

CONTENTS

- 2 Letter to Stakeholders
- 4 Profile
- 6 Financial Performance
- 7 Financial Strength
- 8 Shareholdings and Joint Ventures
- 9 International Programmes and Partnerships
- LO Sustainable Business Model
- 11 Materiality Analysis
- 11 ESG Awards
- 12 People Worldwide
- **14** Training
- 16 Leonardo Training Academies
- **18** Business Areas
- 23 Unmanned Technology
- 24 Milestones
- 26 Be Tomorrow 2030
- 28 Research in Numbers
- 29 Innovation in Numbers
- 38 Customer Centricity
- 40 Leonardo Flagship
- 44 Sustainability Plan
- 46 Commitment to the Planet
- 48 Objectives and Sustainability Plan
- 49 Investments aligned with the SDGs

LETTER TO STAKEHOLDERS





CEO

LUCIANO CARTA Chairman

For Leonardo, 2022 was an important year. We have once again achieved, and in some cases exceeded, the objectives set. We have delivered results that further confirm the validity of our strategic path.

Indeed, thanks to the actions undertaken since 2018, Leonardo has strengthened its competitiveness and consolidated its role as a top player in Aerospace, Defence and Security at a global level. Today we are a more solid, resilient, sustainable, innovative company, ready to face challenges and seize future opportunities.

Orders show significant growth of over 20% compared to 2021, with a value of over €17 billion, increasing our backlog to over 37 billion. There are positive trends in all our business areas, confirming the commercial solidity of the Group and the validity of the diversified offer of products, systems and solutions that meet the complex operational requirements of customers, guaranteeing interoperability and multi-domain capabilities.

Revenues showed a solid growth trend, which in 2022 was more than 4% thanks, in particular, to Helicopters and Electronics for Defence and Security.

EBITA showed a double-digit increase again driven by Defence and Security Electronics, in particular thanks to the European component, bringing the ROS above 8%. The positive trend of EBITA is even more marked, equal to around 14%, if we consider the inclusion of charges related to the COVID emergency as now recurring costs.

The net result, which grew significantly, benefited from the capital gain realized from the sale of some Leonardo DRS businesses.

An important part of the Group's financial performance was the improvement in cash generation. Cash flow (FOCF) grew by 158%, demonstrating the Group's ability to consolidate the efficiency path undertaken, structurally increasing cash generation.

The significant cash generation and the disposals of Leonardo DRS businesses have allowed the Group to continue along the path of reducing the Group's net debt, down by 3.4% compared to 2021, and at the same time to strengthen the core business through the purchase of 25.1% of the German Hensoldt and the consolidation of the Israeli RADA in the subsidiary Leonardo DRS.

Our investment in Hensoldt is a catalyst for forging a closer partnership that will further strengthen both our positions in the growing defense electronics market: it will enable us to create value for customers and partners through the pooling of strengths complementary products of the two companies, while preserving national technologies and capabilities. This investment reflects our vision of the importance of building closer cooperation in the European Aerospace and Defense industry and Leonardo's determination to play an active role in its long-term development.

The merger of RADA into Leonardo DRS, and the consequent listing of the company, represents a significant and strategic step forward, allowing the Group to achieve a unique positioning in the tactical radar segment, guaranteeing a stable domestic presence in the Israeli industrial context and supporting the development of Leonardo's international market.

All of this progress was underpinned by the strengthening of the Group's operating performance, the rationalization and efficiency of working capital, a careful investment policy and an efficient financial strategy.

In consideration of the performance and the confidence in our future growth path, we have again proposed the payment of a dividend of 0.14 euros per share.

The results achieved are even more significant in the light of a general and national economic framework characterized by inflationary pressures on energy and raw material costs: our results demonstrate the solidity of the Group's industrial strengths and the ability to react and adapt to complex challenges, as already demonstrated during the pandemic period.

In this context, we continued to pursue with determination our objectives in terms of improving our competitive positioning in international markets and the creation of long-term value.

There were also many actions that we implemented in the ESG area, supporting the Business Plan's priorities, with the aim of "protecting people and the planet, guaranteeing defense and security, with long-term benefits in terms of development technology, innovation and progress". These were, in fact, some of the topics covered on the occasion of the first ESG Investor Day in which Leonardo presented significant results on decarbonisation, sustainable innovation, diversity and inclusion, attraction of talent and valorisation of people.

Scope 1 + 2 CO₂ emissions were further significantly reduced by 15% compared to 2021, in particular thanks to the commitment to replace SF6 in the helicopter sector and to initiatives for greater energy efficiency.

We have further strengthened the decarbonization journey by announcing a commitment to the Science Based Target initiative, a path on which we will work together with our key suppliers and our customers to reduce emissions along our value chain.

We have made significant progress in terms of social impact starting from the hiring of around five thousand people, with an acceleration on the stabilization of employment contracts and a focus on young people under the age of 30 who, this year, represent 44% of new hires. We continued to support the training of our people, worked on reducing injuries and pushed for the promotion of an inclusive work environment: the presence of women in managerial positions has increased, today 18.6% of the total number of executives and middle managers, and the recruitment of women with a STEM degree, whose ratio to total recruitment with a STEM degree is now 22%.

We have continued to integrate ESG objectives into financial instruments and into the management remuneration plan, demonstrating a leadership that has once again been recognized worldwide by the main sustainability ratings, rankings and indices.

During 2022, we continued to work with the United Nations Global Compact, of which we have been members since 2018. Since last year, we have been on the Board of Directors of the Global Compact Network Italy Foundation, which allows us to actively contribute on sustainability discussions.

Today Leonardo is a leading international leader in the Aerospace Defense & Security sector, a solid and global Group, a leader in European collaboration programs, an industrial engine for the development of territories, synonymous with innovation and high technology, in line with the strategic objectives of Be-Tomorrow Leonardo 2030.

We have continued to deliver on all our promises and we continue to be confident in the path we have taken. With this, and the fundamental contribution of all 51,000 of our people, we are confident that we can face and gain from the great technological challenges in today's world and thus confirm the positive evolution of recent years.

PROFILE

A TECHNOLOGICAL AND INDUSTRIAL LEADER IN AEROSPACE, DEFENCE & SECURITY

Leonardo plays a strategic role in the industrial development of the countries in which it operates, with a direct presence in five domestic markets and a commercial network extending worldwide. Innovation, continuous research, digital industry and sustainability are the cornerstones of its business worldwide, while the company's 51,000-plus people are the engine driving its growth.





51,392 people worldwide



105 sites worldwide



~10,500 suppliers worldwide



150 countries with a commercial presence



revenues 2022

€17.3 BIL.

orders 2022



orders portfolio 2022





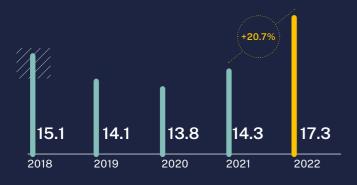
in R&D

2022 REVENUES BY GEOGRAPHICAL AREA **2022 REVENUES BY MARKET** 14% 83% 88% 26% Italy Defence Government Rest of the World 11% 17% 12% Civil Non-Government 27% SHAREHOLDER BASE 30.2% Ministry of Economy and Finance 51.8% Institutional investors 0.5% Treasury shares 17.5% Individual investor 2022 PRINCIPAL FIGURES ON COMMERCIAL PERFORMANCE **18 AW169M LUH** for the Austrian MoD C-130J support for the Italian Air Force MFoCS systems for the US Army Naval guns and logistical support for **4** German Navy **frigates 5 AW119Kx** helicopters for the Israeli MoD 20 EFA for the Spanish Air Force 32 AW149 for the Polish MoD AW101/CH-149 SAR upgrade for the Canadian Armed Forces 26 TH-73A for the US DoD

FINANCIAL PERFORMANCE

The economic-financial results for 2022 confirm the Group's growth path and increase in profitability and cash generation undertaken since 2018.

ORDERS (€ BIL.)



REVENUES (€ BIL.)



//// 2018 orders, including NH90 Qatar contract (€ 3 BIL.)





////, FOCF 2018 includes the advance for NH90 Qatar

FINANCIAL STRENGTH

Rating agencies improved Leonardo's outlook during 2022 in light of the operational performance recorded over the past two years, the favourable conditions in its reference sectors and the improvement of credit metrics estimated by agencies in the next 12-18 months.

AGENCIES

Moody's

Ba1 / Positive Outlook July 2022

S&P

BB+ / Positive Outlook May 2022

Fitch

BBB-/ Stable Outlook
January 2022

M&A

Leonardo has strengthened its position on the market with a targeted campaign of mergers & acquisitions resulting in strategic transactions of long-term importance that will enable the Group to be a global player in the Aerospace and Defence sector.

EUROPE

In the Electronics sector, completion in January 2022 of the acquisition of a 25.1% share in Hensoldt created a strategic longterm presence in the German defence market, strengthening the existing partnership with initiatives to collaborate in the development of joint opportunities in the air, land and maritime domains.

US

The focus was on the portfolio of Leonardo DRS, with the sale of the Global Enterprise Solutions (GES) and Advanced Acoustic Concepts (AAC) businesses. Agreement was reached for the merger of Rada Electronic Industries, listed on Nasdaq, into Leonardo DRS. This automatically resulted in listing in November 2022 of the latter company on both Nasdag and Tase (the Tel Aviv stock exchange), reinforcing Leonardo DRS's position in its core business of sensors and integrated systems.

2022 ANNUAL REPORT SUMMARY

SHAREHOLDINGS AND JOINT VENTURES



Leonardo DRS

Defence electronics

80.9%

Larimart

Defence electronics

60%

MBDA

Defence Systems

25%





Defence electronics / Helicopters

Defence electronics

25.1%

31.33%

Elettronica

Defence electronics

Hensoldt



100%

PZL-Świdnik

Leonardo UK

Helicopters

100%

Kopter Helicopters

100%



Telespazio

Satellite services

67%

Thales Alenia Space

Satellite production

33%

Avio

Space propulsion

29.63%



ATR

Regional turboprop aircraft

50%



Leonardo International

Commercial coordination 100%

Leonardo **Global Solutions**

Services 100%

Leonardo Logistics

Logistics

100%

INTERNATIONAL PROGRAMMES AND PARTNERSHIPS



JOINT STRIKE FIGHTER

international co-operation between the United States, Italy and seven other nations (United Kingdom, Netherlands, Norway, Denmark, Australia, Turkey and Canada). Italy, as a level 2 partner, is responsible for production of the wing assemblies, specific avionic systems, and final assembly and testing of the F35A and F35B variants for the Italian and Dutch fleets.



The ATR consortium, a joint venture owned equally by Leonardo and Airbus, is the world's leading manufacturer of turboprop aircraft for regional transport. The ATR 42 and 72 are the bestselling aircraft in the market segment for 90+ seats. Leonardo produces the entire fuselage, and the vertical and horizontal tail stabilisers, which are made of composite material for all aircraft.



The GCAP (Global Combat Air Programme) programme involves the UK, Italy and Japan with their respective national industries among which Leonardo is a strategic partner – and is aimed at developing a 'system of systems', based on sixth-generation air combat platforms for multi-domain defence operations, from 2035.



EUROFIGHTER

An industrial programme stemming from The most important European aeronautical programme developed by Eurofighter GmbH, a consortium of the defence industries of Italy, the United Kingdom, Germany and Spain. Leonardo holds a 36% share in the programme, playing a key role in production of aeronautical and electronic components.



NH90

Europe's most important helicopter programme, developed by the NHIndustries consortium, in which Leonardo has 32% of the entire programme value. Leonardo's Tessera (Venice) site is the programme's Italian assembly and maintenance hub.



A programme developed by France, Italy, Spain and Germany. The first unmanned aircraft system designed for flight in unsegregated airspace.



SESAR

A research programme devoted to modernisation of air traffic management (ATM) and air navigation services (ANS) in Europe. SESAR is guided by SESARJU, a public private partnership including the European Union, Eurocontrol and Leonardo, as well as more than 50 other organisations.



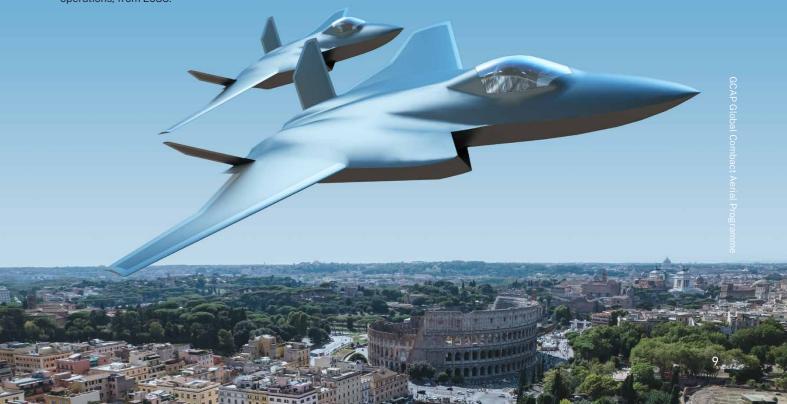
NEXT GENERATIOON CIVIL TILTROTOR

A Leonardo research project promoted under the EU's Clean Sky 2 programme for development of a new generation tiltrotor with an architecture and technological systems capable of cutting CO2 emissions and noise footprint, while maximising speed and efficiency.



FREMM

Europe's most important military naval programme, the result of a partnership between the Italian and French defence industries. Leonardo is responsible for integration of combat systems and supply of advanced equipment.



LEONARDO 2022 ANNUAL REPORT SUMMARY

SUSTAINABLE BUSINESS MODEL

Capitals

PEOPLE AND SKILLS

51,392 employees

12,200 people in R&D and engineering

FINANCIAL RESOURCES

€ 9.5 billion in purchase of goods and services

€ 4.1 billion personnel cost

€ 10.7 billion of net invested capital

TECHNOLOGIES AND INTELLECTUAL

6.2 petaflop of computing power

27.1 petabyte of storage capacity

11 Leonardo Labs

INDUSTRIAL ASSETS

105 sites and main plants

€ 487 million investments in tangible assets

RELATIONS AND COLLABORATIONS

90 Universities and research centres

10,500 suppliers

ENERGY AND NATURAL RESOURCES

79% of electricity from renewable sources

51% of waste recovered

Impacts

PEOPLE

PLANET



4,984 new hires, **59**% hold a STEM qualification, 44% under 30 and 24% women



966 training opportunities including internship, apprenticeship, traineeship and school-to-work alternation programmes

19% reduction in the injury rate compared to 2021

15% intensity of scope 1 and 2 CO₂₀ emissions reduction (LB) (*)

15% scope 1 and 2 CO₂₀ emissions reduction (MB)

4% intensity of waste produced reduction (*)

13% intensity of water withdrawals reduction (*)

7% intensity of energy consumption reduction (*)

(*) calculated on revenues and vs 2021













PROSPERITY



55% of sources of financing linked to ESG parameters

82% of purchases related to domestic markets

30% of investors are signatories to

Solutions for security and progress in 150 countries













MATERIALITY ANALYSIS

The involvement of internal and external stakeholders is a significant part of Leonardo's business model and is reflected in the materiality analysis that each year identifies risks and opportunities linked to the organisation's impact on the economy, the planet and people, and the company's ability to create value in the short, medium and long term. It is a process, based on an approach that integrates a data-driven methodology with extensive consultation with external stakeholders and senior management, aimed at identifying the material issues central to guiding the definition of corporate strategy.

Governance	Responsible and ethical business conduct Business continuity Sound Corporate Governance
People	Working conditions, health and safety Skill management and talent attraction Active support in developing skills in the STEM area Diversity and inclusion
Planet	Environmental impact of the use of materials Natural resources management and conservation of ecosystems Climate change, adaptation/mitigation Development of Earth observation technologies
Prosperity	Citizen security Solutions' quality, security and performance Cyber security and data protection R&D, innovation and advanced technology Sustainable supply chain Customer relations Digital transformation

ESG AWARDS

Sustainability Leader in the Dow Jones Sustainability Indices of S&P Global for 13 years, with the highest score in the Aerospace and Defence industry for the fourth year in a row

Confirmed among the **leaders** in the **fight against climate change** by **CDP** (an international non-profit organisation), one of the best rated companies in the Aerospace & Defence sector.

Ranked in Band A of the Defence Companies Index on Anti-Corruption and Corporate Transparency (DCI) of Transparency International.

Assigned an A rating by MSCI ESG Ratings.

One of the companies included in the MIB ESG INDEX on the Italian Stock Exchange (Euronext), Italy's leading blue chip indicator for the 40 best companies in terms of ESG performance.

Included in the Bloomberg Gender-Equality Index 2023 for the third year in a row.



Employees under 30

from 8.2% to 11.2%

Women managers

from 15.1% to 18.7%

Women hired

>4,900

EMPLOYEES BY AGE

11% < 30 years 53% 30-50 years 36% > 50 years **EMPLOYEES BY GENDER**

81% Men

19% Women

Figures 2022 Performance 2018-2022, baseline 2017



Leonardo has always placed great importance on co-operating with the education system: universities, polytechnics, research centres and schools represent strategic partners for creating an open, shared **education system focused on continuous learning, as well as programmes and projects centred on innovation and research**.

Starting from the formula of **Advanced Technical Institutes**, now known as ITS Academies, the company supports a 'strategic reservoir' for the **development** of **professional skills** and the enhancement of communities' economic fabric and industrial vocation.

The Aerotech Academy, on the other hand, is an example of an advanced education programme within the company, dedicated to the new frontiers of engineering. The result of a partnership with the Federico II University of Naples, the programme has involved more than 50 students in the past 24 months—many of whom later came to work within the company—in project work focused on innovation in aerostructures and industry 4.0.

ITS Academy

At the end of 2022, an agreement was formalised between the Leonardo Foundation, the Emilia-Romagna Region, Liguria Region, Puglia Region, Umbria Region, MITD, Cyber Security Agency, Confindustria INDIRE, National ITS Association and the Minister of Education to create a national ecosystem of digital skills, with the aim of creating ITS Academy curricular training courses aimed at various roles.

> 400,000

people reached with scientific and digital citizenship initiatives 50.000

students, more than 1,300 teachers and more than 1,000 schools participate in STEMLab > 4.600

hours of instruction by Leonardo employees in 7 Italian Technical High Schools (ITS) > 11,000

students visited Leonardo's virtual stands during Career Days

15

STEMLab

This is a scientific citizenship dissemination project to support secondary school teachers in Italy in raising awareness among girls and boys on the importance and relevance of STEM disciplines.

STEMLab offers free video-lessons to teachers in the form of webinars, with teaching guides and in-depth laboratory cards, developed directly by Leonardo experts, on subjects and technologies related to innovation.

LOVE FOR LEARNING

With the LOVE FOR LEARNING programme, already active for three years, Leonardo supports its people to constantly update their professional skills. A dedicated training offer, Coursera, makes it possible to take advantage of over 4,600 courses. The effectiveness of the initiative is confirmed by the growing number of participants – over 11,800 – with 46,000 courses started and 246,500 hours of training completed in areas such as Cloud Computing, Big Data, Machine Learning, Artificial Intelligence and cyber-attacks.

LEONARDO TRAINING ACADEMIES

In building and promoting a **culture** of **education** and **training** to improve **business competitiveness** and generate value for **stakeholders**, Leonardo has developed a comprehensive network of **Training Academies**. They are characterised by the use of digital platforms, simulation systems and LiveVirtualConstructive (LVC) learning environments, making use of proprietary methods, augmented reality, artificial intelligence and deep learning. These institutions offer internationally recognised **training programmes** for **professionals** connected with the company's fields of business and provide ongoing updating of inhouse skills, with the emphasis on 'employability' and 'lifelong learning'.

Helicopters Training Academies

The Academies are globally recognised centres of excellence for training helicopter pilots, maintenance technicians and operators. These training facilities offer qualification programmes for specific product models and aeronautical regulations, based on international standards.

International Flight Training School (IFTS)

In the aircraft arena, the IFTS provides training for military pilots under a partnership between Leonardo and the Italian Air Force.

Aircraft Academy

The Academy provides training that is focused on qualifications and skills in professional aircraft maintenance.

Cyber & Security Academy

In the area of cyber and security, the Academy provides training in the technological, regulatory, methodological and process aspects of security to support institutions, defence organisations, the public sector, critical infrastructure bodies and businesses in the secure digital transition and protection against cyber threats.

Aerostructures Academy

In the field of aerostructures, the Academy updates expertise dedicated to the development of new production lines.

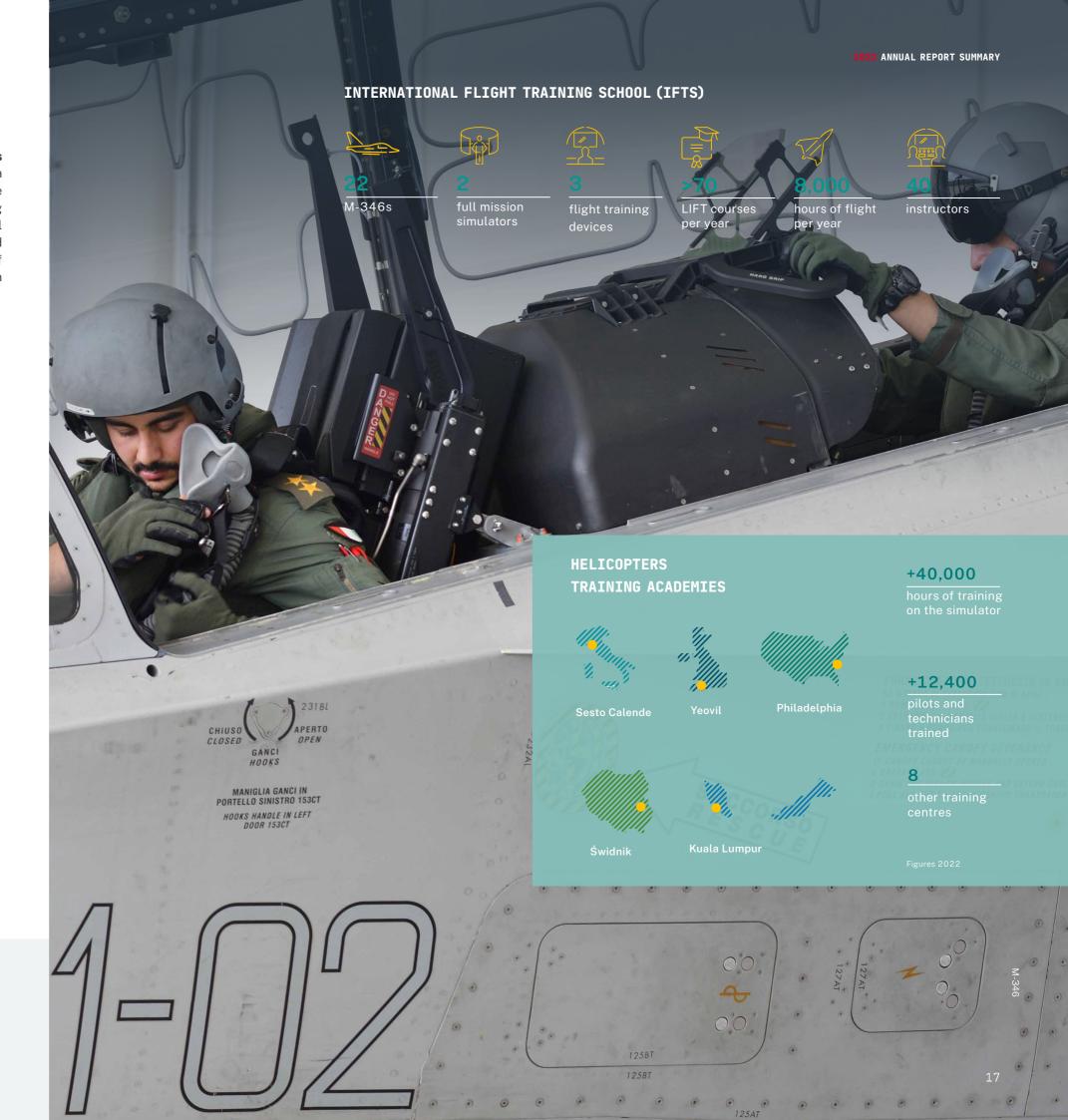
Radar & Sensors Academy

In Electronics, the Academy develops specific training programmes for the domains of land, maritime, avionics, electrooptical and IRST (infrared search and track).

Impact of virtual training systems on the environment:

>220,000

tonnes reduction in CO_{2e} emissions since 2018





Research, design, development and production of helicopters for civil and defence applications. Leonardo's helicopters, from the 1.8-tonne single-engine to the 16-tonne three-engine, fulfil missions ranging from public utility, public order, offshore, search and rescue, EMS (Emergency Medical Services) and defence on land and at sea. To respond to the needs of future vertical mobility, Leonardo is committed to researching innovative technologies and platforms, such as the tiltrotor and the remotely piloted helicopter, and to developing a new generation of light helicopters with hybrid/electrical propulsion.

4,550 helicopters in service in **150** countries, employed by **1.500** operators

700 helicopters engaged in Search & Rescue worldwide

12,400 pilots and technicians trained in 2022

40,000 hours of training in simulation environments

Autonomous capability to develop and integrate systems and avionics

A leader in the design and construction of



2022 REVENUES OUT OF LEONARDO TOTAL

Ante Sector eliminations

+ 3.5%

2022-2031

Civil Market CAGR

€ 33 BIL.

Civil Market

2022-2031



€ 6.1 BIL. 2022 Orders



€ 13.6 BIL. 2022 Portfolio

€ 114 BIL.
Defence market

2022-2031

- 3.3% Defence market CAGR 2022-2031 Multi-domain technological solutions for border security and management of critical infrastructure. C4ISTAR (Command, Control, Communication, Computers, Intelligence, Surveillance, Target Acquisition, Reconnaissance) sensors and systems, and self-protection equipment allowing forces in the field to have full awareness of the operational scenario and access to superior information.

Electronics

for defence

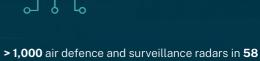
and security

In terms of global security, Leonardo protects institutions, businesses and citizens, guaranteeing the security of digital ecosystems and the resilience of strategic assets: secure digitalisation of processes, infrastructure and applications, mission-and business-critical communication technologies and solutions, systems and platforms for ongoing threat monitoring and response in both the physical world and cyberspace.



2022 REVENUES OUT OF LEONARDO TOTAL

Ante Sector eliminations



2022 ANNUAL REPORT SUMMARY

> 1,000 platforms supplied to 70 navies equipped with Leonardo defence systems

> 3,000 optronic systems on board land vehicles

> 1,000 optronic systems on board defence aircraft 120 airports on 5 continents using Leonardo air traffic control systems

115,000 security incidents managed every second by the Global Security Operation Centre (SOC)

>7,000 networks cyber-protected in 130 countries 200 control rooms and 50,000 terminals managed to secure Italian police communications

>50 countries worldwide using Leonardo critical communications systems



€ 8.6 BIL. 2022 Orders

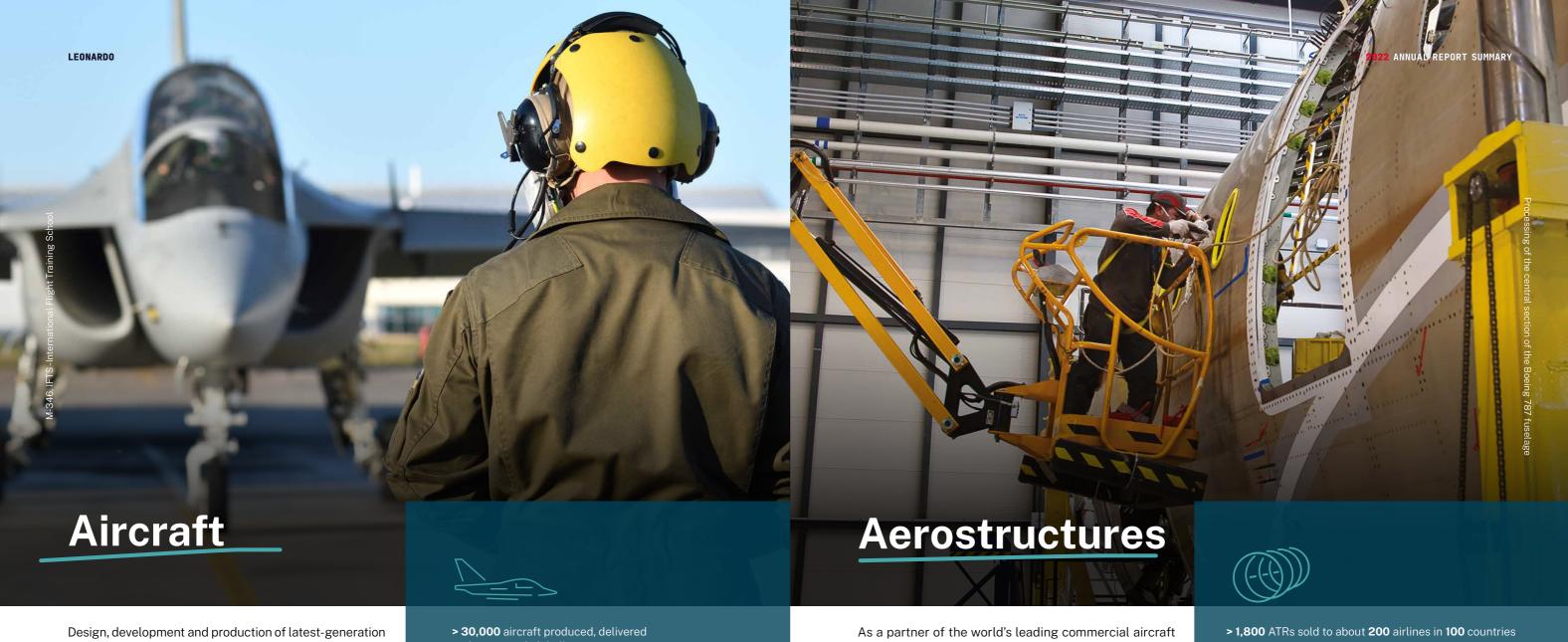
€ 15.2 BIL. 2022 Portfolio

€ 3,165 BIL.

Market

2022-2031

+ 4.7 % Civil Market CAGR 2022-2031



aircraft that meet the needs of the most complex operational scenarios: from basic training to complex defence and peacekeeping operations; from tactical transport to humanitarian and firefighting support; from command and control to intelligence, surveillance and reconnaissance. Leonardo's aircraft, characterised by advanced performance, innovative systems and sensors, and reduced maintenance requirements, have digital capabilities that can constantly improve training systems.

- and supported globally
- > 20,000 pilots trained
- > 2,000 training aircraft sold in more than 40
- > 1,200 aircraft managed at about 50 sites/bases

manufacturers, Leonardo is involved and specialises in the production and assembly of major structural components made of both composite materials and conventional metal for commercial and military aircraft, helicopters and unmanned aircraft. Leonardo participates in the most important programmes in the sector, such as the Boeing 787 Dreamliner, the Airbus A220 and A321, and the ATR series of bestselling regional turboprops.

>2,000 fuselage sections produced for the Airbus A321

21% € 3.1 BIL.

2022 REVENUES OUT OF LEONARDO TOTAL

Ante Sector eliminations



€ 2.8 BIL. 2022 Orders



€ 8.6 BIL. 2022 Portfolio

€ 1,079 BIL. Civil Market 2022-2031

+ 6.0 % Civil Market CAGR 2022-2031

€ 753 BIL. Defence market 2022-2031

+ 7.3% Defence market CAGR 2022-2031



2022 REVENUES OUT OF LEONARDO TOTAL

Ante Sector eliminations



€ 420 MLN 2022 Orders



€ 1.1 BIL. 2022 Portfolio

€ 1,079 BIL. Civil Market 2022-2031

+ 6.0 % Civil Market CAGR 2022-2031



> 50% of the living space of the International Space

2,5 metres – the length of the robotic arm developed to bring Martian soil samples back to Earth with

The world's **most powerful** hyperspectral instrument

Station developed by Thales Alenia Space

NASA's Mars Sample Return

on board the ASI PRISMA satellite

Leonardo covers the entire value chain of the space industry, including the manufacture of satellites and orbiting infrastructure, the production of high-tech equipment and sensors, as well as management of satellite services and propulsion and launch systems. These capabilities, stemming from over 60 years of experience, have been consolidated with the aid of a strategic partnership between Leonardo and Thales for the Space Alliance and Leonardo's industrial participation in Avio.

€ 1,521 BIL. Market 2022-2031

+ **5.2** % CAGR 2022-2031

UNMANNED TECHNOLOGY

Development of unmanned technology is a frontier of innovation for which Leonardo is producing remotely piloted systems for air, land and maritime applications in both civil and military missions. These modular, flexible solutions integrate platforms, radar and electro-optical sensors, mission systems and ground control stations. In this context, Leonardo supplies technologies and services for the management and protection of unmanned air traffic, Unmanned Traffic Management (UTM).

50

Falco **remotely piloted** aircraft **systems** sold worldwide

825

unmanned systems – including 125 surveillance aircraft and 700 target drones – delivered worldwide

3rd

edition of the Leonardo Drone
Contest, the only open innovation
project in Italy, held in partnership
with six Italian universities,
promoting the development of
AI for applications in unmanned
systems

>30 KM

the route travelled by an experimental electric drone, in partnership with the Bambino Gesù Children's Hospital in Rome, to transport biomedical material

up to 100 KG

the maximum load carried by drones powered by electrical propulsion for logistics services developed by Leonardo and FlyingBasket and used to transport freight for Poste Italiane, Italy's postal service.





January

HENSOLDT ACQUISITION

Finalised the acquisition of a 25.1% share in HENSOLDT, a leading German company in sensors for defence and security applications. The agreement strengthens the partnership that has been under way between the two companies for some time

March

GROWTH PLAN FOR THE ELECTRONICS BUSINESS

Electronics, with reinforcement of production lines thanks to the 'Factory Leonardo DRS's business portfolio of the Future'

March

OPTIMISATION OF THE LEONARDO DRS PORTFOLIO

Launch of a five-year plan for growth Sale of the stake in Advanced Acoustic and development to achieve a position

Concepts (AAC) and sale of the Global of European leadership in Defence Enterprise Solutions (GES) business to continue the process of refocusing

ENERGY SELF-PRODUCTION PROGRAMME

Contracts signed to operationally launch National Strategic Hub (NSH), a project Leonardo's self-production programme company owned by Leonardo, TIM, Cassa for renewable sources, covering 10% Depositi e Prestiti and Sogei, begins of the annual energy needs of the sites work to provide Italy's public sector with concerned

NATIONAL STRATEGIC HUB - NSH

efficient, secure Cloud infrastructure

September

THE FIRST DIGITAL HIGH SCHOOL

Italy's first project, with the support of Leonardo and the Leonardo Foundation, for an experimental digital high school providing students with a solid background in the STEAM disciplines

April

LEONARDO CYBER & SECURITY ACADEMY

The Leonardo Cyber & Security Academy is a new advanced educational institute providing institutions, companies and strategic infrastructure organisations with training and qualifications in the field of security

June

FIRST ESG INVESTOR DAY

Leonardo's first Investor Day focusing on ESG (Environmental, Social and Governance) issues, to underline the priority assigned to ESG concerns in Leonardo's Industrial Plan

June

MERGER OF RADA INTO LEONARDO DRS

Agreement for the merger of Rada, a leading Israeli maker of tactical military radar systems, into Leonardo DRS with automatic listing of the latter on both Nasdaq and Tase (Tel Aviv stock exchange)

November

FINANCING OF ESG SUSTAINABILITY-LINKED

'Sustainability-Linked' financing from the European Investment Bank with innovative KPI - the first example in the A&D sector - and linked to ESG technological targets, with particular attention paid to Leonardo's increase in computing power per capita

December

LAUNCH OF GLOBAL COMBAT AIR PROGRAMME (GCAP)

GCAP is an international collaboration between Italy, the UK and Japan and their respective defence industries to develop a sixth-generation platform capable of multi-domain operations, set to enter service from 2035.

December

GENERATIONAL MIX CHANGE PLAN

Agreement signed for the launch of a generational mix and skills change plan, to be realised in the two-vear period 2023-2024, with a recruitment programme focused on key sectors of the company, in line with the evolution of its business

BE TOMORROW 2030

The Be Tomorrow-Leonardo 2030 strategic plan expresses a clear vision of the company's path for the next 10 years and beyond: strengthening and transforming the business in order to grow, accelerating the process of innovation, and increasing long-term competitiveness in the pursuit of sustainability. The aim is to develop new capabilities, in both the civil and military sectors, to respond to the challenges posed by the complexity of the digital age: interdependence, interrelation and rapid evolution. In terms of industrial processes, the plan focuses on the convergence between manufacturing and the digital sphere as a factor in transforming production and design models.

PRIORITIES FOR DEVELOPMENT



Strengthen our "Core"

- · Increasing critical mass in strategic areas: Helicopters, Electronics, Cyber and Uncrewed Aircraft, to strengthen and to acquire a position of international leadership
- Strengthening our presence in global markets
- Evolving our approach to the market, from product supplier to global partner



Transform to grow

- · Diversifying the portfolio of activities and making the most of distinctive and transversal skills: Digitalisation, Command and Control, Connectivity, Cyber Security
- · Responding ever more effectively to customers' demands, with innovative service-based supply models (X-as-a-service), ongoing measurement of customer satisfaction, and excellence in Simulation & Training solutions and systems
- Investing in people and skills to support the ambitions of the business



Master the new

- Through the Leonardo Labs, high-tech incubators for the development of innovative skills that can be applied to all the Group's businesses
- · Increasing investment in research activities
- · Focusing on Autonomous Intelligent Systems to build leadership across all domains

GLOBAL

SOLID

Profitable

Investment grade

Solid cash conversion capability

TARGETS FOR 2030

Global Leader in Helicopters and in Simulation and Training solutions

European number one in Defence Electronics

Key position in collaborative international aeronautical

Key player in Europe in unmanned systems and solutions for all domains

Partner of security institutions

National partner of choice for the monitoring of infrastructure and territories (Global Monitoring)

National partner for the implementation of the PNRR-Italy's recovery and resilience plan



DRIVER OF INNOVATION

Fully digitalised processes, production and offering

The engine of an innovative ecosystem along interconnected technological lines

Point of reference for sustainability innovation in the AD&S sector

TARGETS ACHIEVED IN 2022





Partner in the **Global Combat** Air Programme (GCAP)



Acquisition of a 30% stake in GEM



Acquisition and Integration of Kopte



Acquisition of a 70% stake in



Acquisition of a 25.1% stake in Hensoldt



Finalising the merger of Rada and listing of Leonardo DRS









Creation of the International Flight Training School (IFTS)



relaunch the **Aerostructures** Division



Industrial Reorganisation of the Electronics



Launch of the X-2030 platform



Creation of the National Strategic Hub -PSN



Launch of a new **Global Monitoring** proposition





Creation of the Leonardo Labs



Leadership in **ESG** ratings and indicators

Sustainability operating model integrated within the Group



Commitment to the Science Based **Target initiative**



Participation Skydweller programme



the davinci-1 supercomputer



Launch of

the Cyber

Academy

& Security



Launch of Business Innovation Factory - BIF



Definition of a new strategy for the **Uncrewed Aircraft** segment



RESEARCH IN NUMBERS

15 TECHNOLOGICAL AREAS



Artificial intelligence



Communication networks



Cyber



Digital enablers



Electronics



Flight technologies



Materials



Mechanics



Modelling and simulation



Quantum technologies



Software architecture and processing



Systems autonomy



integration technologies



Optronics

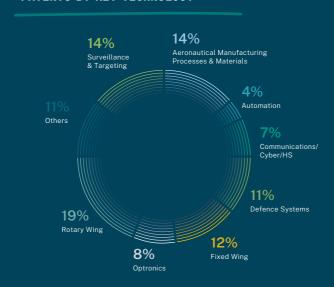


Propulsion

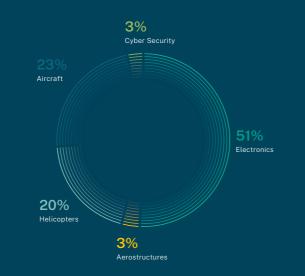
INTELLECTUAL PROPERTY

The type of patents developed focus primarily on dual-use technologies in sectors related to AD&S (Aerospace, Defence & Security), assisting small and medium-sized enterprises in the development of their products and supporting emerging start-ups. In 2022, centralised governance policies on Intellectual Property (IP) were implemented to foster growth and sustainable management of IP rights portfolios, protection covering the dissemination of technicalscientific information, and protection and industrial enhancement of results achieved in R&D initiatives by Leonardo and Leonardo Labs researchers.

PATENTS BY KEY TECHNOLOGY



PATENTS BY SECTOR





LEONARDO **2022 ANNUAL REPORT SUMMARY**

HPC DAVINCI-1

Leonardo technologies.

DAVINCI-1 HPC/CLOUD

11 LEONARDO LABS

Leonardo's constant investment in research and development and its strong orientation towards open innovation have given birth to the Leonardo Labs, a network of technological incubators which support all aspects of engineering in Leonardo's fields of business. This includes research and development into the most innovative technologies, exploration of emerging technologies, and anticipation of future demands in the market.

A total of 11 laboratories, each with its own technological focus, operate through a number of centres spread across Italy and internationally, with a focus on nine research areas: Artificial Intelligence (AI), Digital Twin and Advanced Simulation, Big Data, High Performance Computing (HPC) and Cloud, Quantum Technologies, Autonomous and Robotic Systems, Electrification, New Materials, and Sustainability.







Future aircraft technologies



Future electronics & sensing



Space technologies



Quantum technologies



rotorcraft

technologies

Future



HPC/Cloud/ Big data technologies



Intelligent autonomous system



Advanced

Logistics 4.0

Materials technologies

Future security & safety technologies

4 JOINT LAB

Solvay

Istituto Italiano di Tecnologia







Industrial robotics



Space robotics



High performance computing

150 researchers and PhD candidates involved in the Labs network

69 terabytes of usable data in data lakes

the davinci-1 supercomputer became fully available to Leonardo Labs researchers and Leonardo engineers and researchers to exploit computing power and storage capacity for research activities, numerical simulation, big data analytics and Artificial Intelligence. Among the most significant activities involving the Labs network and

of innovative services based on Big Data, implementation of innovative data management solutions and enabling of new data-based computational models: successful testing and validation of the hybrid Cloud and HPC environment for the collaborative digital design of future platforms. Work also included a new version of the Digital Twin framework with new multi-physics and multi-scale simulation capabilities; design and development of

Artificial Intelligence

UAV (Uncrewed Aerial Vehicle) platforms to test and demonstrate autonomous flight capabilities; completion of experimental setups for the **QKD infrastructure** (Quantum Key Distribution) and continued study and development of **Quantum Safe**; as well as development of diverse configurations for fixed-wing cargo aircraft based on different propulsion technologies.

Quantum technologies

New communication and

encryption technologies

Electrification

fuel cells

New propulsion systems.

The davinci-1 supercomputer, one of the world's most powerful HPCs for the AD&S sector, represents the digital

Davinci-1 supports the Group's digital transformation process. The davinci-1 High Performance Computing architecture

is an integrated supercomputing and Cloud computing platform that combines flexibility with computing power,

enabling the use of algorithms (from deep learning to artificial intelligence), the customisation of technological

platforms, and the calculation of countless interactions between the data generated (data analysis and Big Data).

Davinci-1 is also a digital enabler for improving product legacy and accelerating evolution of the ecosystem of

DAVINCI-1

backbone of Leonardo, cutting across all business areas and the Leonardo Labs network.

Unmanned robotics

Predictive maintenance

Digital twins and

advanced simulation

Certification through simulation

Global monitoring

20 mln. gb

Innovative materials

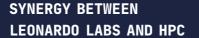
memory capacity

5 mln. bil.

floating-point operations per second

100 gb

per second reading and writing speed



In 2022, the set of services provided by HPC launched in 2022 were: planning

LEONARDO PRODUCTION SYSTEM (LPS)

The LPS (Leonardo Production System) has the goal of optimising the efficiency and productivity of Leonardo's industrial sites with an approach orientated towards ongoing improvement in the management of processes and programmes. The programme is based on WCM (World Class Manufacturing), a structured and integrated production methodology aimed at continuously improving all areas of production performance to guarantee product quality and satisfy customer expectations. LPS is managed by a governance and control system based on standardised evaluation criteria for each technical pillar defined internationally by the **WCM Association**, of which Leonardo became a member in 2022 - the first company in the A&D sector to do so.

LPS IN NUMBERS

~5.000 employees in 18 plants involved in improvement projects

projects

~8.000 improvement 95% reduction in accidents (safety)

+ 30% improvement in productivity

Baseline 2019, figures updated to 2022

LPS 4.0

Over the next 10 years, Leonardo will be engaged in enhancing its consolidated businesses and developing technology innovation projects, as outlined in the Be Tomorrow - Leonardo 2030 strategic plan, with the goal of achieving a sustainable transformation of new technological cycles, thanks above all to integration of digital technologies and manufacturing. In this context, Leonardo launched the LPS 4.0 programme, revising the LPS programme to establish a new version featuring a greater focus on digitalisation of production. The development of LPS 4.0 has a direct impact on process transformation costs, helping to improve their sustainability through adoption of digital technologies.

Business drivers Success factors Injuries Standard Customer satisfaction Information method DIGITALISATION Performance Sustainability Sustainability





€ 9.5 BIL.

value of purchases of goods and services

65 %

impact of purchases on revenues

82 %

of purchases related to domestic markets, with a supply chain of more than 6.300 SMEs

In Italy, Leonardo is at the centre of an ecosystem of about 4,000 companies employing more than 126,000 people. This generates 10.8 billion euros in added value, enabling the development of local supply chains with a high concentration of knowhow and innovation.

PURCHASES BY COUNTRY



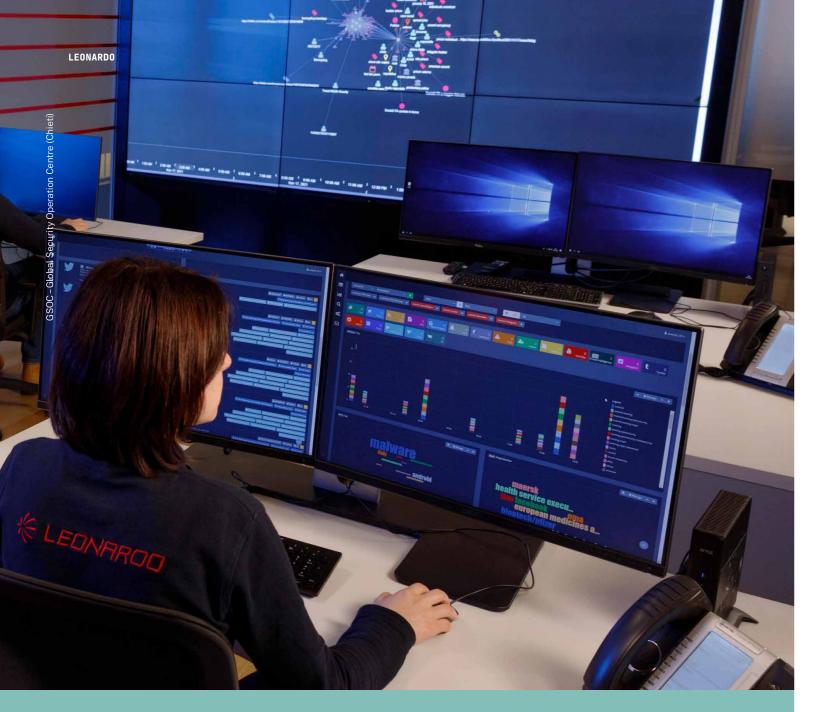
>150

suppliers involved in improvement and development training hours into managerial, technical and specialist projects in Italy and the United Kingdom, of which more skills delivered to suppliers than 130 with LEAP

>22,000

LEONARDO EMPOWERING ADVANCED PARTNERSHIPS (LEAP)

Through Leonardo Empowering Advanced Partnerships (LEAP), designed to develop the supplier base, Leonardo aims to optimise supplier relations, while at the same time making the most of the technological capabilities of both players in this new project: the Group and the supply chain. Improvement and development projects are already under way for more than 130 suppliers participating in the LEAP programme. In 2021, the LEAP programme evolved into LEAP Partnership for Sustainability, setting sustainability goals for suppliers in addition to targets for operational performance and cost-competitiveness. The transition to LEAP-Partnership for Sustainability focuses on the Leonardo suppliers' commitment to innovation, digital transformation, cyber security and the green transition. In 2022, more than 600 key suppliers were assessed in terms of ESG sustainability, identifying strong points and areas for improvement in the supply chain. This analysis inspired the 'Leonardo Supply Chain Sustainability Manifesto', addressing three key issues - Digital Transformation, Cyber Security, and People & Planet - through 18 tangible **projects** with measurable, progressive milestones.



NATIONAL STRATEGIC HUB - NSH

Thanks to its expertise in 'secure management' of data, in 2022 Leonardo joined **National Strategic Hub (NSH)**, a company that designs, produces and manages new infrastructure providing Cloud services for public authorities. Through Leonardo's security operation centres, guaranteeing defence against all types of data violations by external agents, the infrastructure to protect the country's sensitive data and critical strategic services can now rely on a secure, efficient and dependable Cloud. The goal of NSH is to promote the country's digital transition, with the target of connecting 75% of Italy's public authorities to the Cloud by 2026.



CYBER SECURITY



Private/hybrid cloud



High Performance Computing



Artificial intelligence algorithms



Predictive simulation capability

NATIONAL RECOVERY AND RESILIENCE PLAN - NRRP

Leonardo, in line with the provisions of its Be Tomorrow – Leonardo 2030 strategic plan, has established itself as Italy's partner in the country's digital, ecological and industrial transition process. The Group, leveraging its core assets and distinctive skills, has identified **seven Clusters of interest** which can act as an engine of development, in line with the objectives of the **National Recovery and Resilience Plan (NRRP)**.

LEONARDO ASSETS & COMPETENCES - ENABLING FACTORS







Artificial intelligence algorithms

performance

computing



Predictive simulation capability



Decisionmaking support tools



Command and control



ontrol assets



CYBER SECURITY



GLOBAL MONITORING

Continuous monitoring and securing of critical infrastructure



DIGITAL PA

Facilitating the delivery of easily usable, efficient and secure digital public services



EDUCATION & RESEARCH

Contribute to the development of a digitized, integrated and homogeneous education system throughout the country



SPACE

Contributing to the growth of the Space Economy as a strategic aspect of the country's development



HEALTH

Contributing to the development of an efficient and interconnected health system



SMART CITIES

Increasing the safety and resilience of cities by promoting sustainable mobility



DIGITAL LOGISTICS

Contributing to the development of connected, automated and secure multimodal logistics

















ns Grou





In line with the UN Sustainable
Development Goals



CUSTOMER CENTRICITY



TRAINING AND SIMULATION

The training of civilian and military pilots, technicians and maintainers is provided through a global network of training centres and via the extensive use of simulation systems and LVC-capable learning environments to guarantee the highest levels of safety.



TECHNICAL AND LOGISTICS SERVICES

Leonardo provides its customers with a wide range of services to support operational capability for every type of mission, supporting their long-term industrial and technological growth.



SUPPORT AND MAINTENANCE

24/7 support, including remotely through the Leonardo Customer Portal, guarantees technical and logistic services for site management, installation and commissioning, inservice data acquisition, configuration management and obsolescence, technical publications and infologistics services.



FULL SERVICE

A global network of service centres and logistics guarantees support for platforms and systems throughout their lifecycle. A portfolio of services includes advanced turnkey support using proprietary digital tools to guarantee operability, mission effectiveness, and optimisation of costs and warehousing.



~48,000

of total 2022 revenues hours of training delivered from Customer Support, using flight simulators Service and Training

>13,000

helicopter and aircraft pilots and operators trained



28%

LEONARDO FLAGSHIP

HELICOPTERS

AW139

A multi-role helicopter capable of carrying out any type of mission: search and rescue, security, offshore, private and executive transport.

AW119

Multi-role single-engine helicopter with performance and navigation capabilities comparable with higher category models.

AW609

The first tiltrotor for civil and government applications. It combines the benefits of helicopters with those of fixed-wing aircraft.

AW149

The most modern helicopter in its category for defence applications, equipped with state-of-the-art avionics systems.

AW189

Modern helicopter that combines high load capacity and range with low operating costs for offshore transport, rescue and transport missions.

AW169

Latest generation helicopter characterised by high mission versatility for transport, rescue and government missions.

AW101

The most advanced and powerful multi-role helicopter available on the market today. Equipped with sophisticated avionics and mission systems, it guarantees maximum operational efficiency, also thanks to its high degree of autonomy.





AIRCRAFT

C-27J

Global benchmark for new generation medium-sized tactical turboprop craft for training military pilots. It oftransport aircraft.

M-346 AJT/FA

Among the most advanced jet airfers extensive training capabilities, long-term reliability and reduced operating costs.

M-345

Trainer for the basic to advanced phases of military pilot training with performance typical of a jet aircraft and operating costs comparable to those of high-performance turboprop trainers.

ELECTRONICS

FALCO Xplorer

MALE (Medium Altitude Long Endurance) class system for surveillance of areas even in severe conditions. The uncrewed platform, developed for military and civilian ISTAR (Intelligence, Surveillance, Target Acquisition, Reconnaissance) missions, combines persistence in flight of over 24 hours with a load capacity of up to 350 kg.

ATOS

Modular avionics suite for the management of surveillance missions that can be integrated on any type of aerial platform, including uncrewed aircraft. The system allows collection and integration of data from the various on-board sensors for a complete tactical picture.

KRONOS

Family of multi-function and multi-mission radars, dedicated to surveillance and air, land and maritime defence.

OTO 76/62 SR (Super Rapido)

Light naval weapon system capable of providing air defence, anti-surface and anti-missile capabilities.

ATHENA MK2

Combat management system capable of integrating and coordinating all information from various sensors in real time, guaranteeing complete situational awareness for surface and underwater naval assets.

SOFTWARE DEFINED RADIO

Radio for strategic, tactical, platform applications, providing secure communications, based on broadband SDR technology, with functions and characteristics modifiable via software.

SICOTE

System to control territory supplied to the military Carabinieri, capable of preventing and analysing threats.

SPACE

COSMO-SkyMed Second Generation

Italian Earth observation satellite system, equipped with synthetic aperture radar sensors, ensuring global coverage of the planet under all weather conditions.

SICRAL 3

Italian satellite system for military communications, guaranteeing interoperability between defence, public safety and civil protection networks.

Copernicus

European satellite programme to monitor Earth, the marine and atmospheric environments, and climate change.



The European Union's Global Navigation Satellite System (GNSS).

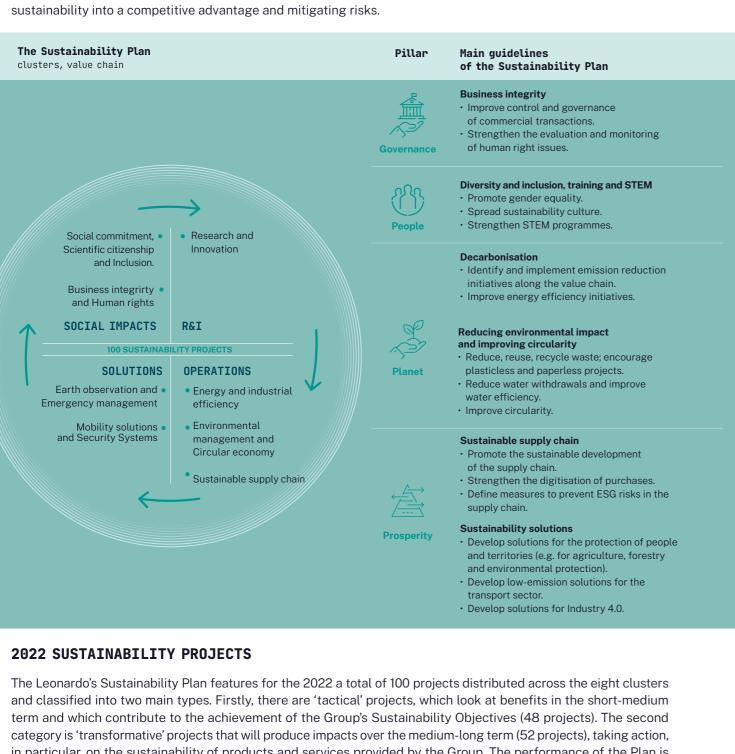
PRISMA Second Generation

Italian mission for Earth observation equipped with a hyperspectral sensor to collect data and information on the health of the planet, for the benefit of institutions, the scientific community and citizens.



SUSTAINABILITY PLAN

Leonardo's Sustainability Plan translates the Group's sustainability vision and objectives into projects and initiatives that can be measured in the short, medium and long term, through a structured model guided by a data-driven approach. Focusing on the entire value chain-from research and development to operations, from customer support solutions to social impacts - the Plan is divided into eight clusters, each of which includes specific projects, measured with KPIs linked to ESG pillars. During 2022, the Plan was further strengthened, in line with the indications provided by the 2021 materiality analysis, through initiatives that respond to stakeholder requests, with the aim of translating



Impact on SDGs



Others







111









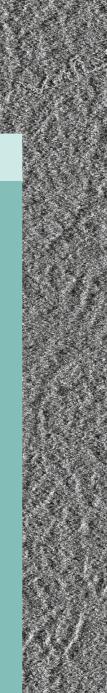














in particular, on the sustainability of products and services provided by the Group. The performance of the Plan is measured, especially in the context of tactical projects, through specific ESG KPIs which are also monitored in terms of achieving Sustainability Objectives. The robustness, coherence and consistency of ESG data are ensured by a bottom-up collection and verification process.

COMMITMENT TO THE PLANET

The **transition towards a circular economic model**, enabled by technology and the adoption of conscious behaviours, is an integral part of the strategy and projects of Leonardo's Sustainability Plan, with a transformative approach across the value chain. Leonardo's circularity strategy is based on four main interconnected areas: optimising the use and choice of materials right from the design stage (for example through eco-design); use of digital platforms to **dematerialise and virtualise** activities and solutions offered to the customer; **extending the useful life of products** by optimising maintenance cycles and through forecasting models; and finally **promoting the recycling and reuse** of materials, with the objective of reducing waste produced by 15% by 2030.

CIRCULAR ECONOMY MODEL

OPTIMISE

Reduction of materials thanks to advanced design systems

Application of the Product Lifecycle Management approach and Ecodesign

Use of composite materials to reduce weight, consumption and impacts

Study of new materials to encourage reuse and to limit their disposal

SHARE AND DEMATERIALISE

Sale of flight hours to replace the product

Virtualisation of product tests

Training systems delivered through virtual training

Elimination of paper documentation in production processes



EXTEND USEFUL LIFE

Optimisation of the maintenance cycle

Predictive maintenance for helicopters

Replacement of only those components that have reached the end of their life

Software updates to extend the life of hardware

'Buy-back' of used helicopters

RECYCLE/REUSE

Use of recyclable metallic materials

Reconditioning of used components

Recycling and reuse of auxiliary materials, packaging, assembly jigs and metallic equipment

Recycling of composite materials (e.g. carboresins)



OBJECTIVES AND SUSTAINABILITY PLAN

PILLAR	OBJECTIVES	PROGRESS	TARGET YEAR	SDG/MATERIAL TOPICS	
GOVERNANCE	Extending Trade Compliance Directive to the Group		2022	Sound corporate governance	
	Expanding the business compliance training to other types of third parties (distributors/resellers), making it a mandatory prerequisite for the completion of the engagement	•	2022	Responsible and ethic business conduct	
	Renewal/maintenance of the ISO 37001:2016 "Anti- Bribery Management System" certification		2023	16 resums	
{\}\}	More than 100 training hours per employee in the period 2018-2022	•	2022	Diversity and inclusion Skills management	
	Under 30 equal to at least 40% of total new hires		2022		
	Women equal to at least 32% of total new hires	*	2022	and talent attraction Active support for the development of STEM skills	
			2025		
	Women equal to 30% of total new hires in STEM areas		2025		
	20% female representation at management levels		2025		
	Women equal to 20% of total employees		2025		
PEOPLE	27% of women in succession plans		2025	4 min. 5 mm. 6 min. 8 min.min.	
	10% reduction in consumption of electricity withdrawn from external grid $^{\mbox{\tiny II}}$		2025	Fighting climate change, adaptation and mitigation	
	50% reduction in Scope 1 + Scope 2 emissions (market based) $^{\mbox{\tiny III}}$	•	2030	Environmental impact of materials use	
	25% reduction in water withdrawals ^{IV}	•	2030	or materials use	
PLANET	15% reduction in the amount of waste produced $^{\mbox{\tiny IV}}$	•	2030	8 SECTION 9 SECTION 12 SECTION 13 SECTION 13 SECTION 14 SECTION 15	
←	Managing more than 75% of the value of orders placed by Leonardo Divisions with digital collaboration platforms $^{\vee}$		2022	Sustainable supply chain	
	Implementing supply chain development programmes and medium/long-term partnerships, focused on SMEs, to improve business sustainability	€	2023	R&D, innovation and advanced technology	
	Raising awareness of/delivering training on SDGs and supporting tools for reporting to more than 80% of key suppliers (over 500 suppliers)	€	2023	Cyber security and data protection Digital	
	100% of LEAP partners with set targets and plans on green energy, CO ₂ emission reduction, waste recycling, water consumption		2023	transformation	
	Increasing computing power by 40% per capita VI		2025	12 speed. 13 dec	
PROSPERITY	Increasing storage capacity by 40% per capita ^{VI}		2025		

workers; the 2025 target is calculated on total

IV Reduction in absolute value. 2019 year baseline.

included in the scope. VI Calculated as the number of flops (Floating Point Il Calculated in relation to revenues. 2019 year baseline. Operations Per Second) and bytes in relation to III Reduction in absolute value. 2020 year baseline. employees in Italy. 2020 year baseline.











