



NOVAS | Equity Conference 2023

ELES S.p.A.

Milan | October 2023



Speakers



Francesca Zaffarami
CEO

- (1997 – 2003) MSc in Electronics Engineering from Università degli Studi di Perugia
- (2008 – 2009) EMBA at LUISS Business School (Rome)
- (2003 – 2004) Application Engineer at ELES S.p.A.
- (2004 – 2006) Member of the team responsible for “Wafer Level Burn In” R&D project, assisted by Catania Research Lab
- (2005 – 2006) Project Manager deputy to digitalization and research project
- (2006 – 2008) Improvement Project Portfolio Manager at ELES S.p.A.
- (2008 – 2014) Controller and COO Assistant at ELES S.p.A.
- (2016 – Today) CEO and Vice Chairman at ELES S.p.A.



Massimiliano Bellucci
General Director

- (1990) High School Diploma in Electronics Engineering (Todi – PG)
- (1995 - 1998) ELES Semiconductor Equipment S.p.A. – Field test technical officer;
- (1998 – 2001) ELES Semiconductor Equipment S.p.A. – Program/Product Manager of ATE-Equipment;
- (2001 – Today) Cofounder and Chief Executive Officer of CBL-Electronics;
- (2022 – Today) ELES Semiconductor Equipment S.p.A. – General Director and Director of Sales



Prof. Dr. Harald Kuhn
Head of Fraunhofer Institute for Electronic Nano Systems ENAS

Prof. Harald Kuhn has more than 20 years of experience in the semiconductor industry and has held various management positions at Infineon and Siemens. His high methodical competence in developing innovative, modularized and scalable concepts was the basis for a successful worldwide productive implementation. In his function, Prof. Kuhn was a leader in innovation (e.g. Artificial Intelligence; IIoT) and its productive implementation. His international experience, especially in Asia, completes his profile.

(2020 – Today) Director of Fraunhofer-Institute for Electronic Nano Systems ENAS

(2020 – Today) Chair for Smart Systems Integration and director of the Center for Microtechnologies, both at the Chemnitz University of Technology.

ELES is an Aggregating pole of frontier technology

ELES Group's Mission

Solving the biggest challenges in **Semiconductor** and **Module Reliability**, towards zero defects and maximum sustainability



30+ years of continuous innovation in the semiconductor sector



Well positioned to benefit from **semiconductor** and **aerospace** and **defense** secular growth



Strong portfolio offering capitalizing the exponential growth related to **automotive** **energy transition**, **Artificial Intelligence** and **Space** economy



Solid 1H performance in a challenging environment



SEMICONDUCTOR

 **RETE**



AEROSPACE &
DEFENSE

Growth Drivers | Industry Demand Pillars

SEMICONDUCTOR

- **Energy transition** in the **automotive sector** is **driving** current **demand** counterbalancing a slowdown in consumer electronics and communication sector
- Semiconductor supply chain is experiencing a protracted period of high level of inventories and overcapacity while **supply chain regionalization and European and US Chip act are supporting a new long-term investment cycle**
- **Generative AI and aviation electrification will strongly support future demand**



AEROSPACE & DEFENSE

- **Increasing budget in defense spending** with conventional defense evolving into national security with multi-domain battlespace
- **Space economy is expected to growth exponentially over the coming years** due to the fourfold growth in the number of satellites driven by commercial constellations¹
- Civil government and defense customers will continue to hold largest market value in the space economy

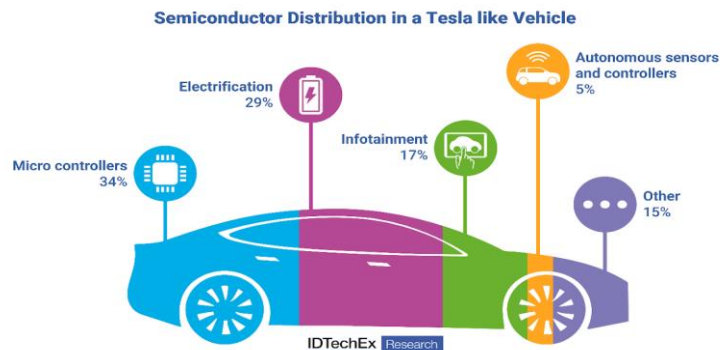


¹Satellite to be built and launched, Euroconsult, December 2022

Automotive Energy Transition | A Significant Growth Driver

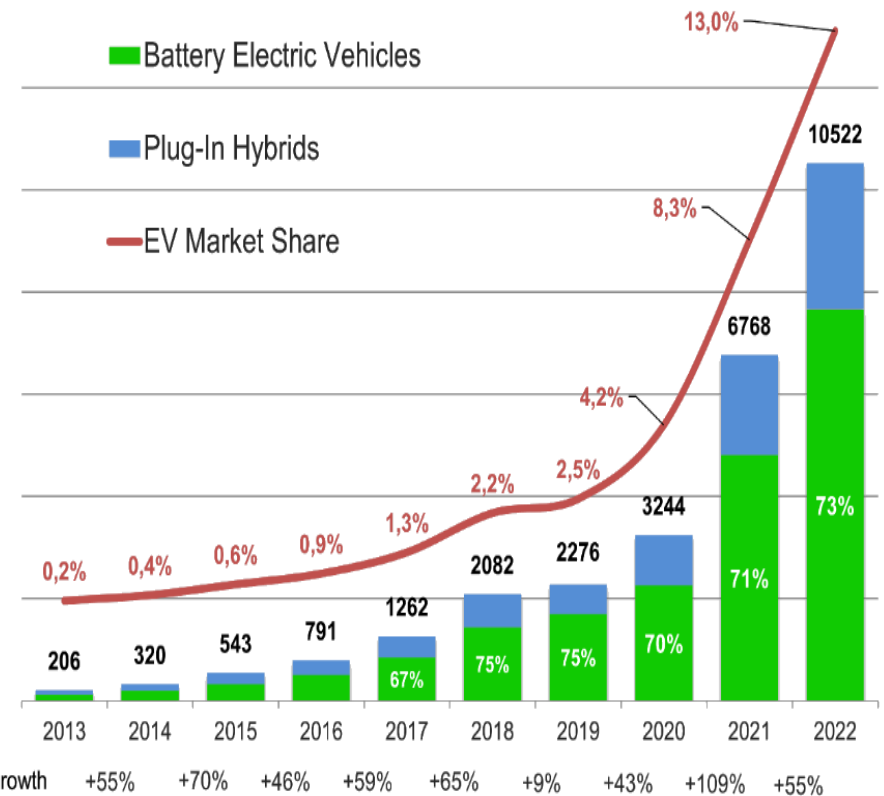


- **Favourable government policies and subsidies and OEM commitment to net-zero emissions and sustainability targets** contribute to the growing EV penetration
- The power semiconductors market is benefiting from the surge in EV adoption worldwide
- An **EV has 2 to 3 times more semiconductor content in terms of dollar value compared to conventional ICE vehicles**. Power semiconductors account for about 75.0% of this incremental semiconductor content in EVs



GLOBAL BEV & PHEV SALES ('000s)

EV VOLUMES



Source: Global EV Sales for 2022, By Roland Irle, EV-Volumes

On an average, the semiconductor content in the car is constantly increasing

Supply Chain Regionalization | Significant Investments Ahead

- The European Chips Act represents a turning point in terms of the “chip” legislative framework, which will mobilize **~€43 billion in investments across Europe destined to all sector’s activities, ranging from production to research and testing**
- The main goal of the European Chips Act is to create a state-of-the-art European chip and semiconductor ecosystem, increasing the resilience of this sector and ensuring supply through the reduction of its dependence on external sources



**Strengthen Europe's
research and
technology
leadership** towards
smaller and faster
chips



Build and reinforce capacity to innovate in the design, manufacturing and packaging of advanced chips



Put in place a
**framework to increase
production capacity to
20% of the global
market by 2030**



Address the skills shortage, **attract new talent and support the emergence of a skilled workforce**

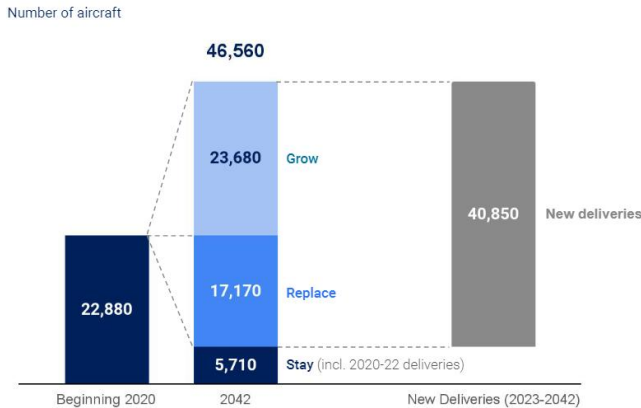


Develop an in-depth understanding of the global semiconductor supply chains

Aerospace and Defense | Strong Long-Term Outlook

AVIATION

Demand for new passenger & freighter aircrafts



Source: Airbus Global Market Forecast 2023

- #22,880 aircraft in-service at the beginning of 2020
- #17,170 aircraft or 75% of the aircraft currently in-service will be replaced by 2042
- #23,680 new aircrafts will start their service in the period 2022-2042

SPACE

Trend for the satellite industry 2022 - 2031



- 2,500 satellites will be launched on average every year by 2031



- Decade to decade growth:
X 4.5 in # | X 3.0 in kg | X 1.5 in \$



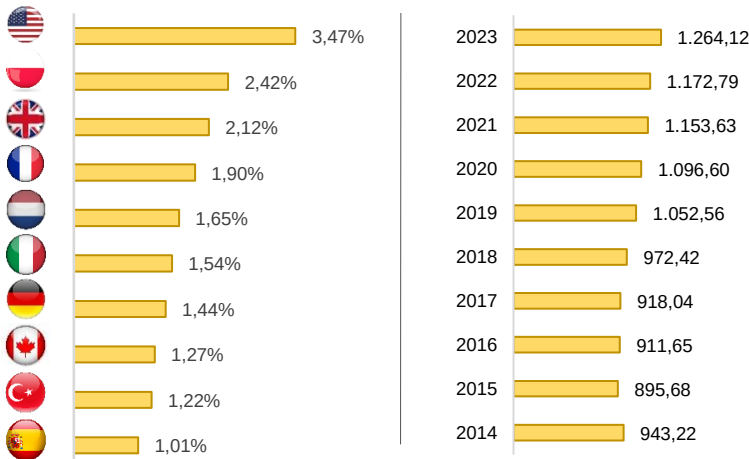
- USD 400 billion of revenues are expected for the decade (manufacturing & launch)



- The space industry will grow by almost 50% over past decade

DEFENSE

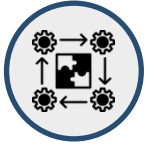
NATO Defense Spending / GDP in 2022 (%) and Combined Expenditure (2014-2023, in \$bn)



Source: Statista, July 21 2022 | July 12, 2023

- Significant increase of defense budget following the recent invasion and the increasing geopolitical tensions
- Commitment to reach the 2% defense expenditure for the NATO countries

Business Highlights | 1H2023



First semester with full consolidation of CBL Electronics and CAMPERA expanding the group positioning in the Aerospace and Defense industry, strong organic growth in a challenging environment



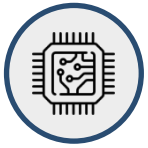
New orders from a major customer (SEMI), a world leader in LED lighting, worth around € 2,0 m for **High Power solutions**



The Group expanded its presence in the **U.S. Silicon Valley** through the acquisition of a new **OSAT** (Outsourced Semiconductor Assembly and Test) that will start offering RETE applications to its customers



Acquisition of a new customer, a leading European semiconductor Player for **AI and Data Computing and management** that will include Eles solutions in the production line of **high power (1500W) chips**



The **Semiconductor Reliability Laboratory ICE Inc** has chosen the liquid-cooled **ELES ART HPH semiconductor qualification platform** to process **ultra-high-power chips for AI** (Artificial Intelligence) and **Data Servers applications**,



Acquired an important order from **OHB Italia Prime Contractor** for important missions of the European Space Agency (ESA), for the development and implementation of an EGSE



SEMICONDUCTOR

 **RETE**



AEROSPACE & DEFENSE

Market Trend vs. SEMI Offer Match

Quality & Reliability
Test Solution

Production Test
Solution

HIGH & VERY HIGH POWER SEGMENT Generative AI, Data Computing, Server Management



TWO CONFIGURATIONS AVAILABLE:

LIQUID COOLING

System for High performance devices
from 0W to 1000W.

LIQUID COOLING BI-PHASE

System for High performance devices
from 100W to 1500W with very high
power density - UNIQUE SOLUTION
ON THE MARKET

System for devices from 20W to 400W. In particular for SoC
ADAS (Advanced Driver – Assistant System)

Liquid Cooling Technology for Better Stress Factor
applications to reduced time under test: From BI (hours) to
FAST_BI (minutes)

HIGH & VERY HIGH VOLTAGE SEGMENT Automotive & Aviation Electrification



System for High Voltage devices from 0V
to 4KV.

our technology allows to apply a better
(wider and much complete) stress matrix,
compliance with sector regulations.



Best-in-Class Solution in Cost of Ownership

Ready for integration with smart fab (Industry 4.0)

Under Development Specific Configurations For SiC & GaN

Market Trend vs. Avionic & Defense Offer Match

Quality & Reliability
Test Solution

POWER MIXED SIGNAL BOARD SEGMENT



MODULAR TEST BENCH

With interface managing a considerable group of Analog, Digital and mixed signals

Production Test
Solution

BOUNDARY SCAN TEST TECHNOLOGY

System for test very High complex digital board with Bscan test sysemt



ECU SEGMENT

System for test very high and complex systems (more tha 1200 electric point connections)

our technology allows to apply a better (wider and much complete) stress, for functional test of Avionic Units (for example flight mission control unit for helicopter)



Ready for integration with smart fab (Industry 4.0)

Market Trend vs. SPACE Offer Match

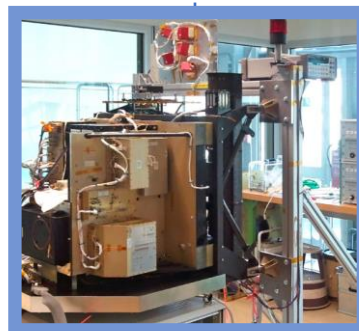
POWER, MIXED SIGNAL & FULL DIGITAL SEGMENT For Test Ground Satellite



The system supports the assembly, integration and validation phases of satellite or subsystems.



The Solar Array Simulator EGSE (rack) provides simulation of the spacecraft's Solar Array configuration. It will be equipped with several Solar Array Simulators, each simulating a Solar Array Assembly.



VALIDATION SEGMENT Space mission

The COTE systems are used during mission launch operations.

The system, which includes umbilical FEE connection, is used to assembly, verify, test and supply the satellite during all integration and testing activities including launch campaign.



Ready for integration with smart fab (Industry 4.0)



Expanding RETE | Cooperation between ELES and Fraunhofer ENAS

Quantum computing and new materials are transforming process and test technologies making RETE crucial for handling the increased complexity. ELES started a cooperation with Fraunhofer Institute for Electronic Nano Systems ("ENAS") for affirming RETE in the market

MISSION

To support ELES to provide **new products** to the semiconductor Market that will be able to better validate the device mission profile leading to overall cost reduction by improved reliability confidence

EVALUATION

Over the last year **Fraunhofer ENAS** has had the **opportunity to evaluate** RETE methodology proposed by ELES over the last six months, extensive **project assessment** activities have been **carried** out within the institute **to validate RETE approach**

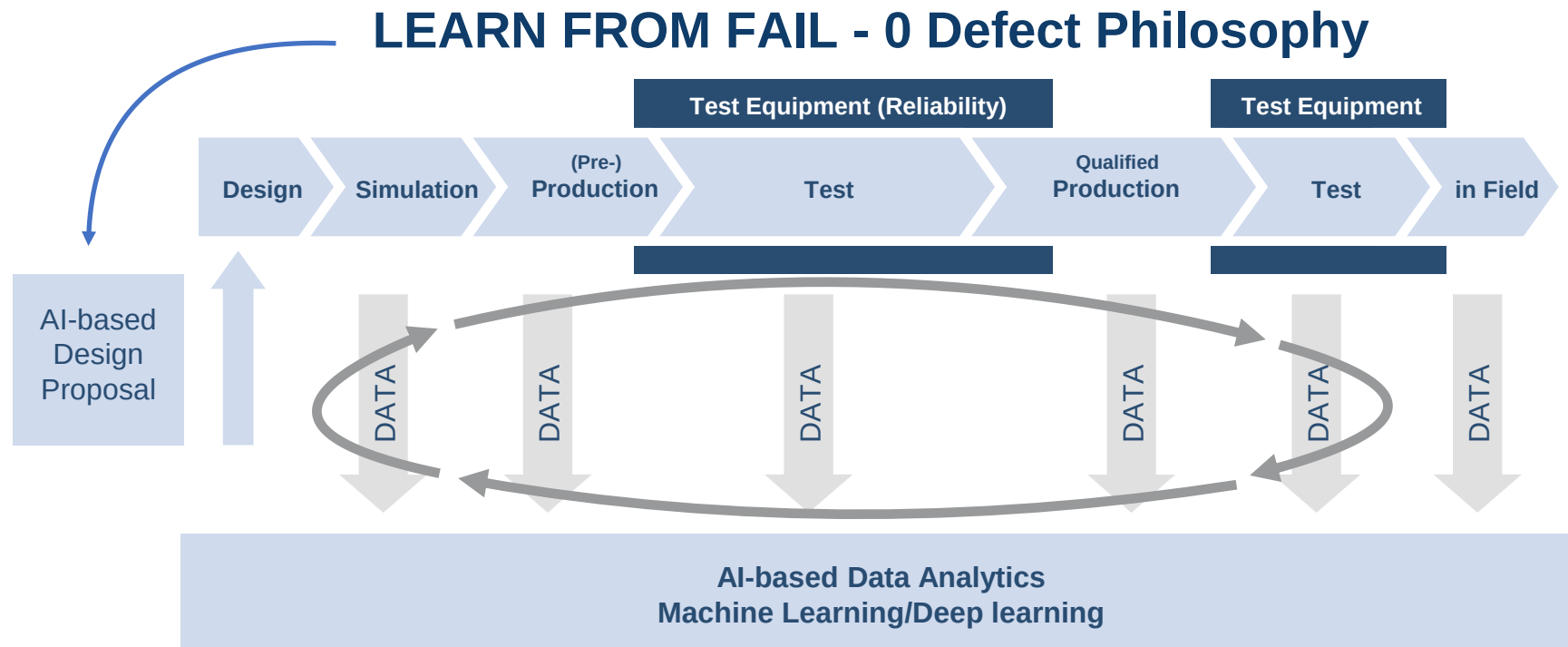
GOAL

RETE Product , for new systematic in DfT and DfR for break through in fast and reliable qualification by best cost position and time to market.

Expanding RETE | Cooperation between ELES and Fraunhofer ENAS (1/2)



Closed Loop Model for new way of chip development 2 production RETE from Fraunhofer ENAS and ELES



Expanding RETE | Cooperation between ELES and Fraunhofer ENAS (2/2)



Thinking End to End

Close Loop from Design to Reliability for FTR by best Quality and Cost

Closed Loop

-  Design
-  Qualification & Reliability
-  Inline and Functional Test



Holistic Approach

-  Data Based Solution
-  Combining several Domain
-  Balancing of standards and differentiating

GOAL: 'First Time Right by best Quality and Cost'

Effect: Market Leader by differentiating, Quality and Cost

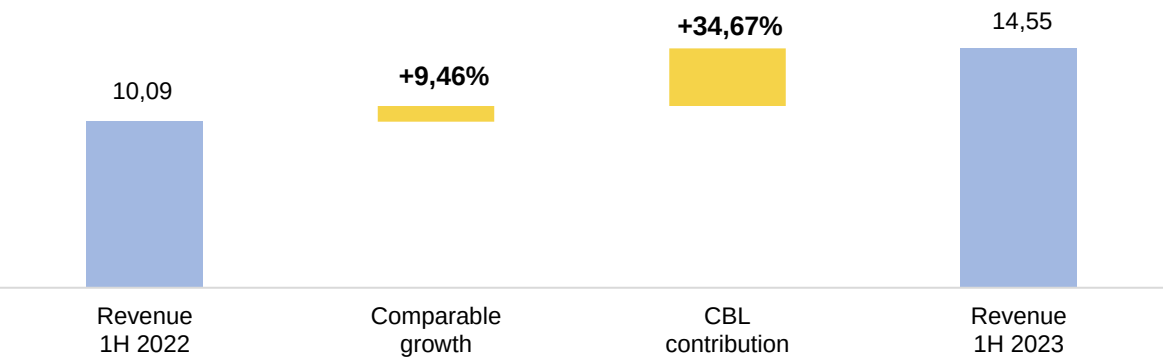
Key Financial Highlights | 1H2023

Key Highlights:

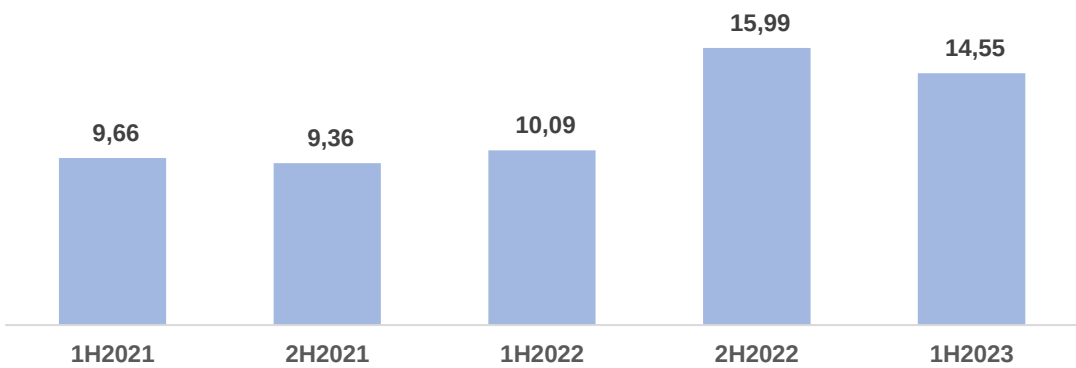
▪ Application growth compensated system weakness ▪ EBITDA grew more proportionally than Revenue due to profitability expansion ▪ Increased profitability following gross margin expansion ▪ Net Income impacted by interest rate increase ▪ NET DEBT Increased due to CBL acquisition, R&D investments and working capital expansion. €6,5m capital increase completed in February 2023	Revenues (€M)	14,55	10,09	+44,1%
	EBITDA (€M)	2,05	1,07	+92,5%
	EBITDA Margin %	13,62%	10,31%	+331 b.p.s
	Net Income (€M)	0,23	0,12	+91,6%
	Net Debt (€M)	4,65	1,21	n.m.

Revenue Evolution | Revenue (€m)/ Comp. Growth (%)

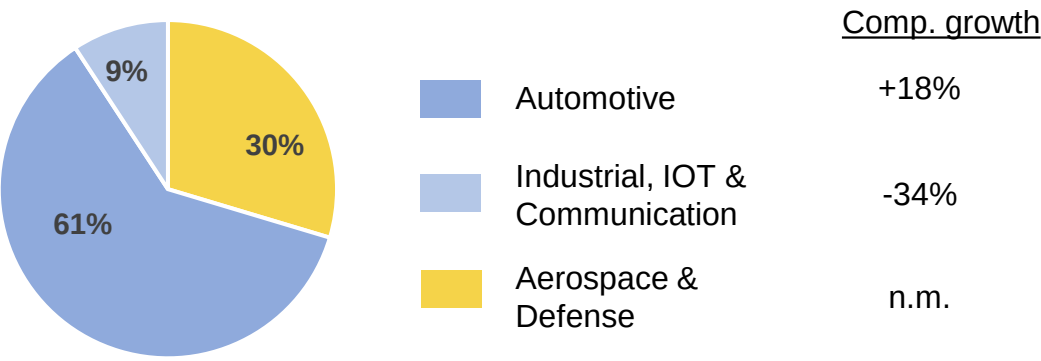
ELES Group: Revenue bridge 1H (€m)/ Comp. Growth (%)



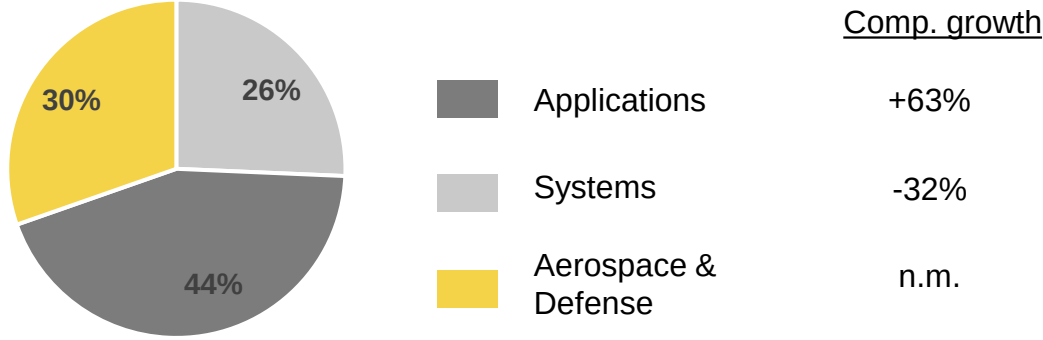
ELES Group: Revenue Development



ELES Group: Revenue breakdown 1H 2023 and YoY growth

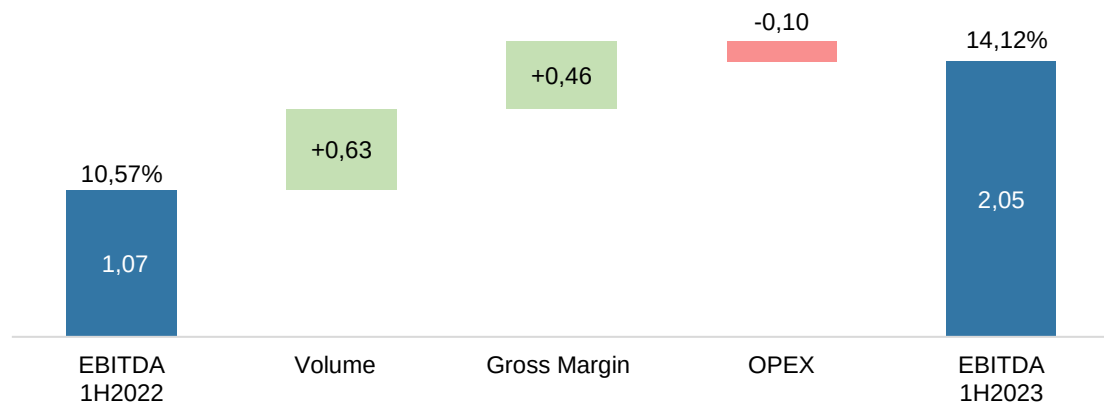


ELES Group: Revenue breakdown 1H 2023 and YoY growth



EBITDA Evolution | EBITDA (€m)/ EBITDA Margin (%)

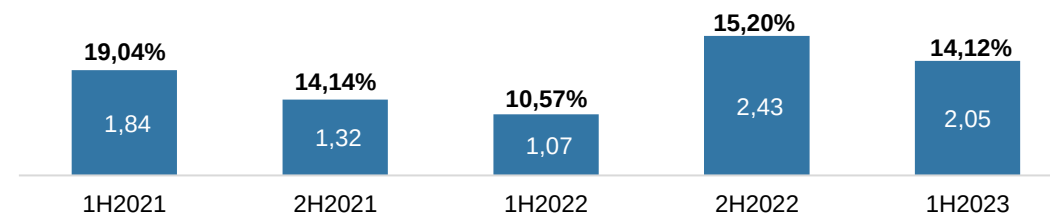
EBITDA 1H 2023 vs 1H 2022



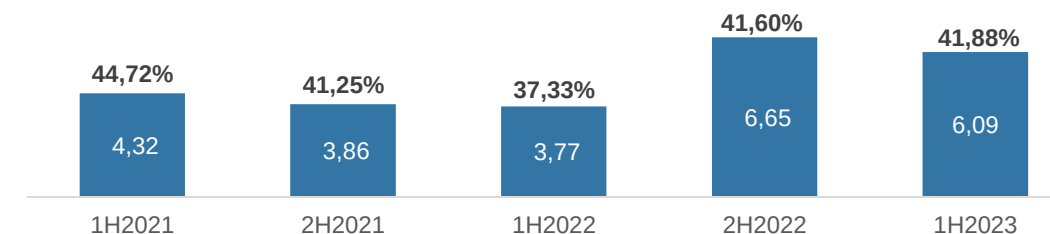
Key Highlights:

- EBITDA improvement, 1H2023 vs 1H2022, driven by **higher gross margin**, 455 b.p.s. expansion YoY, and **volume growth**
- OPEX increase, +99 b.ps. YoY, was a detractor on 1H2023 EBITDA**
- OPEX are higher on the first month due to seasonality related to CBL's business that usually has a stronger 2H**

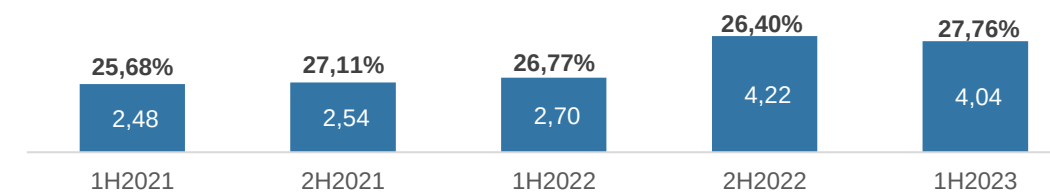
EBITDA & EBITDA Margin Evolution



GROSS PROFIT & GROSS MARGIN Evolution

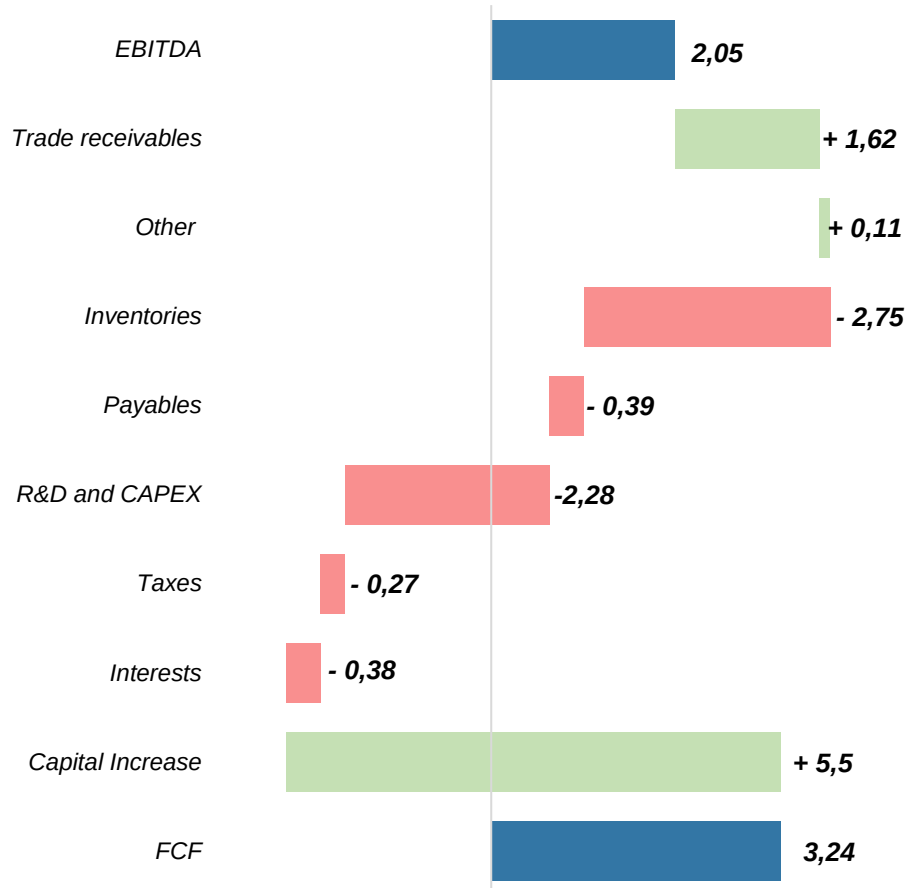


OPEX and OPEX % Evolution

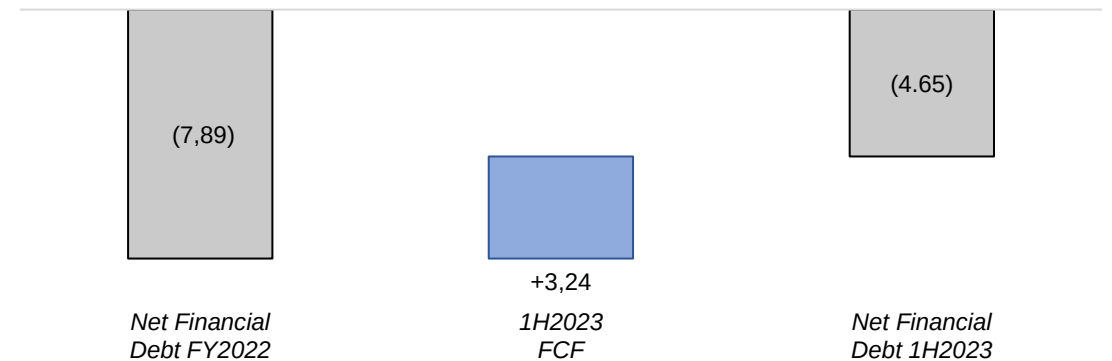


Free Cash Flow Evolution

Free Cash Flow Bridge 1H2023 vs FY2022



Net Financial Debt Evolution FY2022 to 1H2023

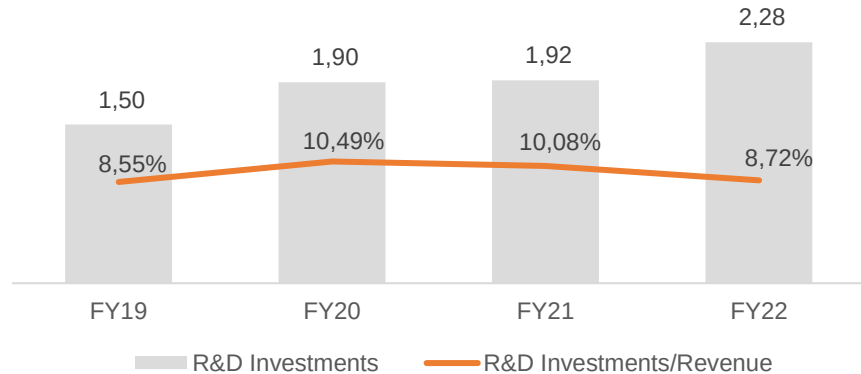


Key Highlights

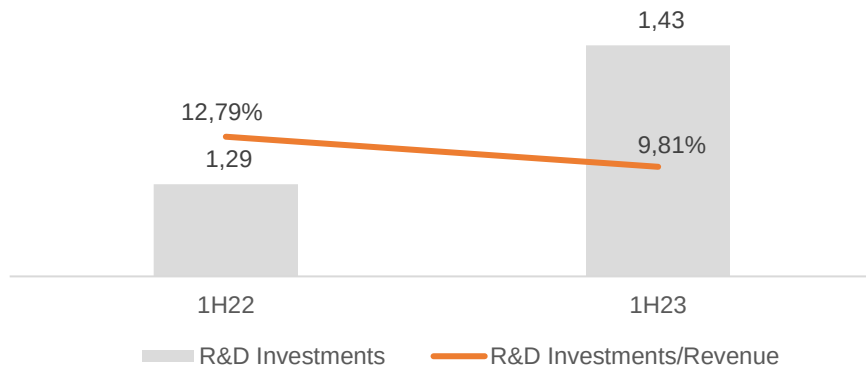
- Net Financial Debt decreased by **€3,24mn** mainly due to the €5,5mn capital increase¹
- Net Working Capital had a -€1,4mn contribution to free cash flow generation due to **€2,75mn inventories expansion**
- R&D investments in 1H2023 were €1,5mn while CAPEX investment were €0,8mn

R&D Investments | Focus on 1H2023

R&D Investments (€/m) evolution since IPO



R&D Investments (€/m) and % 1H23 vs 1H22



Development of new products and innovation of existing products:

- new **ART20X** test platform and development environment, extension of the **SMART MTX** platform that, is now also able to process **SiC & GaN HV up to 6000V** and extension of **ARTHph** platform that, thanks to an innovative proprietary **liquid cooling solution**, is now also able to process micro with a power exceeding **1500W**.

Development of a proprietary EGSE (Electronic Ground Support Equipment):

- equipped with the **Solar Array Simulator**, **Battery Simulator**, **Secondary Level Protection** instruments and able to increase the competitiveness of the group's offer for **ground testing of the satellite** and its **mission payloads**. In addition, great emphasis in this year's R&D is placed on the implementation of the **EDEN communication protocol in the CBL platform**.

Next Steps | Strategy



Investments in R&D expanding the offer suited for AI and energy transition



Semiconductor design and production will be transformed by generative AI, data will be pervasive and RETE methodology will gain significant traction



Expand RETE awareness and go to market thanks to the partnership with high level players



Increase market share in the A&D leveraging on CBL use cases and RETE methodology which will be a significant enabler in an industry that will be transformed by AI adoption and energy transition;



Scale up CBL final products offer in order to gain significant traction in the market and expand profitability

SEMICONDUCTOR

AEROSPACE & DEFENSE

Cross: *integration process of the new acquired companies, to enhance the synergies*

Appendix | Profit & Loss

PROFIT & LOSS	30.06.2022	%	30.06.2023	%
(Euro/1000)				
Sale revenues	10.095	100,0	14.550	100,0
Other revenues	251	2,5	103	0,7
Total Revenues	10.346	102,5	14.653	100,7
Material purchase & Changes in inventories	(4.627)	(45,8)	(4.607)	(31,7)
Service costs	(2.353)	(23,3)	(3.384)	(23,3)
Other operational costs	(222)	(2,2)	(328)	(2,3)
Personnel cost	(2.078)	(20,6)	(4.281)	(29,4)
EBITDA	1.067	10,6	2.054	14,1
Write-downs and depreciations	(782)	(7,7)	(987)	(6,8)
Accruals to provisions	(144)	(1,4)	(181)	(1,2)
EBIT	141	1,4	885	6,1
Financial revenues	12	0,1	50	0,3
Financing costs	(76)	(0,8)	(392)	(2,7)
Profits/Losses on exchange rates	161	1,6	(43)	(0,3)
EBT	237	2,3	501	3,4
Taxes	(118)	(1,2)	(274)	(1,9)
Net Profit of the Group	118	1,2	227	1,6

Appendix | Balance Sheet

BALANCE SHEET			
(Euro/1000)	30.06.2023	31.12.2022	Δ%
Tangible assets	7.489	7.065	6,0
Intangible assets	10.033	9.160	9,5
Financial assets	453	452	0,2
Fixed assets	17.975	16.677	7,8
Inventory	12.779	10.032	27,4
Trade receivables	9.396	11.014	(14,7)
Trade payables	(7.522)	(7.910)	(4,9)
Operating working capital	14.652	13.135	11,5
Employee benefits	(1.153)	(1.104)	4,4
Provisions for non-current risks and charges	(576)	(613)	(6,1)
Deferred tax receivables	1.181	984	20,1
Deferred tax liabilities	(555)	(563)	(1,4)
Net claims/liabilities	(525)	(30)	>100%
Other current assets/liabilities	(1.628)	(1.326)	22,7
Net invested	31.000	28.485	8,8
Net Equity	(26.354)	(20.597)	28,0
Current financial assets	7.710	2.755	>100%
Current Debt	(6.166)	(5.714)	7,9
Long Term Debt	(11.549)	(13.392)	(13,8)
Cash and cash equivalents	5.360	8.462	(36,7)
Net financial position	(4.645)	(7.888)	(41,1)
Total sources	(31.000)	(28.486)	8,8

Thanks for your attention



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