



Leonardo Cyber & Security Solutions

Cyber in Space

24.05.2023



Electronics



Helicopters



Aircraft



Cyber &
Security



Space



Unmanned
Systems



Aerostructures

LEADER IN AEROSPACE, DEFENCE AND SECURITY

Leonardo is a global company that develops **multi-domain operational capabilities** in the Aerospace, Defence and Security sector, with an integrated offer of high-technology solutions for military and civil applications.

BUSINESS SECTORS

HELICOPTERS



- › Helicopters Division
- › PZL-Świdnik (100%)
- › Kopter (100%)
- › Leonardo UK/Helicopters (100%)
- › NH Industries (32%)

AERONAUTICS



- › Aircraft Division
- › Aerostructures Division
- › ATR* (50%)
- › Eurofighter GmbH (21%)

DEFENCE ELECTRONICS & SECURITY



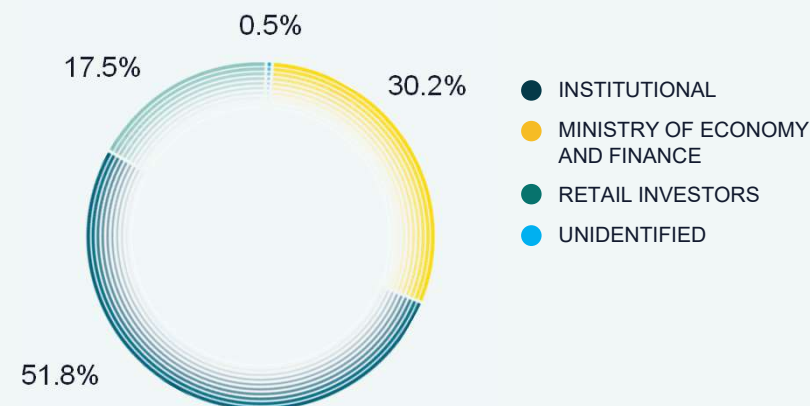
- › Electronics Division
- › Cyber & Security Solutions Division
- › Leonardo DRS (80.9%)
- › Leonardo UK/Electronics/Cyber (100%)
- › MBDA* (25%)
- › Hensoldt (25.1%)
- › Elettronica (31.3%)
- › Larimart (60%)

SPACE



- › Telespazio* (67%)
- › Thales Alenia Space* (33%)
- › AVIO (29.6%)

SHAREHOLDER COMPOSITION*



90% ca. of the institutional float is international

30% of investors are signatories of the Principle for Responsible Investments (PRI)

* Joint venture | % Leonardo's share

*As of February 2023



MAIN PERFORMANCE AND FINANCIAL RESULTS 2022

ECONOMIC-FINANCIAL

REVENUES

€ 14.7 BN

ORDERS

€ 17.3 BN

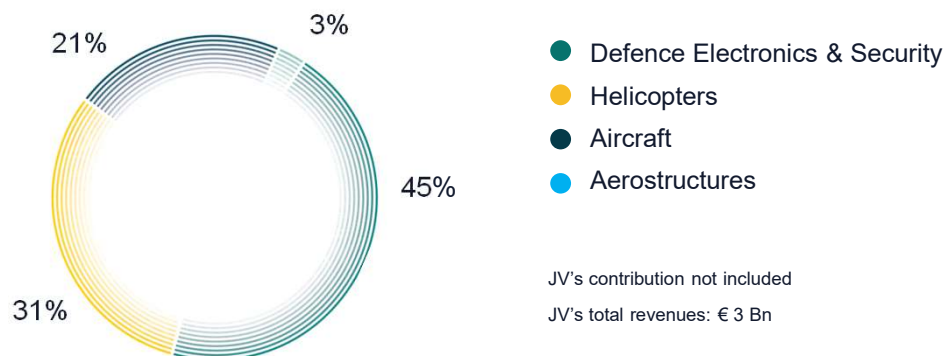
ORDER BACKLOG

€ 37.5 BN

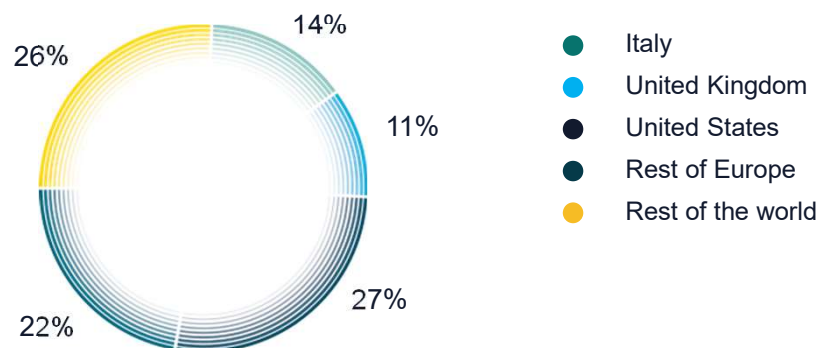
EBITA

€ 1.2 BN

Revenues by business sector



Revenues by Geographical Area



SUSTAINABILITY

50%

of investments in 2022 – 2024 to achieving SDGs

2 BN

Invested in R&D (13.6% of revenues)

55%

Sources of funding ESG-linked

-15%

CO₂ emissions Scope 1 and 2 (market)

44%

of "under 30" new hires



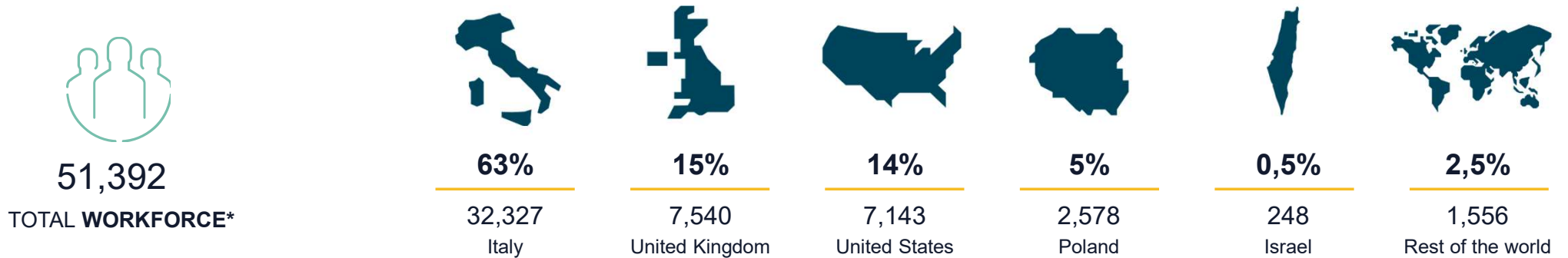
* As of the draft financial statements approved by the BoD of 09 March 2023

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LEONARDO, A GLOBAL PLAYER

INTERNATIONAL FOOTPRINT

Leonardo is the leading Italian industrial company and one of the major Aerospace, Defence and Security players in the world. The company has a solid industrial base in five countries (Italy, United Kingdom, United States, Poland and Israel), a global commercial network, strategic partnerships and collaborations in the most important international programmes.



5 Domestic markets (Italy, UK, US, Poland, Israel)

86% of 2022 revenues comes from international markets



*As of December 31, 2022



CYBER & SECURITY SOLUTIONS DIVISION

Leonardo Cyber & Security Solutions develops, implements and manages products, systems, services and solutions for the **valorization** and **protection of data**, the security of **digital ecosystems** and the **resilience of strategic assets** of public and private entities

PEOPLE ASSET AND PRESENCE



~ 2000
People

5
Strategic assets

- Global SOC Chieti, Italia
- 3 Regional Center, UK, EU, ME
- Cyber & Security Academy

+15% CAGR
In the last 3 years



>20

sites worldwide



50 countries

commercial activities

THE SYNERGY OF 4 TECHNOLOGICAL DOMAINS

- SECURE CLOUD & DIGITAL**
Efficiency of digital processes and generation of new value-added services
- MISSION CRITICAL COMMUNICATIONS**
Ensuring business continuity and mission critical communications
- GLOBAL MONITORING**
Situational Awareness, operational efficiency and service quality
- CYBER SECURITY & CYBER RESILIENCE**
Support for decisions driven by information superiority





SPACE & CYBERSECURITY

Context, Needs and Mapping of leonardo C&SS Capabilities

C-SOC OBJECTIVES

- Protect assets and operations of ESA and other Space stakeholders of ESA Member States from emerging cyber threats in Space Domain
- including IT and Mission (ground & space) assets
- implementing a secure and scalable architecture
- able to guarantee geographically-distributed continuous operations
- using best-in-class technologies
- while privileging European solutions
- towards a more Secure (and, therefore, safer) Space

CYBER THREATS TO SPACE ASSETS

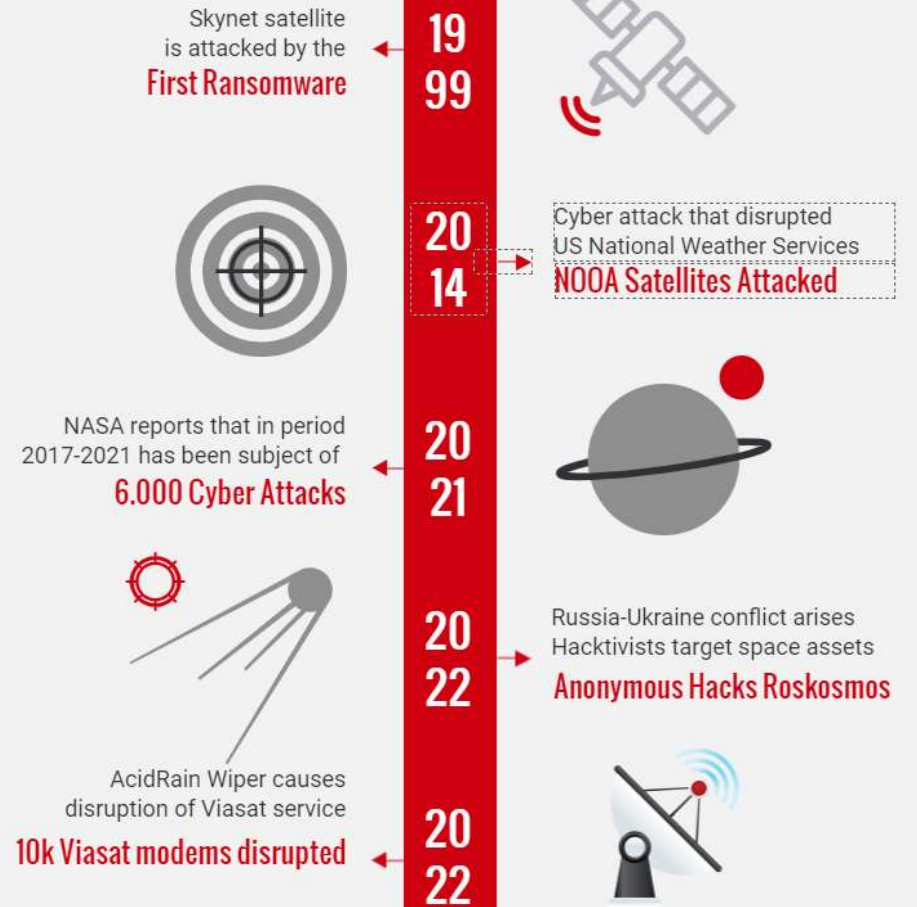
Space Assets are **Complex Digital Infrastructures**

- having a **Wide Attack Surface**
- subject to **Hybrid and Asymmetric Threats**
- based on multi-layer **supply-chain**
- needing state-of-the-art **Cyber skills**



Cyber attacks to space assets during the last two decades

RECENT HISTORY OF CYBER ATTACKS TIMELINE



CYBER THREATS IN THE SPACE DOMAIN

- **Cyber Attacks**, having the potential to affect both **IT systems/networks** and **OT assets/networks** (also in RF domain), both **in-orbit** and **on-ground**. Targets include Space Agencies, Governments, Service Providers, End Users and the industrial **Supply Chain**.
- **Cyber Threats** are evolving into: tracking and monitoring satellites & transmissions; hijacking satellites in order to control, destroy or deactivate them; attacks against services at the transmission site, the satellite, the communication link and the user segment.
- **Personnel Attacks**: intentional and unintentional actions that may be used or exploited to penetrate, degrade, damage and destroy Space systems such as **Social Engineering attacks** or the exploit of act of negligence or natural occurrences.

C-SOC MAIN FUNCTIONALITIES

- **Preventive and reactive monitoring** of corporate and mission critical network functions;
- **Distributed threat monitoring, vulnerability management and risk analysis;**
- Sensors and technology **data collection** capability;
- **Big Data Processing, Data Fusion:** collecting and consolidating all the security-relevant data feeds distributed in the different infrastructures in scope of the C-SOC into one integrated architecture;
- **Analytics:** correlation and triage of the real-time data feeds, incorporating knowledge about ESA's environment, threats, and vulnerabilities;
- **Alerting:** escalating incidents to the service customers (e.g. ESACERT, NOC, EOP SOC) who have the operational authority to initiate the incident response in the affected organization or area;
- **Situational awareness and reporting:** using cyber threat intelligence from a wide variety of sources, synthesizing and feeding back as threat intelligence, and comprehensive reporting on cyber security status and performance metrics to the service customers.

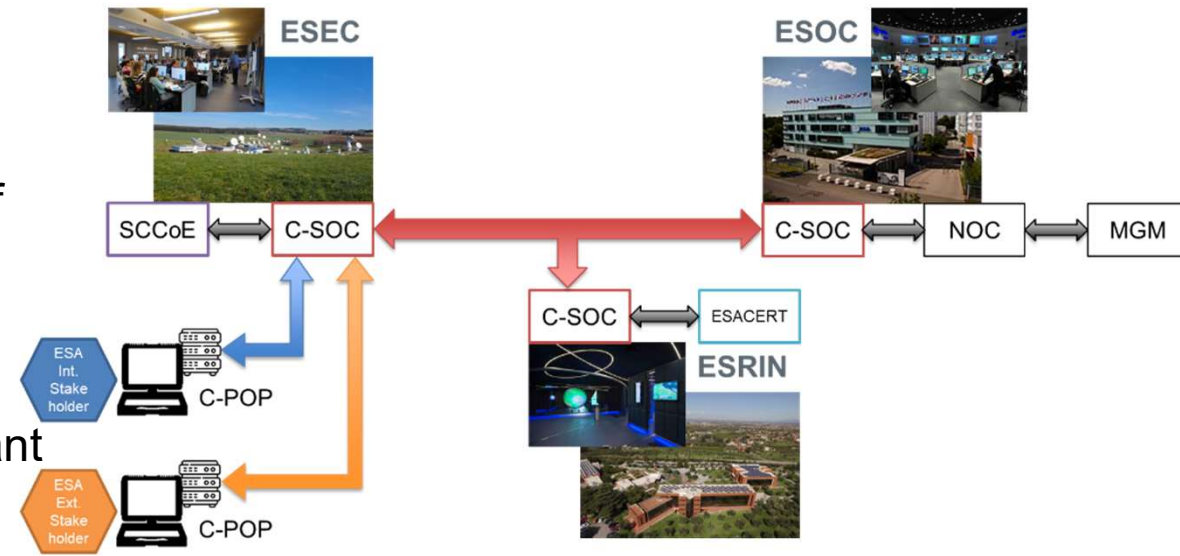
C-SOC HIGH-LEVEL ARCHITECTURE

- **ESEC**: C-SOC Master **ESOC**: C-SOC Backup
- **ESRIN**: ESACERT Master **ESEC**: ESACERT Backup
- **ESRIN**: SOC supervision and services through C-POP
- Stakeholders and Peripheral Elements connected through C-POPs

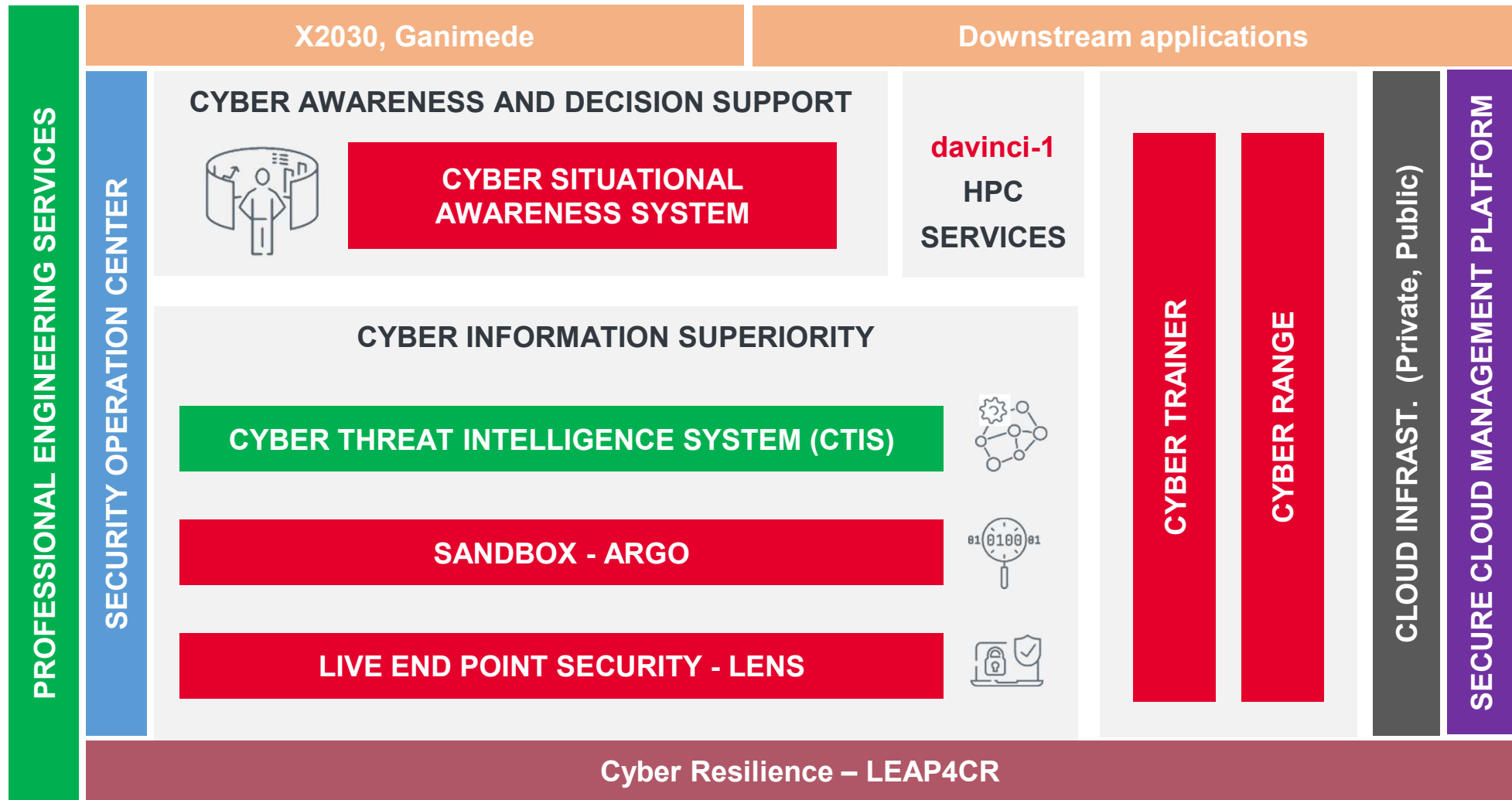


- ESEC** Redu, Belgium
- ESOC** Darmstadt, Germany
- ESRIN** Frascati, Italy
- ESTEC** Noordwijk, The Netherlands
- ECSAT** Oxfordshire, UK

- C-POPs are point-of-presence that expose C-SOC services to the Tenants
 - Logs are collected from tenant by means of the C-POP, then transmitted to the C-SOC Core where they are securely and anonymously processed.
 - Processing results are sent only to the tenant C-POP



LEONARDO PLATFORMS & SOLUTIONS



C-SOC CHALLENGES

- Industrial Team: **19 Entities** from **8 ESA Member States**
- **Unique proposition:** IT+OT+RF, first of its kind
- Complex system: strong focus on **Engineering Management & IVVQ**
- Maximise the use of **European Technologies**
- Wide industrial team with **SMEs** and **Academia**: requires robust management capabilities and cross-cultural empathy
- Schedule: **systems in operations by 2024**



BENEFITS FOR LOCAL AND REGIONAL ECOSYSTEMS

C-SOC Project is looking at the broadest impact and the highest ROI for ESA Member States:

- Highly-qualified workforce employed in the Member States supporting the project
- Long-Term operations and technological evolutions, sustaining local/regional economies around **ESEC** (Redu, Belgium), **ESOC** (Darmstadt, Germany) and **ESRIN** (Frascati, Italy)
- Fostering International Cooperation between Industrial and Institutional stakeholders
- Spin-out business opportunities for Industry (reuse of IPR from space to non-space market)
- Supporting the vision of ESA and national stakeholders towards a more secure (and therefore safer) Space



THANK YOU
FOR YOUR ATTENTION

leonardo.com

Bruna Campagna

Cyber & Security Solutions Division
Marketing & International Business
Space Business Development

Leonardo SpA
Via Laurentina, 00144 Roma

