, at 64 years (non-management) or 67 years (management);

- annual salary increases of between 2.5% and 3.5%, depending on the age group;

- employee turnover depending on the age of the employees;

- discount rate of 3.6% per annum (versus the rate of 0.90% used at December 31, 2021).

The overall amount of the provision was €0.335 million at the end of the period, a decrease of €0.140 million on the previous period.

- Other information

Information on executives

ADVANCES AND LOANS TO MANAGEMENT

No loans or advances were made to executives of the Company during the financial year, in accordance with the provisions of Article R.123-197 of the French Commercial Code.

MANAGEMENT COMPENSATION

Total compensation paid to members of the Board of Directors in their capacity as directors (formerly known as "directors' fees") amounted to €0.316 million for the year and is shown within "Other expenses" in the income statement.
The total compensation paid to the Chairmen of the Board of Directors and the Chief Executive Officer of the Company was €0.699 million for the financial year and breaks down as follows:

Description (in thousands of euros)	2022	2021
Gross salaries	534	525
Benefits in kind	10	10
Bonuses	155	263
Total compensation	**699**	**798**

Increases and decreases in future tax liabilities

Description of temporary differences (in thousands of euros)	Value
Tax loss carryforwards	433,159

This amount comprises:

- the tax loss carried forward made during previous periods and available at January 1, 2022, in the sum of €374.240 million;

- the tax loss made in the 2022 financial year in the sum of €58.919 million.

Headcount at year end

Salaried staff	2022	2021
Managers	132	126
Supervisors and technicians	36	26
Administrative employees	11	8
Total*	**179**	**160**

* Excluding temporary workers.

3.3 INTERNAL CONTROL AND RISK MANAGEMENT PROCEDURES RELATING TO THE PREPARATION AND PROCESSING OF ACCOUNTING AND FINANCIAL INFORMATION

One of the objectives of internal control is to prevent and control the risks of error and fraud in the accounting and financial fields. In this context, Carmat set up a system to provide reasonable assurance of the reliability of its produced and published accounting and financial information.

The accounting and financial processes correspond to all the activities enabling the economic operations of the Company to be translated into accounting and financial information.

The two key processes that affect the reliability of Carmat's accounting and financial information are:

- the process of producing accounting and financial information (including the accounting closing process);
- the process of publishing accounting and financial information.

The Company's objectives in this area are:

- the production of reliable information that complies with legal and regulatory requirements;
- the prevention and detection of accounting and financial fraud or irregularities;
- the preservation of the assets of the Company;
- the application of the guidelines given by the Board of Directors;

- the reliability of the information used internally for monitoring and control purposes;
- the reliability of the financial statements and other financial information communicated to the financial markets.

PRODUCTION OF ACCOUNTING INFORMATION

Accounting is carried out by Carmat's accounting team, assisted by an accounting firm that has been supporting the Company for many years.

Payroll is provided by an external firm. Carmat is also assisted as needed by renowned specialist firms, particularly for tax & legal and actuarial matters.

For the production of its financial statements, Carmat relies mainly in terms of information systems on its ERP (Enterprise Resource Planning), and on more specific software used by its accounting firm; as well as a set of policies, operating procedures and calendar of operations, which are updated regularly.

The organization set up aims in particular to ensure segregation of duties, thereby limiting the risk of error and fraud, and to allow an appropriate level of control, especially on the most sensitive points.

It is specified that Carmat draws up its financial statements according to French accounting standards and does not draw up any consolidated financial statements.

The financial statements are prepared and reviewed monthly by the Finance Department, with the accounting firm. A summary of the net financial income (expense), including a comparison with the budget approved annually by the Board of Directors, is regularly presented to the Company's management team. The various departments also receive regular financial reporting statements relating to their area of activity, prepared by management control teams. A financial update is presented by the Chief Financial Officer at each Board of Directors' meeting.

As Carmat is not yet self-financing, particular attention is paid to the Company's financing plan, cash flow forecasts and liquidity risk. In this context, the Company's multi-year business plan is updated and presented to the Board of Directors, at least once a year (and more frequently if necessary), and the financing strategy and options are regularly shared and discussed with the Board of Directors.

PUBLICATION OF ACCOUNTING AND FINANCIAL INFORMATION

The Company publishes its indicative financial calendar for the current year in January.

The Company publishes its results semi-annually and annually. The annual financial report is integrated into the Universal Registration Document (formerly Registration Document) which is made available to shareholders and the public, within the legal deadlines.

The accounting and financial information published semi-annually and annually is prepared by Carmat's Administration and Finance Department, under the supervision of the Chief Executive Officer and is then reviewed by the Audit Committee, followed by the Board of Directors.

In addition, Carmat's Statutory Auditors certify the Company's annual financial statements and review the interim financial statements.

All press releases published by the Company, whether or not they are of an accounting or financial nature, are validated beforehand by the Company's Chief Executive Officer.

Carmat is assisted as needed by specialized advisers to ensure that the information it publishes complies with the legal and regulatory requirements.

3.4 STATUTORY AUDITOR'S REPORT ON THE 2022 FINANCIAL STATEMENTS

This is a free translation into English of the Statutory Auditor's report issued in French and is provided solely for the convenience of English speaking readers. This report includes information specifically required by European regulations or French law, such as information about the appointment of Statutory Auditors. This report should be read in conjunction with, and construed in accordance with, French law and professional auditing standards applicable in France.

Carmat
36 avenue de l'Europe
Immeuble l'Etendard Energy III
78140 Vélizy Villacoublay, France

OPINION

To the Shareholders,

In compliance with the engagement entrusted to us by your Shareholders' Meeting, we have audited the accompanying financial statements of Carmat for the year ended December 31, 2022.

In our opinion, the financial statements give a true and fair view of the assets and liabilities and of the financial position of the Company at December 31, 2022 and of the results of its operations for the year then ended in accordance with French accounting principles.

BASIS FOR OPINION

Audit framework

We conducted our audit in accordance with professional standards applicable in France. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Our responsibilities under these standards are further described in the "Responsibilities of the Statutory Auditor relating to the audit of the financial statements" section of our report.

Independence

We conducted our audit engagement in compliance with the independence rules provided for in the French Commercial Code (Code de commerce) and the French Code of Ethics (Code de déontologie) for Statutory Auditors, for the period from January 1, 2022 to the date of our report.

Emphasis of matter

Without qualifying our opinion, we draw your attention to the "General principles and conventions" section of note 3.2.2.3 "Significant accounting policies" to the financial statements, which sets out the various factors on which the assumption that the Company will continue as a going concern is based.

JUSTIFICATION OF ASSESSMENTS

In accordance with the requirements of Articles L.823-9 and R.823-7 of the French Commercial Code relating to the justification of our assessments, we inform you of the following matters which, in our professional judgment, were the most significant in our audit of the financial statements.

These matters were addressed as part of our audit of the financial statements as a whole, and therefore contributed to the opinion we formed as expressed above. We do not provide a separate opinion on specific items of the financial statements.

Accounting estimates

The Company impairs its inventories using the methods described in the "Inventories" section of note 3.2.2.3 "Significant accounting policies" to the financial statements. We assessed the methods used by the Company, based on information available at the date hereof, and performed tests, using sampling techniques, to verify the application of those methods.

As part of our assessments, we verified that the estimates were reasonable.

SPECIFIC VERIFICATIONS

In accordance with professional standards applicable in France, we have also performed the specific verifications required by French legal and regulatory provisions.

Information given in the management report and in the other documents provided to the shareholders with respect to the Company's financial position and the financial statements

We have no matters to report as to the fair presentation and the consistency with the financial statements of the information given in the Board of Directors' management report and in the other documents provided to the shareholders with respect to the Company's financial position

and the financial statements, with the exception of the following item.

In accordance with French law, we inform you that the information about payment terms for accounts receivable required under Article D.441-6 of the French Commercial Code is not provided in the management report. Consequently, we cannot attest to the fair presentation of that information and its consistency with the financial statements.

Report on corporate governance

We attest that the Board of Directors' report on corporate governance sets out the information required by Article L.225-37-4 of the French Commercial Code.

Other information

In accordance with French law, we have verified that the required information concerning the identity of the shareholders and holders of the voting rights has been properly disclosed in the management report.

RESPONSIBILITIES OF MANAGEMENT AND THOSE CHARGED WITH GOVERNANCE FOR THE FINANCIAL STATEMENTS

Management is responsible for preparing financial statements giving a true and fair view in accordance with French accounting principles, and for implementing the internal control procedures it deems necessary for the preparation of financial statements that are free of material misstatement, whether due to fraud or error.

In preparing the financial statements, management is responsible for assessing the Company's ability to continue as a going concern, disclosing, as applicable, matters related to going concern, and using the going concern basis of accounting, unless it expects to liquidate the Company or to cease operations.

The financial statements were approved by the Board of Directors.

RESPONSIBILITIES OF THE STATUTORY AUDITOR RELATING TO THE AUDIT OF THE FINANCIAL STATEMENTS

Our role is to issue a report on the financial statements. Our objective is to obtain reasonable assurance about whether the financial statements as a whole are free of material misstatement. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with professional standards will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions taken by users on the basis of these financial statements.

As specified in Article L.823-10-1 of the French Commercial Code, our audit does not include assurance on the viability or quality of the Company's management.
As part of an audit conducted in accordance with professional standards applicable in France, the Statutory Auditors exercise professional judgment throughout the audit. They also:

- identify and assess the risks of material misstatement in the financial statements, whether due to fraud or error, design and perform audit procedures in response to those risks, and obtain audit evidence considered to be sufficient and appropriate to provide a basis for their opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control;

- obtain an understanding of the internal control procedures relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the internal control;

- evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates made by management and the related disclosures in the notes to the financial statements;

- assess the appropriateness of management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Company's ability to continue as a going concern. This assessment is based on the audit evidence obtained up to the date of the audit report. However, future events or conditions may cause the Company to cease to continue as a going concern. If the Statutory Auditors conclude that a material uncertainty exists, they are required to draw attention in the audit report to the related disclosures in the financial statements or, if such disclosures are not provided or are inadequate, to issue a qualified opinion or a disclaimer of opinion;

- evaluate the overall presentation of the financial statements and assess whether these statements represent the underlying transactions and events in a manner that achieves fair presentation.

Lyon, April 20, 2023

The Statutory Auditor
PricewaterhouseCoopers Audit
Gonzague Van Royen

4

CORPORATE GOVERNANCE

4.1 COMPOSITION OF THE COMPANY'S ADMINISTRATIVE AND MANAGEMENT BODIES

4.1.1 COMPOSITION OF THE BOARD OF DIRECTORS

The Board of Directors consists of 11 members, including eight independent directors. The Board has been chaired by Alexandre Conroy since December 21, 2022. Alexandre succeeded Jean-Pierre Garnier, who resigned for personal reasons.

The Company is not required to have directors representing employees or directors representing employee shareholders on the Board of Directors.

Professor Alain Carpentier, Honorary President, co-founder and former director of the Company, and Laurent Kirsh, representative of Thérabel Group (shareholder group of the Company) are permanent guests of the Board but do not take part in the voting.

The tables below detail the information concerning each of the members of the Board of Directors (it being specified that the information on the other offices of the directors are those of which the Company is aware and that the companies identified by an asterisk "*" are listed companies):

	Personal information				Experience	Position on the Board				Committees
	Year of birth	Gender	Citizenship	Number of shares*	Number of directorships in listed companies (including Carmat)	Independent	First appointed	Term of office ends	Number of years' service on the Board	Committee membership
Jean-Pierre Garnier (Chairman of the Board)**	1947	M	French and American	N/A	N/A	No	Dec. 3, 2018	Resigned on Dec. 21, 2022	N/A	
Alexandre Conroy (Chairman of the Board of Directors)***	1963	M	French	0	1	Yes	Dec. 21, 2022	SM held to approve the financial statements for year ending Dec. 31, 2024	0	
Stéphane Piat (Chief Executive Officer and director)	1971	M	French	106,571	1	No	April 27, 2017	SM held to approve the financial statements for year ending Dec. 31, 2024	5 years	
Matra Défense, represented by Karl Hennessee	1974	M	German and American	0	1	No	May 20, 2015	SM held to approve the financial statements for year ending Dec. 31, 2024	7 years	Member of the Appointments & Compensation Committee
Henri Lachmann****	1938	M	French	N/A	N/A	Yes	Dec. 23, 2010	Term of office ended May 11, 2022	N/A	
Pierre Bastid	1954	M	French	12,020	3	Yes	April 5, 2018	SM held to approve the financial statements for year ending Dec. 31, 2024	4 years	
Santé Holdings SRL, represented by Antonino Ligresti	1938	M	Italian	0	2	Yes	April 12, 2016	SM held to approve the financial statements for year ending Dec. 31, 2024	6 years	Member of the Appointments & Compensation Committee
Jean-Luc Lemercier	1957	M	French	0	1	Yes	Jan. 2, 2017	SM held to approve the financial statements for year ending Dec. 31, 2024	5 years	Chairman of the Appointments & Compensation Committee

	Personal information				Experience	Position on the Board				Committees
	Year of birth	Gender	Citizenship	Number of shares*	Number of directorships in listed companies (including Carmat)	Independent	First appointed	Term of office ends	Number of years' service on the Board	Committee membership
Michael Mack	1947	M	American	0	1	Yes	Jan. 2, 2017	SM held to approve the financial statements for year ending Dec. 31, 2024	5 years	
André Muller	1963	M	French	0	2	Yes	March 30, 2020	SM held to approve the financial statements for year ending Dec. 31, 2024	2 years	Chairman of the Audit Committee. Member of the Appointments & Compensation Committee
Florent Battistella	1960	M	French	50,053	1	Yes	May 12, 2021	SM held to approve the financial statements for year ending Dec. 31, 2024	1 year	
David Coti	1982	M	French	0	1	No	May 12, 2021	SM held to approve the financial statements for year ending Dec. 31, 2024	1 year	Member of the Audit Committee
John B. Hernandez	1966	M	American	0	2	Yes	May 12, 2021	SM held to approve the financial statements for year ending Dec. 31, 2024	1 year	Member of the Audit Committee

* For companies represented by an individual, the number of shares held by the individual.
** Until December 21, 2022.
*** As of December 21, 2022.
**** Until May 11, 2022.

Full name or registered name of the member and business address	Other positions currently held in other companies	Previous other positions and functions in other companies over the last five years
Alexandre Conroy Carmat 36, avenue de l'Europe 78941 Velizy Villacoublay, France	None	- Director of Becton-Dickinson France and Becton-Dickinson Holdings SAS - Executive Vice-President, President BD Americas, Europe, Middle East and Africa (until April 2017) - Executive Vice-President, President BD Medical Delivery Solutions (until January 2019) - Executive Vice-President, Chief Integrated Supply Chain Officer (until 2022)
Stéphane Piat Carmat 36, avenue de l'Europe 78941 Velizy Villacoublay, France	- Chairman of the Board of Directors of Triflo Cardiovascular Inc. - Director of Echosens - Chairman of GSPEL (SAS)	None
Matra Défense **Represented by Karl Hennessee** Airbus SAS 2, rond-point Emile Dewoitine 31700 Blagnac, France	- Chairman of Projic 9 - Chairman of Matra Défense - Managing Director of Matra Holding GmbH - Director of Perpetual Ltd - Director of Aeropart - Director of Golden Valley Investment Pte. Ltd.	- Member of the Executive Committee of Projic 9 (until July 2017) - Director of Shiny T BV and Sunny T BV (until November 2020) - Director of Fast Express Investment Ltd (until May 2022) - Director of Indian Aero Ventures Private Limited (until September 2021)
Pierre Bastid Hougou 480, avenue Louise 1050 Brussels, Belgium	- Director of Hougou SA - Director of Hougou Finance SA - Director of Cellectis* and Pharnext* - Director of Hebioso SA and Nepteam SAS - Director of Louise 342-344 SA - Director of Batuque Hotelaria e Turismo SA, Casino Royal SA and East West SA (Cape Verde) - Director of Hougou SA Développement SA - Co-Manager of La Chartreuse BSC	- Director of Shango SA - Permanent representative of Hebioso SA at Hougou SA
Santé Holdings SRL **Represented by Antonino Ligresti** NCTM Via Andrea Doria 7 20124 Milan, Italy	- Sole shareholder of Immobiliare Cosio SRL - Partner of Iniziative Immobiliari Tre societa simplice (SCI) - Partner of SCI 12 Kennedy - As representative of Santé Holdings: Director of Abivax*	None

Full name or registered name of the member and business address	Other positions currently held in other companies	Previous other positions and functions in other companies over the last five years
Jean-Luc Lemercier Edwards Lifesciences Route de l'Etraz 70 1260 Nyon, Switzerland	- Corporate Vice-President EMEACLA & JAPAC of Edwards Lifesciences	None
Dr. Michael Mack The Heart Hospital Baylor Plano 1100 Allied Drive 4708 Alliance – S. 500 TX 75093 Plano, United States	None	None
André Muller Riedmattstrasse 26 6052 Hergiswil, Switzerland	- Director and Executive Vice President of Idorsia Pharmaceuticals Ltd* responsible for finance, information systems and group purchasing - Director of Idorsia Pharmaceuticals Japan (Japan) - Director of Idorsia Pharmaceuticals US Inc. (United States) - Chairman of Chiron Investments AG (Switzerland)	- Director of various subsidiaries of Actelion Ltd (Switzerland) (until 2017)
David Coti Bratya SPRL Rue J. Jordaens 18 1000 Brussels, Belgium	- Chief Investment Officer of Corely Belgium SPRL - Manager of Bratya SPRL - Vice President, Marketing of TBR - Member of the Governance Committee of Investir & + - Permanent representative of the Chairman of Corely Belgium SPRL at Alpopack SAS	None
Florent Battistella Carmat 36, avenue de l'Europe 78941 Velizy Villacoublay, France	- Chairman of Couach - Chairman of Nepteam - Manager of Nisima - Director of Gican - Director of Altawest - Member of the Supervisory Board of BT2i	None
John B. Hernandez Carmat 36, avenue de l'Europe 78941 Velizy Villacoublay, France	- Director of ResMed*	None

As far as the Company is aware:

- there is no family link between the Company's various directors;
- no director has been convicted of fraud in the last five years;
- no director has been associated with any bankruptcy, sequestration of assets or liquidation, or had a company placed into administration, in the last five years;
- no director has been accused of any offense or received any official public sanction pronounced by the statutory or regulatory authorities (including designated professional bodies) in the last five years; and
- no director has been prevented by a court from acting as a member of an administrative, management or supervisory board of an issuer or from taking part in the management or conduct of the affairs of an issuer over the past five years.

It should also be noted that no strategic and/or historical investors act together with others in relation to Carmat.

4.1.2 BIOGRAPHIES OF THE MEMBERS OF THE BOARD OF DIRECTORS

ALEXANDRE CONROY (DIRECTOR AND CHAIRMAN OF THE BOARD OF DIRECTORS)

After starting out in the pharmaceutical and biotech industry, Alexandre Conroy spent most of his career at Becton Dickinson & Co (NYSE). During his 31 years with that company, he was notably President of the Pharmaceutical Systems BU, President for the Americas and EMEA regions, and President of the Medication Delivery Solutions BU, during periods of growth, turnaround, and acquisition integration. Between 2019 and 2022, he led the group's global industrial operations in the context of the Covid-19 pandemic and its impact on supply chains.

A graduate of HEC business school in Paris, Alexandre was a member of the group's executive committee and corporate officer of Becton Dickinson & Co. His career has taken him to Argentina, the United States and Europe.

PIERRE BASTID

A former manager at Schneider Electric and later Valeo, Pierre Bastid was appointed Vice President of Thomson Television Components France (Thomson Multimedia Group) in 1998. In 2004, through Magenta Participations, he was instrumental in the acquisition of Alstom Power Conversion, which later became Converteam Group and was subsequently sold to General Electric in 2011.

Since that date, Pierre Bastid has managed the assets resulting, among other things, from the sale of his Converteam shares.

FLORENT BATTISTELLA

Florent Battistella is a graduate engineer from INSA Toulouse, and holds a PhD in Solid State Physics from Toulouse's Paul Sabatier University.

After several years as a researcher, he worked in production at IBM (semiconductor manufacturing), then in the automotive sector at Valeo, and finally at Solectron (electronics manufacturing), where he was Vice President, Operations in charge of nine European sites. From 2004 to 2011, he served as Vice Chief Executive Officer, then Chief Operating Officer and finally Chief Executive Officer of emerging countries at Converteam, a company under LBO which was acquired by General Electric in 2011. He later founded a holding company with stakes in various firms, notably in the naval and aeronautical sectors.

DAVID COTI

David Coti holds a dual degree in International Business (ESSEC International and Plekhanov University in Moscow).

He started his career by creating a distribution company in the Commonwealth of Independent States (CIS) in the 2000s. As an investor with a keen interest in emerging markets, life sciences, biotechnologies and clean technologies, he has been managing various family offices since 2015, including those of the Gaspard family (Bratya SPRL and Corely SPRL), owners of the Lyreco group. Since 2016, he has also been Vice President, Marketing for TBR, a company specializing in digital marketing. He is also a member of the governance committee of Investir &+, an investment structure that supports the growth of entrepreneurs developing projects with a strong social or environmental impact.

KARL HENNESSEE

Karl Hennessee, Chairman of Matra Défense, has 25 years of experience in law, economics and regulation. He worked, in Europe and in the United States, as a business lawyer on some of the most important cases for a very large company in the energy sector, then as Secretary General of this same company.

In addition to his management functions at Airbus Group, Karl Hennessee is Chairman of the Board of Directors of the International Arbitration Tribunal within the International Chamber of Commerce. He also sits on the Board of Directors of several other non-profit organizations. He lectures and regularly publishes articles on law and regulations.

JOHN B. HERNANDEZ

John B. Hernandez holds a BA in Political Science from the University of Chapel Hill, North Carolina, and an MA and PhD in Health Policy from Pardee RAND Graduate School, California.

John is currently Clinical Director and Head of Clinical Research and Health Economics at Google. From 2016 to 2018, he served as Head of Health Economics and Market Access at Verily (formerly Google Life Sciences). Prior to joining Google in 2016, he held executive positions at major medical device companies, including Boston Scientific and then Abbott Vascular, where he served as Vice President of Global Health Economics from 2010 to 2016. Previously, he held a research role at the RAND Corporation and a consulting role at PricewaterhouseCoopers, as well as serving as director of e-Clinical at IQVIA (formerly Quintiles).

JEAN-LUC LEMERCIER

Jean-Luc Lemercier graduated in pharmacy from Claude Bernard Lyon 1 University.

Jean-Luc Lemercier draws on more than 30 years' experience and acknowledged leadership in medical devices. During his career, he has held a number of key positions in the field of cardiology, including at Johnson & Johnson Cordis, where he notably created and headed the Structural Heart Disease division. Since 2017, he has been Corporate Vice President EMEA, Canada & Latin America at Edwards Lifesciences.

DR. ANTONINO LIGRESTI

Dr. Ligresti is a qualified physician and surgeon, specializing in cardiology and internal medicine.

He began his career in the Medical Clinic at the University of Milan and at the city's Fatebenefratelli Hospital. In 1979, following the gradual acquisition of several prestigious establishments in Lombardy, he created the first private hospital group in Italy. Dr. Ligresti joined the Générale de Santé Board of Directors in 2003 and became its Chairman a year later. Générale de Santé was subsequently sold to the Ramsay group. Dr. Ligresti was also instrumental in creating the European Institute of Oncology.

DR. MICHAEL MACK

Dr. Mack is a graduate of Boston College, St Louis University and the University of Texas Southwestern Medical School. He is also the Director of the Cardiovascular Department for pharmaceutical firm Baylor Scott & White Health, a director on the American Board of Thoracic Surgery and a member of the FDA Medical Device Epidemiology Network Initiative (MDEpiNet) Advisory Committee.

Michael Mack is an internationally renowned heart surgeon with extensive experience in the introduction of medical devices and innovative procedures for cardiovascular disease. He has authored more than 650 scientific publications and has received the Presidential Citation from the American College of Cardiology (ACC) and the Transcatheter Cardiovascular Therapeutics (TCT) Lifetime Achievement Award.

ANDRÉ MULLER

A graduate of EM Lyon business school, André Muller brings to the Board his extensive experience in the healthcare sector as Chief Financial Officer, director and investor.

He served as Executive Vice President in charge of Finance at Actélion, a Swiss biotech company which was acquired in 2017 by the US pharmaceutical group Johnson & Johnson. He also helped found and lead the IPO at Idorsia Ltd, a spin-off of Actélion's clinical R&D activity. He currently serves as Executive Vice President in charge of Finance, Information Systems and Group Procurement at Swiss biopharmaceutical company Idorsia Ltd, which is listed on the Swiss stock exchange.

STEPHANE PIAT

Stéphane Piat holds a master's degree in Management Science from IAE Dijon School of Management, and a post-graduate degree in Quantitative Marketing from ESA business school in Grenoble.

He is a specialist in the medical device business, particularly in the field of cardiology. He joined Carmat as Chief Executive Officer in September 2016.

Stéphane worked for Becton Dickinson & Co and Johnson & Johnson groups before joining Abbott Vascular as General Manager, Mid-Size Europe in 2007. He was appointed General Manager, EMEA, of Evalve, where he was in charge of the clinical and commercial development of Mitraclip, a new interventional cardiology product. In 2014, he was appointed Division Vice President, Global Market Development within Abbott Vascular's Structural Heart division in San Francisco.

4.1.3 MEMBERS OF THE MANAGEMENT TEAM

STEPHANE PIAT
CHIEF EXECUTIVE OFFICER

See section 4.1.2

PASCALE D'ARBONNEAU
CHIEF FINANCIAL OFFICER

Pascale began her career as an auditor at Coopers & Lybrand (now PwC) before entering the pharmaceutical industry as Director of Finance & IT at the French subsidiary of the Johnson & Johnson – MSD joint venture. She spent much of her career (1999-2016) at GlaxoSmithKline, first as Director, Head of Controlling & Finance Partnering, France, before holding a number of senior roles within the Group (Vice President & Finance Controller, Pharma Europe; Vice President & Area Finance Director, Western Europe; and Vice President Finance, Compliance & Control Integration for all business units worldwide). Before joining Carmat at the end of 2018, Pascale d'Arbonneau was Executive Director of the Econocom International B.V. family office.

Pascale is a graduate of the ESCP Business School and holds a DEA in Management Control and a Postgraduate Diploma in Finance and Accounting. She is also a lecturer at the Paris Diderot University.

FRANCESCO ARECCHI
GLOBAL MARKET DEVELOPMENT DIRECTOR

A marketing professional with extensive experience in leading global companies within the healthcare industry, Francesco Arecchi joined Carmat in September 2017. Francesco Arecchi spent most of his career in Life Sciences companies such as Johnson & Johnson and Abbott, where he held a number of positions from sales to marketing in cardiology breakthrough technology products, such as Cypher and MitraClip.

Prior to joining Carmat, he served as Product Manager EMEA at Abbott's Structural Heart division. Francesco Arecchi is a biomedical engineer and a graduate of Politecnico di Milano (Italy) with an MBA from Rotterdam School of Management (Netherlands).

RAOUIA BOUYANZER
HUMAN RESOURCES DIRECTOR

Raouia Bouyanzer has more than 20 years of experience in payroll and human resources management. She began her career in an accounting firm in 1998. In 2001, she joined Morgan Stanley, where she held positions in social benefit management audit, payroll and human resources over a period of more than seven years. Raouia joined Carmat in February 2011 as Administrative, Finance and Human Resources Director, focusing on Human Resources since 2012.

She holds a Master's degree in HR from ESSEC Business School and a degree in Accounting and Finance.

THIERRY DUPOUX
QUALITY ASSURANCE & REGULATORY AFFAIRS DIRECTOR

Thierry Dupoux is a seasoned medical device professional with a strong expertise in Quality Assurance and Regulatory Affairs. An engineering graduate from Ecole Centrale de Lyon (France), he has worked most of his career in Life Sciences companies such as General Electric, where he was appointed Supply Chain Quality & Compliance Manager for the plant in Buc (France) in his final position at the company. In 2006, he joined Sorin Group, now LivaNova, a world leader in heart surgery and neuromodulation. In his 12 years at LivaNova, he held several senior positions in Quality Assurance, Regulatory Affairs and R&D. Prior to joining Carmat, he was Vice President of Quality Assurance at LivaNova where he led the integration of the Quality Systems following the merger between Sorin Group and Cyberonics.

ALEXANDRE ELEONORE
DIRECTOR OF MANUFACTURING

Alexandre Eleonore is a proven industry expert with a strong background in operational management. He graduated from the Sevenans Polytechnic Institute, now UTBM (Université de Technologie Belfort Montbéliard), and spent the first part of his career in leading automotive equipment manufacturers such as Faurecia and Plastic Omnium. After ten years in this sector, he joined Sorin Group in 2009, which became Microport CRM, one of the world's leading players in the treatment of cardiac rhythm disorders. He was appointed Vice President, Operations & Customer Service, implementing cost improvement plans. He joined Carmat as Director of Manufacturing in November 2019.

MARC GRIMMÉ
RESEARCH & DEVELOPMENT DIRECTOR

Since 1996, Marc Grimmé has led all of the technical studies related to Carmat's artificial heart development program. He began his career in 1991 at MBDA France, where he was notably in charge of all activities related to the development of mission-critical electronics, from upstream studies and the design phase to production commissioning.

Marc Grimmé is a graduate of the Institut Supérieur d'Electronique et du Numérique (ISEN).

DR. PIET JANSEN
CHIEF MEDICAL OFFICER

Dr Petrus ('Piet') Jansen has more than 25 years of senior management experience in the circulatory support device industry. He began his career in 1997 as Director of Clinical Research for the Novacor division of Edwards Lifesciences, a US company specialized in medical innovations for structural heart diseases.

In 2001, he was appointed Vice-President at Jardvik Heart Inc. In New-York, where he was responsible for the clinical programs. From 2004 to 2009, he was Chief Medical Officer with World Heart Corporation.

Dr Jansen holds a PhD in medicine from the University of Amsterdam and graduated as a Doctor of Medicine from Radboud University Nijmegen, both in the Netherlands.

PROF. CHRISTIAN LATREMOUILLE
DIRECTOR OF SURGICAL AFFAIRS

Before joining Carmat in 2021, Christian Latrémouille was Head of the Department of Cardiovascular Surgery at the Georges Pompidou European Hospital in Paris, a position that he took up in 2017. He had previously been in charge of the heart transplantation program in Alain Carpentier's prestigious Cardiovascular Surgery Department at the Hôpital Broussais in Paris, and Associate Professor at the University of Paris-Descartes. He was also responsible for the preclinical development phase of the Carmat bioprosthetic total artificial heart.

Prof. Christian Latrémouille is a Doctor of Medicine specialized in cardiovascular surgery, and is a Professor at the University of Paris.

4.2 CONFLICTS OF INTEREST IN THE GOVERNING, MANAGEMENT AND SUPERVISORY BODIES AND EXECUTIVE MANAGEMENT

4.2.1 POTENTIAL CONFLICTS OF INTEREST

At the date of this Universal Registration Document and as far as the Company is aware, there are no current or potential conflicts of interest between the private interests and other duties of the Company's Board of Directors and the interests of the Company.

Similarly, at the same date, the Company has no knowledge of any current or potential conflicts of interest between the private interests or other duties of the members of the Audit Committee or the Compensation Committee and the interests of the Company.

The Board of Directors' Internal Rules set out the duties and obligations of the Board members (see section 4.4.2 of this document). These duties and obligations include preventing any conflict of interest situations and inappropriate use of inside information.

At the date of this Universal Registration Document, there were no service contracts linking the members of

the Board of Directors and Executive Management of the Company other than those that may be reported in the related-party agreements section, nor any business relationship binding the independent directors and the Company.

All related-party agreements are disclosed in section 4.6 of this document. Financial information about related companies is disclosed in the notes to the financial statements (see section 3.2.2 of this document).

4.2.2 SHAREHOLDING COMMITMENTS OF THE DIRECTORS AND EXECUTIVE MANAGEMENT

No shareholding commitments were applicable to directors or Executive Management at December 31, 2022, except in the case of Stéphane Piat, Chief Executive Officer, who is required to hold, in registered form, (i) a specified percentage of the ordinary shares which have resulted or will result (as applicable) from the conversion of the free preference shares ("AGAP") awarded to him in 2017, 2018, 2019, 2020 and 2022, and (ii) a specified percentage of the free shares awarded to him in 2021 and 2022 (see section 4.5.1 of this document).

4.3 BOARD COMMITTEES

4.3.1 AUDIT COMMITTEE

By decision of the Board of Directors of July 8, 2009 the Company set up an Audit Committee for an unlimited duration.

Under the exclusive and collective responsibility of the members of the Board of Directors of the Company and in order to ensure the quality of internal control and the reliability of the information provided to shareholders and financial markets, the Committee oversees matters relating to the preparation and control of accounting and financial information and, to this end, shall in particular:

- follow-up on the process of developing information and financial communication;
- monitor the effectiveness of the internal control and risk management systems and in particular:

  - evaluate the internal control procedures and any measures taken to remedy any significant internal control dysfunctions;

  - review the annual work programs of the auditors;

  - evaluate the adequacy of the risk monitoring procedure;
- monitor the statutory audit of the annual and consolidated financial statements by the auditors and in particular:

  - review the assumptions used for the preparation of the annual financial statements of the Company and the half-yearly and, where applicable, quarterly financial statements before their examination by the Board of Directors, after reviewing the financial position, cash position and commitments of the Company;

  - evaluate, in consultation with the auditors, the appropriateness of the choice of accounting principles and methods;

  - consult the members of the Board responsible for the financial aspects as well as the administrative and financial director if he/she is not a member of the Board, between the end of any financial year and the date on which the Committee decides on the draft annual financial statements, with regard to the adequacy of the accounting principles and methods used, the effectiveness of the accounting control procedures and any other appropriate matters;

  - issue a recommendation on the auditors proposed for appointment by the Shareholders' Meeting and review their fees;
- monitor the independence of the auditors and in particular:

  - propose the establishment of rules for recourse to auditors for work other than auditing in order to guarantee the independence of the audit services provided by auditors in accordance with the laws, regulations and recommendations applicable to the Company, and verify proper application;

  - authorize the use of auditors for work other than auditing;
- examine the conditions of use of derivatives;
- execute periodic reviews of the status of significant litigation;
- review the Company's procedures for the receipt, retention and treatment of claims relating to accounting matters and accounting internal controls, audit matters

and documents transmitted by employees on an anonymous and confidential basis and which would call into question accounting or auditing practices; and

- generally, provide advice and make any appropriate recommendations in the above areas.

The Audit Committee met twice in 2022, in particular to review the financial statements for 2021 and the first half of 2022 and to analyze the Company's cash needs and financing options.

As of the date of this Universal Registration Document, the Audit Committee comprises André Muller (independent director and Chairman of the Audit Committee), John B. Hernandez (independent director), and David Coti (director).

4.3.2 APPOINTMENTS & COMPENSATION COMMITTEE

The Company also has an Appointments & Compensation Committee which, at the date of this Universal Registration Document, is comprised of four members, including three independent members, appointed by the Board of Directors for an unlimited term:

- Jean-Luc Lemercier, independent director and Chairman of the Appointments & Compensation Committee;
- André Muller, independent director;
- Santé Holdings SRL, represented by Antonino Ligresti, independent director; and
- Matra Défense, represented by Karl Hennessee.

The main objectives of the Appointments & Compensation Committee are to:

- recommend to the Board of Directors the persons who should be appointed to Executive Management, the Board of Directors and the main functions of the Company, as the case may be;
- review the compensation policies for executives and high-potential staff within Carmat, propose the compensation of executives and, where applicable, the members of the Board of Directors and prepare any report that the Company must present on these subjects.

It reports to the Board of Directors on its activities at regular intervals.

4.3.3 BOARD OBSERVERS

Article 17-VI of the Articles of Association gives the Ordinary Shareholders' Meeting the power to appoint, at its discretion, up to three persons or legal entities, who may or may not be shareholders, for a term of office of one year expiring at the Shareholders' Meeting held to approve the financial statements for the year just ended and held during the year in which their terms of office expire. This term of office may be renewed an unlimited number of times. The duty of the observers (*censeurs*) is to ensure the strict application of the Articles of Association and to present their observations at the meetings of the Board of Directors. The observers perform a general and permanent role of advice and monitoring within the Company. In connection with their role they may make observations to the Board of Directors.

Observers must be invited to each meeting of the Board of Directors in the same way as directors. Observers have only consultative powers on an individual or joint basis and have no voting rights on the Board.

At the date of this Universal Registration Document, no observer has been appointed.

4.4 STATEMENT ON CORPORATE GOVERNANCE

4.4.1 CORPORATE GOVERNANCE

The Company refers to the recommendations of the AFEP-MEDEF Corporate Governance Code for listed companies, to the extent that these principles are compatible with the organization, the size, the resources and the ownership structure of the Company.

To this end, the Company regularly reviews its corporate governance in respect of the recommendations of the AFEP-MEDEF Code, as updated in January 2020.

The principal recommendations not applied are presented below.

Exclusions	Reasons
Assessment of the Board of Directors	There is no formal system to measure the individual contribution of each director. Reason: All Board members gave positive feedback on the Board's operation as a collective body, which is only possible if individual contributions are satisfactory.
Desirable balance in Board composition in terms of diversity (representation of women and men, nationalities, etc.)	Since the Company's shares are not listed on a regulated market, it is not subject to the diversity requirements set out in the French Commercial Code. Going forward, however, it has set itself the goal of gradually diversifying the composition of its Board.
Executive compensation	The *quantifiable* conditions on which the annual variable compensation of the executive corporate officers is based are not always preponderant. Reason: Given the Company's development stage, it was considered that a preponderance of qualitative conditions could be more appropriate in certain years.
Long-term executive compensation	The resolutions authorizing free share award plans, put to the vote at the shareholders' meeting, do not refer to the maximum percentage of the total award that can be awarded to the executive corporate officers. Reason: It was considered that the Board of Directors is more qualified to determine the appropriate number of free shares to be awarded to the Company's Chief Executive Officer.

4.4.2 INTERNAL RULES OF THE BOARD OF DIRECTORS

The Board of Directors adopted internal rules, the purpose of which is to define the ways in which it is organized and operates over and above the legal and statutory provisions in force. These rules were last updated in June 2021. They are available on request from the registered office of the Company.

In addition to respecting the legal, regulatory and statutory provisions applicable to the Board, the Board of Directors, in accordance with these rules:

- determines the Company's business strategy and ensures its implementation. Subject to the powers expressly granted by Shareholders' Meetings and within the scope of the Company's purpose, the Board shall consider any matter affecting the proper functioning of the Company and shall, by its deliberations, resolve matters affecting it;
- appoints the Chairman of the Board, the Chief Executive Officer and the Deputy Chief Executive Officers, and determines their duties and compensation;
- authorizes the agreements and commitments referred to in Articles L.225-38 *et seq.* of the French Commercial Code;
- authorizes the decisions and commitments listed in the Appendix to the internal rules;
- ensures the quality of information provided to shareholders and the markets.

The Board of Directors' Internal Rules also set out the directors' duties and obligations, which include general obligations, duty of loyalty, duty of disclosure, duty to refrain from trading in the Company's shares during certain black-out periods, duty regarding inside information, duty regarding holding financial instruments issued by the Company, duty of care and duty to provide and right to obtain information. These duties and obligations include preventing any conflict of interest situations and inappropriate use of inside information.

4.4.3 WORK OF THE BOARD OF DIRECTORS

During the 2022 financial year, the Board of Directors met ten times. In addition to its traditional governance missions, including the approval of the 2021 financial statements and those of the first half of 2022, the Board focused in particular on:

- steering and continuation of the artificial heart's development;
- the plan to resume production, implants and sales, following the voluntary temporary suspension of implants decided by Carmat in December 2021;
- the Company's strategic plan;
- the Company's manufacturing plan;
- the commercial development of Aeson®;
- the Company's financial forecasts and financing;
- changes in the Company's governance.

Board meetings are subject to an annual provisional calendar defined at the latest in January of each year. Each meeting is prepared in advance by the Chairman and the Chief Executive Officer.

The table below summarizes the effective presence of the directors at the various Board meetings.

Effective presence at Board meetings (2022)	Number of meetings applicable	Effective presence at meetings
Jean-Pierre Garnier – Chairman of the Board of Directors (until December 21, 2022)	10	9
Alexandre Conroy – Chairman of the Board of Directors (as of December 21, 2022)	0	0
Stéphane Piat – Chief Executive Officer and director	10	10
Matra Défense – Director	10	8
Henri Lachmann – Director (until May 11, 2022)	3	1
Pierre Bastid – Director	10	8
Santé Holdings SRL – Director	10	10
Jean Luc Lemercier – Director	10	9
Michael Mack – Director	10	10
André Muller – Director	10	9
Florent Battistella – Director	10	8
David Coti – Director	10	9
John B. Hernandez – Director	10	9

4.4.4 SEPARATION OF THE OFFICES OF CHAIRMAN OF THE BOARD OF DIRECTORS AND CHIEF EXECUTIVE OFFICER

When the Company converted to a *société anonyme*, the Board of Directors opted for a separation of the offices of Chairman of the Board of Directors and of Chief Executive Officer.

The Board of Directors must approve in advance the following decisions and commitments, it being specified that the thresholds mentioned below in these decisions will be assessed (i) individually for each operation and (ii) annually:

A. Corporate life of the Company:

(a) any amendment to the articles or other documents constituting the Company or its subsidiaries;

(b) liquidation, amicable dissolution or other similar proceedings relating to the Company and/or the companies or entities controlled by the Company (the "Subsidiaries") and withdrawal from the Company.

B. Strategic decisions:

(a) definition of strategic, economic, social, financial and scientific priorities for the Company;

(b) operations outside the strategy announced by the Company;

(c) significant development of related or derivative activities, directly within the Company, or through subsidiaries controlled or not;

(d) the change in the normal business of the Company and its development strategy;

(e) any significant agreement to use patents or production licenses granted to third parties outside the ordinary course of business;

(f) any transfer, acquisition, contribution or exchange of assets of a unit amount exceeding three hundred thousand euros (€300,000);

(g) any investment in excess of three hundred thousand euros (€300,000);

(h) mergers, spin-offs, contributions, partnerships, joint ventures or similar significant transactions;

(i) transfer and relocation of the Company's registered office outside France, cross-border mergers or conversion

of the Company into a European company;

(j) additional indebtedness, modification, refinancing of a loan amounting to more than three hundred thousand euros (€300,000);

(k) significant change in the accounting rules and principles applied by the Company;

(l) hiring, dismissal and alteration of employment contracts (including the compensation) of any employee who has an executive function (i.e., medical director, director of operations, sales manager and administrative director and financial director);

(m) selection of advisers and intermediaries in strategic decision-making and compensation.

C. Related-party agreements (approval and annual review of contracts in progress).

D. Securities:

(a) issue of any securities giving access, immediately or in the future, to 5% or more of the share capital of the Company;

(b) transfer of securities of subsidiaries to third parties or subscription or acquisition of securities issued by an entity other than a subsidiary.

E. Any proposal to the Shareholders' Meeting relating to the policy of dividend distribution, redemption of shares or other payments or distribution to shareholders.

F. Adoption and modification of the annual budget, approval and modification of the business plan.

G. Any commitment exceeding three hundred thousand euros (€300,000).

H. Compensation and profit-sharing of executives in respect of their office or employment contract (including any stock option plans, performance shares or other similar arrangements) on the proposal of the Appointments & Compensation Committee.

I. Appointment and dismissal of executive corporate officers, the administrative and financial director, the scientific director and the medical director.

J. Decision regarding commitments or transactions relating to a dispute of more than two hundred and fifty thousand euros (€250,000).

K. Site closure; adoption of a plan to safeguard employment.

L. Appointment of Statutory Auditors and alternates.

M. Subscription of any loan or advance to acquire securities of any subsidiary company except in the event that such subsidiary is directly or indirectly wholly owned by the Company.

N. Granting of guarantees, deposits of endorsements for the benefit of third parties (including a subsidiary) or granting of security rights to guarantee debts of the Company.

It is specified that:

- one of the aforementioned decisions foreseen within the annual budget in a precise manner shall not have to be approved again when implemented; and

- decisions A to E shall be adopted by a majority of (i) half of the directors on first call and (ii) half of the directors present or represented on second call.

4.4.5 INDEPENDENT DIRECTORS

The Company has eight independent directors: Alexandre Conroy, Jean-Luc Lemercier, Michael Mack, André Muller, Pierre Bastid, Florent Battistella, John B. Hernandez and the company Santé Holdings SRL; the Company believes that since their appointment they have met the criteria of the AFEP-MEDEF Code (as amended in January 2020), that is:

- not be or have been in the past five years (criterion 1):

  - an employee or executive corporate officer of the Company;

  - an employee, executive corporate officer or director of a company consolidated by the Company;

  - an employee, executive corporate officer or director of the Company's parent company or another company consolidated by it;

- not be an executive corporate officer of a company in which the Company directly or indirectly holds a directorship or in which an employee appointed as such or an executive corporate officer of the Company (currently in office or having held such office in the last five years) holds a directorship (criterion 2);
- not be a significant customer, supplier or banker of the Company or its group or for which the Company or its group represents a significant part of the business (criterion 3);
- have no close family ties with a corporate officer (criterion 4);
- not have been the Company's Statutory Auditor during the last five years (criterion 5);
- not have been a director of the Company for more than 12 years (criterion 6);

- not have any particular relationships of interest with the Company, its management or its Group (significant shareholder, employee or other) that could compromise his/her freedom of judgment (criterion 7);
- for non-executive corporate officers, not receive variable compensation in cash or securities, or any compensation related to the Company's or the Group's performance (criterion 8);
- in addition, the Board of Directors may consider that a director who meets the above criteria should nonetheless not be regarded as independent given his/her particular position in the Company, having regard to its share ownership or for any other reason. Conversely, the Board of Directors may consider that a director who does not meet the above criteria is nonetheless independent. For example, major shareholders of the Company or its parent company may be considered as independent if they do not have any control over the Company (criterion 9).

The table below summarizes independence assessments for members of the Board of Directors at December 31, 2022.

Criteria	1	2	3	4	5	6	7	8	9	Independence
Alexandre Conroy – Chairman of the Board	X	X	X	X	X	X	X	N/A	N/A	Independent
Stéphane Piat – Chief Executive Officer and director		X	X	X	X	X	X	N/A	N/A	Not independent
Matra Défense, represented by Karl Hennessee	X	X	X	X	X	X		X	N/A	Not independent
Pierre Bastid	X	X	X	X	X	X		X	*	Independent
Santé Holdings SRL, represented by Antonino Ligresti	X	X	X	X	X	X		X	*	Independent
Jean-Luc Lemercier	X	X	X	X	X	X	X	X	N/A	Independent
Michael Mack	X	X	X	X	X	X	X	X	N/A	Independent
André Muller	X	X	X	X	X	X	X	X	N/A	Independent
Florent Battistella	X	X	X	X	X	X	X	X	N/A	Independent
David Coti	X	X	X	X	X	X		X	N/A	Not independent
John B. Hernandez	X	X	X	X	X	X	X	X	N/A	Independent

* Although they are major shareholders of the Company, Pierre Bastid and Santé Holdings SRL have been considered as independent because they do not participate in the control of Carmat.

4.4.6 INTERNAL CONTROL AND RISK MANAGEMENT

Internal control procedures are in place within the Company, in particular covering administrative, accounting, and finance areas. Internal controls are designed to guarantee implementation of the Company's strategy and ensure the quality of its financial reporting.

Risk Committee

In January 2020, the Company also created a Risk Committee, which includes all members of its management team, whose role is to identify the Company's main risks and to define and implement appropriate risk mitigation plans. The Committee meets at least twice a year.

Manufacturing Committee

Given the critical importance of production issues for the Company, Carmat has also set up a Manufacturing Committee, which meets regularly throughout the year.
Chaired by Pierre Bastid, an independent director, this committee also includes three other directors (Florent Battistella, Alexandre Conroy and David Coti), as well as the Chief Executive Officer, the Director of Manufacturing, the Director of Research & Development, the Director of Quality Assurance and the Chief Financial Officer.

4.4.7 CODE OF ETHICS & BUSINESS CONDUCT

On September 7, 2020, the Board of Directors adopted a Code of Ethics & Business Conduct. This came into effect on December 1, 2020 and applies to all staff and directors of the Company.

The Code is available on the Company's website. It sets out the corporate standards of behavior to be observed

by all people working for or on behalf of Carmat and the disciplinary measures that may be taken in the event of non-compliance.

These standards cover compliance with laws, rules and regulations, conflicts of interest, protection and proper use of the Company's resources and assets, confidentiality and information management (including inside information), bribes, kickbacks and other improper payments or gifts, political contributions and activity, work environment, accuracy of records (including accounting and financial information), the quality of public disclosures, clinical and scientific integrity, and interactions with healthcare professionals.

4.5 COMPENSATION AND BENEFITS OF EXECUTIVES AND DIRECTORS

4.5.1 COMPENSATION AND BENEFITS IN KIND OF EXECUTIVES AND DIRECTORS

Table 1: Summary table of compensation and options, warrants and free shares awarded to each executive corporate officer (in euros)

Jean-Pierre Garnier – Chairman of the Board of Directors (until December 21, 2022)	2021	2022
Compensation payable for the year (detailed in table 2)	100,000	100,000
Value of long-term variable compensation awarded during the year	-	-
Value of options and warrants awarded during the year (detailed in table 4)	-	-
Value of free shares awarded for the year (detailed in table 6)	-	-
TOTAL	**100,000**	**100,000**

Alexandre Conroy – Chairman of the Board of Directors (as of December 21, 2022)	2021	2022
Compensation payable for the year (detailed in table 2)	N/A	3,500
Value of long-term variable compensation awarded during the year	N/A	-
Value of options and warrants awarded during the year (detailed in table 4)	N/A	-
Value of free shares awarded for the year (detailed in table 6)	N/A	-
TOTAL	**N/A**	**3,500**

Table 1 (cont.): Summary table of compensation and options, warrants and free shares awarded to each executive corporate officer (in euros)

Stéphane Piat – Director and Chief Executive Officer	2021	2022
Compensation payable for the year (detailed in table 2)*	590,415	778,165
Value of long-term variable compensation awarded during the year	-	-
Value of options and warrants awarded during the year (detailed in table 4)	-	-
Value of free shares awarded for the year (detailed in table 6)**	1,831,500	2,431,004
TOTAL	**2,421,915**	**3,209,169**

* Benefits in kind included. Stéphane Piat received a 1.64% increase in his fixed compensation in 2022. He is also entitled to variable compensation (based on objectives approved by the Board of Directors), which in 2022 was raised from a maximum of 50% to a maximum of 70% of his fixed compensation. The percentage achievement of those objectives in 2022, as validated by the Compensation Committee, was 109.5% (versus 66% in 2021). Details of the objectives and their level of achievement are not disclosed publicly for reasons of confidentiality.

** Some free shares awarded in 2022 (AGAP 2022) are subject to performance conditions (unlike those awarded in 2021). Their values at December 31, 2022 and December 31, 2021 correspond to the share price and the estimate made by the Company on those dates of the probability of achievement of the performance conditions, if applicable. At least 15% of the number of ordinary shares resulting from the conversion of the free preference shares awarded to Stéphane Piat in 2022, and 15% of the ordinary shares awarded to him in 2022, must be held by the latter in registered form until the end of his tenure as corporate officer. To the best of the Company's knowledge, no hedging instrument has been put in place.

Table 2: Summary table of the compensation of each executive corporate officer (in euros)

Jean-Pierre Garnier – Chairman of the Board of Directors (until December 21, 2022)	2021		2022	
	Amounts due[1]	Amounts paid[2]	Amounts due[1]	Amounts paid[2]
Fixed compensation*	100,000	100,000	100,000	100,000
Annual variable compensation	-	-	-	-
Multi-annual variable compensation	-	-	-	-
Special compensation	-	-	-	-
Directors' compensation (formerly directors' fees)	-	-	-	-
Benefits in kind	-	-	-	-
TOTAL	**100,000**	**100,000**	**100,000**	**100,000**

(1) For the current fiscal year. (2) During the fiscal year (including in respect of the previous fiscal year).

* Under an employment contract as US Business Development Manager. Jean-Pierre Garnier receives fixed compensation but no variable compensation or any other benefits. His fixed compensation was not increased in either 2021 or 2022.

Table 2 (cont.): Summary table of the compensation of each executive corporate officer (in euros)

Alexandre Conroy – Chairman of the Board of Directors (as of December 21, 2022)	2021		2022	
	Amounts due[1]	Amounts paid[2]	Amounts due[1]	Amounts paid[2]
Fixed compensation****	N/A	N/A	3,500	0
Annual variable compensation	N/A	N/A	-	-
Multi-annual variable compensation	N/A	N/A	-	-
Special compensation	N/A	N/A	-	-
Directors' compensation (formerly directors' fees)	N/A	N/A	-	-
Benefits in kind	N/A	N/A	-	-
TOTAL	**0**	**0**	**3,500**	**0**

(1) For the current fiscal year. (2) During the fiscal year (including in respect of the previous fiscal year).
**** Compensation for his position as Chairman of the Board of Directors (there is no employment contract between Alexandre Conroy and the Company) – see section 4.6 (Related-party agreements).

Stéphane Piat – Director and Chief Executive Officer	2021		2022	
	Amounts due[1]	Amounts paid[2]	Amounts due[1]	Amounts paid[2]
Fixed compensation**	425,250	425,250	433,725	433,725
Annual variable compensation**	155,000	262,500	334,169	155,000
Multi-annual variable compensation	-	-	-	-
Special compensation	-	-	-	-
Directors' compensation	-	-	-	-
Benefits in kind***	10,165	10,165	10,271	10,271
TOTAL	**590,415**	**697,915**	**778,165**	**598,996**

(1) For the current fiscal year. (2) During the fiscal year (including in respect of the previous fiscal year).
** Stéphane Piat received a 1.64% increase in his fixed compensation in 2022. He is also entitled to variable compensation (based on objectives approved by the Board of Directors), which in 2022 was raised from a maximum of 50% to a maximum of 70% of his fixed compensation. The percentage achievement of those objectives in 2022, as validated by the Compensation Committee, was 109.5% (versus 66% in 2021). Details of the objectives and their level of achievement are not disclosed publicly for reasons of confidentiality.
*** Company car.

Table 3: Table of directors' compensation and other compensation received by non-executive corporate officers

Table 3	Amounts paid in 2021	Amounts paid in 2022
Truffle Capital – Director (until May 12, 2021)		
Directors' compensation*	4,000	0
Other compensation	0	0
Airbus Group – Director		
Directors' compensation*	13,000	9,000
Other compensation	0	0
Henri Lachmann – Director (until May 11, 2022)		
Directors' compensation*	44,000	16,000
Other compensation	0	0
Pierre Bastid – Director		
Directors' compensation*	48,000	48,000
Other compensation	0	0
Santé Holdings SRL – Director		
Directors' compensation*	52,000	44,000
Other compensation	0	0
Jean-Luc Lemercier – Director		
Directors' compensation*	52,000	36,000
Other compensation	0	0
André Muller – Director		
Directors' compensation*	48,000	40,000
Other compensation	0	0
Florent Battistella – Director (since May 12, 2021)		
Directors' compensation*	24,000	24,000
Other compensation	0	0
David Coti – Director (since May 12, 2021)		
Directors' compensation*	7,000	11,000
Other compensation	0	0
John B. Hernandez – Director (since May 12, 2021)		
Directors' compensation*	28,000	48,000
Other compensation	0	0
Michael Mack – Director		
Directors' compensation*	48,000	48,000
Other compensation	0	0

* The term "Directors' compensation" replaces the term "Directors' fees" previously used.

Table 4: Stock options awarded to each executive corporate officer during the year ended December 31, 2022

No stock options were awarded in 2022.

Table 5: Stock options exercised by each executive corporate officer during the year ended December 31, 2022

No stock options were exercised in 2022.

Table 6: Free shares awarded to each corporate officer during 2022

Free shares awarded to each corporate officer by the issuer and by any Group company	Plan no. and date	Class and number of AGA awarded during the year		Value of shares*	Award date	Vesting date	End of lock-up period	Performance conditions
Stéphane Piat Chief Executive Officer	June 2022 AGA plan							
		o/w free shares 2022-1	40,844	€426,003	June 27, 2022	June 27, 2023	June 27, 2025	N/A
		o/w free shares 2022-2	40,844	€426,003	June 27, 2022	June 27, 2024	June 27, 2025	N/A
		o/w free shares 2022-3	40,844	€426,003	June 27, 2022	June 27, 2025	June 27, 2025	N/A
	2022 AGAP plan	AGAP 2022	1,783	€1,152,995	June 27, 2022	June 27, 2023	June 27, 2025	See section 5.2.5
TOTAL			124,315	€2,431,004				

* Value based on the Carmat share price at December 31, 2022 (€10.43), weighted by the Company's estimate of the probability of achieving the AGAP performance conditions. At least 15% of the number of these ordinary shares must be held by Stéphane Piat in registered form until the end of his tenure as corporate officer. To the best of the Company's knowledge, no hedging instrument has been put in place.

Tables 7 and 7 *bis*: Free shares awarded to each executive corporate officer that became available during the year ended December 31, 2022

Table 7: Free shares that vested during the year

Corporate officer name	Plan no. and date	Class and number of AGA/ordinary shares vested during the year	
Stéphane Piat Chief Executive Officer	2021 AGA plan of June 14, 2021		
		Free-shares 21-1	18,000
TOTAL			18,000

Table 7 *bis*: Preference shares (AGAP) that became convertible into ordinary shares in 2022

Corporate officer name	Plan no. and date	Class and number of AGAP that became convertible during the year		Number of ordinary shares to which the convertible AGAP give right*
Stéphane Piat Chief Executive Officer	2019 AGAP plan of April 1, 2019	AGAP 2019-02	2,640	26,400
		AGAP 2019-03	1,320	0
	2019 AGAP plan of September 23, 2019	AGAP 2019-02	1,800	18,000
		AGAP 2019-03	150	0
TOTAL			5,910	44,400

* Taking into account the actual degree of achievement of the performance conditions on the convertibility date, as determined by the Board of Directors (i.e., 100% for the AGAP 2019-02 and 0% for the AGAP 2019-03).

Table 8: History of stock option awards (for executive and non-executive directors)[01]

Table 8	BCE-2012-1	BCE-2012-2	BSA-2017 – Board member	BSA-2021 – Directors	2018 stock option plan	2019 stock option plan
Date of the Board meeting	June 27, 2012	Nov. 8, 2012	May 15, 2017	June 14, 2021	Dec. 3, 2018	April 1, 2019
Total number of shares that can be subscribed or acquired	56,500	6,700	12,000	12,000	46,000	46,000
Number of which can be subscribed or acquired by corporate officers (executive and non-executive)	4,000	0	12,000	12,000	46,000	46,000
Jean-Luc Lemercier*			6,000		0	0
Michael Mack*			6,000		0	0
Jean-Pierre Garnier**			0		46,000	46,000
Florent Battistella*				6,000		
John B. Hernandez*				6,000		
Marcello Conviti**	4,000					
Starting point for exercising options	June 27, 2012	Nov. 8, 2012	May 15, 2017	May 12, 2021	Jan. 1, 2019	Jan. 1, 2019
Expiration date	June 27, 2022	Nov. 8, 2022	May 15, 2027	June 14, 2031	Dec. 2, 2028	March 31, 2029
Subscription or purchase price	€108.483	€122.003	€30.10 (note 1)	€24.57 (note 1)	€20.35 (note 2)	€22.70 (note 2)
Exercise conditions (when the plan includes several tranches)	See section 5.2.5	See section 5.2.5	See section 5.2.5	See section 5.2.5	See section 5.2.5	See section 5.2.5
Number of shares subscribed at Dec. 31, 2022	0	0	0	0	0	0
Cumulative number of stock options canceled or expired	56,500	6,700	0	0	0	0
Stock options remaining at year-end	0	0	12,000	12,000	46,000	46,000

* Corporate officer on the date of publication of this document. ** Former corporate officer of the Company.
Note 1: Price corresponding to the average weighted volume of the share prices quoted over the 20 trading days preceding the date of the Board of Directors' decision.
Note 2: Share price (closing price) on Euronext Growth on the day preceding the Board of Directors' decision.

01 Except for awards that expire prior to 2021.

Table 9: Dilutive instruments granted to the top ten employees who are not corporate officers, and options exercised by these grantees during 2022

Stock options awarded to the top ten employee grantees who are not corporate officers, and options exercised by these grantees*	Total number of options awarded/ shares subscribed or purchased	Weighted average price
Options granted during the year by the issuer and by any company included in the scope of the stock option awards to the top ten employees of the Company and of any company included in this scope, having been granted the highest number of options (comprehensive information)	None	None
Options held on the issuer and on any of the aforementioned companies exercised during the year by the top ten employees of the issuer or of any of the aforementioned companies, having purchased or subscribed to the highest number of options (comprehensive information)	None	None

* Also including other financial instruments granting access to the share capital (BSA, BSAR, BSPCE, etc.).

Table 10: History of free share awards (comprehensive information)

2017 AGAP plans

Class of AGAP	AGAP 2017-01	AGAP 2017-02	AGAP 2017-03	AGAP 2017-01	AGAP 2017-02	AGAP 2017-03
Date of the Board meeting	May 15, 2017			Sept. 25, 2017		
Total number of free shares (AGAP/AGA) awarded	270	1,800	3,180	50	200	310
Of which awarded to corporate officers:	180	1,000	1,720	0	0	0
Stéphane Piat – Chief Executive Officer and director	180	1,000	1,720	0	0	0
AGAP/AGA vesting date	May 15, 2018			Sept. 25, 2018		
Exercise period to convert AGAP into ordinary shares*	From May 15, 2020 to May 15, 2025			From Sept. 25, 2020 to Dec. 25, 2025		
End of lock-up period	May 15, 2020			Sept. 25, 2020		
Number of shares (AGAP or AGA) vested at Dec. 31, 2022	270	1,800	3,180	50	200	310
Cumulative number of shares (AGAP/ AGA) expired or not convertible	0	0	0	0	0	0
Cumulative number of shares (AGAP/ AGA) expired or canceled (corporate officers)	0	0	0	0	0	0
Number of shares (AGAP or AGA) outstanding at Dec. 31, 2022	0	0	0	0	0	0
Cumulative number of ordinary shares issued at Dec. 31, 2022	27,000	36,000	105,600	5,000	4,000	11,350
Number of ordinary shares yet to be issued at Dec. 31, 2022	0	0	59,400	0	0	0

* See section 5.2.5 for the conversion ratios into ordinary shares, and the associated performance conditions.

2018 AGAP plans

Class of AGAP	AGAP 2018-01	AGAP 2018-02	AGAP 2018-03	AGAP 2018-03
Date of the Board meeting	April 16, 2018		Sept. 27, 2018	Feb. 11, 2019
Total number of free shares (AGAP/AGA) awarded	580	11,500	370	370
Of which awarded to corporate officers:	580	7,500	0	0
Stéphane Piat – Chief Executive Officer and director	500	7,500	0	0
AGAP/AGA vesting date	April 16, 2019		Sept. 27, 2019	Feb. 11, 2020
Exercise period to convert AGAP into ordinary shares*	From April 16, 2021 to April 16, 2026		From Sept. 27, 2021 to Dec. 27, 2026	From Feb. 11, 2022 to May 11, 2027
End of lock-up period	April 16, 2021		Sept. 27, 2021	Feb. 11, 2022
Cumulative number of shares (AGAP/AGA) vested at Dec. 31, 2022	580	11,300	370	370
Cumulative number of shares (AGAP/AGA) expired or not convertible	0	200	0	0
Cumulative number of shares (AGAP/AGA) expired or canceled (corporate officers)	0	0	0	0
Number of shares (AGAP) outstanding at Dec. 31, 2022	0	0	0	0
Cumulative number of ordinary shares issued at Dec. 31, 2022	20,000	14,500	0	0
Number of ordinary shares yet to be issued at Dec. 31, 2022	38,000	151,750	27,750	27,750

* See section 5.2.5 for the conversion ratios into ordinary shares, and the associated performance conditions.

2019 AGAP plans

Class of AGAP	AGAP 2019-01	AGAP 2019-02	AGAP 2019-03	AGAP 2019-01	AGAP 2019-02	AGAP 2019-03
Date of the Board meeting	April 1, 2019			Sept. 23, 2019		
Total number of free shares (AGAP/AGA) awarded	4,760	4,760	2,380	2,240	2,240	220
Of which awarded to corporate officers:	2,640	2,640	1,320	1,800	1,800	150
Stéphane Piat – Chief Executive Officer and director	2,640	2,640	1,320	1,800	1,800	150
AGAP/AGA vesting date	April 1, 2020			Sept. 23, 2020		
Exercise period to convert AGAP into ordinary shares*	From April 1, 2024 to June 30, 2027	From April 1, 2022 to June 30, 2027		From Sept. 23, 2024 to Dec. 23, 2027	From Sept. 23, 2022 to Dec. 23, 2027	
End of lock-up period	April 1, 2024	April 1, 2022		Sept. 23, 2024	Sept. 23, 2022	
Cumulative number of shares (AGAP/AGA) vested at Dec. 31, 2022	4,240	4,640	2,320	2,020	2,240	220
Cumulative number of shares (AGAP/AGA) expired or not convertible	120	120	60	0	0	0
Cumulative number of shares (AGAP/AGA) expired or canceled (corporate officers)	0	0	0	0	0	0
Number of shares (AGAP or AGA) outstanding at Dec. 31, 2022	400	0	0	220	0	0
Number of ordinary shares issued at Dec. 31, 2022	0	0	0	0	0	0
Number of ordinary shares yet to be issued at Dec. 31, 2022**	46,400	46,400	0	22,400	22,400	0

* See section 5.2.5 for the conversion ratios into ordinary shares, and the associated performance conditions.
** Assuming 100% achievement of the applicable performance conditions for AGAP not yet able to be converted.

2019 AGAP plans (cont.)

Class of AGAP	AGAP 2019-01	AGAP 2019-02	AGAP 2019-03
Date of the Board meeting		Dec. 2, 2019	
Total number of free shares (AGAP/AGA) awarded	1,000	1,000	1,000
Of which awarded to corporate officers:	0	0	0
Stéphane Piat – Chief Executive Officer and director	0	0	0
AGAP/AGA vesting date		Dec. 2, 2020	
Exercise period to convert AGAP into ordinary shares*	From Dec. 2, 2024 to March 1, 2028	From Dec. 2, 2022 to March 1, 2028	
End of lock-up period	Dec. 2, 2024	Dec. 2, 2022	
Cumulative number of shares (AGAP/AGA) vested at Dec. 31, 2022	1,000	1,000	1,000
Cumulative number of shares (AGAP/AGA) expired or not convertible	0	0	0
Cumulative number of shares (AGAP/AGA) expired or canceled (corporate officers)	0	0	0
Number of shares (AGAP or AGA) outstanding at Dec. 31, 2022	0	0	0
Number of ordinary shares issued at Dec. 31, 2022	0	0	0
Number of ordinary shares yet to be issued at Dec. 31, 2022**	10,000	10,000	0

* See section 5.2.5 for the conversion ratios into ordinary shares, and the associated performance conditions.
** Assuming 100% achievement of the applicable performance conditions for AGAP not yet able to be converted.

2020 AGAP plans

Class of AGAP	AGAP 2020-01	AGAP 2020-02	AGAP 2020-01
Date of the Board meeting	Dec. 2, 2020		March 22, 2021
Total number of free shares (AGAP/AGA) awarded	2,240	900	120
Of which awarded to corporate officers:	800	500	0
Stéphane Piat – Chief Executive Officer and director	800	500	0
AGAP/AGA vesting date	Dec. 18, 2021		March 22, 2022
Exercise period to convert AGAP into ordinary shares*	From Dec. 18, 2024 to March 18, 2029	From Dec. 18, 2025 to March 18, 2029	From March 22, 2025 to June 22, 2029
End of lock-up period	Dec. 17, 2024	Dec. 17, 2025	March 22, 2024
Cumulative number of shares (AGAP/AGA) vested at Dec. 31, 2022	2,040	820	120
Cumulative number of shares (AGAP/AGA) expired or not convertible	0	0	0
Cumulative number of shares (AGAP/AGA) expired or canceled (corporate officers)	0	0	0
Number of shares (AGAP or AGA) outstanding at Dec. 31, 2022	200	80	0
Cumulative number of ordinary shares issued at Dec. 31, 2022	0	0	0
Number of ordinary shares yet to be issued at Dec. 31, 2022**	224,000	90,000	12,000

* See section 5.2.5 for the conversion ratios into ordinary shares, and the associated performance conditions.
** Assuming 100% achievement of the applicable performance conditions for AGAP not yet able to be converted.

2021 AGA plans

Class of AGA	AGA 2021-01	AGA 2021-02	AGA 2021-03
Date of the Board meeting		June 14, 2021	
Total number of free shares (AGAP/AGA) awarded	39,000	58,500	117,500
Of which awarded to corporate officers:	18,000	27,000	45,000
Stéphane Piat – Chief Executive Officer and director	18,000	27,000	45,000
AGAP/AGA vesting date	June 14, 2022	June 14, 2023	June 14, 2024
End of lock-up period	June 14, 2024	June 14, 2024	June 14, 2024
Cumulative number of shares (AGAP/AGA) vested at Dec. 31, 2022	39,000	0	0
Cumulative number of shares (AGAP/AGA) expired or not convertible	0	0	0
Cumulative number of shares (AGAP/AGA) expired or canceled (corporate officers)	0	0	0
Number of shares (AGAP or AGA) outstanding at Dec. 31, 2022	0	58,500	117,500
Cumulative number of ordinary shares issued at Dec. 31, 2022	39,000	0	0
Number of ordinary shares yet to be issued at Dec. 31, 2022	0	58,500	117,500

2022 AGAP plans

Class of AGAP	AGAP 2022
Date of the Board meeting	June 27, 2022
Total number of free shares (AGAP/AGA) awarded	4,654
Of which awarded to corporate officers:	1,783
Stéphane Piat – Chief Executive Officer and director	1,783
AGAP/AGA vesting date	June 27, 2023
Exercise period to convert AGAP into ordinary shares*	From June 27, 2025 to Sept. 27, 2030
End of lock-up period	June 27, 2025
Cumulative number of shares (AGAP/AGA) vested at Dec. 31, 2022	0
Cumulative number of shares (AGAP/AGA) expired or not convertible	0
Cumulative number of shares (AGAP/AGA) expired or canceled (corporate officers)	0
Number of shares (AGAP or AGA) outstanding at Dec. 31, 2022	4,654

Number of ordinary shares issued at Dec. 31, 2022	0
Number of ordinary shares yet to be issued at Dec. 31, 2022**	465,400

* See section 5.2.5 for the conversion ratios into ordinary shares, and the associated performance conditions.
** Assuming 100% achievement of the applicable performance conditions for AGAP not yet able to be converted.

2022 AGA plans

Class of AGA	AGA 2022-01	AGA 2022-02	AGA 2022-03	AGA June 2022-01	AGA June 2022-02	AGA June 2022-03
Date of the Board meeting	February 14, 2022			June 27, 2022		
Total number of free shares (AGA) awarded	5,980	8,970	19,850	97,587	97,587	124,816
Of which awarded to corporate officers:	0	0	0	40,844	40,844	40,844
Stéphane Piat – Chief Executive Officer and director	0	0	0	40,844	40,844	40,844
AGA vesting date	February 14, 2023	February 14, 2024	February 14, 2025	June 27, 2023	June 27, 2024	June 27, 2025
End of lock-up period	February 14, 2025	February 14, 2025	February 14, 2025	June 27, 2025	June 27, 2025	June 27, 2025
Cumulative number of shares (AGA) vested at Dec. 31, 2022	0	0	0	0	0	0
Cumulative number of shares (AGA) expired or not convertible	0	0	0	0	0	0
Cumulative number of shares (AGA) expired or canceled (corporate officers)	0	0	0	0	0	0
Number of shares (AGA) outstanding at Dec. 31, 2022	5,980	8,970	19,850	97,587	97,587	124,816
Number of ordinary shares issued at Dec. 31, 2022	0	0	0	0	0	0
Number of ordinary shares yet to be issued at Dec. 31, 2022	5,980	8,970	19,850	97,587	97,587	124,816

* See section 5.2.5 for the conversion ratios into ordinary shares, and the associated performance conditions.

Table 10 *bis*: Information about the free shares awarded to Stéphane Piat

The following table summarizes the AGAP and AGA awarded to Stéphane Piat, Director and Chief Executive Officer of the Company, since he was first appointed Chief Executive Officer on September 1, 2016. Stéphane Piat has not received any other instruments (BSA share warrants, BCE company founder share warrants, stock options, etc.) giving access to the Company's share capital.

Summary:

The AGAP 2017 awarded to Stéphane Piat in 2017 became convertible in 2020 into 132,600 ordinary shares (corresponding to a value of €1.38 million based on Carmat's share price at December 31, 2022, i.e., €10.43).

The AGAP 2018 awarded to Stéphane Piat in 2018 became convertible in 2021 into 162,500 ordinary shares (corresponding to a value of €1.69 million based on Carmat's share price at December 31, 2022, i.e., €10.43).

The AGAP 2019-02 and 2019-03 awarded to Stéphane Piat in 2019 became convertible in 2022 into 44,400 ordinary shares (corresponding to a value of €0.46 million based on Carmat's share price at December 31, 2022, i.e., €10.43).

A total of 18,000 AGA 2021-1 awarded to Stéphane Piat in 2021 became available in 2022 (corresponding to a value of €0.19 million based on Carmat's share price at December 31, 2022, i.e., €10.43).

The AGAP 2019-01, AGAP 2020 and AGAP 2022 awarded to Stéphane Piat in 2019, 2020 and 2022, respectively, will become convertible between 2024 and 2025 into a maximum of 325,700 ordinary shares, assuming that all the performance conditions are fully met. Based on Carmat's closing share price on December 31, 2022 (€10.43), these ordinary shares would be worth €3.68 million.

The AGA 2021-2 and 2021-3 awarded to Stéphane Piat in 2021, and the AGA 2022 awarded to him in 2022 (i.e., 194,532 ordinary shares in all), will become available between 2023 and 2025 (corresponding to a value of €2.0 million based on Carmat's share price at December 31, 2022, i.e., €10.43).

Table 10 *bis* – Part 1	**2017 AGAP plan**			**2018 AGAP plan**	
Class of AGAP	**AGAP 2017-01**	**AGAP 2017-02**	**AGAP 2017-03**	**AGAP 2018-01**	**AGAP 2018-02**
Award date	May 15, 2017			April 16, 2018	
Number of free shares (AGAP/AGA) awarded	180	1,000	1,720	500	7,500
Maximum number of ordinary shares to which the AGAP or AGA give right	18,000	20,000	172,000	50,000	150,000
AGAP/AGA vesting date	May 15, 2018			April 16, 2019	
AGAP convertibility date/AGA availability date	May 15, 2020			April 16, 2021	
Exercise period to convert AGAP into ordinary shares	From May 15, 2020 to May 15, 2025			From April 16, 2021 to April 16, 2026	
Number of shares (AGAP or AGA) vested at Dec. 31, 2022	180	1,000	1,720	500	7,500
Cumulative number of shares (AGAP/AGA) expired or canceled	0	0	0	0	0
Cumulative number of shares that have become convertible (AGAP) or available (AGA) at Dec. 31, 2022	180	1,000	1,720	500	7,500
% achievement of performance conditions on the convertibility date	100%	100%	55%	100%	75%
Number of ordinary shares to which the convertible/available AGAP/AGA give right	18,000	20,000	94,600	50,000	112,500
Number of ordinary shares actually issued at Dec. 31, 2022	18,000	20,000	38,500	20,000	0
Number of ordinary shares yet to be issued at Dec. 31, 2022	0	0	56,100	30,000	112,500

Table 10 *bis* (cont.): Information about the free shares awarded to Stéphane Piat

Table 10 *bis* – Part 2	2019 AGAP plan			2019 AGAP plan		
Class of AGAP or AGA	**AGAP 2019-01**	**AGAP 2019-02**	**AGAP 2019-03**	**AGAP 2019-01**	**AGAP 2019-02**	**AGAP 2019-02**
Award date	April 1, 2019			Sept. 23, 2019		
Number of free shares (AGAP/AGA) awarded	2,640	2,640	1,320	1,800	1,800	150
Maximum number of ordinary shares to which the AGAP or AGA give right	26,400	26,400	13,200	18,000	18,000	1,500
AGAP/AGA vesting date	April 1, 2020			Sept. 23, 2020		
AGAP convertibility date/AGA availability date	April 1, 2024	April 1, 2022		Sept. 23, 2024	Sept. 23, 2022	
Exercise period to convert AGAP into ordinary shares*	From April 1, 2024 to June 30, 2027	From April 1, 2022 to June 30, 2027		From Sept. 23, 2024 to Dec. 23, 2027	From Sept. 23, 2022 to Dec. 23, 2027	
Number of shares (AGAP or AGA) vested at Dec. 31, 2022	2,640	2,640	1,320	1,800	1,800	150
Cumulative number of shares (AGAP/AGA) expired or canceled	0	0	0	0	0	0
Cumulative number of shares that have become convertible (AGAP) or available (AGA) at Dec. 31, 2022		2,640	1,320		1,800	150
% achievement of performance conditions on the convertibility date		100%	0%		100%	0%
Number of ordinary shares to which the convertible/available AGAP/AGA give right		26,400	0		18,000	0
Number of ordinary shares actually issued at Dec. 31, 2022		0	0		0	0
Number of ordinary shares yet to be issued at Dec. 31, 2022**	26,400	26,400	0	18,000	18,000	0

* See section 5.2.5 for the conversion ratios into ordinary shares, and the associated performance conditions.
** Assuming 100% achievement of the applicable performance conditions for AGAP not yet able to be converted.

Table 10 *bis* (cont.): Information about the free shares awarded to Stéphane Piat

Table 10 *bis* – Part 3	**2020 AGAP plan**	
Class of AGAP or AGA	**AGAP 2020-01**	**AGAP 2020-02**
Award date	Dec. 18, 2020	
Number of free shares (AGAP/AGA) awarded	800	500
Maximum number of ordinary shares to which the AGAP or AGA give right	80,000	50,000
AGAP/AGA vesting date	Dec. 18, 2021	
AGAP convertibility date/AGA availability date	Dec. 18, 2024	Dec. 18, 2025
Exercise period to convert AGAP into ordinary shares*	From Dec. 18, 2024 to March 18, 2029	From Dec. 18, 2025 to March 18, 2029
Number of shares (AGAP or AGA) vested at Dec. 31, 2022	800	500
Cumulative number of shares (AGAP/AGA) expired or canceled	0	0
Cumulative number of shares that have become convertible (AGAP) or available (AGA) at Dec. 31, 2022		
% achievement of performance conditions on the convertibility date		
Number of ordinary shares to which the convertible/available AGAP/AGA give right		
Number of ordinary shares actually issued at Dec. 31, 2022		
Number of ordinary shares yet to be issued at Dec. 31, 2022**	80,000	50,000

* See section 5.2.5 for the conversion ratios into ordinary shares, and the associated performance conditions.
** Assuming 100% achievement of the applicable performance conditions for AGAP not yet able to be converted.

Table 10 *bis* (cont.): Information about the free shares awarded to Stéphane Piat

Table 10 *bis* – Part 4	**2021 AGA plan**		
AGA/AGAP	**AGA 2021-01**	**AGA 2021-02**	**AGA 2021-03**
Award date	June 14, 2021		
Number of free shares (AGAP/AGA) awarded	18,000	27,000	45,000
Maximum number of ordinary shares to which the AGAP or AGA give right	18,000	27,000	45,000
AGAP/AGA vesting date	June 14, 2022	June 14, 2023	June 14, 2024
AGA availability date	June 14, 2024		
Number of shares (AGAP or AGA) vested at Dec. 31, 2022	18,000	0	0
Cumulative number of shares (AGAP/AGA) expired or canceled	0	0	0
Cumulative number of shares that have become convertible (AGAP) or available (AGA) at Dec. 31, 2022			
Number of ordinary shares to which the convertible/available AGAP/AGA give right			
Number of ordinary shares actually issued at Dec. 31, 2022			
Number of ordinary shares yet to be issued at Dec. 31, 2022	18,000	27,000	45,000

Table 10 *bis* (cont.): Information about the free shares awarded to Stéphane Piat

Table 10 *bis* – Part 5	June 2022 AGA plan			2022 AGAP plan
AGA/AGAP	AGA June 2022-01	AGA June 2022-02	AGA June 2022-03	AGAP 2022
Award date	June 27, 2022			June 27, 2022
Number of free shares (AGAP/AGA) awarded	40,844	40,844	40,844	1,783
Maximum number of ordinary shares to which the AGAP or AGA give right	40,844	40,844	40,844	178,300
AGAP/AGA vesting date	June 27, 2023	June 27, 2024	June 27, 2025	June 27, 2023
AGAP convertibility date/AGA availability date	June 27, 2025			June 27, 2025
Exercise period to convert AGAP into ordinary shares*	N/A			From June 27, 2025 to Sept. 27, 2030
Number of shares (AGAP or AGA) vested at Dec. 31, 2022	0	0	0	0
Cumulative number of shares (AGAP/AGA) expired or canceled	0	0	0	0
Cumulative number of shares that have become convertible (AGAP) or available (AGA) at Dec. 31, 2022				
% achievement of performance conditions on the convertibility date				
Number of ordinary shares to which the convertible/available AGAP/AGA give right				
Number of ordinary shares actually issued at Dec. 31, 2022				
Number of ordinary shares yet to be issued at Dec. 31, 2022**	40,844	40,844	40,844	178,300

* See section 5.2.5 for the conversion ratios into ordinary shares, and the associated performance conditions.
** Assuming 100% achievement of the applicable performance conditions for AGAP not yet able to be converted.

Table 10 *ter*: Free share awards to the top ten employees who are not corporate officers, and shares that became available to these beneficiaries in 2022

Free shares awarded to the top ten employees who are not corporate officers, and shares that became available to these beneficiaries	Total number of shares (AGAP* and AGA) awarded/ shares (AGAP* and AGA) available	of which AGAP 2022	of which AGA June 2022	of which AGA 2022	of which AGAP 2020-01	of which AGAP 2019-02	of which AGAP 2019-03	of which AGA 2021-1
Free shares (AGAP and AGA) awarded** during the year by the issuer and by any company falling within the scope of stock option awards, to the top ten employees of the issuer or of any company falling within this scope who have been awarded the highest number of shares (comprehensive information)	205,729	2,871	197,458	5,400				
Free shares (AGAP and AGA) in the issuer and in the aforementioned companies that became available*** during the year, for the top ten employees of the issuer or of these companies for whom the highest number of AGAP and AGA became available (comprehensive information)	21,975				120	620	235	21,000

* See sections 5.2.5 and 5.4.3 for the characteristics and performance conditions attached to the various AGAP shares.
** Provisional award.
*** AGAP/AGA vested during the year. Concerning eight employees in 2022.

Table 11: Clarifications regarding the terms of compensation and other benefits awarded to executive corporate officers

Executive corporate officer	Employment contract		Supplementary pension plan		Allowances or benefits due or likely to be due upon loss of office or change in role		Non-compete indemnities	
	Yes	No	Yes	No	Yes	No	Yes	No
Jean-Pierre Garnier – Chairman of the Board of Directors (until December 21, 2022)	X*			X		X		X
Start date of office								Dec. 3, 2018
End date of office								Resigned on Dec. 21, 2022
Alexandre Conroy – Chairman of the Board of Directors (as of December 21, 2022)		X		X		X		X
Start date of office								Dec. 21, 2022
End date of office								SM held to approve the fiscal year ending Dec. 31, 2024
Stéphane Piat, Chief Executive Officer		X		X	X**		X**	
Start date of office								April 27, 2017
End date of office								SM held to approve the fiscal year ending Dec. 31, 2024

* Employment contract as US Business Development Manager from December 3, 2018 to December 31, 2022. Jean-Pierre Garnier receives fixed compensation but no variable compensation, Directors' fees or other benefits. His fixed compensation has not been never increased since the beginning of his employment contract.
** See section 4.6 (Related-party agreements).

Table 12: Share warrants (BSA), company founder share warrants (BCE) and stock options awarded by the Company to the corporate officers, still valid but not exercised at December 31, 2022

Holder/Number of shares*	BSA-2017 – Board members	Stock options – 2018	Stock options – 2019	BSA-2019 – Consultant	BSA-2021 – Directors
Jean-Pierre Garnier Chairman of the Board of Directors (until December 21, 2022)	-	46,000	46,000	-	-
Jean-Luc Lemercier Director	6,000	-	-	-	-
Michael Mack Director	6,000	-	-	-	-
André Muller Director since March 30, 2020		-	-	6,000	-
Florent Battistella Director since May 12, 2021	-	-	-	-	6,000
John B. Hernandez Director since May 12, 2021	-	-	-	-	6,000

* See section 5.2.5 for details of the conditions attached to these BSA share warrants and stock options.

On June 24, 2019, André Muller, director of the Company since March 30, 2020, was awarded 6,000 BSA share warrants for his services as consultant (see section 5.2.5 – Table "BSA-2019-Consultant").

4.5.2 BOARD OF DIRECTORS COMPENSATION POLICY

On December 2, 2020, the Board of Directors determined the compensation policy for Board members in respect of their directorship, applicable as of January 1, 2021:

- For independent directors: €8,000 per meeting attended whether in person or remotely, plus €4,000 per meeting for directors based in the United States to compensate for travel time in the case of meetings attended in person;
- For other directors: €2,000 per meeting attended whether in person or remotely.

However, the Chairman of the Board and the Chief Executive Officer will not receive any compensation in respect of their directorship.

Members of the Audit Committee and the Compensation Committee will each receive, in addition to the above amounts:

- €4,000 per year for independent directors;
- €1,000 per year for other directors.

However, the Chairman of the Board and the Chief Executive Officer will not receive any compensation in respect of their Committee membership.

Should new independent directors be appointed,[01] they will each be awarded 6,000 BSA share warrants when they take up office, which are exercisable in tranches of one third per year over three years.

Alexandre Conroy receives gross annual compensation of €120,000 in his capacity as Company director and Chairman of the Board of Directors (see section 4.6 "Related-part agreements").

01 This does not apply to the Chairman of the Board of Directors, even if he is independent.

4.5.3 AMOUNTS PROVISIONED OR RECOGNIZED BY THE COMPANY FOR THE PAYMENT OF PENSIONS, RETIREMENT OR OTHER BENEFITS FOR EXECUTIVES AND DIRECTORS

The Company has not signed a specific agreement on retirement obligations. These are therefore limited to the agreed retirement lump-sum payment.

In application of Approach 1 set out in ANC Recommendation no. 2013-02, a provision for retirement obligations was booked at December 31, 2022 (see note 3.2.2.6 to the financial statements in section 3 of this Universal Registration Document).

4.5.4 STATEMENT ON SERVICE CONTRACTS

At the date of publication of this Universal Registration Document, there are no service contracts binding the members of the Board of Directors or management of the Company that provide for benefits under such contracts, with the exception of those mentioned in section 4.6 "Related-party agreements".

4.6 RELATED-PARTY AGREEMENTS

4.6.1 DESCRIPTION OF RELATED-PARTY AGREEMENTS

ROYALTIES AGREEMENT

Under a royalties agreement signed on June 24, 2008 and amended by an addendum of February 5, 2010 between Carmat, Professor Alain Carpentier and Matra Défense (a subsidiary of Airbus Group) as a result of contributions made when the Company was established, it was agreed that Carmat would pay Professor Alain Carpentier and Matra Défense a total sum equal to 2% of the direct net sales generated by the total artificial heart in the countries covered by at least one of the patents initially contributed by them to the Company after obtaining CE marking and FDA authorization. These payments will be made on a half-yearly basis within thirty days of the end of each six-month period, according to a distribution between Professor Alain Carpentier and Matra Défense established in proportion to their holdings in the share capital of the Company on the date it was established.

However, Carmat may repurchase this right to royalties by paying Professor Alain Carpentier and Matra Défense, in proportion to their holdings in the share capital of the Company on the date it was established, a total sum of €30 million less the amount of royalties already paid at the time this right to royalties is repurchased. This sum of €30 million is indexed-linked to the Production prices index for industry and services to companies – Medico-surgical and orthopedic material for export in the Eurozone PVIC Code 3310921007M with a base level of 100.3 in April 2008 as calculated and published by the French National Institute for Statistics and Economic Studies (INSEE).

SEVERANCE AND NON-COMPETE AGREEMENT BETWEEN THE COMPANY AND STÉPHANE PIAT

At its meeting of September 13, 2022, the Board of Directors decided that Stéphane Piat, Company director and Chief Executive Officer, would receive severance representing up to 18 months' compensation (fixed and variable) in the event of the forced termination of his duties. An agreement was signed to this effect on the same date between the Company and Stéphane Piat, also providing for various exclusivity, non-compete, non-solicitation, confidentiality and intellectual property undertakings. A monthly amount equal to 40% of his fixed monthly compensation may be paid to him in respect of the non-compete undertaking in the 12 months following his departure from the Company. The Company believes that the amount and terms of this severance are appropriate given the highly sensitive and high-risk nature of its business.

MANAGEMENT AGREEMENT BETWEEN THE COMPANY AND ALEXANDRE CONROY

At its meeting of December 21, 2022, the Board of Directors decided that Alexandre Conroy would receive, in his capacity as Chairman of Carmat's Board of Directors and in respect of the transfer to the Company of any work and intellectual property rights provided for in Article 5 of the agreement, initial gross annual compensation of €120,000 (subject to modification at a later date under the conditions provided for by applicable laws and regulations). An agreement was signed to this effect on the same date between the Company and Alexandre Conroy, setting out, among other matters: (i) the main terms and conditions of his duties as Company director and Chairman of the Board of Directors (together, the "Duties"), (ii) his obligations, in particular with respect to confidentiality and non-compete undertakings. The agreement also provided that Alexandre Conroy would subscribe to Company stock options which the Board may decide to issue during the first half of 2023 in light of an independent expert's report. The agreement is valid for the entire term of his Duties. The Company believes that the terms of the agreement, and in particular the compensation provided for, are appropriate in light of Alexandre Conroy's Duties.

4.6.2 STATUTORY AUDITOR'S SPECIAL REPORT ON RELATED-PARTY AGREEMENTS

This is a free translation into English of the Statutory Auditor's special report on related-party agreements issued in French and is provided solely for the convenience of English speaking readers. This report should be read in conjunction with, and construed in accordance with, French law and professional auditing standards applicable in France.

CARMAT SA
36, avenue de l'Europe
Immeuble l'Etendard Energy III
78140 Vélizy-Villacoublay, France

To the Shareholders,

In our capacity as Statutory Auditor of Carmat, we hereby report to you on related-party agreements.

It is our responsibility to report to shareholders, based on the information provided to us, on the main terms and conditions of agreements that have been disclosed to us or that we may have identified as part of our engagement, as well as the reasons given as to why they are beneficial for the Company, without commenting on their relevance or substance or identifying any undisclosed agreements. Under the provisions of Article R.225-31 of the French Commercial Code (Code de commerce), it is the responsibility of the shareholders to determine whether the agreements are appropriate and should be approved.

Where applicable, it is also our responsibility to provide shareholders with the information required by Article R.225-31 of the French Commercial Code in relation to the implementation during the year of agreements already approved by the Shareholders' Meeting.

We performed the procedures that we deemed necessary in accordance with professional standards applicable in France to such engagements. These procedures consisted in verifying that the information given to us is consistent with the underlying documents.

AGREEMENTS TO BE SUBMITTED FOR THE APPROVAL OF THE SHAREHOLDERS' METTING

Agreements authorized and entered into during the year

In accordance with Article L.225-40 of the French Commercial Code, we were informed of the following agreements entered into during the year and authorized in advance by the Board of Directors.

- Severance and non-compete agreement between Carmat and Stéphane Piat

With: Stéphane Piat, Company director and Chief Executive Officer.

Nature and purpose: this agreement was authorized by the Board of Directors on September 13, 2022 and signed on the same date. On the recommendation of the Appointments & Compensation Committee, the Board of Directors decided that Stéphane Piat would receive severance representing up to 18 months' compensation (fixed and variable) in the event of the forced termination of his duties. The agreement also provides for various exclusivity, non-compete, non-solicitation, confidentiality and intellectual property undertakings for Stéphane Piat. A monthly amount equal to 40% of his fixed monthly compensation may be paid to him in respect of the non-compete undertaking in the 12 months following his departure from the Company. The Company believes that the amount and terms of this severance are appropriate given the highly sensitive and high-risk nature of its business.

Terms and conditions: no amounts were paid by the Company in 2022 under this agreement.

Reasons given as to why the agreement is beneficial for the Company: to formally set the terms of the severance to be paid in the event of forced termination of the duties of the director and Chief Executive Officer of the Company.

- Management agreement between Carmat and Alexandre Conroy

With: Alexandre Conroy, Chairman of the Company's Board of Directors.

Nature and purpose: at its meeting of December 21, 2022, the Board of Directors decided that Alexandre Conroy would receive, in his capacity as Chairman of Carmat's Board of Directors and in respect of the transfer to the Company of any work and intellectual property rights provided for in Article 5 of the agreement, initial gross annual compensation of €120,000 (subject to modification at a later date under the conditions provided for by applicable laws and regulations). An agreement was signed to this effect on December 21, 2022 between the Company and Alexandre Conroy, setting out, among other matters: (i) the main terms and conditions of his duties as Company director and Chairman of the Board of Directors (together, the "Duties"), (ii) his obligations, in particular with respect to confidentiality and non-compete undertakings. The agreement also provided that Alexandre Conroy would subscribe to Company stock options which the Board may decide to

issue during the first half of 2023 in light of an independent expert's report. The agreement is valid for the entire term of his Duties.

Terms and conditions: no amounts were paid in 2022 under this agreement.

Reasons given as to why the agreement is beneficial for the Company: to set the terms under which the Chairman of the Board of Directors performs his duties and is compensated therefor.

AGREEMENTS ALREADY APPROVED BY THE SHAREHOLDERS' MEETING

Agreements approved in previous years

We were informed of the following agreements approved by the Shareholders' Meeting in previous years, which remained in force but were not implemented during the year.

- Royalties agreement between CARMAT, Professor Alain Carpentier and Matra Défense

With: Professor Alain Carpentier and Matra Défense, founding shareholders of the Company.

Nature and purpose: on June 24, 2008, the Company signed a royalties agreement with Professor Alain Carpentier and Matra Défense. This agreement was amended on February 5, 2010. Under the agreement, the Company undertakes to pay to Professor Alain Carpentier and Matra Défense 2% of the net sales proceeds of the Carmat artificial heart manufactured and distributed by Carmat, with this amount to be divided between the two beneficiaries in proportion to their respective shares in the capital of the Company on the date it was established.

These royalties will be payable every six months within 30 days of the end of each six-month period, commencing after the first marketing of the Carmat artificial heart after obtaining CE marking and FDA authorization, and ending upon expiration of the patents shown in Appendix 1 to the agreement. The Company is also authorized to repurchase, at any time, the right to benefit from these royalties for a sum of €30,000,000, less any royalties already paid under the agreement, with this total sum being divided between the two beneficiaries in proportion to their respective shares in the share capital of the Company on the date it was established. This amount of €30,000,000 is indexed to the Producer Price Index of the Business Services Industry – Euroarea orthopedic and orthopedic equipment (Indice du Prix à la Production de l'Industrie des Services aux Entreprises – Matériel médicochirurgical et d'orthopédie-exportation zone Euro). The rights allocated to Professor Alain Carpentier and to Matra Défense in this way are non-transferable.

Terms: no amounts were paid by the Company in 2022 under this agreement.

Lyon, April 20, 2023

The Statutory Auditor

PricewaterhouseCoopers Audit

Gonzague Van Royen

5

INFORMATION ABOUT THE COMPANY AND THE SHARE CAPITAL

5.1 LEGAL STRUCTURE

5.1.1 REGISTERED NAME

The Company's registered name is: "Carmat".

5.1.2 PLACE AND NUMBER OF REGISTRATION – LEI NUMBER

The Company is registered in the Versailles Trade and Companies Register under number 504 937 905.

Its LEI (Legal Entity Identifier) number is 96 95 0 0 ARXAC M0P0 KH333.

5.1.3 DATE OF INCORPORATION AND TERM

The Company was incorporated on June 25, 2008 and registered on June 30, 2008 for a term of 99 years, unless said term is extended or the Company is wound up in advance.

5.1.4 REGISTERED OFFICE, LEGAL FORM AND APPLICABLE LAW

The Company's registered office is located at 36, avenue de l'Europe – Immeuble l'Etendard-Energy III – 78140 Vélizy-Villacoublay (phone number: +33 1 39 45 64 50). The Company is a French joint-stock corporation (*société anonyme*) with a Board of Directors. It is governed by French law, especially the provisions of Book II of the French Commercial Code (*Code de commerce*).

5.1.5 ORGANIZATION OF THE GROUP

The Company is not part of a group.

5.1.6 SUBSIDIARIES AND INVESTMENTS

The Company has no subsidiaries or investments.

5.2 SHARE CAPITAL

5.2.1 VALUE OF THE SHARE CAPITAL AND EQUITY

Share capital

At December 31, 2022, the fully paid-up share capital amounted to €907,018.76, divided into 22,675,469 shares with a par value of €0.04 each, including:
- 22,641,279 ordinary shares,
- 34,190 preference shares.

The preference shares break down as follows:
- 1,260 preference shares of class 2017-03,
- 380 preference shares of class 2018-01,
- 10,150 preference shares of class 2018-02,
- 740 preference shares of class 2018-03,
- 7,260 preference shares of class 2019-01,
- 7,880 preference shares of class 2019-02,
- 3,540 preference shares of class 2019-03,
- 2,160 preference shares of class 2020-01,
- 820 preference shares of class 2020-02.

The Shareholders' Meeting of April 27, 2017 decided to add three classes of preference shares convertible into ordinary shares and governed by Articles L.228-11 *et seq.* of the French Commercial Code to Article 12.2 of the Company's Articles of Association, respectively named "AGAP 2017-01", "AGAP 2017-02" and "AGAP 2017-03" (hereinafter together referred to as the "2017 Preference Shares").

The Shareholders' Meeting of April 5, 2018 decided to add three new classes of preference shares convertible into ordinary shares to Article 12.2 of the Company's Articles of Association, respectively named "AGAP 2018-01", "AGAP 2018-02" and "AGAP 2018-03" (hereinafter together referred to as the "2018 Preference Shares").

The Shareholders' Meeting of March 28, 2019 decided to add three new classes of preference shares to Article 12.2 of the Company's Articles of Association, respectively called "AGAP 2019-01", "AGAP 2019-02" and "AGAP 2019-03" (hereinafter together referred to as the "2019 Preference Shares"). The provisions of the Articles of Incorporation relating to "AGAP 2019-01" were amended by the May 12, 2021 Shareholders' Meeting.

The Shareholders' Meeting of March 30, 2020 decided to add two new classes of preference shares to Article 12.2 of the Company's Articles of Association, called "AGAP 2020-01" and "AGAP 2020-02" (hereinafter referred to as the "2020 Preference Shares").

The Shareholders' Meeting of May 11, 2022 decided to add a new class of preference shares to Article 12.2 of the Company's Articles of Association, respectively called "AGAP 2022" (hereinafter referred to as the "2022 Preference Shares").

The 2017, 2018, 2019, 2020 and 2022 Preference Shares will also be convertible into Ordinary Shares subject to vesting and lock-up periods and to performance conditions, as described in section 5.4.2 of this document.

The various Preference Share awards are detailed in section 4.5 of this document.

Equity

At December 31, 2022, equity showed a credit balance and was not less than half of the share capital.

5.2.2 SECURITIES NOT REPRESENTING CAPITAL

At the date of this Universal Registration Document, there were no securities not representing capital.

5.2.3 PLEDGES, GUARANTEES AND COLLATERAL

At the date of this Universal Registration Document, and to the best of the Company's knowledge, no shares have been pledged or used as guarantee or collateral.

5.2.4 ACQUISITION BY THE COMPANY OF ITS OWN SHARES

At December 31, 2022, the Company held 8,103 treasury shares, representing 0.036% of its share capital. The carrying amount of these shares was €84.5 thousand at December 31, 2022.

The Combined Shareholders' Meeting of May 11, 2022 authorized the Board of Directors to implement a share buyback program for a period of 18 months from the date of the meeting, pursuant to the provisions of Article L.225-209 of the French Commercial Code and in compliance with the General Regulation of the French Financial Markets Authority (Autorité des marchés financiers – AMF).

During the year ended December 31, 2022, the Company carried out the following transactions in its own shares under the liquidity agreement entered into with an independent financial services provider, as authorized by the Shareholders' Meeting:

- purchase of 235,432 shares at an average price of €12.21;
- sale of 231,907 shares at an average price of €12.27.

5.2.4.1: Characteristics of the authorization

The main terms of this authorization are the following:

Number of shares that may be purchased: 10% of the share capital at the date of the buyback. When shares are acquired in order to promote trading in and the liquidity of the shares, the number of shares taken into account to determine the above-mentioned 10% limit corresponds to the number of shares purchased, less the number of shares sold during the period of the authorization.

Objectives of the share buyback program

- To ensure the liquidity of the shares of the Company under a liquidity agreement with an investment services provider that complies with market practices as accepted by the AMF in terms of share liquidity agreements.
- To honor obligations under stock purchase option programs, free share awards, employee savings plans or other share allocations to employees and executives of the Company or related companies.
- To deliver shares upon exercise of the rights attached to securities giving access to the share capital.
- To hold shares in treasury for subsequent delivery as payment or exchange for external growth transactions pursuant to the applicable regulations.
- To cancel all or some of the shares bought back.
- Or more generally, to carry out transactions for any purposes subsequently authorized by law or to implement any market practices subsequently authorized by the market authorities. In such event, the Company will inform the shareholders in a press release.

Maximum purchase price: €150, excluding fees and commissions and any adjustments made in order to account for corporate actions.

It is specified that the number of shares acquired by the Company for the purpose of being held in treasury for subsequent delivery as payment or exchange as part of a merger, demerger or contribution may not exceed 5% of the share capital.

Maximum amount of funds that may be allocated to the share buyback program: €5,000,000

The shares bought back may be canceled up to a limit of 10% of the share capital per 24-month period.

5.2.4.2: Liquidity agreement entered into with Gilbert Dupont

The liquidity agreement entered into for a period of 12 months, renewable each year by tacit agreement, covers the Company's shares listed on the Euronext Growth market in Paris. Upon the signing of the liquidity agreement, €123,414.37 and 3,160 Company shares were allocated to the liquidity account.

5.2.4.3: Employee share awards

In the year ended December 31, 2022, the Company did not buy back any of its own shares with a view to awarding them to employees under a stock option plan, free share award plan, employee savings plan or other share allocations to employees and executives of the Company or related companies.

5.2.4.4: Overview of share buybacks

The share buyback program authorized by the Combined Shareholders' Meeting of May 11, 2022 was used exclusively for the liquidity agreement entered into with Gilbert Dupont.

At December 31, 2022, the resources in the liquidity account set up for this agreement represented €45 thousand and 8,103 Company shares, i.e., 0.036% of the current share capital.

5.2.5 OTHER SECURITIES GIVING ACCESS TO THE SHARE CAPITAL

At December 31, 2022, the exercise or conversion of all the securities giving access to the share capital would result in the net creation of 1,885,970 Company shares, representing 8.3% of the current issued share capital and 7.7% of the share capital after issue of these new shares.

A shareholder holding 1% of the current share capital would therefore subsequently hold 0.923% if all the securities were exercised.

Type of instrument	Number of new shares that may be created (at December 31, 2022)
Incentive instruments for Management, Consultants and Board members	
- BCE-2012-01	0
- BCE-2012-02	0
- BSA-2017 – Board members	12,000
- BSA-2018 – Consultant	10,000
- BSA-2019 – Consultant	6,000
- BSA-2021 – Board members	12,000
- Stock options – 2018	46,000
- Stock options – 2019	46,000
- Preference shares – 2017	58,320
- Preference shares – 2018	233,980
- Preference shares – 2019	142,460
- Preference shares – 2020	323,020
- Preference shares – 2022	465,400
- Free shares – 2021	176,000
- Free shares – 2022	34,800
- Free shares – June 2022	319,990
Total incentive instruments	1,885,970
Financing tool	
- BSA Kepler Cheuvreux Tranches 1 & 2	0
Total financing instruments	0
Total	1,885,970

The tables below present all the securities giving access to the issued share capital of the Company that have been awarded (and remain in effect at December 31, 2022 or were in effect in 2022) and would result in the net subscription of 1,885,970 new shares.

COMPANY FOUNDER SHARE WARRANTS (BCE)

Security	BCE-2012-1
Number of BCE warrants issued and awarded	56,500
Number of BCE warrants expired	56,500
Number of BCE warrants exercised	0
Balance of BCE warrants to be exercised	0
Date of the Shareholders' Meeting	April 26, 2012
Date of the Board meeting	June 27, 2012
Exercise price per new share subscribed	€108.483
BCE warrant expiration date	Ten years from the date of award of the BCE warrants
Ratio	One BCE-2012-1 warrant for one new Carmat share
Exercise conditions	- 50% of BCE-2012-1 warrants may be exercised on the basis of monthly periods in tranches of 1/48th from the date on which the BCE-2012-1 options are awarded to the beneficiary, subject to his/her actual and continued presence within the Company at that date; - 16.25% of the BCE-2012-1 warrants may be exercised after the successful outcome of the pivotal clinical trials of the Carmat total artificial heart (report from the scientific advisory committee), subject to his/her actual and continued presence within the Company at that date; - 16.25% of the BCE-2012-1 warrants may be exercised from the date on which CE marking is obtained for the Carmat total artificial heart, subject to actual and continued presence of the beneficiary within the Company at that date; - 17.5% of the BCE-2012-1 warrants may be exercised after completion at December 31 of the first year of marketing of the Carmat total artificial heart, confirmed by the Board of Directors, in accordance with the expectations in terms of revenue and gross profit margin set out in the business plan drawn up by Executive Management and approved by the Board of Directors, subject to the actual and continued presence of the beneficiary within the Company at that date.
Number of new shares that may be subscribed	0

Security	BCE-2012-2
Number of BCE warrants issued and awarded	6,700
Number of BCE warrants expired	6,700
Number of BCE warrants exercised	0
Balance of BCE warrants to be exercised	0
Date of the Shareholders' Meeting	April 26, 2012
Date of the Board meeting	November 8, 2012
Exercise price per new share subscribed	€122.003
BCE warrant expiration date	Ten years from the date of award of the BCE warrants
Ratio	One BCE-2012-2 warrant for one new Carmat share
Exercise conditions	- 50% of BCE-2012-2 warrants may be exercised on the basis of monthly periods in tranches of 1/48th from the date on which the BCE-2012-2 options are awarded to the beneficiary, subject to his/her actual and continued presence within the Company at that date; - 16.25% of the BCE-2012-2 warrants may be exercised after the successful outcome of the pivotal clinical trials of the Carmat total artificial heart (report from the scientific advisory committee), subject to his/her actual and continued presence within the Company at that date; - 16.25% of the BCE-2012-2 warrants may be exercised from the date on which CE marking is obtained for the Carmat total artificial heart, subject to actual and continued presence of the beneficiary within the Company at that date; - 17.5% of the BCE-2012-2 warrants may be exercised after completion at December 31 of the first year of marketing of the Carmat total artificial heart, confirmed by the Board of Directors, in accordance with the expectations in terms of revenue and gross profit margin set out in the business plan drawn up by Executive Management and approved by the Board of Directors, subject to the actual and continued presence of the beneficiary within the Company at that date.
Number of new shares that may be subscribed	0

SHARE WARRANTS (BSA)

Security	BSA Kepler Cheuvreux – Tranches 1 & 2 (all exercisable by Kepler Cheuvreux)
Number of BSA warrants issued and awarded	1,050,000
Number of BSA warrants expired	460,000
Number of BSA warrants exercised	590,000
Balance of BSA warrants to be exercised	0
Date of the Shareholders' Meeting	April 5, 2018
Date of CEO's decision	September 27, 2018 and April 7, 2021
Exercise price per new share subscribed	94% of the average volume-weighted trading price
BSA warrant expiration date	March 27, 2022
Ratio	One Kepler BSA warrant for one new Carmat share
Number of new shares that may be subscribed	0

The Company has put in place a new flexible equity financing arrangement with Kepler Cheuvreux, as the previous one expired in July 2018. Signed in September 2018, this new framework agreement comprises up to two consecutive 12-month tranches (and may be extended by a further six months in the event of a capital increase), with a first €12 million tranche beginning on the date the agreement is signed, followed by a second tranche bringing the total amount (Tranche 1 + Tranche 2) to €25 million.

Under this framework, Kepler Cheuvreux has made a firm and definitive commitment to purchase new shares under Tranches 1 and 2 for €25 million, at times and intervals of its own choosing, no later than March 27, 2022, subject to compliance with the terms agreed upon by the two parties. The Company may terminate the agreement at any time. Kepler Cheuvreux does not intend to retain the shares subscribed under these arrangements, and will subsequently sell them to investors or on the open market. This agreement expired on March 27, 2022.

Security	BSA-2017 – Board members
Number of BSA warrants issued and awarded for free	12,000
Number of BSA warrants expired	0
Number of BSA warrants exercised	0
Balance of BSA warrants to be exercised	12,000
Date of the Shareholders' Meeting	April 27, 2017
Date of the Board meeting	May 15, 2017
Exercise price per new share subscribed	€30.10
BSA warrant expiration date	May 15, 2027
Ratio	One BSA – Board members warrant for one new Carmat share
Exercise conditions	- up to 1,500 warrants will be exercisable as from January 2, 2018; - up to 94 additional warrants will be exercisable from each month starting on January 2, 2018, i.e., from February 2, 2018 for the first tranche, it being specified that the last tranche will be limited to 82 warrants.
Number of new shares that may be subscribed	12,000

Security	BSA-2018 – Consultant
Number of BSA issued and subscribed at €3.14/BSA	10,000
Number of BSA warrants expired	0
Number of BSA warrants exercised	0
Balance of BSA warrants to be exercised	10,000
Date of the Shareholders' Meeting	April 5, 2018
Date of the Board meeting	June 11, 2018
Exercise price per new share subscribed	€20.93
BSA warrant expiration date	June 11, 2028
Ratio	One BSA – Consultant warrant for one new Carmat share
Exercise conditions	- the 10,000 warrants will be exercisable as from February 1, 2021; - June 11, 2028 at the latest.
Number of new shares that may be subscribed	10,000

At its meeting of December 2, 2020, the Board of Directors revised the terms of exercise of the BSA-2018 – Consultant, authorizing the beneficiary to exercise all of his/her BSA warrants notwithstanding the termination of his/her consulting contract, provided that he/she joined Carmat as an employee no later than April 1, 2021, which it did on February 1, 2021.

Security	BSA-2019 – Consultant
Number of BSA issued and subscribed at €3.03/BSA	6,000
Number of BSA warrants expired	0
Number of BSA warrants exercised	0
Balance of BSA warrants to be exercised	6,000
Date of the Shareholders' Meeting	March 28, 2019
Date of the Board meeting	June 24, 2019
Exercise price per new share subscribed	€20.21
BSA warrant expiration date	June 24, 2029
Ratio	One BSA – Consultant warrant for one new Carmat share
Exercise conditions	- up to 166 warrants per full calendar month that has elapsed from the first day of the calendar month following the decision of the Board of Directors; - June 24, 2029, at the latest.
Number of new shares that may be subscribed	6,000

Security	BSA-2021 – Directors
Number of BSA issued and subscribed at €6.00/BSA	12,000
Number of BSA warrants expired	0
Number of BSA warrants exercised	0
Balance of BSA warrants to be exercised	12,000
Date of the Shareholders' Meeting	May 12, 2021
Date of the Board meeting	June 14, 2021
Exercise price per new share subscribed	€24.57
BSA warrant expiration date	June 14, 2031
Ratio	One BSA – Consultant warrant for one new Carmat share
Exercise conditions	- 4,000 BSA warrants exercisable as from May 12, 2022, a further 4,000 warrants as from May 12, 2023, and a further 4,000 warrants as from May 12, 2024. Exercisable by June 14, 2031, at the latest.
Number of new shares that may be subscribed	12,000

STOCK OPTIONS

Security	Stock options – 2018
Number of options issued and awarded	46,000
Number of options expired	-
Number of options exercised	-
Balance of options to be exercised	46,000
Date of the Shareholders' Meeting	April 5, 2018
Date of the Board meeting	Dec. 3, 2018
Exercise price per new share subscribed	€20.35
Option expiration date	Ten years from the date of award of the options
Ratio	One stock option for one new Carmat share
Exercise conditions	- 50% of the options may be exercised in increments of 1/36th each month elapsed from January 1, 2019, and in any event no later than 10 years after their date of award to the beneficiary; - 50% of the options are exercisable when the Company succeeds in successfully raising additional financing (excluding Equity Line financing and EIB type loans) for an amount of at least €100 million between the date of award and December 31, 2021, and in any event no later than 10 years after their date of award to the beneficiary.
Number of new shares that may be subscribed	46,000

At its meeting of June 22, 2020, the Board of Directors revised the terms of the 2018 stock options to postpone the deadline for achieving the performance condition (additional funding of at least €100 million) from December 31, 2020 to December 31, 2021.

Security	Stock options – 2019
Number of options issued and awarded	46,000
Number of options expired	-
Number of options exercised	-
Balance of options to be exercised	46,000
Date of the Shareholders' Meeting	March 28, 2019
Date of the Board meeting	April 1, 2019
Exercise price per new share subscribed	€22.70
Option expiration date	Ten years from the date of award of the options
Ratio	One stock option for one new Carmat share
Exercise conditions	- the options can be exercised in increments of 1/36th each month elapsed from January 1, 2019; - March 31, 2029, at the latest.
Number of new shares that may be subscribed	46,000

PREFERENCE SHARES (FREE PREFERENCE SHARES SUBJECT TO PERFORMANCE CONDITIONS OVER A 3 TO 5-YEAR PERIOD)

The AGAP (AGAP 2017, AGAP 2018, AGAP 2019, AGAP 2020 and AGAP 2022) are preference shares subject to performance conditions over a period of 3 to 5 years. The general mechanism of the AGAP is as follows:

- On date T, the beneficiary is awarded a number of AGAP subject to performance conditions. Each AGAP is convertible into a maximum number of ordinary shares (e.g., 100).
- On date T+12 months, the AGAP vest in the beneficiary provided that the beneficiary is still with the Company on that date. This is known as the vesting date. If the beneficiary is no longer with the Company on the vesting date, the AGAP will lapse.
- On date T+x months (where x varies from 36 to 60 months depending on the AGAP), which is the convertibility date, the AGAP become convertible into a number of ordinary shares based on the degree of achievement of the preset performance conditions. The degree of achievement is determined by the Board of Directors. If all the conditions are met, the AGAP will be convertible into the maximum number of shares (in our example: 100). If none of the conditions are met, the AGAP will not be convertible into ordinary shares. If some conditions are met but not others, the AGAP will be convertible into a number of ordinary shares based on the degree of achievement of the objectives (in our example, if the degree of achievement is 60%, then each AGAP may be converted into 60 ordinary shares).
- The AGAP may be converted into ordinary shares at the beneficiary's request during the convertibility period, typically a period of three to five years after their convertibility date.

For more information on the rights attached to preference shares issued by the Company, see Article 12.2 of the Articles of Association, reproduced in section 5.4.2 of this document.

AGAP 2017 (free preference shares subject to performance conditions)	Tranche 1	Tranche 2	Tranche 3
Number of preference shares awarded	320	2,000	3,490
Number of preference shares lapsed	0	0	0
Number of preference shares vested	320	2,000	3,490
- of which number of preference shares already converted into ordinary shares	320	2,000	2,230
- of which number of preference shares yet to be converted into ordinary shares	0	0	1,080
- of which number of preference shares not convertible into ordinary shares	0	0	180
Number of preference shares not yet vested	0	0	0
Maximum number of ordinary shares that may be created at December 31, 2022*	0	0	59,400
Maximum net** number of shares that may be created at December 31, 2022	0	0	58,320

* According to the conversion ratios decided by the Board of Directors (see paragraph below).
** Maximum number of ordinary shares that may be created, net of the number of preference shares canceled upon their conversion.

The Board of Directors noted that, at the AGAP 2017 convertibility date:

- for the AGAP 2017-01, the sole performance condition had been achieved, meaning that each AGAP 2017-01 could be converted into 100 ordinary shares;
- for the AGAP 2017-02, the sole performance condition had been achieved, meaning that each AGAP 2017-02 could be converted into 20 ordinary shares;
- for the AGAP 2017-03, the performance conditions had been 55% achieved, meaning that each AGAP 2017-03 could be converted into 55 ordinary shares.

AGAP 2018 (free preference shares subject to performance conditions)	Tranche 1	Tranche 2	Tranche 3
Number of preference shares awarded	580	11,500	740
Number of preference shares lapsed	0	200	0
Number of preference shares vested	580	11,300	740
- of which number of preference shares already converted into ordinary shares	200	1,150	740
- of which number of preference shares yet to be converted into ordinary shares	380	10,150	0
- of which number of preference shares not convertible into ordinary shares	0	0	740
Number of preference shares not yet vested	0	0	0
Maximum number of ordinary shares that may be created at December 31, 2022*	38,000	151,750	55,000
Maximum net** number of shares that may be created at December 31, 2022	37,620	141,600	54,760

* According to the conversion ratios decided by the Board of Directors (see paragraph below).
** Maximum number of ordinary shares that may be created, net of the number of preference shares canceled upon their conversion.

The Board of Directors noted that, at the AGAP 2018 convertibility date:

- for the AGAP 2018-01, the sole performance condition had been achieved, meaning that each AGAP 2018-01 could be converted into 100 ordinary shares;
- for the AGAP 2018-02 and 2018-03, the performance conditions were met at a rate of 75%, meaning that each AGAP 2018-02 could be converted into 15 ordinary shares (10 ordinary shares for two employees who left the Company before the end of the convertibility period), and that each AGAP 2018-03 could be converted into 75 ordinary shares.

AGAP 2019 (free preference shares subject to performance conditions)	Tranche 1	Tranche 2	Tranche 3
Number of preference shares awarded	8,000	8,000	3,600
Number of preference shares lapsed	120	120	60
Number of preference shares vested	7,260	7,260	3,540
- of which number of preference shares already converted into ordinary shares	0	0	0
- of which number of preference shares yet to be converted into ordinary shares	7,260	7,260	0
- of which number of preference shares not convertible into ordinary shares	0	0	3,540
Number of preference shares not yet vested	620	0	0
Maximum number of ordinary shares that may be created at December 31, 2022*	78,800	78,800	0
Maximum net** number of shares that may be created at December 31, 2022	71,540	70,920	0

* Based on the applicable conversion ratios and performance conditions described in the table below.
** Maximum number of ordinary shares that may be created, net of the number of preference shares canceled upon their conversion.

AGAP 2019 Preference share tranches	Performance conditions	Maximum conversion ratio applicable for each performance condition
Tranche 1	Success of the first patient treated in the United States under the US pivotal study following the positive conclusion of the early feasibility study	10
Tranche 2	Obtaining CE marking with sufficient inventory to support the commercial launch	10
Tranche 3	Billing and implantation of 5 prostheses within 4 months of CE marking	10

The Board of Directors noted that, at the AGAP 2019-02 convertibility date, the sole performance condition had been achieved, meaning that each AGAP 2019-02 could be converted into 10 ordinary shares.

The Board of Directors also noted that, at the AGAP 2019-03 convertibility date, the sole performance condition had not been met, meaning that the AGAP 2019-03 could not be converted into ordinary shares.

AGAP 2020 (free preference shares subject to performance conditions)	Tranche 1	Tranche 2
Number of preference shares awarded	2,360	900
Number of preference shares lapsed	0	0
Number of preference shares vested	2,160	820
- of which number of preference shares already converted into ordinary shares	0	0
- of which number of preference shares yet to be converted into ordinary shares	2,160	820
- of which number of preference shares not convertible into ordinary shares	0	0
Number of preference shares not yet vested	200	80
Maximum number of ordinary shares that may be created at December 31, 2022*	236,000	90,000
Maximum net** number of shares that may be created at December 31, 2022	233,840	89,180

* Based on the applicable conversion ratios and performance conditions described in the table below.
** Maximum number of ordinary shares that may be created, net of the number of preference shares canceled upon their conversion.

AGAP 2020 Preference share tranches	Performance conditions	Maximum conversion ratio applicable for each performance condition
Tranche 1	Actual annual production of 150 devices that have passed the quality assurance standards	50
	Annual sale of 100 devices (excluding clinical trials or "*Forfait Innovation*" program)	50
	Maximum number of ordinary shares that may be created, regardless of the number of performance conditions achieved for Tranche 1	100
Tranche 2	Obtaining PMA in the United States	100

AGAP 2022	(free preference shares subject to performance conditions)	Single tranche
Number of preference shares awarded		4,654
Number of preference shares lapsed		0
Number of preference shares vested		0
	- of which number of preference shares already converted into ordinary shares	0
	- of which number of preference shares yet to be converted into ordinary shares	0
	- of which number of preference shares not convertible into ordinary shares	0
Number of preference shares not yet awarded		4,654
Maximum number of ordinary shares that may be created at December 31, 2022*		465,400
Maximum net** number of shares that may be created at December 31, 2022		465,400

* Based on the applicable conversion ratios and performance conditions described in the table below.
** Maximum number of ordinary shares that may be created, net of the number of preference shares canceled upon their conversion.

AGAP 2022	Performance conditions
- Each AGAP 2022 may be converted into up to 100 ordinary shares (depending on the degree of achievement of the performance condition):	
- Carmat's 2022 revenue ("2022 Revenue") in millions of euros will entitle the holder to a number of ordinary shares defined by the following formula: (2022 Revenue/59) *100	
- Carmat's 2023 revenue ("2023 Revenue") in millions of euros will entitle the holder to a number of ordinary shares defined by the following formula: (2023 Revenue/59) *100	
- Carmat's 2024 revenue ("2024 Revenue") in millions of euros will entitle the holder to a number of ordinary shares defined by the following formula: (2024 Revenue/59) *100	
- In any event, the total number of ordinary shares to which each 2022 AGAP will entitle the holder will be limited to 100, regardless of the revenue achieved over the period 2022-2024.	

FREE SHARES

AGA 2021 (free ordinary shares)	Tranche 1	Tranche 2	Tranche 3
Number of shares awarded	39,000	58,500	117,500
Number of shares expired	0	0	0
Number of shares vested	39,000	0	0
Number of shares not yet vested	0	58,500	117,500
Maximum number of ordinary shares that may be created at December 31, 2022	0	58,500	117,500

AGA 2022 (free ordinary shares)	Tranche 1	Tranche 2	Tranche 3
Number of shares awarded	5,980	8,970	19,850
Number of shares expired	0	0	0
Number of shares vested	0	0	0
Number of shares not yet vested	5,980	8,970	19,850
Maximum number of ordinary shares that may be created at December 31, 2022	5,980	8,970	19,850

AGA June 2022	(free ordinary shares)	Tranche 1	Tranche 2	Tranche 3
Number of shares awarded		97,587	97,587	124,816
Number of shares expired		0	0	0
Number of shares vested		0	0	0
Number of shares not yet vested		97,587	97,587	124,816
Maximum number of ordinary shares that may be created at December 31, 2022		97,587	97,587	124,816

5.2.6 AUTHORIZED BUT UNISSUED SHARE CAPITAL

Shareholders' Meeting of May 11, 2022

Table of delegations of authority applicable following the Shareholders' Meeting of May 11, 2022:

Resolution	Purpose of the resolution	Maximum nominal amount in euros	Terms and conditions for determining the issue price	Period of authorization and expiration
26th resolution	Delegation of authority allowing the Board of Directors to increase the capital immediately or in the future by issuing ordinary shares or any other securities giving access to the capital or giving right to the award of debt securities, with pre-emptive subscription rights	Nominal value of increases in capital: €400,000 (1) Nominal value of bonds and other debt securities giving access to the share capital: €150,000,000 (1)	N/A	July 11, 2024 (26 months)
27th resolution	Delegation of authority allowing the Board of Directors to issue shares or any other securities giving access to the capital immediately or in the future or giving right to the award of debt securities, without pre-emptive subscription rights, by way of a public offer (Article L.225-136)	Nominal value of increases in capital: €400,000 (1) Nominal value of bonds and other debt securities giving access to the share capital: €150,000,000 (1)	At least equal to the average volume-weighted price of the last five stock market sessions prior to the defining of the issue price less any discount (maximum 30%)	July 11, 2024 (26 months)

(1) These amounts are not cumulative. The overall maximum nominal amount of capital increases that can be carried out under the delegations granted under the 26th to 33rd resolutions is set at €400,000. The maximum nominal amount of debt securities which can be issued under the above delegations is set at €150,000,000 (34th resolution of the Shareholders' Meeting of May 11, 2022).

Resolution	Purpose of the resolution	Maximum nominal amount in euros	Terms and conditions for determining the issue price	Period of authorization and expiration
28th resolution	Delegation of authority allowing the Board of Directors to issue shares or any other securities giving access to the capital immediately or in the future or giving right to the award of debt securities, without pre-emptive subscription rights, by way of an offer to qualified investors or to a limited circle of investors within the meaning of Article L.411-2, II of the French Monetary and Financial Code (Article L.225-136 3°)	Nominal value of increases in capital: €400,000 (1) Nominal value of bonds and other debt securities giving access to the share capital: €150,000,000 (1)	At least equal to the average volume-weighted price of the last five stock market sessions prior to the defining of the issue price less any discount (maximum 30%)	July 11, 2024 (26 months)
29th resolution	Subject to the listing of the Company's shares on a regulated market, authorization allowing the Board of Directors, in the event of the issue of shares or any other securities giving access to the capital without pre-emptive subscription rights, to set the issue price at a maximum of 10% of the share capital and within the limits determined by Shareholders' Meeting	Limited to 10% of the Company's share capital (as existing on the date of the transaction) per 12-month period	At least equal to the average volume-weighted price of the last five stock market sessions prior to the defining of the issue price, less any discount (maximum 30%)	July 11, 2024 (26 months)
30th resolution	Delegation of authority allowing the Board of Directors to increase the amount of each of the issues with or without pre-emptive subscription rights that may be decided under the 26th to 28th resolutions	Limited to 15% of the initial issue	Price identical to that of the initial issue	July 11, 2024 (26 months)
31st resolution	Delegation of authority allowing the Board of Directors to issue shares or any other securities giving access to the capital immediately or in the future or giving right to the allocation of debt securities, without pre-emptive subscription rights, to a category of beneficiaries (life sciences and technology investors)	Nominal value of increases in capital: €400,000 (1) Nominal value of bonds and other debt securities giving access to the share capital: €150,000,000 (1)	At least equal to the average volume-weighted price of the last five stock market sessions prior to the defining of the issue price less any discount (maximum 30%)	November 11, 2023 (18 months)
32nd resolution	Delegation of authority allowing the Board of Directors to issue shares or any other securities giving access to the capital immediately or in the future or giving right to the allocation of debt securities, without pre-emptive subscription rights, to a category of beneficiaries (strategic, business or financial partners)	Nominal value of increases in capital: €400,000 (1) Nominal value of bonds and other debt securities giving access to the share capital: €150,000,000 (1)	At least equal to the average volume-weighted price of the last five stock market sessions prior to the defining of the issue price less any discount (maximum 30%)	November 11, 2023 (18 months)

(1) These amounts are not cumulative. The overall maximum nominal amount of capital increases that can be carried out under the delegations granted under the 26th to 33rd resolutions is set at €400,000. The maximum nominal amount of debt securities which can be issued under the above delegations is set at €150,000,000 (34th resolution of the Shareholders' Meeting of May 11, 2022).

Resolution	Purpose of the resolution	Maximum nominal amount in euros	Terms and conditions for determining the issue price	Period of authorization and expiration
33rd resolution	Delegation of authority allowing the Board of Directors to issue shares or any other securities giving access to the capital immediately or in the future or giving right to the allocation of debt securities, without pre-emptive subscription rights, to a category of beneficiaries (financial institutions underwriting the issue)	Nominal value of increases in capital: €400,000 (1) Nominal value of bonds and other debt securities giving access to the share capital: €150,000,000 (1)	At least equal to the average volume-weighted price of the last three stock market sessions prior to the defining of the issue price less any discount (maximum 30%)	November 11, 2023 (18 months)
35th resolution	Delegation of authority allowing the Board of Directors to issue shares or any other securities giving access to the capital immediately or in the future or giving right to the allocation of debt securities, without pre-emptive subscription rights, to a category of beneficiaries (equity- or bond-based financing arrangement)	Nominal value of increases in capital: €200,000 (1) Nominal value of bonds and other debt securities giving access to the share capital: €75,000,000	At least equal to the average volume-weighted price of the last three stock market sessions prior to the defining of the issue price less any discount (maximum 30%)	November 11, 2023 (18 months)
36th resolution	Delegation of authority allowing the Board of Directors to increase the capital by incorporation of premiums, reserves, profits or other amounts	Nominal value of increases in capital: €200,000 (2)	N/A	July 11, 2024 (26 months)

(1) These amounts are not cumulative. The overall maximum nominal amount of capital increases that can be carried out under the delegations granted under the 26th to 33rd resolutions is set at €400,000. The maximum nominal amount of debt securities that may be issued under the above delegations is set at €150,000,000 (34th resolution of the Shareholders' Meeting of May 11, 2022). (2) Cap separate from the one presented in (1).

Ordinary share subscription warrants:

Resolution	Purpose of the resolution	Maximum nominal amount in euros	Method of determining the BSA issue price	Method of determining the BSA exercise price	Period of authorization and expiration
37th resolution	Delegation of authority allowing the Board of Directors to issue warrants to members of the Board of Directors (who are not employees or executives), persons bound by a service contract or members of committees set up by the Board of Directors	€1,600 (corresponding to 40,000 shares)	To be set by the Board of Directors Issue price could be free	At least equal to the average of the prices weighted by the volumes of the last 20 trading sessions preceding the fixing of the issue price of the warrants	November 11, 2023 (18 months)

Free share awards:

Resolution	Purpose of the resolution	Maximum nominal amount in euros	Vesting period	Lock-up period	Period of authorization and expiration
38th resolution	Delegation of authority allowing the Board of Directors to award free ordinary shares on one or several occasions to employees and/or corporate officers	€12,800 (corresponding to 320,000 ordinary shares)	1 year minimum	Minimum cumulative vesting and lock-up period of 2 years	July 11, 2025 (38 months)

Ordinary share subscription warrants:

Resolution	Purpose of the resolution	Maximum nominal amount in euros	Vesting period	Subscription or purchase price	Period of authorization and expiration
39th resolution	Authorization granted to the Board of Directors to award stock subscription or purchase options	€4,000 (corresponding to 100,000 ordinary shares)	N/A	(i) on the Euronext Growth Paris market, at least equal to the sale price of a share at closing and 80% of the average price for shares purchased (ii) on a regulated market, may not be less than 95% of the average quoted price or 80% of the average purchase price of the shares	July 11, 2025 (38 months)

In 2022, the Board of Directors made use of the delegations of authority granted by the Shareholders' Meeting of May 11, 2022, and:

- awarded 319,900 free ordinary shares on June 27, 2022;
- awarded 4,654 free AGAP 2022 on June 27, 2022;
- issued 2,960,710 ordinary shares on December 8, 2022 resulting from a capital increase decided by the Chief Executive Officer.

5.2.7 INFORMATION ABOUT THE COMPANY'S SHARE CAPITAL SUBJECT TO AN OPTION OR A CONDITIONAL OR UNCONDITIONAL AGREEMENT MAKING THEM SUBJECT TO AN OPTION

None.

5.2.8 TABLE OF CHANGES IN THE COMPANY'S SHARE CAPITAL

The Company was registered with the Versailles Trade and Companies Registry on June 30, 2008 with an initial share capital of €40,000.

The table below shows a summary of the changes in share capital over the last 3 years:

Date of the operation	Transaction	Capital increase (in euros)	Number of shares issued or canceled	Nominal value of shares (in euros)	Cumulative number of shares	Share capital following the transaction (in euros)
April 1, 2020	Vesting of AGAP	14.80	370 PS	0.04	12,592,539 OS 17,480 PS	504,400.76
June 22, 2020	Vesting of AGAP	424.00	10,600 PS	0.04	12,592,539 OS 28,080 PS	504,824.76
September 7, 2020	Conversion of AGAP	3,081.20	78,900 OS (1,870) PS	0.04	12,671,439 OS 26,210 PS	507,905.96
December 2, 2020	Vesting of AGAP and capital increase via the exercise of Kepler share warrants	1,629.00	33,500 OS 7,225 PS	0.04	12,704,939 OS 33,435 PS	509,534.96
February 8, 2021	Capital increase for cash via the exercise of Kepler share warrants and conversion of AGAP	11,364.40	285,850 OS (1,740) PS	0.04	12,990,789 OS 31,695 PS	520,899.36
March 8, 2021	Increase in capital by cash contribution	92,811.92	2,320,298 OS	0.04	15,311,087 OS 31,695 PS	613,711.28
March 22, 2021	Conversion of AGAP	388.80	9,900 OS (180) PS	0.04	15,320,987 OS 31,515 PS	614,100.08
April 26, 2021	Vesting of AGAP	38.00	950 PS	0.04	15,320,987 OS 32,465 PS	614,138.08
June 14, 2021	Conversion of AGAP	294.00	7,875 OS (525) PS	0.04	15,328,862 OS 31,940 PS	614,432.08

Date of the operation	Transaction	Capital increase (in euros)	Number of shares issued or canceled	Nominal value of shares (in euros)	Cumulative number of shares	Share capital following the transaction (in euros)
September 13, 2021	Conversion of AGAP	963.60	24,425 OS (335) PS	0.04	15,353,287 OS 31,605 PS	615,395.68
February 14, 2022	Cash capital increase via the exercise of Kepler share warrants, vesting and conversion of AGAP	9,266.40	228,500 OS 2,160 PS	0.04	15,615,552 OS 33,765 PS	624,622.08
April 11, 2022	Vesting of AGAP	28.80	720 PS	0.04	15,615,552 OS 34,485 PS	624,650.88
April 11, 2022	Increase in capital by cash contribution	162,171.28	4,054,282 OS	0.04	19,636,069 OS 34,485 PS	786,822.16
June 27, 2022	Vesting of free shares	1,560.00	39,000 OS	0.04	19,675,069 OS 34,485 PS	788,382.16
September 13, 2022	Conversion of AGAP	198.00	5,500 OS (550) PS	0.04	19,680,569 OS 33,935 PS	788,580.16
December 5, 2022	Vesting of AGAP	10.20	255 PS	0.04	19,680,569 OS 34,190 PS	788,590.36
December 8, 2022	Increase in capital by cash contribution	118,428.40	2,960,710 OS	0.04	22,641,279 OS 34,190 PS	907,018.76

OS: Ordinary Shares PS: Preference Shares

5.3 MAJOR SHAREHOLDERS

5.3.1 DISTRIBUTION OF SHARE CAPITAL AND VOTING RIGHTS

CURRENT DISTRIBUTION OF SHARE CAPITAL AND VOTING RIGHTS

The table below shows the distribution of the share capital and voting rights (see section 5.3.2 "Voting rights" of this document, which indicates the conditions under which double voting rights may be obtained) of the Company at December 31, 2022.

To the best of the Company's knowledge, there is no other shareholder owning more than 5% of the share capital or voting rights.

Shareholders (December 31, 2022)	Number of shares	Number of voting rights	% of capital	% of voting rights
Matra Défense (Airbus Group)	2,670,640	3,652,040	11.8%	13.7%
Lohas (Pierre Bastid)	1,905,288	1,905,288	8.4%	7.1%
Santé Holding SRL (Dr. Antonino Ligresti)	1,823,900	2,748,991	8.0%	10.3%
Corely Belgium (Gaspard family)	880,000	1,670,000	3.9%	6.2%
Bratya (Gaspard family)	230,000	460,000	1.0%	1.7%
Professor Alain Carpentier and family	496,583	987,964	2.2%	3.7%
A. Carpentier Scientific Research Association Alain Carpentier Foundation	115,000	230,000	0.5%	0.9%
Thérabel Group	540,162	540,162	2.4%	2.0%
Cornovum	458,715	458,715	2.0%	1.7%
François IV SAS	319,898	319,898	1.4%	1.2%
Treasury stock	8,103	-	0.0%	-
Other	13,227,180	13,761,180	58.3%	51.5%
Total	22,675,469	26,734,238	100.0%	100.0%

Airbus Group (Matra Défense)

Airbus Group (formerly EADS), born out of a merger in July 2000 between DaimlerChrysler Aerospace AG, Aérospatiale-Matra and Construcciones Aeronáuticas SA, is a world leader in the aeronautic, space and defense and associated services sectors. Airbus Group holds shares in Carmat through its wholly owned subsidiary, Matra Défense.

Lohas

This entity is a family office of Pierre Bastid, having acquired the existing shares originally subscribed by ZAKA (another family office of Pierre Bastid) as part of the Company's 2016 private placement.

Corely Belgium and Bratya

These two entities are investment holding companies of the Gaspard family, owner of the Lyreco group.

Santé Holdings SRL

This entity is the family office of Dr. Antonino Ligresti, who was notably Chairman of Générale de Santé.

Professor Alain Carpentier

Professor Carpentier is one of the founders of Carmat. Winner of the 1998 Grand Prix from the Foundation for Medical Research, and Vice-President of the French Academy of Sciences, he also received the prestigious Albert Lasker Award for Clinical Medical Research in 2007 in recognition of his two main contributions to the field – the invention of valve bioprostheses (Carpentier-Edwards valves) and the development of techniques for plastic and reconstructive surgery of heart valves, which benefit several hundred thousand patients worldwide each year.

Scientific Research Association of the Alain Carpentier Foundation (ARSFAC)

Set up in December 2007 by Professor Alain Carpentier, the purpose of the Scientific Research Association of the Alain Carpentier Foundation is to finance medical research projects, in particular in the surgical, cardiovascular and neurological areas.

CorNovum

This entity is an investment vehicle equally owned by the French State and by BPI France.

Thérabel Group

The Thérabel Group is a European pharmaceutical group operating both in the fields of prescription drugs and over-the counter (OTC) drugs.

CHANGE IN THE DISTRIBUTION OF SHARE CAPITAL AND VOTING RIGHTS

The table below shows the distribution of share capital and voting rights in the Company for the prior three years, insofar as known to the Company.

On March 8, 2021, the Company carried out a capital increase for a gross amount of €55.7 million by means of a public offering with a priority subscription period for its existing shareholders, accompanied by a global offering. The following existing shareholders participated in this transaction: Santé Holdings SRL, Thérabel group, Lohas, Bratya, and Corely Belgium.

Shareholders	At December 31, 2021		At December 31, 2020		At December 31, 2019	
	% of capital	% of voting rights	% of capital	% of voting rights	% of capital	% of voting rights
Matra Défense (Airbus Group)	10.7%	14.3%	12.8%	17.8%	13.2%	18.4%
Lohas (Pierre Bastid)	9.1%	7.6%	10.2%	8.9%	11.5%	10.0%
Corely Belgium (Gaspard family)	6.7%	5.6%	6.1%	5.3%	6.3%	5.5%
Bratya (Gaspard family)	1.5%	1.3%	2.1%	1.8%	2.0%	1.7%
Santé Holding SRL (Dr. Antonino Ligresti)	7.3%	11.1%	7.1%	6.2%	7.3%	6.4%
Professor Alain Carpentier	3.5%	5.9%	4.2%	7.4%	4.4%	7.6%
Scientific Research Association Alain Carpentier Foundation	0.7%	1.2%	0.9%	1.5%	0.9%	1.6%
CorNovum	2.9%	2.5%	3.5%	3.1%	3.6%	3.2%
Thérabel Group	2.5%	2.1%	2.4%	2.1%	2.5%	2.1%
Bad 21	1.5%	1.2%	2.4%	2.1%	5.2%	4.5%
Funds managed by Truffle Capital	*	*	1.5%	1.3%	2.8%	3.3%
Air Liquide	0.5%	0.4%	0.6%	0.5%	0.6%	0.5%
Treasury stock	0.0%	-	0.0%	-	0.0%	-
Free float	52.9%	46.8%	46.1%	41.9%	39.6%	35.0%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

* % less than 1%.

In April and December 2022, the Company carried out two capital increases for a gross €40.5 million and €31.1 million, respectively, through a private placement combined with a public offering via the PrimaryBid platform.
Among the participants in the April 2022 operation were: Matra-Défense (Airbus), Santé Holdings SRL, Lohas, Thérabel Group and Bratya & Corely.
Among the participants in the December 2022 operation were: Santé Holdings SRL, Lohas and Thérabel Group.

These operations explain the changes observed in the composition of Carmat's ownership structure over the past years.

The Company is not aware of any of its shareholders crossing any of the statutory thresholds in the year ended December 31, 2022.

5.3.2 VOTING RIGHTS

The voting right attached to ordinary shares is proportional to the percentage of share capital that they represent. Each share entitles at least one vote.

However, in accordance with Article 14 of the Articles of Association and the provisions of the French Commercial Code, all fully paid up shares which have been registered to the same shareholder for at least two years benefit from double voting rights compared with those given to other shares with respect to the percentage of share capital that they represent.

For more information on double voting rights, see Article 14 of the Articles of Association, reproduced in section 5.4.2 of this document.

From the time of their vesting and until they become convertible, the preference shares have the right to vote at the Ordinary and Extraordinary Meetings of ordinary shareholders, with one voting right per preference share. From the date on which they become convertible, the number of voting rights that each preference share entitles becomes equal to the number of ordinary shares to which the conversion of each preference share gives entitlement.

5.3.3 STATEMENT CONCERNING THE CONTROL OF THE COMPANY

At the date of this Universal Registration Document, to the best of the Company's knowledge, no single shareholder was in control of the Company, directly or indirectly or with others, within the meaning of Article L.233-3 *et seq.* of the French Commercial Code.

5.3.4 AGREEMENTS THAT MAY BRING ABOUT A CHANGE IN CONTROL

At the date of this Universal Registration Document, and to the best of the Company's knowledge, there are no agreements that may bring about a change in control of the Company.

5.4 MEMORANDUM AND ARTICLES OF ASSOCIATION

5.4.1 CORPORATE PURPOSE (ARTICLE 2 OF THE ARTICLES OF ASSOCIATION)

The purpose of the Company is, either directly or indirectly, both in France and abroad:

- the research and development of medical devices and equipment, specifically in the cardiovascular field, and in all scientific fields directly or indirectly related thereto;
- the production and marketing of (i) medical devices and equipment in the cardiovascular field and (ii) all associated technologies;
- the acquisition or creation of technology products and licenses related to the cardiovascular field;
- the investment in French or foreign companies, which have activities that are similar to, or which complement those mentioned above;

- and, more generally, all operations of any kind – economic, legal, financial, civil or commercial, industrial, securities or real estate – that may be directly or indirectly connected with the above-mentioned purpose or likely to contribute to the development thereof.

5.4.2 RIGHTS, PRIVILEGES AND RESTRICTIONS ATTACHED TO SHARES (ARTICLES 9 TO 14 OF THE ARTICLES OF ASSOCIATION)

ARTICLE 9 – DEPRECIATION OF THE SHARE CAPITAL

The share capital may be depreciated in accordance with the provisions of Articles L.225-198 *et seq.* of the French Commercial Code.

ARTICLE 10 – SETTLEMENT OF SHARES

At the time of a capital increase, cash shares are settled, upon subscription, for at least a quarter of their face value and, as appropriate, the full share premium.

Settlement of the balance must take place on one or more occasions at the call of the Board of Directors and within five years of the date when the transaction becomes definitive in the case of an increase in share capital.

Calls for funds are announced to the subscribers and shareholders at least two weeks prior to the date set for payment by individual registered letter with acknowledgment of receipt.

A shareholder who does not make the required payments for shares on the due dates will be liable to pay the Company, automatically and without prior warning, delay interest calculated on a daily basis from the due date at the legal rate for commercial court matters plus three points.

In order to obtain payment of these sums, the Company is entitled to take enforcement action and apply the sanctions provided for by Articles L.228-27 *et seq.* of the French Commercial Code.

ARTICLE 11 – FORM OF SHARES

Ordinary shares are in registered or bearer form depending on the shareholder's choice. They can take the bearer form only after they are fully paid up. Fully paid-up preference shares are registered.

The Company is authorized to identify holders of bearer shares by simple request, for the body in charge of clearing securities, of the name or company name, nationality, year of birth or establishment, shareholders' addresses or number of shares held by each of them.

ARTICLE 12 – TRANSFER OF SHARES – RIGHTS AND OBLIGATIONS ASSOCIATED WITH SHARES – THRESHOLD CROSSING

12.1. Transfer of shares

The ordinary shares may be freely traded once issued in accordance with the procedures set out by law.

They remain tradable following the winding up of the Company and until liquidation is complete. Preference shares are transferable in accordance with paragraph 12.2.

Ordinary shares and the preference shares give rise to a book entry and are transferred by a movement between accounts under the conditions and according to the procedures set out in the law and the rules in force.

The provisions of this Article are generally applicable to all securities issued by the Company.

12.2. Rights and obligations attached to shares

The share capital of the Company is composed of Ordinary Shares and Preference Shares.

Shareholders are only liable for the Company's debts up to the amount of their contributions.

I. Rights attached to ordinary shares

Without prejudice to the rights attached to the preferred shares, each ordinary share entitles the holder to a share in the profits and in the share capital in proportion to the portion of share capital it represents. It gives the right to participate, under the conditions set by the law and the present Articles of Association, in Shareholders' Meetings and to vote on resolutions.

The ownership of an ordinary share automatically entails unreserved compliance with the Articles of Association and decisions of the Shareholders' Meeting of the Company.

The rights and obligations attached to the ordinary shares remain the same regardless of the holder.

Whenever it is necessary to own more than one share to exercise a right, in case of exchange, consolidation, award of shares, capital increase or reduction, merger or any other operation, owners of individual securities or less than the required number can exercise these rights only if they make it their personal business to group and possibly

purchase or sell the necessary number of securities.

II. Rights attached to preference shares

Preference shares and the rights of their holders are governed by the applicable provisions of the French Commercial Code, in particular Articles L.228-11 *et seq.*

The maximum number of preference shares that can be issued is:

- 7,600 for 2017 preference shares;
- 13,980 for 2018 preference shares;
- 20,000 for 2019 preference shares;
- 3,400 for 2020 preference shares; and
- 6,150 for 2022 preference shares.

Preference shares are classified into 12 distinct classes according to the performance conditions attached to them:

- "AGAP 2017-01" for a maximum of 320;
- "AGAP 2017-02" for a maximum of 2,000;
- "AGAP 2017-03" for a maximum of 5,280;
- "AGAP 2018-01" for a maximum of 580;
- "AGAP 2018-02" for a maximum of 11,500;
- "AGAP 2018-03" for a maximum of 1,900;
- "AGAP 2019-01" for a maximum of 8,000;
- "AGAP 2019-02" for a maximum of 8,000;
- "AGAP 2019-03" for a maximum of 4,000;
- "AGAP 2020-01" for a maximum of 2,500;
- "AGAP 2020-02" for a maximum of 900; and
- "AGAP 2022" for a maximum of 6,150.

From the time of their vesting and until they become convertible, the preference shares have the right to vote at the Ordinary and Extraordinary Meetings of ordinary shareholders, with one voting right per preference share. From the date on which they become convertible, the number of voting rights that each preference share entitles becomes equal to the number of ordinary shares to which the conversion of each preference share gives entitlement.

From the time of their vesting, preference shares shall have the right to vote at a special meeting of the holders of each class of preference shares. The holders of each class of preference shares shall attend a special meeting for any proposed amendment to the rights attached to such class of preference shares. In addition, in accordance with the provisions of Article L.228-17 of the French Commercial Code, any proposed merger or demerger of the Company whereby preference shares could not be exchanged for shares with specific equivalent rights will be subject to the approval of the special meeting concerned.

The quorum for special meetings will only be met if the shareholders present or represented possess at least one third of the preference shares with the right to vote on the first call and one fifth on the second call. In the event of a change or depreciation of the share capital, the rights of the holders of preference shares are adjusted in such a way as to preserve their rights pursuant to Article L.228-99 of the French Commercial Code. Other rights attached to preference shares are set out in the following paragraph.

From the time of their vesting and until they become convertible, the preference shares benefit from a dividend and give right to the reserves. The amount of the dividend (and, where applicable, the reserves) that each preference share entitles is equal to the amount due in respect of one ordinary share multiplied by the number of ordinary shares to which the conversion of each preference share gives right. For this purpose, the preference shares shall bear dividends from the first day of the financial year preceding the year in which they vest. From the date on which they become convertible, the amount of the dividend (and, where applicable, the reserves) that each preference share entitles becomes equal to the amount due in respect of one ordinary share multiplied by the number of ordinary shares to which the conversion of each preference share gives right.

From the time of their vesting, in the event of the liquidation of the Company, preference shares enjoy the same right to the liquidation bonus as ordinary shares, i.e., a right proportional to the share that their par value represents in the share capital.

From the time of their vesting, preference shares are entitled to pre-emptive subscription rights for any capital increase or any transaction with rights to the ordinary shares.

In the case of capital depreciation or reduction, changes in the distribution of profits, award of free shares, capitalization of reserves, profits or share premiums, distribution of reserves or any issue of equity securities or securities giving right to the award of capital securities with a subscription right reserved for shareholders before the preference shares are convertible under the conditions set out in paragraph III below, the maximum number of ordinary shares that the preference shares may entitle by conversion shall be adjusted to take account of such transaction in accordance with the provisions of Article L.228-99 paragraph 2, 3° and paragraph 5 of the French Commercial Code.

For the purposes of this adjustment, the Board of Directors will calculate, at the time of setting the final number of ordinary shares that each preference share entitles, the conversion ratio applicable according to the degree to which the performance conditions are met, such as provided for in paragraph III below, and adjust this ratio for all transactions previously completed, in accordance with the above provisions.

Each beneficiary will be informed of the practical details

of this adjustment and of its consequences on the award of ordinary shares on conversion of the preference shares he/she has been awarded.

After the preference shares have become convertible and the Board of Directors has calculated the conversion ratio as provided for in paragraph III below (as adjusted in accordance with this article, if necessary), no adjustment shall be made to this conversion ratio, as the holders of preference shares may convert them freely thereafter.

The preference shares will be fully paid up when they are issued by capitalizing the Company's reserves, premiums or profits.

III. Conversion of preference shares into ordinary shares

The issue of preference shares may only be decided in the context of an award of free shares to employees and corporate officers of the Company in accordance with the provisions of Articles L.225-197-1 *et seq.* of the French Commercial Code.

The preference shares will vest (the "Vesting") to the beneficiaries at the end of a vesting period of one (1) year from their award by the Board of Directors (the "Award").

However, if the beneficiary has a disability classified under the second or third category provided for in Article L.341-4 of the French Social Security Code (or their equivalent in applicable foreign law), the Preference Shares will vest before the end of the remaining vesting period. In the event of the beneficiary's death, in accordance with the provisions of Article L.225-197-3 of the French Commercial Code, the beneficiary's heirs or successors may, if they wish, apply for the vesting of the preference shares within six months of the date of death. In the event of retirement, the beneficiaries will retain their right to the Vesting of preference shares even though they are no longer bound by a contract of employment.

Holders of preference shares may request conversion of their preference shares into new or existing ordinary shares (the Company's choice) of the Company as follows:

1. The preference shares become convertible into new or existing ordinary shares (at the Company's choice) after a lock-up period (the "Lock-up Period") of:

(i) two years beginning on the Vesting Date for AGAP 2017-01, 2017-02, 2017-03, 2018-01, 2018-02, 2018-03, 2019-02, 2019-03 and 2022,

(ii) three years beginning on the Vesting Date for AGAP 2020-01,

(iii) four years beginning on the Vesting Date for AGAP 2019-01 and 2020-02.

The terms and conditions of conversion are set out in paragraphs 2 to 13 below (including in the case of a public cash or stock offer that might lead to early convertibility of the AGAP 2020-01, 2020-02 and 2022, to the extent that the Lock-up Period may not be less than one year).

From the date they become convertible (the "Convertibility Date"), preference shares may be converted during a conversion period (the "Conversion Period") of:

(i) five (5) years and three (3) months for AGAP 2017-01, 2017-02, 2017-03, 2018-01, 2018-02, 2018-03, 2019-02, 2019-03 and 2022,

(ii) four (4) years and three (3) months for AGAP 2020-01,

(iii) three (3) years and three (3) months for AGAP 2019-01 and 2020-02,

except in the case of a public cash or stock offer that might lead to early convertibility of the AGAP 2020-01, 2020-02 and 2022, although the date initially proposed for the end of the Conversion Period may not be changed.

2. In accordance with the provisions of Article L.225-197-1 I, paragraph 7 of the French Commercial Code, preference shares will be freely transferable during the Lock-up Period if the beneficiary becomes disabled under the second or third category provided for in Article L.341-4 of the French Social Security Code (or their equivalent in applicable foreign law), regardless of whether the disability occurs before or after the Vesting Date.
In the event of the beneficiary's death, whether the beneficiary dies during the vesting period or the Lock-up Period, his/her heirs will no longer be required to comply with this non-transferability commitment, so the preference shares for which they requested vesting shall become freely transferable.

3. 2017 preference shares are classified into three distinct classes according to the performance conditions attached to them: "AGAP 2017-01", "AGAP 2017-02" and "AGAP 2017-03". The number of ordinary shares to which the conversion of a 2017 preference share will give entitlement will depend on whether one or more (or all) of the Performance Conditions have been met on the Convertibility Date (the "2017 Performance Conditions").

For the "AGAP 2017-01" 2017 preference shares, the 2017 Performance Condition will be the definition of the Company's industrial development plan, which will give the right to convert each AGAP 2017-01 into ordinary shares.

For the "AGAP 2017-02" 2017 preference shares, the 2017 Performance Condition will be the successful implantation of the bioprosthesis evaluated on a total of ten patients worldwide, which will give the right to convert each AGAP 2017-02 into 20 ordinary shares.

For the "AGAP 2017-03" 2017 preference shares, the 2017 Performance Condition will be as follows:

- i. the filing of the clinical module of the CE marking of the bioprosthesis, which will give the right to convert each AGAP 2017-03 share into 15 ordinary shares;
- ii. the CE marking of the bioprosthesis, which will give the right to convert each AGAP 2017-03 into 20 ordinary shares;
- iii. obtaining additional financing for the Company for a cumulative amount of €100 million between the Award date and the Convertibility Date which will give the right to convert each AGAP 2017-03 into 25 ordinary shares. Such financing may take the form of, in particular, capital increases, debt instruments, conditional advances, operating subsidies or revenues received from collaborative or licensing agreements;
- iv. the establishment of a production process that (i) meets the applicable regulatory and quality standards, and (ii) enables the production of a sufficient number of bioprostheses within a sufficient time frame to carry out the necessary clinical trials and to meet commercial orders within the contractual deadlines, without any major interruption of production or quality issues leading to a recall of sold products, which will give the right to convert each AGAP 2017-03 into 15 ordinary shares;
- v. the effective commercialization of the bioprosthesis at 15 European implantation centers, which will give the right to convert each AGAP 2017-03 into ten ordinary shares;
- vi. the successful implantation of the bioprosthesis evaluated on ten patients in the United States, which will give the right to convert each AGAP 2017-03 into ten ordinary shares;
- vii. the successful implantation of the bioprosthesis evaluated on 100 patients worldwide, which will give the right to convert each AGAP 2017-03 into ten ordinary shares;
- viii. the change in the price of the ordinary share according to the following conditions, which will give the right to convert each AGAP 2017-03 into a maximum of ten ordinary shares.

a) If the Final Price is strictly lower than the Initial Price, the number of ordinary shares that each AGAP 2017-03 will be converted into will be equal to zero;

b) If the Final Price is between (i) a value equal to or greater than the Initial Price and (ii) a value below the Ceiling Price, the number of ordinary shares that each AGAP 2017-03 will be converted into will be equal to:

[(Final Price / Initial Price) - 1] x 10

c) If the Final Price is equal to or greater than the Ceiling Price, the number of ordinary shares that each AGAP 2017-03 will be converted into will be equal to ten.

The "Final Price" is the highest average of the trading session closing prices of ordinary shares taken over a period of sixty consecutive days, calculated at any time during the three (3) years preceding the Convertibility Date.

The "Ceiling Price" is equal to the Initial Price multiplied by three, and a maximum of €114.

The "Initial Price" is equal to the closing price of the ordinary share on the Award date, with a minimum of €30 and a maximum of €38 per ordinary share.

The conversion ratio thus determined for each class of 2017 preference shares will be adjusted to take into account the shares to be issued to preserve the rights of holders of securities giving access to the share capital of the Company and holders of 2017 preference shares in accordance with the applicable legal and regulatory provisions and paragraph II above.

4. 2018 preference shares are classified into three distinct classes according to the performance conditions attached to them: "AGAP 2018-01", "AGAP 2018-02" and "AGAP 2018-03". The number of ordinary shares to which the conversion of a 2018 preference share will give entitlement will depend on whether one or more (or all) of the Performance Conditions have been met on the Convertibility Date (the "2018 Performance Conditions"), with the 2017 Performance Conditions (together known as the "Performance Conditions").

For the "AGAP 2018-01" 2018 preference shares, the 2018 Performance Condition will be the successful completion of the "prosthesis" test benches used to obtain CE marking, which will give the right to convert each AGAP 2018-01 into 100 ordinary shares.

For the "AGAP 2018-02" 2018 preference shares, the 2018 Performance Conditions, which will give the right to convert each AGAP 2018-02 into 20 ordinary shares will be as follows:

- i. the recruitment of ten patients for the pivotal study to obtain CE marking, which will give the right to convert each AGAP 2018-2 into ten ordinary shares;
- ii. the recruitment of the 20th patient for the pivotal study to obtain CE marking or the finalization of the pivotal study for submission of the dossier to Dekra, which will give the right to convert each AGAP 2018-2 into five ordinary shares;
- iii. obtaining authorization to complete the early feasibility study in the United States by December 31, 2018, which will entitle the holder to convert each AGAP 2018-2 into five ordinary shares.

For the "AGAP 2018-03" 2018 preference shares, the 2018 Performance Conditions will be as follows:

- i. the filing of the clinical module of the CE marking of the bioprosthesis, which will give the right to convert

each AGAP 2018-03 share into 15 ordinary shares;

- ii. the CE marking of the bioprosthesis, which will give the right to convert each AGAP 2018-03 share into 20 ordinary shares;
- iii. obtaining additional financing for the Company for a cumulative amount of €38.5 million between the Award date and the Convertibility Date which will give the right to convert each AGAP 2018-03 into 25 ordinary shares. Such financing may take the form of, in particular, capital increases, debt instruments, conditional advances, operating subsidies or revenues received from collaborative or licensing agreements;
- iv. the establishment of a production process that (i) meets the applicable regulatory and quality standards, and (ii) enables the production of a sufficient number of bioprosthesis within a sufficient time frame to carry out the necessary clinical trials and to meet commercial orders within the contractual deadlines, without any major interruption of production or quality issues leading to a recall of sold products, which will give the right to convert each AGAP 2018-03 into 15 ordinary shares;
- v. the effective commercialization of the bioprosthesis at 15 European implantation centers, which will give the right to convert each AGAP 2018-03 into ten ordinary shares;
- vi. the successful implantation of the bioprosthesis evaluated on ten patients in the United States, which will give the right to convert each AGAP 2018-03 into ten ordinary shares;
- vii. the successful implantation of the bioprosthesis evaluated on 100 patients worldwide, which will give the right to convert each AGAP 2018-03 into ten ordinary shares;
- viii. the change in the price of the Ordinary Share according to the following conditions, which will give the right to convert each AGAP 2018-03 into a maximum of ten ordinary shares.

a) If the Final Price is strictly lower than the Initial Price, the number of ordinary shares that each AGAP 2018-03 will be converted into will be equal to zero;

b) If the Final Price is between (i) a value equal to or greater than the Initial Price and (ii) a value below the Ceiling Price, the number of ordinary shares that each AGAP 2018-03 will be converted into will be equal to:

[(Final Price / Initial Price) - 1] x 10

c) If the Final Price is equal to or greater than the Ceiling Price, the number of ordinary shares that each AGAP 2018-03 will be converted into will be equal to ten.

The "Final Price" is the highest average of the trading session closing prices of ordinary shares taken over a period of sixty consecutive days, calculated at any time during the three (3) years preceding the Convertibility Date.

The "Ceiling Price" is equal to the Initial Price multiplied by three, and a maximum of €114.

The "Initial Price" is equal to the closing price of the ordinary share on the Award date, with a minimum of €30 and a maximum of €38 per ordinary share.

The conversion ratio thus determined for each class of 2018 preference shares will be adjusted to take into account the shares to be issued to preserve the rights of holders of securities giving access to the share capital of the Company and holders of 2018 preference shares in accordance with the applicable legal and regulatory provisions and paragraph II above.

5. 2019 preference shares are classified into three distinct classes according to the performance condition attached to them: "AGAP 2019-01" for a maximum number of 8,000, "AGAP 2019-02" for a maximum number of 8,000 and "AGAP 2019-03" for a maximum number of 4,000. The conversion of a 2019 preference share will give the right to ten ordinary shares if the performance condition corresponding to the class in question has been achieved at the Convertibility Date (together, the "Performance Conditions").

For the "AGAP 2019-01" 2019 preference shares, the Performance Condition will be the success of the procedure on the first patient treated as part of the pivotal study in the United States following the positive conclusion of the early feasibility study (EFS), which will give the right to convert each AGAP 2019-01 preference share into ten ordinary shares.

For the "AGAP 2019-02" 2019 preference shares, the Performance Condition will be the obtaining of CE marking with sufficient inventory to support the commercial launch of the Carmat prosthesis, which will give the right to convert each 2019 preference share into ten ordinary shares.

For the "AGAP 2019-03" 2019 preference shares, the Performance Condition will be the invoicing and implantation of five prostheses within four months of CE marking (excluding implantations as part of the innovation package in France), which will give the right to convert each 2019 preference share into ten ordinary shares.

The conversion ratio thus determined for each class of 2019 preference shares will be adjusted to take into account the shares to be issued to preserve the rights of holders of securities giving access to the share capital of the Company and holders of 2019 preference shares in accordance with the applicable legal and regulatory provisions and paragraph II above.

6. 2020 preference shares are classified into two distinct classes according to the timetable (as indicated above) and the performance conditions attached to them: "AGAP 2020-01" for a maximum number of 2,500 and "AGAP 2020-02" for a maximum number of 900. The conversion

of a 2020 preference share will give the right to 100 ordinary shares if the performance conditions corresponding to the class in question have been achieved at the Convertibility Date (together, the "Performance Conditions").

For the "AGAP 2020-01" 2020 preference shares, the Performance Conditions, which will give the right to convert each AGAP 2020-01 into 100 ordinary shares will be as follows:

- i. actual annual production of 150 devices and systems that have passed the quality assurance standards, which will entitle the holder to convert each AGAP 2020-01 into 50 ordinary shares;
- ii. annual sale of 100 devices (excluding clinical trials or "*Forfait Innovation*" program). which will entitle the holder to convert each AGAP 2020-01 into 50 ordinary shares.

For the "AGAP 2020-02" preference shares awarded in 2020, the Performance Condition will be obtaining PMA in the United States, which will entitle the holder to convert each AGAP 2020-02 into 100 ordinary shares.

The conversion ratio thus determined for each class of 2020 preference shares will be adjusted to take into account the shares to be issued to preserve the rights of holders of securities giving access to the share capital of the Company and holders of 2020 preference shares in accordance with the applicable legal and regulatory provisions and paragraph k above.

7. 2022 Preference Shares – The conversion of a 2022 Preference Share ("AGA 2022") will entitle the holder to 100 Ordinary Shares if the corresponding performance conditions have been achieved at the Convertibility Date (together, the "Performance Conditions").

The Performance Conditions that will entitle the holder to convert each AGAP 2022 into ordinary shares will be as follows:

a) Net revenue (*chiffre d'affaires net* in French) in euros for the 2022 fiscal year ("CAN 22") which will entitle the holder to convert each AGAP 2022 into a number of ordinary shares ("n1") calculated according to the following formula: n1 = 100 x (CAN 22/59,000,000), it being specified that in any event n1 may not be greater than 100;

b) Net revenue in euros for the 2023 fiscal year ("CAN 23") which will entitle the holder to convert each AGAP 2022 into a number of ordinary shares ("n2") calculated according to following formula: n2 = 100 x (CAN 23/59,000,000), it being specified that in any event, the sum of n1 and n2 may not be greater than 100;

c) Net revenue in euros for the 2024 fiscal year ("CAN 24") which will entitle the holder to convert each AGAP 2022 into a number of ordinary shares ("n3") calculated according to the following formula: n3 = 100 x (CAN 24/59,000,000), it being specified that in any event, the sum of n1, n2 and n3 may not be greater than 100.

The conversion ratio thus determined for each class of 2022 Preference Shares will be adjusted to take into account the shares to be issued to preserve the rights of holders of securities giving access to the share capital of the Company and holders of 2020 Preference Shares in accordance with the applicable legal and regulatory provisions and paragraph k above.

8. The achievement of each Performance Condition shall be determined at a Board of Directors' meeting held as soon as possible after completion of the Performance Condition, which shall independently determine the number of ordinary shares entitled by each preference share at that date. As soon as possible after the Convertibility Date, the Board of Directors will meet to independently determine the final number of ordinary shares entitled by each preference share. The conversion ratio of AGAP 2017-03, AGAP 2018-03 and AGAP 2022 may under no circumstances exceed 100, regardless of the number of Performance Conditions achieved.

However, in the event of a takeover bid or exchange on the ordinary shares:

a) For the 2017, 2018 and 2019 preference shares:

- (i) taking place as of the Award date,
- (ii) whose definitive results are announced no later than the day before the Convertibility Date, and
- (iii) being made at a price per share between the Initial Price and a ceiling equal to three times the Initial Price,

the Board of Directors will determine the number of ordinary shares entitled by the preference shares on the date of announcement of the final results of the offer exclusively under the following conditions:

- For each beneficiary, a number "p" equal to the ratio (i) of the aggregate number of ordinary shares entitling all preference shares (all classes) which have been awarded to the beneficiary according to the achievement of the Performance Conditions at the date of the announcement of the final results of the bid, and (ii) the aggregate number of ordinary shares entitling all preference shares (all classes) if all Performance Conditions are achieved.

- If "p" is less than or equal to 0.35, the "N" number of ordinary shares entitling each of the preference shares (whichever class) awarded to the beneficiary will be calculated using the following formula:

$$N = [0.35 + 0.65*(R-1)/2]*n$$

N being capped at 100 for AGAP 2017-01, 20 for AGAP 2017-02, 100 for AGAP 2017-03, 100 for AGAP 2018-01, 20

for AGAP 2018-02, 100 for AGAP 2018-03 and 10 for AGAP 2019-01, 2019-02 and 2019-03.

n being equal to 100 for AGAP 2017-01, 20 for AGAP 2017-02, 100 for AGAP 2017-03, 100 for AGAP 2019-01, 20 for AGAP 2019-02, 100 for AGAP 2019-03 and 10 for AGAP 2019-01, 2019-02 and 2019-03.

With

R = (Acquisition Price) / (Initial Price)

The "Acquisition Price" is equal to the closing price of the ordinary share on the last day of the offering period, with a maximum of €114 per ordinary share.

The "Initial Price" is equal to the closing price of the ordinary share on the day of the award of preference shares, with a minimum of €30 for 2017 preference shares and 2018 preference shares and €22 for 2019 preference shares and a maximum of €38 per ordinary share for all preference shares.

- If "p" is greater than 0.35, N will be calculated according to the following formula:

$$N = [p + (1-p)*(R-1)/2]*n$$

knowing that, in any case, N can not be less than n*0.35, i.e., 35 for AGAP 2017-01, 7 for AGAP 2017-02, 35 for AGAP 2017-03, 35 for AGAP 2019-01, 7 for AGAP 2019- 02, 35 for AGAP 2019-03 and 10 for AGAP 2019-01, 2019- 02 and 2019-03.

The preference shares concerned will vest to the beneficiaries on the Vesting Date, irrespective of whether or not an attendance condition is provided for in the terms of the preference share plan and of the Performance Conditions above. In any case, preference shares will only become convertible on the Convertibility Date.

a) For the 2020 and 2022 preference shares:

- (i) taking place as of the Award date, and
- (ii) whose definitive results are announced no later than the day before the Convertibility Date,

the preference shares will vest for the holders on the Vesting Date whether or not any continuing presence condition provided for in the preference share award plan has been met, and will become convertible into 100 ordinary shares, whether or not the Performance Conditions have been met, no sooner than one year after the Vesting Date or, if later, immediately after the announcement of the final results of the offer.

9. If on the Convertibility Date none of the Performance Conditions has been achieved or if no takeover bid has been made under the conditions described above, the Company may (not an obligation) redeem the preference shares at any time at their par value.

Similarly, preference shares which may be converted but which have not been converted at the end of the Exercise Period, may (without this being an obligation for the Company) be bought at any time by the Company at their par value.

10. At the end of the Exercise Period, the Company may, in accordance with the applicable legal and regulatory provisions, cancel preference shares not yet converted, including those which it has bought back. The share capital will then be correlatively reduced and creditors will have a right of opposition under the conditions provided for in Article L.225-205 of the French Commercial Code.

11. The new ordinary shares resulting from the conversion of the preference shares shall be assimilated to the ordinary shares in circulation and shall bear dividend from the first day of the financial year preceding the year in which the preference shares are converted and will confer on their holders, upon delivery, all rights attached to the ordinary shares. They will be the subject of a request for admission to trading on the Euronext Growth market on the same trading line as the ordinary shares.

12. The Board of Directors will recognize the conversion of the preference shares into ordinary shares for which the conversion is in accordance with the conditions set out above, take note of the number of ordinary shares resulting from the conversions of preference shares and amendments to the Articles of Association, in particular as regards the allocation of shares by class. This option may be delegated to the Chief Executive Officer under the conditions laid down by law.

13. Shareholders will be informed of the conversions made through the reports of the Board of Directors and the Statutory Auditors provided for in Article R.228-18 of the French Commercial Code. These additional reports will be made available to the shareholders at the registered office as from the date each meeting is convened.

14. Capital increases resulting from the creation of preference shares and new ordinary shares will be carried out by special incorporation of all or part of available reserve accounts and, in particular, into the share premium account.

12.3. Threshold crossing

Any natural person or legal entity acting alone or together with others who comes to possess a number of shares representing a percentage of the share capital or the voting rights in excess of the thresholds set by law, will inform the Company within the statutory period, starting from when the holding threshold is crossed, of the total number of shares or voting rights held.

This information is also provided within the same time frames when the holding of share capital or voting rights drops below the thresholds mentioned in this paragraph.

A person required to provide this information will state the number of securities held giving access to the share capital and the voting rights attached to these.

If required by the rules of a securities market other than a regulated market on which the Company's securities are admitted for trading, this person will also inform the French Financial Markets Authority within a time frame and according to the arrangements set by the General Regulations of the latter, with effect from when the threshold to the holding is crossed. If necessary, this information is made public under the conditions laid down by the General Regulations of the French Financial Markets Authority.

Failure to make a due declaration under the above conditions will result in the shares exceeding the fraction that should have been declared by law having their voting right removed for any Shareholders' Meeting held within a period expiring two years after the date that the notification is dealt with.

Similarly, voting rights attached to these shares and which are not duly declared may not be exercised or delegated by the defaulting shareholder.

The commercial court having jurisdiction for the registered office, at the request of the Chairman of the Company, a shareholder or the French Financial Markets Authority, holds sole jurisdiction to pronounce a total or partial suspension, for a period not to exceed five years, of the voting rights of any shareholder who has not made the required declarations.

ARTICLE 13 – INDIVISIBILITY OF SHARES – BARE OWNERSHIP – USUFRUCT

1 - Shares are indivisible with respect to the Company.

Co-owners of undivided shares are represented at Shareholders' Meetings by one of these or by a single proxy. In the event of disagreement, the proxy is appointed by a court at the application of the most diligent co-owner.

2 - The voting right belongs to the usufructuary at Ordinary Shareholders' Meetings and to the bare owner at Extraordinary Shareholders' Meetings. However, shareholders may agree on any other distribution of the voting right at Shareholders' Meetings. The agreement is notified by registered letter to the Company, which will be required to apply this agreement at any meeting that takes place following expiration of a period of one month after such letter is sent.

The voting right is exercised by the owner where securities are pledged.

ARTICLE 14 – DOUBLE VOTING RIGHT

The voting right attached to capital or dividend shares is proportional to the percentage of the share capital that they represent. Each share gives entitlement to one vote.

However, a voting right that is double that conferred on other shares, having regard to the percentage of the capital that they represent, is attributed to all ordinary shares that are fully paid up, and which can be shown to have been registered to the same shareholder for at least two (2) years. This right is exercised subject to the provisions of Article 12.3 (5) of the Articles of Association.
This double voting right is also conferred from the time they are issued, in the event of an increase in capital through capitalization of reserves, profits or share premiums, upon registered shares in a scrip issue to a shareholder based on previous ordinary shares providing such an entitlement.

The transfer of an ordinary share as a result of succession, liquidation of community property between spouses or donation by living persons to a spouse or a parent entitled to inherit, does not result in the loss of the right acquired and does not interrupt the periods provided for above.

5.4.3 CONDITIONS FOR CHANGING SHAREHOLDERS' RIGHTS

The Articles of Association of the Company do not make any special provision that derogates from general company law.

5.4.4 PROVISIONS OF THE MEMORANDUM AND ARTICLES OF ASSOCIATION, CHARTER OR BYLAWS OF THE COMPANY THAT MAY DELAY, DEFER OR PREVENT A CHANGE IN ITS CONTROL

With the exception of the double or multiple voting rights attached to certain shares (see section 5.3.2 of this Universal Registration Document), the Articles of Association do not make any special provisions that derogate from general company law.

5.4.5 CHANGES TO THE SHARE CAPITAL (ARTICLE 8 OF THE ARTICLES OF ASSOCIATION)

1 - The share capital may be increased by any process and under any arrangements provided for by law.

Only an Extraordinary Shareholders' Meeting is competent to decide on an increase in capital based on a report from the Board of Directors.

Shareholders have a pre-emptive right, in proportion to the number of shares they hold, to subscribe to cash shares issued in order to increase the capital, and may waive this on an individual basis. The Extraordinary Shareholders' Meeting may decide to withdraw this pre-emptive subscription right in accordance with the statutory provisions.

2 - A reduction in capital is authorized or decided upon by the Extraordinary Shareholders' Meeting and may in no case adversely affect the equality of shareholders.

A reduction in capital to below the legal minimum may only be decided subject to the condition precedent of an increase in capital intended to bring this up to at least the legal minimum, unless the Company converts into another form of company that does not require capital in excess of the share capital after it has been reduced.

Failing this, any interested party may seek a legal order to wind up the Company. This may not be issued if, on the day on which the court rules on the merits of the case, the situation has been regularized.

5.5 INFORMATION ON THE LEGAL AFFAIRS OF THE COMPANY DURING THE FINANCIAL YEAR

5.5.1 INFORMATION ABOUT COMPANY CORPORATE OFFICERS AND CONTROL

FREE SHARES, SHARE WARRANTS AND STOCK OPTIONS

Past awards of stock options and share warrants to corporate officers of the Company, as well as the options and warrants they exercised in 2022, are detailed in section 4.5.1.

Past awards of free shares to corporate officers, as well as the free shares that became available in 2022, are detailed in section 4.5.1.

The number of shares held by each corporate officer at December 31, 2022 is mentioned in section 4.1.1.

SHARE TRANSACTIONS BY EXECUTIVES

We indicate below the transactions carried out by corporate officers of the Company (directors, Chief Executive Officer, Deputy Chief Executive Officers) and their relatives in Company shares during 2022, as reported by those officers pursuant to the provisions of Article 223-26 of the AMF General Regulations, or to the best of our knowledge.

Persons concerned	Transaction	Date of transaction	Number of shares	Value of transaction
Stéphane Piat	Disposals	January 3, 2022	18,150	€372k
Matra Défense (Karl Hennessee)	Subscription	April 11, 2022	1,000,000	€10,000k
Lohas (Pierre Bastid)	Subscription	April 11, 2022	300,000	€3,000k
Santé Holdings (Antonino Ligresti)	Subscription	April 11, 2022	500,000	€5,000k
Bratya (David Coti)	Subscription	April 11, 2022	70,000	€700k
Corely (David Coti)	Subscription	April 11, 2022	70,000	€700k
Thérabel (Laurent Kirsch)*	Subscription	April 11, 2022	100,000	€1,000k
Lohas (Pierre Bastid)	Subscription	December 12, 2022	190,476	€2,000k
Santé Holdings (Antonino Ligresti)	Subscription	December 12, 2022	190,476	€2,000k
Thérabel (Laurent Kirsch)*	Subscription	December 12, 2022	47,619	€500k

* Permanent guest of the Board of Directors (following the April 2022 capital increase/fund raising)

5.5.2 INFORMATION ON THE COMPANY'S SECURITIES

EMPLOYEE SHAREHOLDING

In accordance with the provisions of Article L.225-102 of the French Commercial Code, we hereby indicate that the Company has not set up any company savings plan for the benefit of employees and that no agreement provides for employee participation in the share capital of the Company.

However, certain Company employees are entitled to stock options, share warrants (BSA and BSPCE) and free shares, as detailed in section 4.5.1.

Table 9 in section 4.5.1 specifies the number of stock options awarded to the top ten employees who are not corporate officers, and the options exercised by these beneficiaries in 2022.

Table 10 *ter* in section 4.5.1 specifies the number of free shares awarded to the top ten employees who are not corporate officers, and the free shares that became available to them in 2022.

DEALINGS BY THE COMPANY IN ITS OWN SHARES

See section 5.2.4 of this Universal Registration Document.

SECURITIES GIVING ACCESS TO CAPITAL

At December 31, 2022, securities issued by the Company confer subscription rights to a net total of 1,885,970 new shares (8.3% of the existing capital at December 31, 2022).

For details on the securities giving access to the Company's share capital and currently valid, see section 5.2.5 "Other securities giving access to the share capital".

PARTICIPATING AND CONTROLLING INTERESTS

In accordance with the provisions of Articles L.233-6 and L.247-1 of the French Commercial Code, we can report that the Company has not acquired any participating or controlling interests during the reporting period.

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ADDITIONAL INFORMATION

6.1 PERSON RESPONSIBLE FOR THE UNIVERSAL REGISTRATION DOCUMENT

6.1.1 NAME OF THE PERSON RESPONSIBLE FOR THE UNIVERSAL REGISTRATION DOCUMENT

Stéphane Piat, Carmat's Chief Executive Officer, is the person responsible for the Universal Registration Document.

6.1.2 DECLARATION BY THE PERSON RESPONSIBLE FOR THE UNIVERSAL REGISTRATION DOCUMENT

"I hereby declare that, having taken all reasonable care to ensure that such is the case, the information contained in 2022 Universal Registration Document is, to the best of my knowledge, in accordance with the facts and makes no omission likely to affect its import.

I further declare that, to the best of my knowledge, the financial statements have been prepared in accordance with the applicable accounting standards and give a true and fair view of the Company's financial position and results, and that the management report, for which a cross-reference table appears in section 6.7.2 of this document, gives a true and fair view of changes to the business, results and financial position of the Company and that it describes the main risks and uncertainties it faces."

Vélizy-Villacoublay, April 20, 2023

Stéphane Piat
Chief Executive Officer, Carmat

6.2 STATUTORY AUDITORS

6.2.1 STATUTORY AUDITOR

PricewaterhouseCoopers Audit, registered member of the *Compagnie régionale des Commissaires aux Comptes de Versailles et du Centre.*

Represented by Gonzague Van Royen

63, rue de Villiers – 92200 Neuilly-sur-Seine, France

Start of first term: the incorporation of the Company on June 25, 2008.

Duration of current term: six financial years, following renewal at the Shareholders' Meeting of May 12, 2021.

Expiration of current term: at the close of the Shareholders' Meeting to approve the financial statements for the year ending December 31, 2026.

6.2.2 ALTERNATE STATUTORY AUDITOR

None.

6.2.3 FORMER STATUTORY AUDITORS (RESIGNED, REMOVED OR NOT RE-APPOINTED)

Since appointment, the Statutory Auditors and their alternates have not been removed or resigned.

6.3 THIRD-PARTY INFORMATION, STATEMENTS BY EXPERTS AND DECLARATIONS OF ANY INTEREST

None.

6.4 AVAILABLE DOCUMENTS AND 2020-2021 HISTORICAL INFORMATION

Copies of this Universal Registration Document are available free of charge from the Company and from the Company's website (www.carmatsa.com) or the website of the French Financial Markets Authority – AMF (www.amf-france.org).

All documents that must be made available to shareholders (such as the Articles of Association, minutes of Shareholders' Meetings, historical financial information and the evaluations and opinions given by experts at the Company's request included or referred to in this Universal Registration Document) may be consulted at the Company's registered office at 36, avenue de l'Europe – 78140 Vélizy-Villacoublay, France.
All regulatory information, as defined in Article 221-1 of the AMF General Regulations, is available on the Company's website.

The Company's financial information for the years ended December 31, 2020 and December 31, 2021 incorporated by reference into this document was previously presented in the 2020 and 2021 Universal Registration Documents, which were filed with the AMF on February 24, 2021 under number D.21-0076 and on April 21, 2022 under number D.22-0332, respectively, and was the subject of reports by the Statutory Auditors, which contained no qualifications.

6.5 INFORMATION ON HOLDINGS

At the date of this Universal Registration Document, the Company did not have any holdings in the share capital of other companies.

6.6 RECENT EVENTS

In accordance with the principles it has defined and consistently applied, Carmat plans to report all significant milestones that it has reached when it publishes its financial results. In accordance with good medical practices, and subject to regulatory obligations or special circumstances, the Company does not systematically report on individual implants of Aeson®, whether performed in a commercial setting or in the context of clinical trials; nor does it report individually on the state of health of implanted patients.

Since December 31, 2022, the Company has published the following press releases:

- on January 4, 2023, a press release entitled: Carmat announces the first implantation of Aeson® within the framework of the EFICAS clinical study in France;
- on January 5, 2023, a press release entitled: 2023 Financial Calendar;
- on January 18, 2023, a press release entitled: Carmat will hold a video conference on January 23 at 8 pm CET to provide a business update;
- on January 23, 2023, a press release entitled: Carmat provides a business update and communicates its financial targets for the first time;
- on February 23, 2023, a press release entitled: Carmat announces its 2022 annual results and confirms its 2023 objectives;
- on March 6, 2023, a press release entitled: The first U.S. clinical experience with Aeson® TAH published in the Annals of Thoracic Surgery Short Reports.

6.7 CROSS-REFERENCE TABLES

6.7.1 UNIVERSAL REGISTRATION DOCUMENT CROSS-REFERENCE TABLE

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SECTION 5
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6.8 GLOSSARY

Actuator
A device that controls the movement of a fluid or a solid.

Acute heart failure
Sudden inability of the heart to provide sufficient blood flow and supply oxygen to the organs. The symptoms are severe. It occurs either following a heart attack (see myocardial infarction) that caused lesions to an area of the heart, or following a sudden incapacity of the body to compensate for chronic cardiac insufficiency.

AFSSAPS
French Health Products Safety Agency (*Agence Française de Sécurité Sanitaire des Aliments et Produits de Santé*). This agency evaluates and monitors the safe use of health products, examines their quality in the laboratory and inspects production, distribution and testing sites. It also produces information campaigns to ensure the correct use of health products. It was replaced by the ANSM (see corresponding entry) by French Law no. 2011-2012 of December 29, 2011.

Angiotensin-converting enzyme (ACE) inhibitors
Drugs reducing vascular resistance.

Annuloplasty
Procedure to tighten or reinforce the mitral valve.

ANSM
French National Drug and Health Product Safety Agency (*Agence nationale de sécurité du médicament et des produits de santé*). This French public institution's objective is to evaluate the health risks of health products for humans. It has authority over the regulation of biomedical research.

Anticoagulant
Drug limiting blood-clotting to avoid the formation of clots by acting on coagulation factors other than platelets (see corresponding entry). Dosages are complex: too much risks hemorrhage, not enough risks thromboembolic events. Use at high dosage is required for all metal or plastic implanted devices that are not hemocompatible and are the source of numerous complications.

Aorta
The aorta is the body's largest artery, supplying oxygenated blood from the left ventricle to all parts of the body.

Atrium
One of the two small upper chambers of the heart that receive blood before passing it into the corresponding ventricle. Each atrium communicates with the corresponding ventricle through an atrioventricular valve, the tricuspid valve on the right and the mitral valve on the left.

Beta blockers
Drugs which reduce the cardiac rhythm and output to decrease blood pressure.

Bioprosthetic (valves) or bioprosthesis
An artificial valve made from animal tissue in order to replace a failing heart valve. By extension, a medical device containing animal tissue.

Bpifrance
French public investment bank (*Banque Publique d'Investissement*), which now includes the activities of Oseo Innovation (formerly ANVAR), aiming to promote innovation through financial guarantees and partnerships.

Cardiogenic shock
Inability of the myocardial pump function to generate adequate blood flow to the peripheral organs.

CE marking
A declaration by the manufacturer certifying that the product complies with the applicable legal requirements and European directives (meeting a number of conditions including safety, efficacy and traceability).

Chemically treated animal pericardial tissue
A double-walled sack that contains the heart and the roots of the large blood vessels of animal origin (bovine, porcine or equine) treated with a sterilizing fixative, glutaraldehyde. Known to be the least thrombogenic biomaterial and does not bring about transplant rejection.

Chronic heart failure
The incapacity of the heart to provide sufficient blood flow to deal with the oxygen needs of the various organs. The main causes of chronic heart failure are angina and myocardial infarction, high blood pressure, valvular heart disease and myocardial degeneration. In each of these cases, the result is the progressive destruction of the cardiac muscle with loss of its ability to contract.

Cleanroom
Room or suite of rooms where the concentration of particles is controlled in order to minimize the introduction, generation and retention of particles inside, generally with a specific industrial or research aim. Factors such as temperature, humidity and relative pressure are also maintained at a precise level.

Clinical Trial Authorization (CTA)
Authorization issued by the French national agency that evaluates drug safety (*Agence Nationale de sécurité du Médicament* – ANSM). One of two authorizations required to carry out biomedical research on humans in France, the other being that of the Patient Protection Committee (*Comité de Protection des Personnes* – CPP) (see corresponding entry).

Coagulation (blood)
Blood clot formation. This is the body's normal reaction to stop blood loss. However, when clots form in the heart, a blood vessel or in an implanted device, they may obstruct blood flow and cause a pulmonary embolism or cerebrovascular accident.

Compliance
In medical terms, the ability of a hollow organ to change volume under the influence of a variation in pressure.

Coronary disease
Decrease in the power of one or more arteries of the heart (coronary arteries), resulting in angina and myocardial infarction (heart attack).

Critical Event Committee (CEC)
Committee made up of members who are completely independent from the sponsor and study investigators, established as part of the ISO 13485 standard and the Good Clinical Practice (GCP) guidelines. The Committee's role is to review all adverse events, serious or otherwise, and to determine their causal link with the device under investigation.

Data Safety and Monitoring Board (DSMB)
Board made up of members who are completely independent from the sponsor and study investigators, established as part of the ISO 13485 standard and the Good Clinical Practice (GCP) guidelines. The Board's role is to

review all study data and issue an opinion to the sponsor on whether to continue the inclusion of subjects in the clinical study.

Destination therapy (DT)
Definitive implantation, as opposed to bridge therapy.

Diastole
The period of relaxation of the muscle tissue of the chambers of the heart that allow them to fill with blood.

Diuretic
Drug that removes excess fluids, to decrease pressure on the heart and prevent pulmonary edema.

Etiology
The study and analysis of the causes of diseases.

Ex vivo
Refers to tests which are performed on cadavers (see *in vivo*).

Fuel cell
Cell in which electricity is produced through the oxidation on an electrode of a reduction fuel (for example hydrogen) coupled with the reduction on the other electrode of an oxidant, such as oxygen from the air.

Hardware-in-the-Loop (HIL) simulation
Real-time simulation that makes computers believe they are navigating the actual system.

Hemocompatibility
A measure of the compatibility between non-living materials used in medical devices that are in contact with blood and other organs.

Hemolysis
Destruction of red blood cells, releasing hemoglobin into the blood plasma and reducing oxygen-carrying capacity.

High blood pressure
Condition associated with cardiovascular disease characterized by arterial pressure greater than normal levels, causing an increase in the left ventricular volume.

HUD
See Humanitarian Device Exemption (HDE).

Human whole blood
Unprocessed blood containing plasma, red blood cells, white blood cells and platelets.

Humanitarian Device Exemption (HDE)
FDA approval process allowing a device to be marketed without evidence of effectiveness (only data relating to the safety of the device are required). The FDA calls a device approved in this way a Humanitarian Use Device (HUD). This approval limits the number of devices that can be released on the US market to 4,000 per year.

Hyperlipidemia
Condition caused by abnormally high levels of fat in the blood.

Hypertrophy
Excessive growth of an organ or body tissue.

Immunosuppressant
Drugs that limit the body's immune reactions in order to reduce rejection risk following a transplant. The most well known is cyclosporin.

In silico
Refers to tests that are performed on computers and/or by digital simulation.

In vitro
Refers to tests that take place outside the organism, in the laboratory or on a test bench. Originally, these tests were carried out in glass tubes.

In vivo
Refers to tests which are performed in living organisms (see also *ex vivo*).

Incidence
The number of new cases of a disease observed during a given period and in a specific population. It differs from the prevalence, which is a status measurement that counts all cases (new or not) at a given time.

Inotrope
Drug increasing the force of heart muscle contractions. Dependence on inotropes marks the terminal phase of heart failure.

Investigational Device Exemption (IDE)
Approval process allowing a device to be used during a clinical study with the aim of generating the safety and efficacy data required to obtain PMA.

Ischemia
Decrease of the arterial blood flow to an organ.

ISO standards
Standards created by the International Organization for Standardization (ISO) in order to guarantee reliable and good quality products and services.

Medical Board
Professional, administrative and legal body for the defense and regulation of the medical profession.

Mitral valve
Valve in the heart that separates the left atrium from the left ventricle.

Myocardial infarction
Necrosis (death) of part of the cardiac muscle. In plain language, a heart attack. It occurs when one or more coronary arteries become blocked slowing the flow of blood, and therefore oxygen, to the cells of the myocardium (the muscular tissue of the heart), causing them to suffer (painful sensation) and potentially die.

New York Heart Association (NYHA) Classification
A scale based on symptoms that aims to quantify and monitor the functional impact (on activity) of cardiac insufficiency for an individual.

Orthotopic
Refers to the transplantation of an organ to its normal anatomical location.

Patient Protection Committee (*Comité de Protection des Personnes* – CPP)
The Patient Protection Committee's role is to ensure that all biomedical research projects on humans carried out in France comply with medical, ethical and legal considerations aimed at ensuring the protection of the persons participating in the research.

Platelet aggregation inhibitor
Drug preventing blood platelets, which are partly responsible for blood coagulation (see corresponding entry), from sticking together and forming the beginning of a clot. The best known is aspirin.

Polyetheretherketone (PEEK)
A high-performance plastic with a unique combination of properties used for its strength in the medical, aeronautical, automobile, electronics, food and industrial sectors.

Polyurethane
A plastic material used in varnishes, paints and synthetic rubbers obtained through polymerization.

Pre-Market Approval (PMA)
FDA approval process before the marketing of a device. It requires exhaustive safety and effectiveness data, notably by means of a clinical study (IDE).

Prevalence
Measurement of the state of health of a population at a given time, which can be expressed as a percentage. For a given pathology, the prevalence is obtained by dividing the number of people affected at a given time by the size of the total population.

Product Lifecycle Management (PLM)
Software used to create and maintain product definition throughout their life cycle, from initial offering to end of useful life. PLM covers the management of product definition, including configuration, development and project management.

Proteinic
Concerning proteins.

Pulmonary artery
Arteries that carry blood from the heart to the lungs.

Pulmonary edema
Pulmonary alveoli fill with blood plasma that has passed through the walls of capillaries (small blood vessels). Acute pulmonary edema (APE) is a medical emergency and typically results in cardiac decompression.

Pulmonary embolism
Situation where a blood clot blocks a pulmonary artery.

Pulsatile
Rhythmic pulsations of the heart beat.

Red blood corpuscles
Red blood cells.

Reduced ejection fraction
Terminal chronic heart failure in patients with an ejection fraction measurement under 40%.

Research Tax Credit (RTC)
Financial aid created to encourage research and development efforts within companies.

Septicemia
Serious generalized infection when bacteria from a local infection enter the bloodstream of an organism.

Stasis
In medical terms, this refers to the abnormal stagnation of blood in an organ.

Stroke
Sudden neurological damage due to blockage of blood flow or hemorrhage in the brain.

Systole
Contraction phase of the chambers of the heart muscle to eject the blood it contains.

Telemetry
Means of monitoring certain biological, particularly cardio-respiratory, or technical factors, remotely.

Thromboembolism
Condition characterized by the formation of blood clots in veins (thrombus) which, upon detaching, may cause embolisms (sudden blockages of blood vessels).

Thrombogenic, thrombogenicity
Refers to causing a thrombus (blood clot).

Thrombosis
Obscuration, through the formation of a clot (thrombus), of

an artery, vain or cardiac chamber (embolism). The blood no longer flows or supplies organs.

Total orthotopic artificial heart
A total artificial heart (TAH) is a device that replaces the natural heart. It is different from a ventricular assist device, which supports the function of a diseased heart.

Transplantation
Surgical operation consisting in replacing a diseased organ with a healthy one.

US Food and Drug Administration (FDA)
Regulatory agency that authorizes the marketing of drugs and medical devices in the United States.

Vasodilator
Drug which relaxes blood vessels to increase the blood and oxygen flow to the heart without increasing its workload.

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