



FINANCIAL RESULTS FOR Q1 2023

May 25, 2023

VIGO IN A NUTSHELL



35 years of experience
and operations

**VIGO IS A WORLD LEADER IN HIGH-TECH SOLUTIONS –
THE MOST ADVANCED MID-INFRARED PHOTONIC DETECTORS,
DETECTION MODULES AND SEMICONDUCTOR MATERIALS**

Headquarter in Poland
and branch office in USA

Over **200** highly qualified
and experienced experts
(1 Professor, 14 PhDs and >60 engineers)

25 distributors in **18** countries
supporting sales of solutions

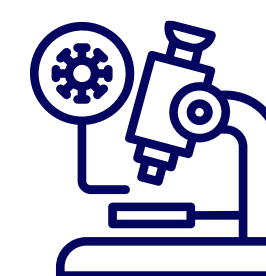
Listed on the WSE since **2014**

Approx. **PLN 450** million
capitalisation

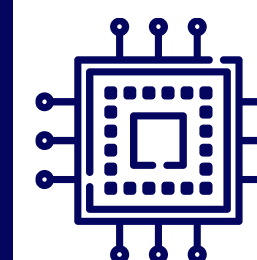
Support for stable long-term
shareholders



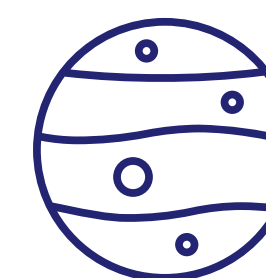
Activity in the global infrared market: infrared sensors (12.3% CAGR 2020-30), semiconductor materials (17.2% CAGR 2020-27), photonic integrated circuits (20.4% CAGR 2021-30).



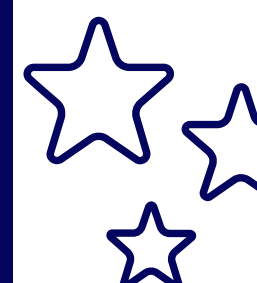
An established market position reinforced by the world-class R&D department and expert technological knowledge of over 60- person team of engineers and scientists.



Numerous long-term technological megatrends, e.g. systems miniaturization, Internet of Things (IoT), wearables lab-on-chip, security and defense, development of the semiconductor industry in Europe.



Addressing market needs thanks to a modern, scalable production facility, providing the most technically advanced solutions.



Presence at the global forefront of industrial innovation - using a unique advantage throughout the entire VIGO photonic value chain.



Implementation of an ambitious development strategy - moving VIGO to a higher utility curve in order to provide long-term value for all stakeholders.

AGENDA

1. EXECUTIVE SUMMARY
2. SUMMARY OF Q1 2023
3. FINANCIAL RESULTS FOR Q1 2023
4. PERSPECTIVES



Q1 2023 SUMMARY

Improving sales

- PLN 18.8 million of consolidated revenues (+60% y/y) - increases in industrial (+33% y/y), military (over 10x y/y), transport (+50% y/y) and semiconductor materials applications (nearly 3x y/y) and decrease in science and medicine (-16% y/y), growing share of revenues in all markets, including primarily North America (over 4x y/y) and Poland (over 3x y/y)
- Implementation of price increases for customers for 2023 in the amount of 20-30% - successive implementation from the beginning of this year.
- The inflow of new sales orders in the amount of PLN 24.2 million by the end of April - increase by 10% y/y
- A new contract with a German contractor for the supply of detectors worth up to EUR 3.5 million

Better operational results

- Higher operating results y/y related to limiting the increase in costs and improving sales, which translates into improved profitability y/y

Acceleration of development activities

- New funding in the amount of PLN 9.4 million for the implementation of a research and development project regarding a sensor for water quality testing
- Planned acceleration of the most promising projects related to infrared rays and photonic integrated circuits

Infrared detectors



Infrared detection modules



Epiwafers



SUMMARY OF Q1 2023

TECHNOLOGY DEVELOPMENT

Objective of the initiative

- Exploitation of the market in its gradual fading phase by improving the customisation process and exploring uncovered market niches.
- Stabilisation of multi-element detector technology, implementation of digital solutions, development of products for military and space applications.

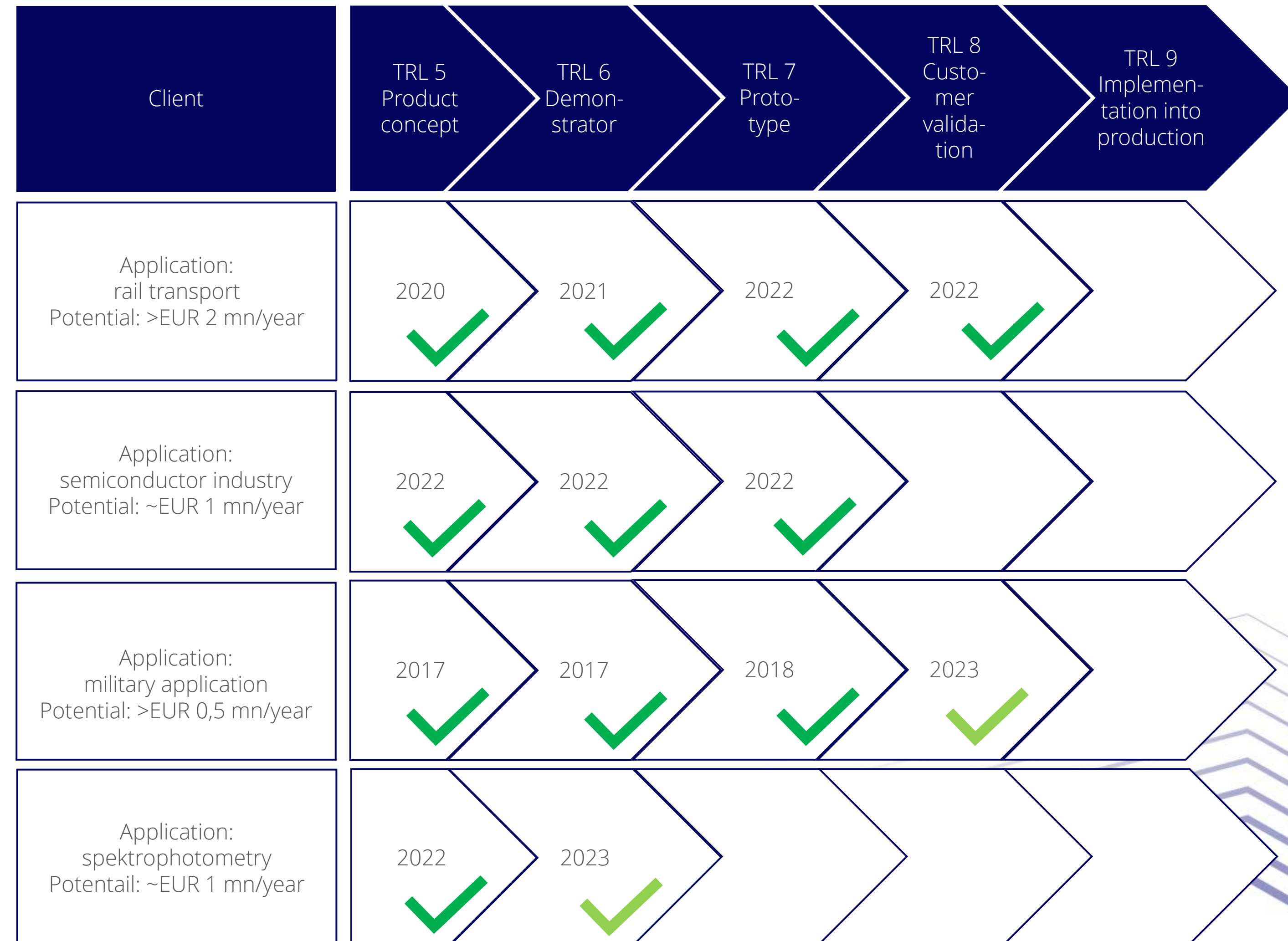
Achievements in Q4 2022 and Q1 2023

- First demonstrators of LN2 detectors was sent to potential clients – sales volume potential for >1000 detectors/year (>1 mn EUR). Win opportunity for best in class detectors for one of the biggest manufacturer of spectrophotometers – sales potential and big opportunity to cooperate with client in new projects.
- Successful verification of system with VIGO detectors for military application - sales volume potential for >2000 detectors/year.

Plans for 2023

- Improvement of technological processes for current product portfolio.
- Implementation to production LN2 detectors for spectrophotometry application.

COMMERCIALISATION - SAMPLE PROJECTS



TECHNOLOGY DEVELOPMENT

Objective of the initiative

- Gaining the No. 1 position in the market for manufacturers of III-V detectors in the MidIR range. Implement T2SL supergrid technology (matching MCT performance), achieving technical performance superior to competitors across the MidIR range.

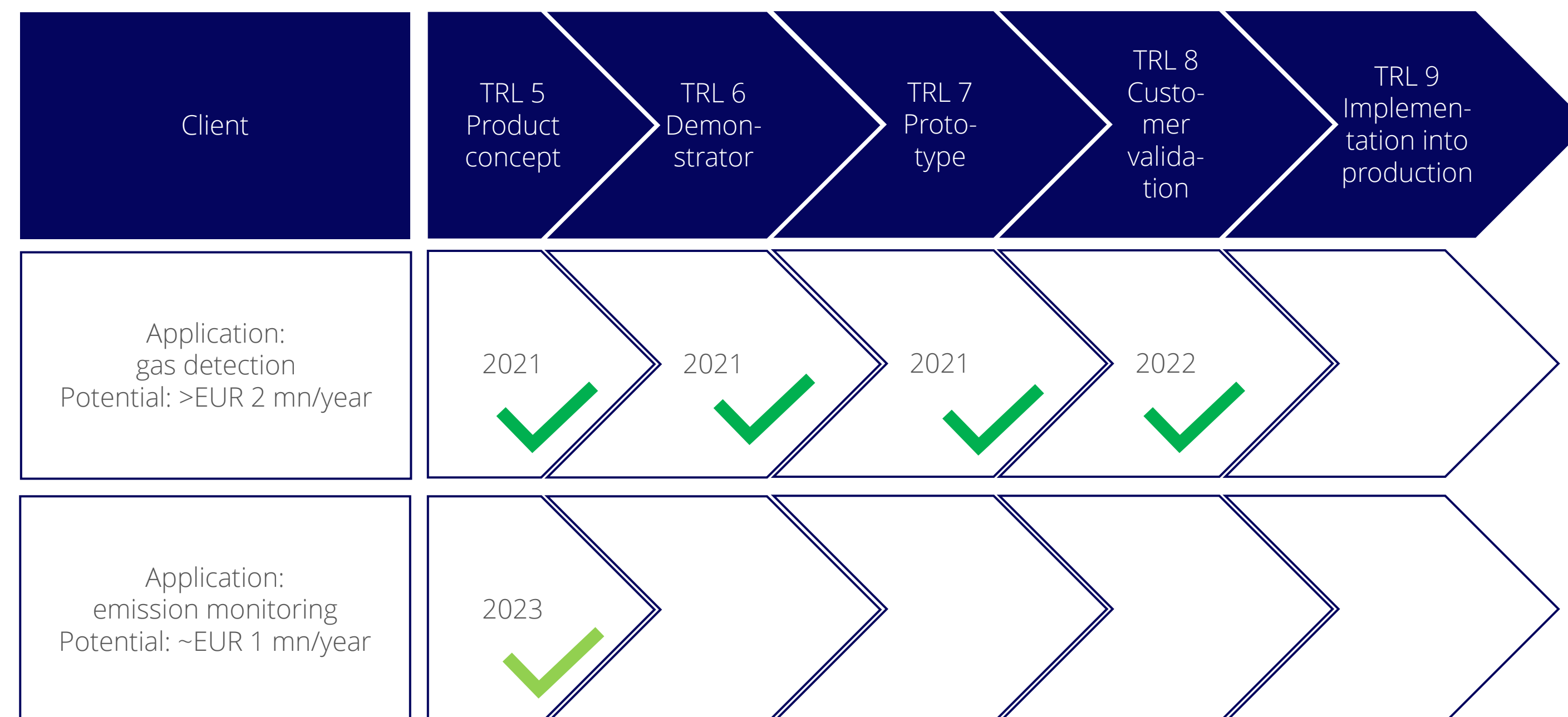
Achievements in Q4 2022 and Q1 2023

- Fulfillment of an order for 500 pcs. and acquiring more at TMD Precisely defined standards and production costs.
- Very promising results achieved at the first tests of epitaxial layers optimal for spectroscopy.

Plans for 2023

- Development of LWIR superlattice detectors for spectroscopy.
- Development of a passivation that will improve the stability of detectors at high temperatures.
- Launching of the high-end MWIR III-V product line.

COMMERCIALISATION - SAMPLE PROJECTS



III-V InGaAs DETECTORS AND DETECTION MODULES INITIATIVE

TECHNOLOGY DEVELOPMENT

Objective of the initiative

- Entering the III-V InGaAs detectors' market.

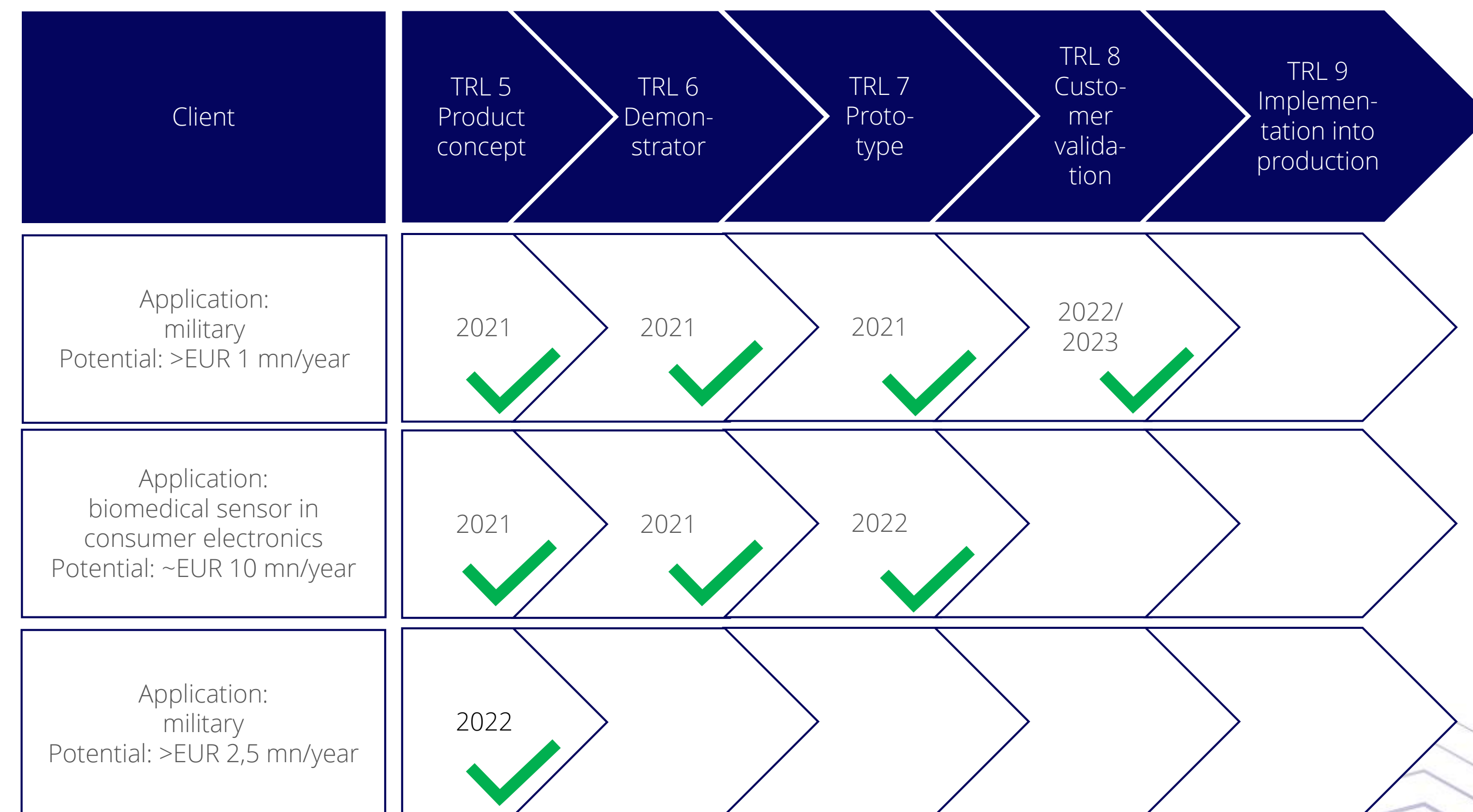
Achievements in Q4 2022 and Q1 2023

- First order for 100 InGaAs 1.7um detectors for military applications.
- Positive customer validation of Extended InGaAs.
- „State of the art" parameters achieved for Extended InGaAs 2.4um.

Plans for 2023

- Entering the Extended InGaAs market sector „gas sensing”.
- Development of a multi-element detector for industrial applications.
- Cooperation with a large military contractor to develop a balanced Extended InGaAs module.

COMMERCIALISATION - SAMPLE PROJECTS



TECHNOLOGY DEVELOPMENT

Objective of the initiative

- Gain visibility in the market for epitaxy services, exploring market niches for photonic instruments (new VCSELs, unusual solutions).
- Refining the technology for the production and characterisation of VCSELs.

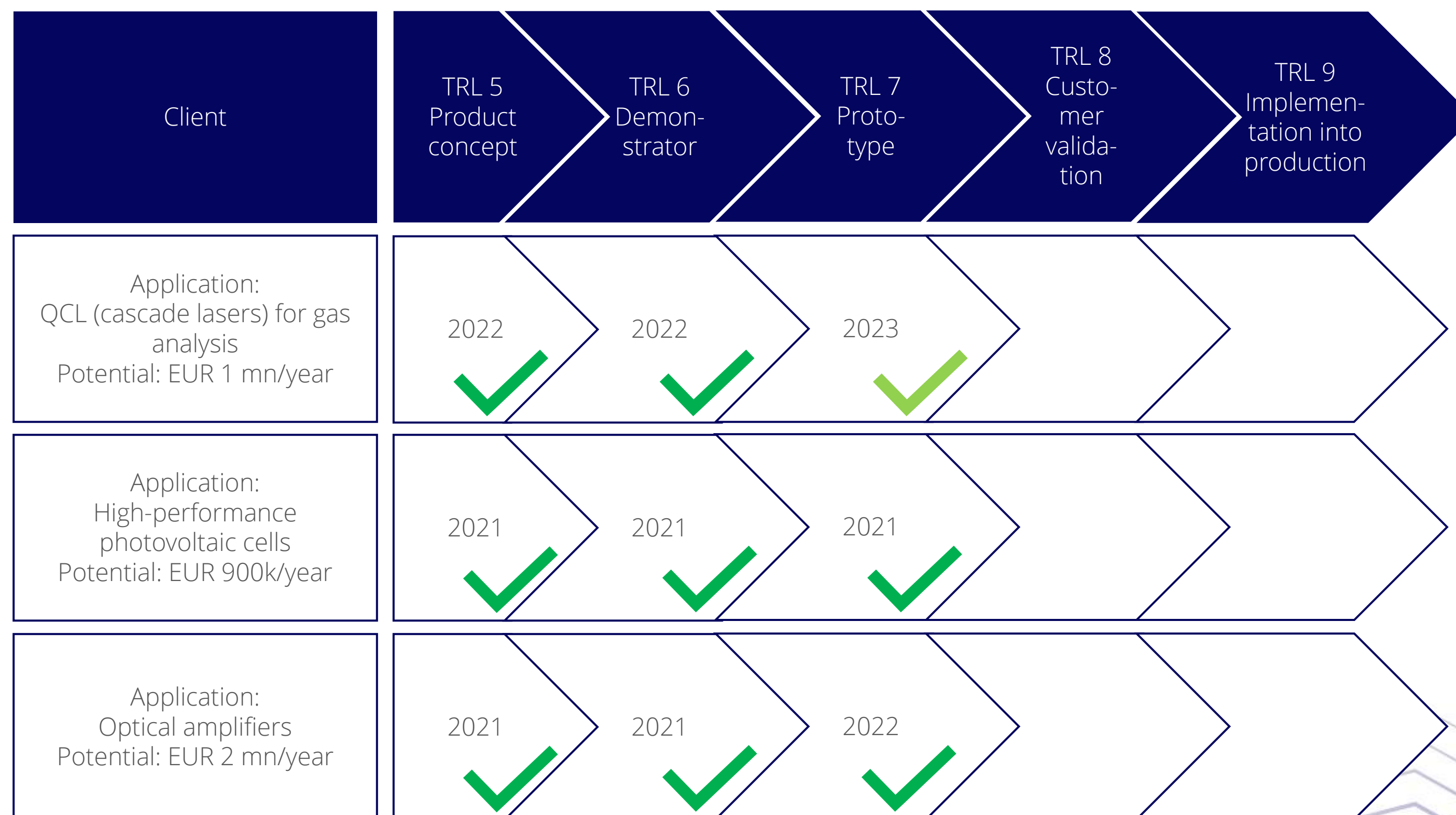
Achievements in Q4 2022 and Q1 2023

- Structures of Quantum Cascade Lasers (QCLs) - positive implementations at clients, strengthening the position of a manufacturer of high-quality laser structures.
- Photovoltaic Cell Structures - resumption and commencement of the second stage of implementation in the project of high-efficiency photovoltaic cells after restructuring on the client's side.
- Structures of Semiconductor Optical Amplifiers (SOA) - project maintenance, next development stage and preparation for implementation at the customer's site.

Plans for 2023

- Completion of implementation and preparation for serial production of QCL structures.
- Completion of implementation and preparation for serial production of photovoltaic cell structures.
- Completion of implementation and preparation for mass production of SOA structures.

COMMERCIALISATION - SAMPLE PROJECTS



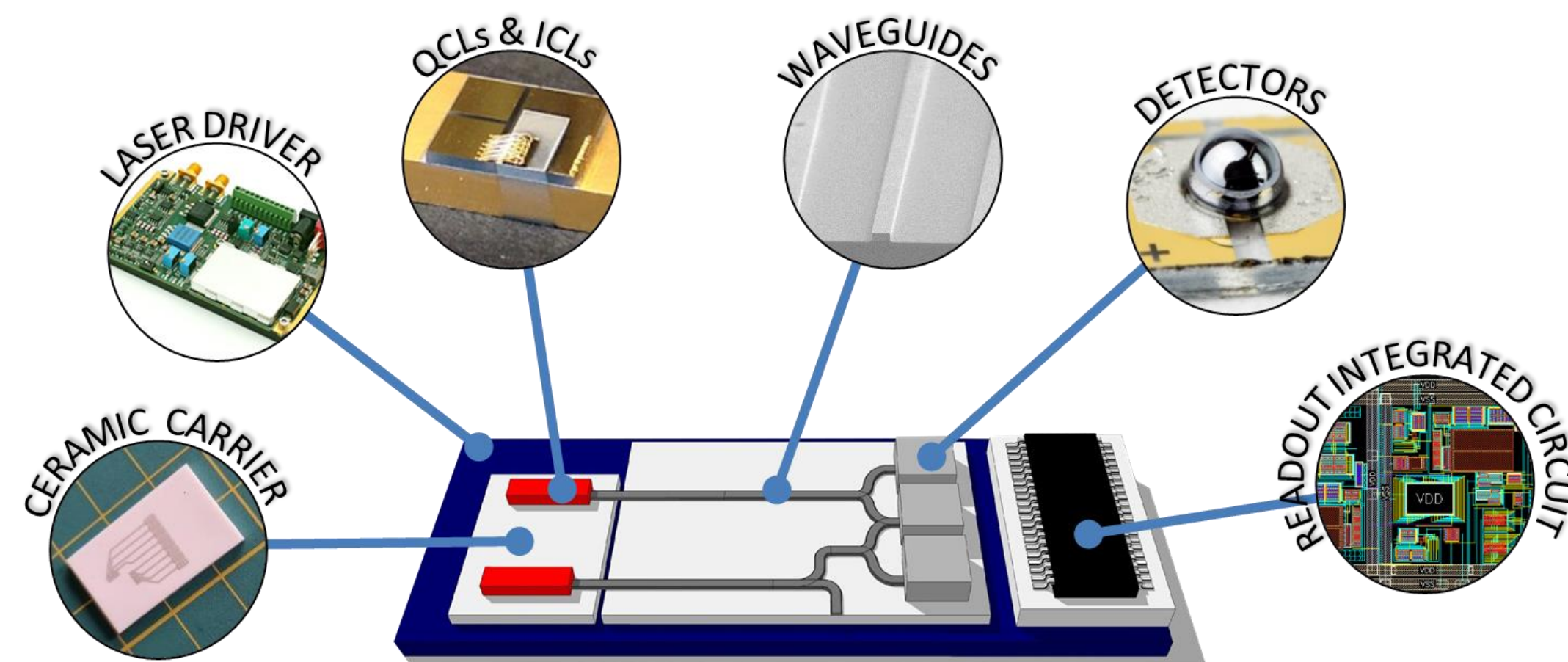
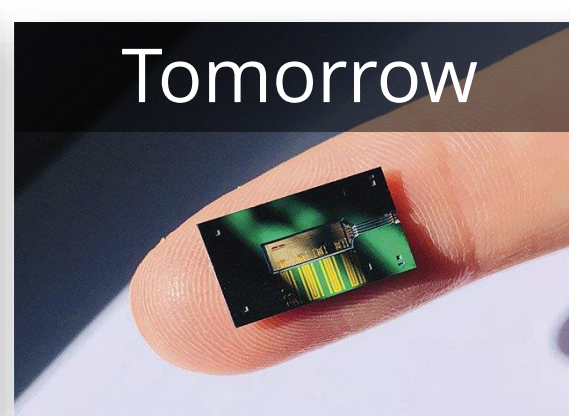
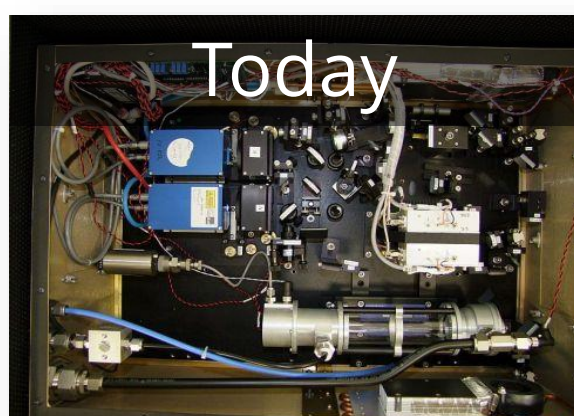
OPTOELECTRONIC SYSTEMS AND PHOTONIC INTEGRATED CIRCUITS (PIC) INITIATIVE

TECHNOLOGY DEVELOPMENT

Objective of the initiative

- Introduction, as the world's first manufacturer, of mid-infrared integrated circuits.
- Complete production line (world's first) for PICs in the MIR range (MIRPIC), complete supply chain for MIRPICs.

Gas detectors

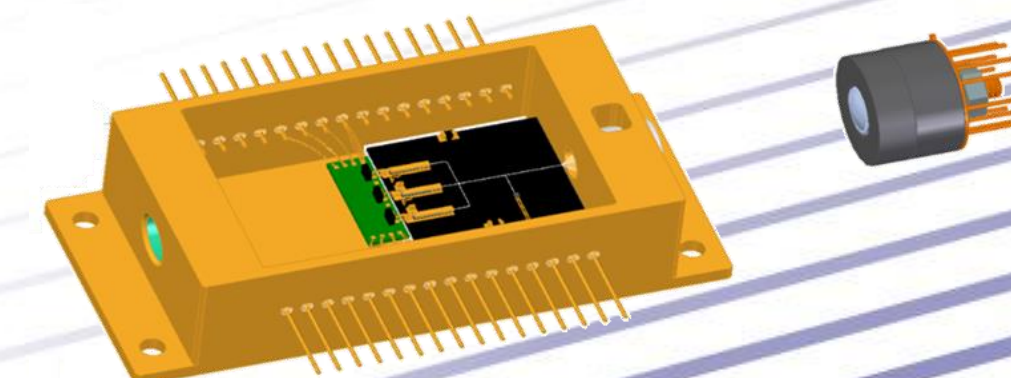
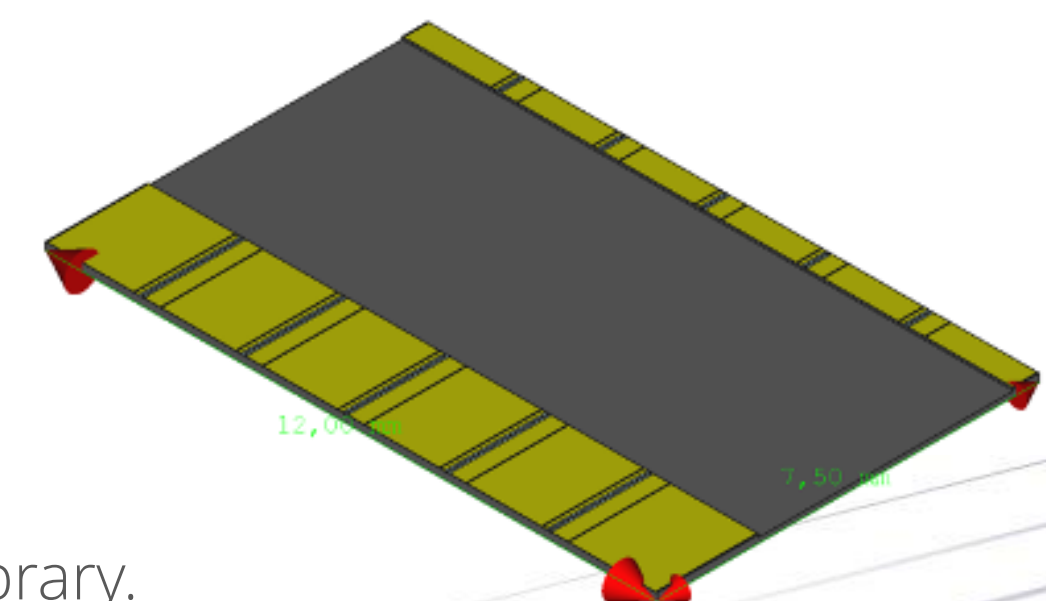
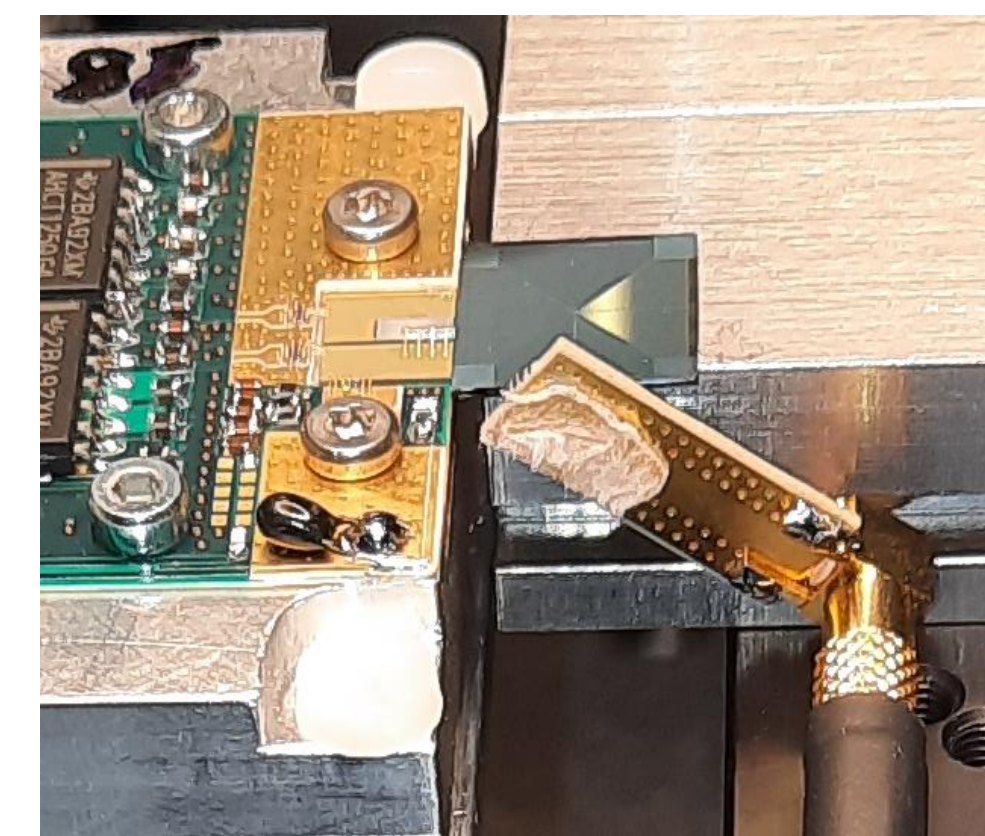


Achievements in Q4 2022 and Q1 2023

- Development of the component library (PDK): MMI, DBR, AWG.
- Characterization of Ge-on-Si/1 μm structures (IMIF QCL + PW waveguide + VIGO DET).
- Development of two heterogeneous integration concepts ("shelf" and "super-shelf" configuration) - first successful integration attempts.
- Tests of suspended SOI waveguide structures, optimization of the Ge and Si etching proces.
- IMIF's QCLs integration with VIGO's controller.
- Development of the concept of a butterfly PIC package.

Plans for 2023

- Further development of the PDK component library.
- Development of integration techniques, integration and packaging of 3 \times QCL/ICL and passive PIC + detector.
- Vertical integration attempts.
- Miniaturization of the QCL laser controller.
- Preparation to scaling-up the technology.



TECHNOLOGY DEVELOPMENT

Objective of the initiative

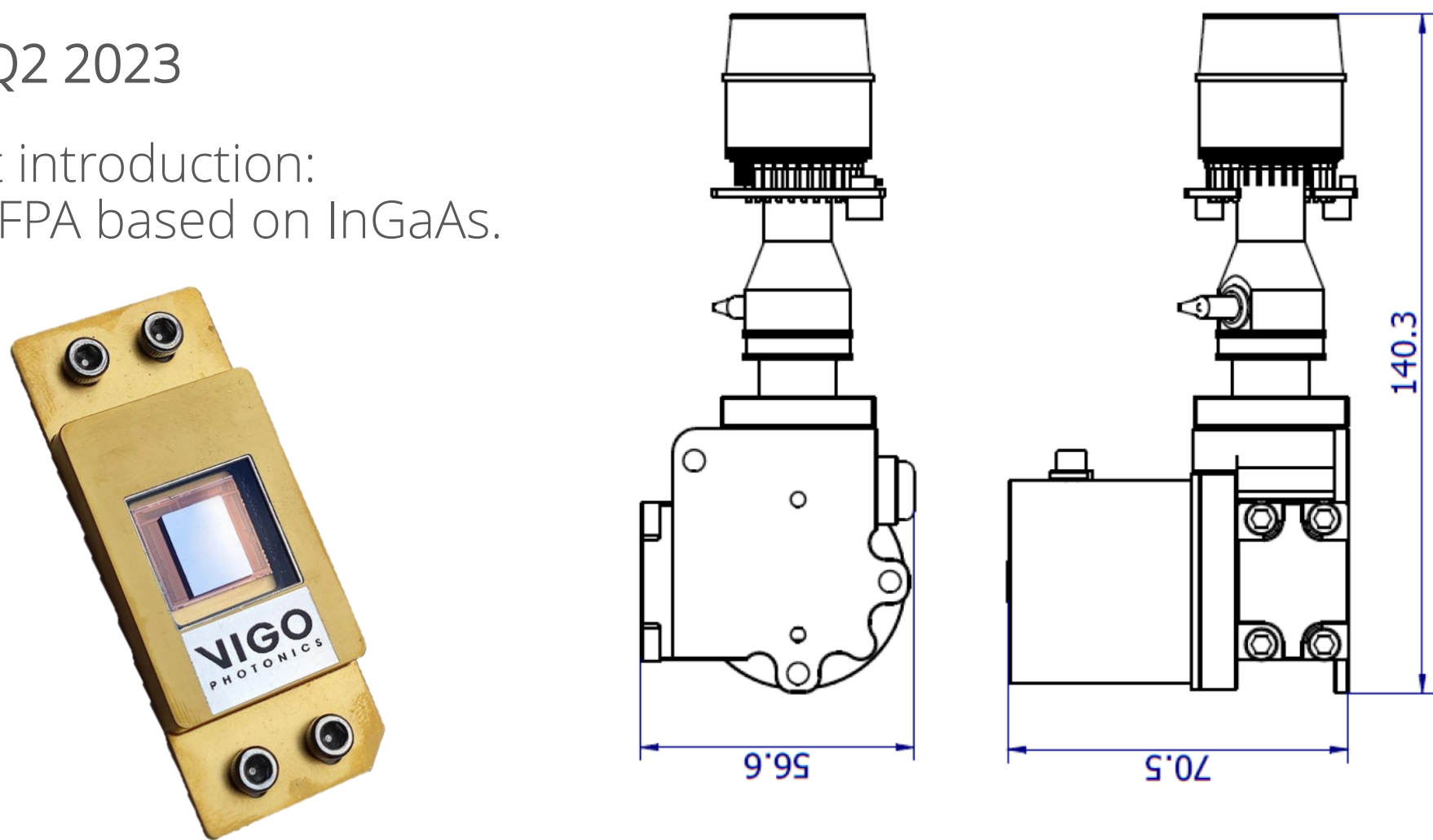
- Becoming a major supplier of detectors for the Polish army/armament industry, winning customers outside Poland (industry, space).
- Development of cooled array production technology.

Achievements in Q4 2022 and Q1 2023

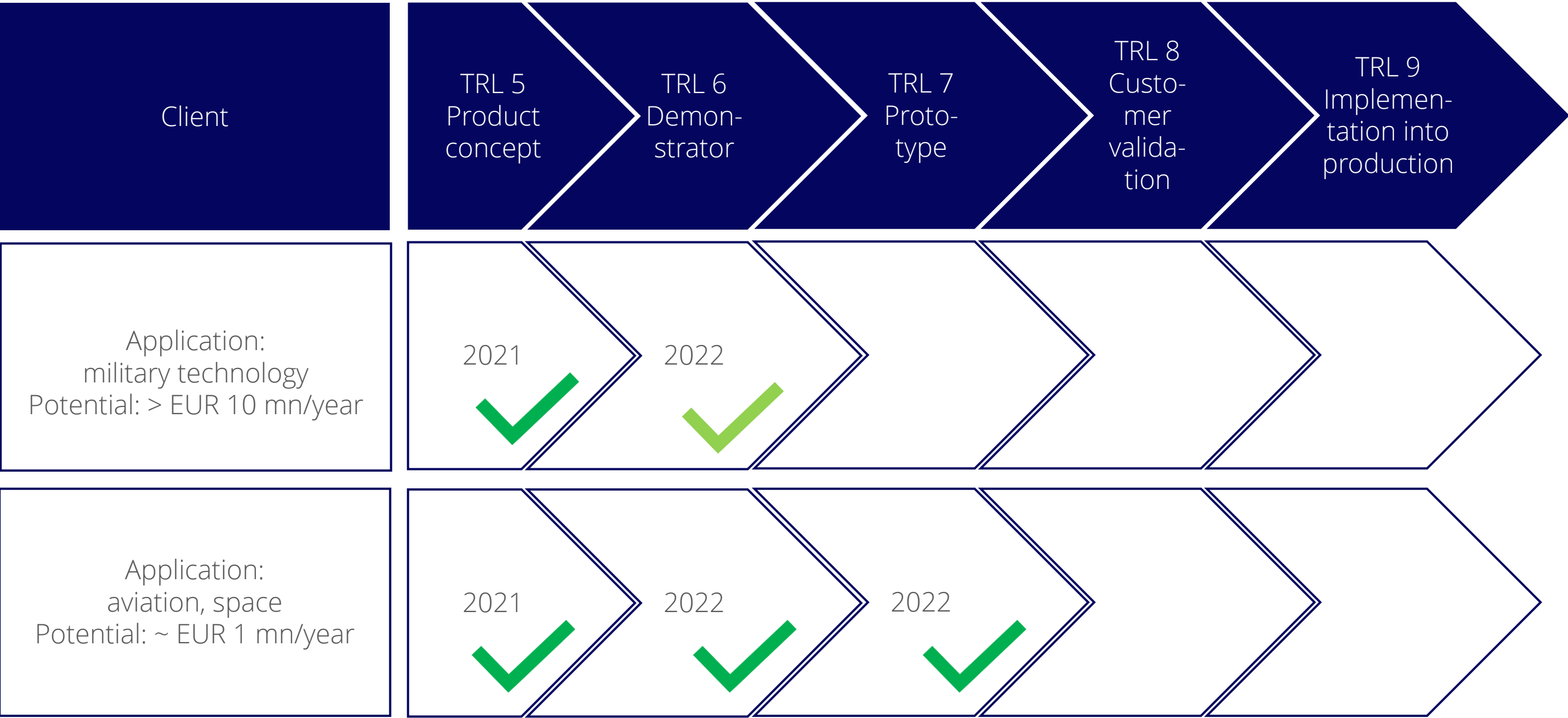
- Development of low-volume production technology for InGaAs arrays.
- Comparison of the capabilities of the cooled FPA demonstrator with a commercially available sensor (demonstration for MON and PGZ experts).

Plans for Q2 2023

- Product introduction:
 - SWIR FPA based on InGaAs.



COMMERCIALISATION - SAMPLE PROJECTS



NEW AGREEMENT FOR THE SUPPLY OF DETECTORS



AGREEMENT WITH A GERMAN CONTRACTOR FOR THE SUPPLY OF DETECTORS VALUE OF UP TO EUR 3.5 MILLION

- Contractor: Customer from Germany
- Subject of the contract: delivery of detectors for precise and fast control of laser pulses (another VIGO contract with this contractor)
- Value of deliveries: EUR 2.9 to 3.5 million (PLN 13.3 - 16.2 million)
- Delivery time: 1.03.-31.12.2023

The infrared detectors covered by the contract are used for precise and quick control and diagnostics of laser pulses produced by the contractor. They allow you to determine the shape, power and frequency of pulse repetition in real time.

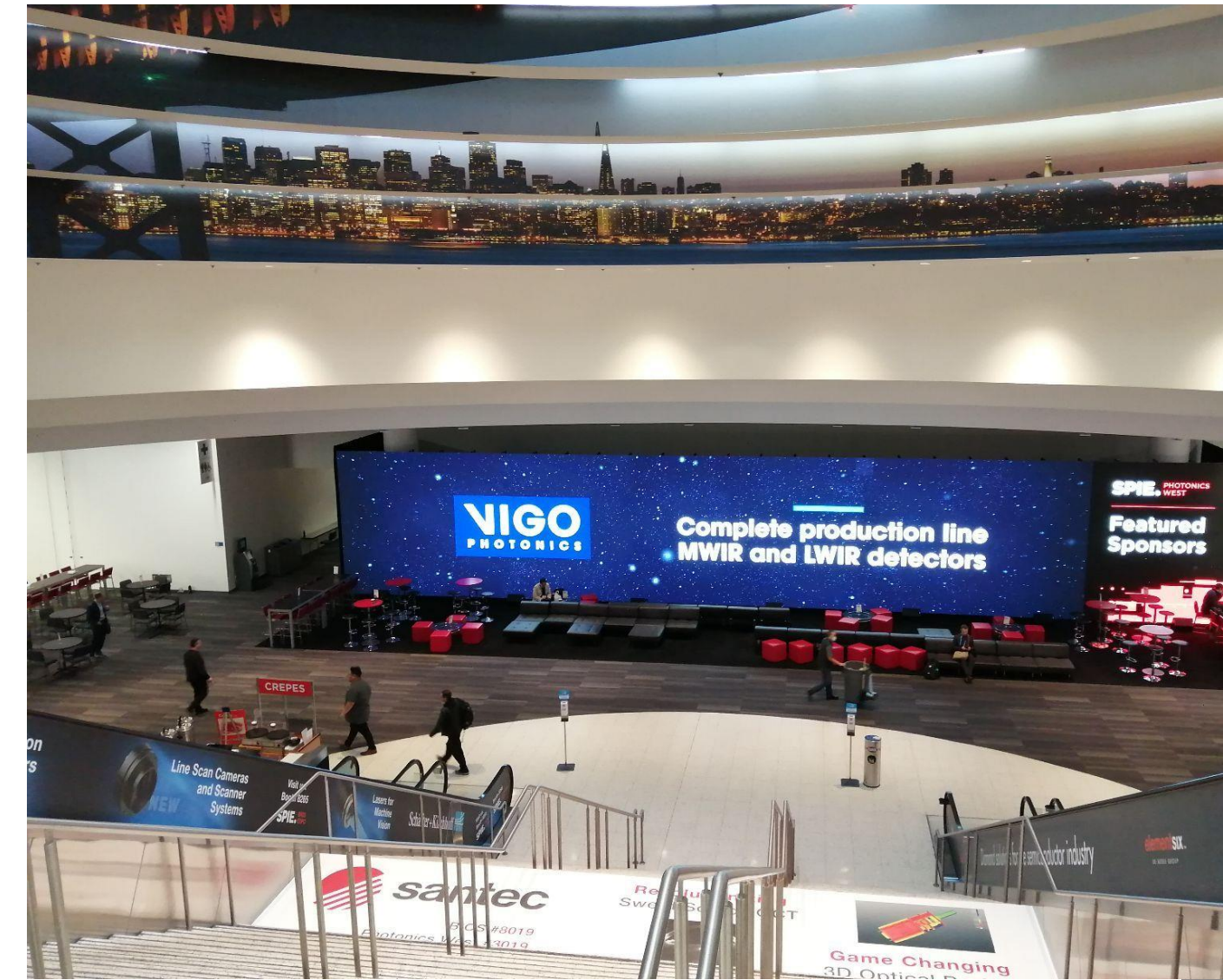


SUPPORT FOR COMMERCIALIZATION OF SOLUTIONS THROUGH MARKETING ACTIVITIES IN Q1 2023



INCREASED ACTIVITY AT INTERNATIONAL SCIENTIFIC CONFERENCES AND INDUSTRY FAIRS:

- SPIE Photonics West (USA) - participation in the largest industry photonics conference in the world; strong promotion of the VIGO Photonics brand with an emphasis on information about the field office in the USA.
- Smart City Summit (Taiwan) - participation of a VIGO representative in the Polish delegation of technology companies.
- Gas Sensor Workshop (Germany) - recognition of the market of spectrophotometer manufacturers (gas analysis) on the German market.
- Space Industry Days (Poland) - presentation of VIGO's potential in the space sector and participation in the inauguration of ESA BIC Poland.



PRODUCTS

Participation in conferences creates the VIGO brand as an authority in the industry and gives the opportunity to promote technologies developed as part of strategic initiatives

SUPPORT FOR PRODUCT COMMERCIALIZATION:

- Refreshing the standard product offer of VIGO Photonics.
- Implementation of prototypes of six new detectors based on compounds from group III-V to the offer.
- A webinar dedicated to the array detectors technology initiative, informing about the developed SWIR matrix and development plans for the entire product line.
- A publicly available library of scientific publications from all over the world, in which VIGO Photonics products were used, was created on the website.



VIGO Photonics
webinar series

New product development
SWIR Focal Plane Array





FINANCIAL RESULTS FOR Q1 2023

CONSTANTLY GROWING ORDER PORTFOLIO



VISIBLE CONTINUOUS DEVELOPMENT OF PHOTONICS AND MIDDLE-IR SOURCES MARKETS AND INCREASING DEMAND FOR VIGO PRODUCTS, CONSTANTLY INCREASE THE ORDER PORTFOLIO DESPITE VARIABLE MARKET ENVIRONMENT

ORDER BOOK

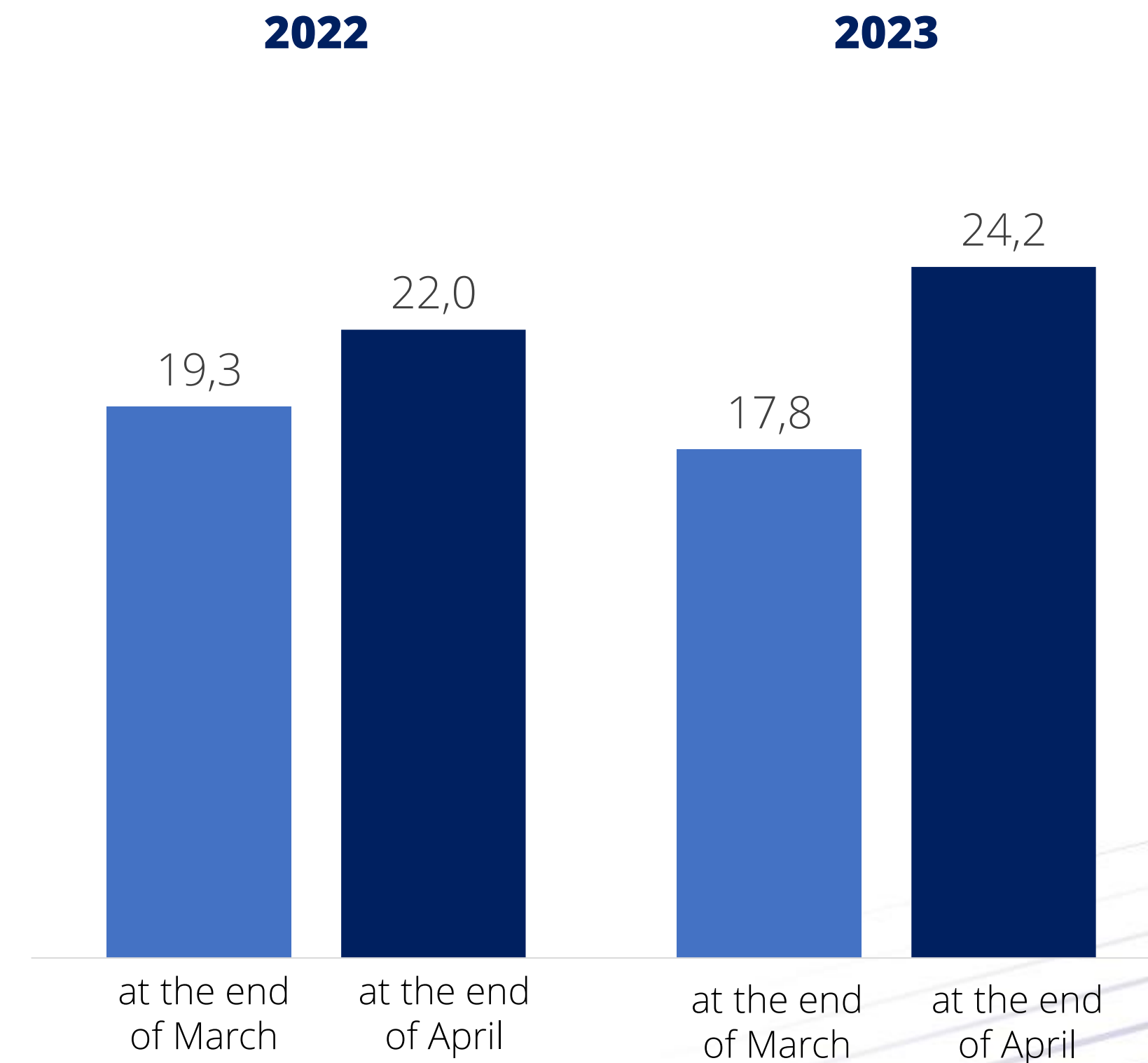
PLN 24.2 mn

value of VIGO's order portfolio at the end of April 2023
(from the beginning of 2023)

+10% increase in orders y/y

Continuing high demand for VIGO Photonics products proves further dynamic development of the photonics market and its good prospects.

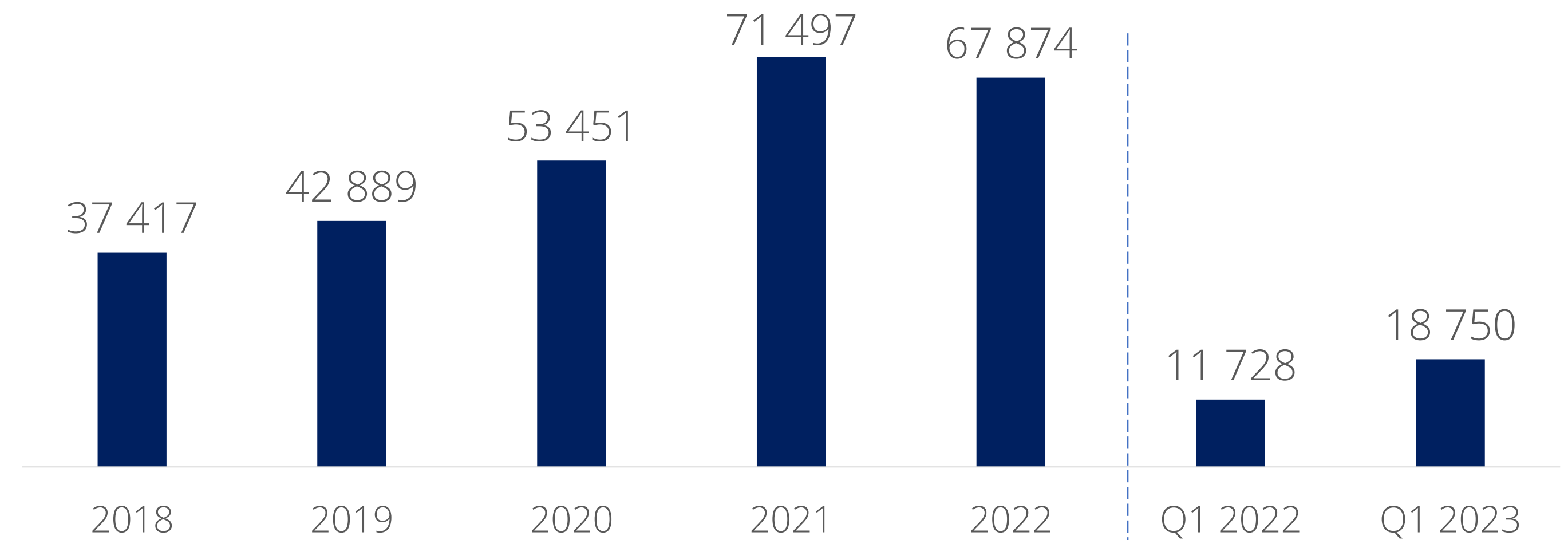
The highest value orders in industrial, transport and scientific applications.



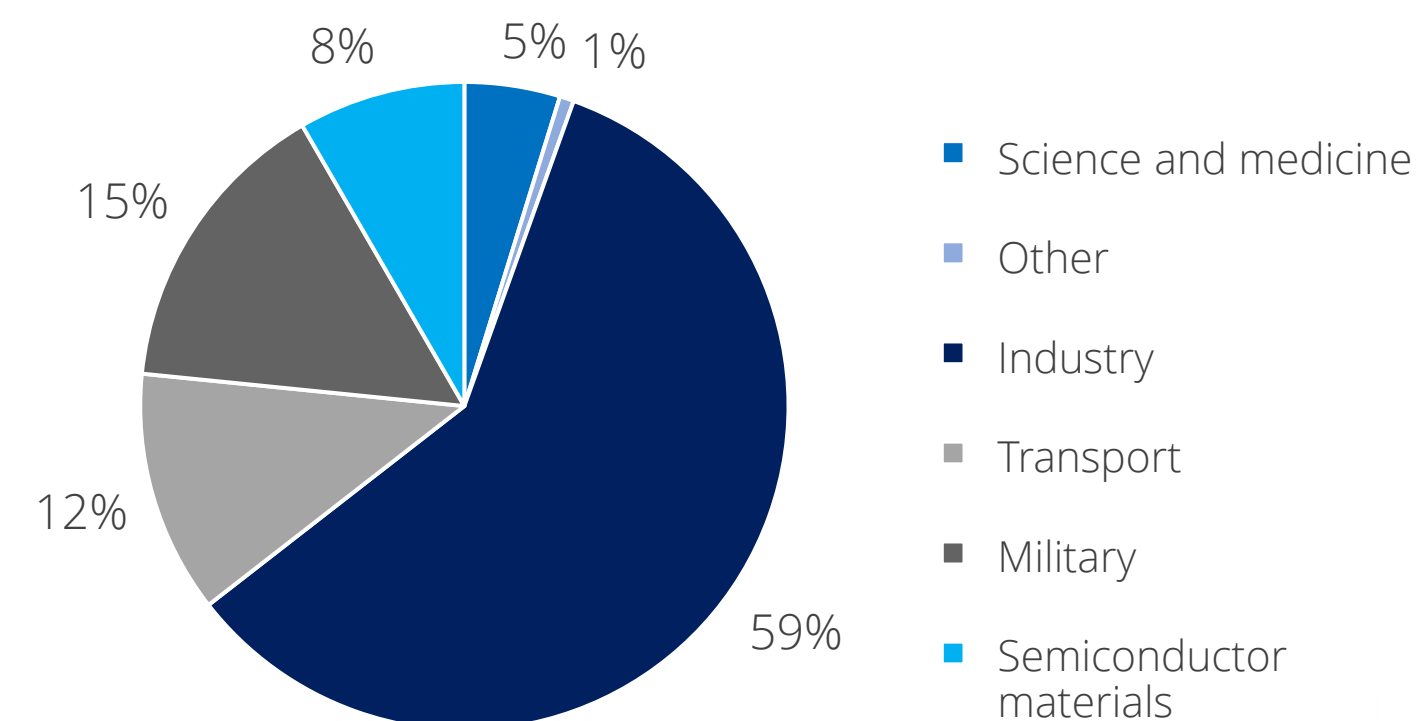
SALES REVENUES IN Q1 2023

- PLN 18.8 million of consolidated sales revenue (+60% y/y)
- Sales of detectors and detection modules in the amount of PLN 17.2 million (+54% y/y), and semiconductor materials PLN 1.6 million (3x y/y).
- Revenues by applications:
 - Industry: PLN 11.1 million (+33% y/y)
 - Military: PLN 2.8 million (10x y/y)
 - Transport: PLN 2.3 million (+50% y/y)
 - Science and medicine: PLN 0.9 million (-16% y/y)
- Geographically, over 4x sales growth in the US, 3x growth in Poland, 40% growth in Asia and 32% growth in Europe.
- Strong demand trends in the segments
 - industrial - detectors for gas and semiconductor analyzers,
 - military - orders from regular customers (Safran, PCO S.A.),
 - transport - orders from the Chinese market
 - semiconductor materials - increasing orders for QCL laser structures from a European customer in the sensor industry

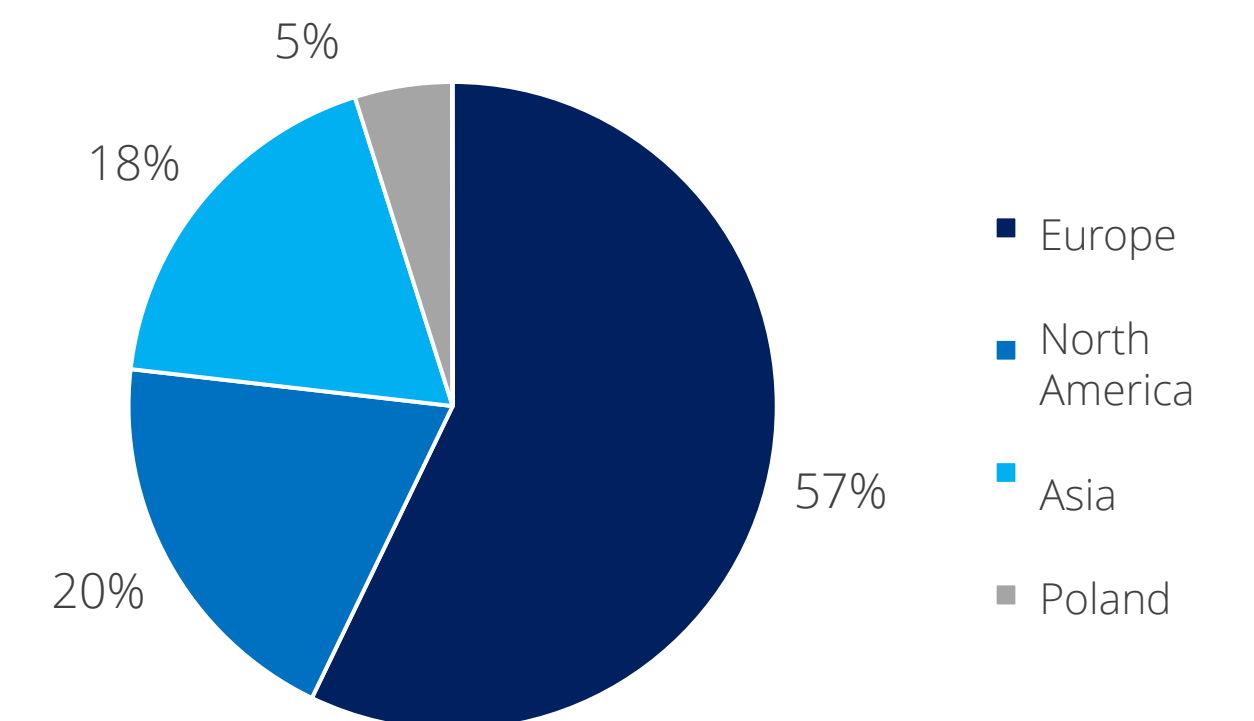
SALES REVENUES PER YEAR (PLN THOUSAND)



SALES REVENUES BY APPLICATION IN Q1 2023



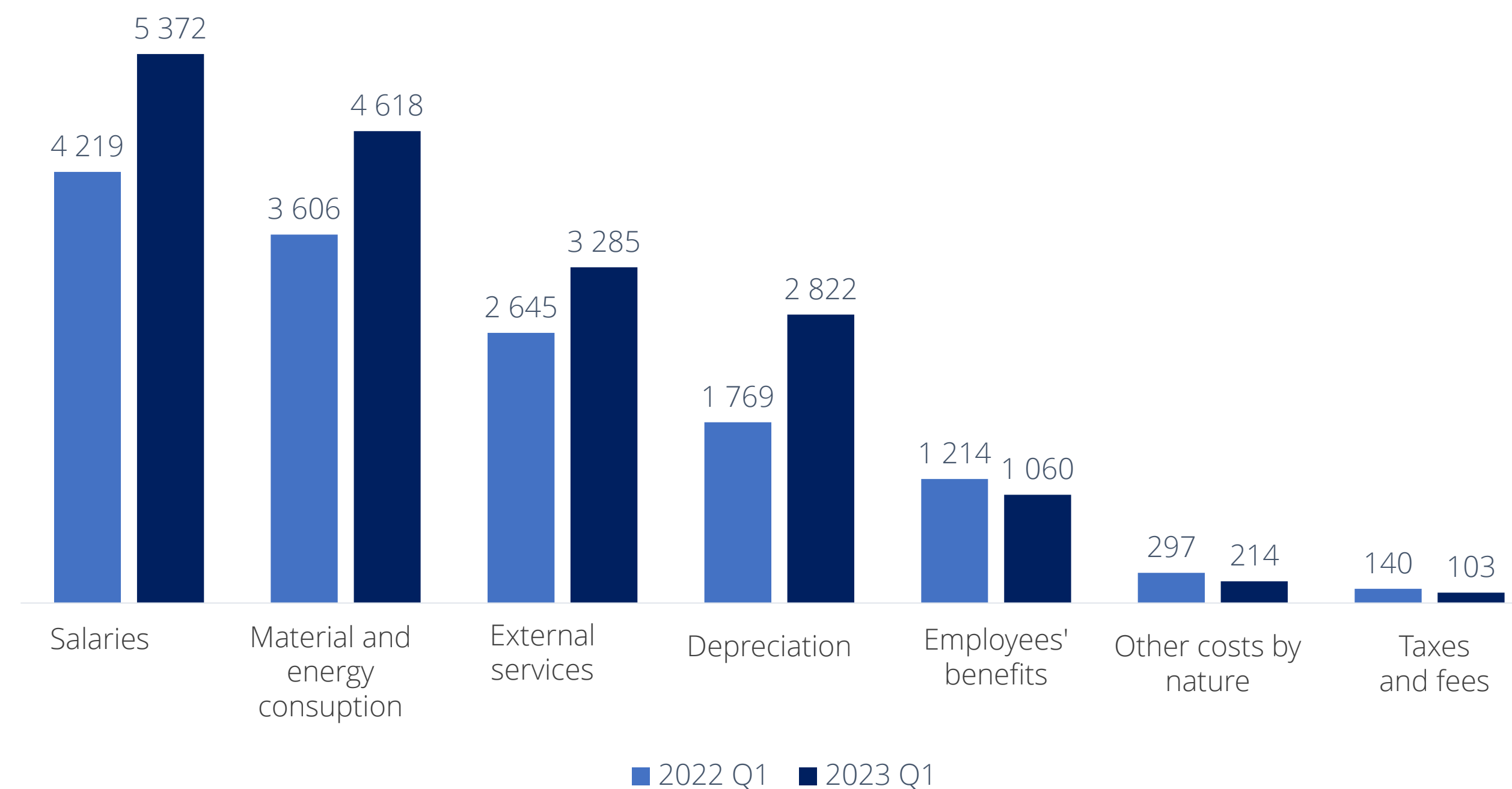
SALES REVENUES BY REGION IN Q1 2023



OPERATING COSTS (OPEX) IN Q1 2023

- The costs of basic operating activities amounted to PLN 17.5 million (+26% y/y).
- The greatest impact on the increase in costs had:
 - salaries
 - usage of materials and energy
 - depreciation
 - external services

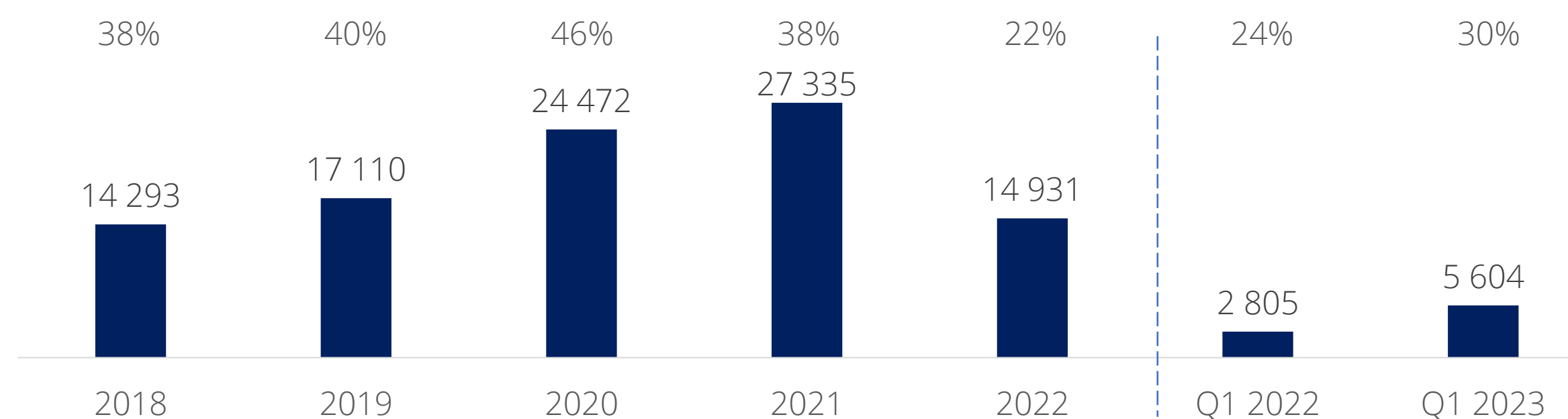
OPERATING COSTS IN Q1 2023 (PLN THOUSAND)



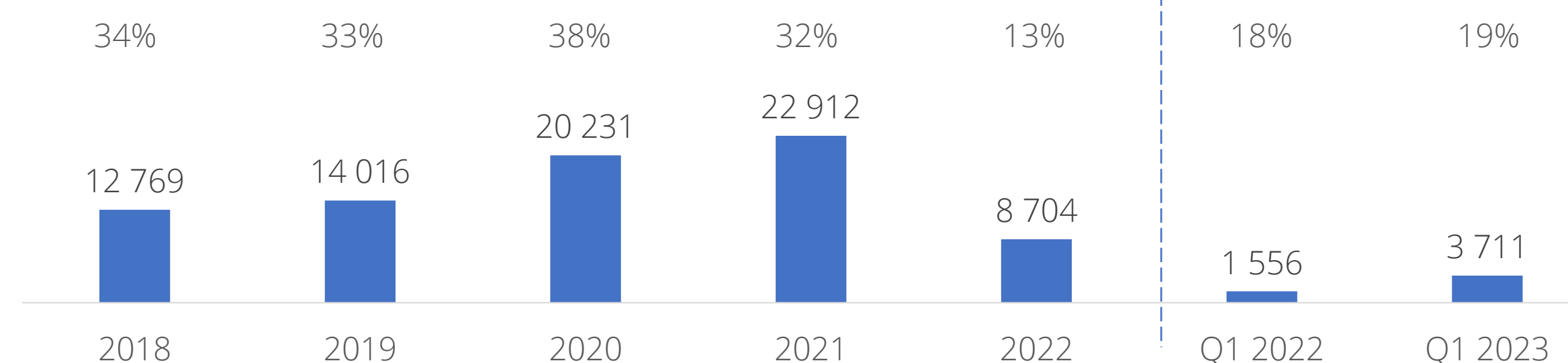
FINANCIAL PERFORMANCE IN Q1 2023

- Adjusted EBITDA: PLN 5.6 million (2x y/y).
- Operating profit (EBIT): PLN 3.7 million (over 2x y/y)
- Net profit adjusted for deferred tax: PLN 3.0 million (2x y/y).
- The net result was significantly affected by the increase in operating costs (partly caused by macroeconomic and geopolitical factors - high inflation, increase in energy and material costs, as well as increase in employment and expansion of the Company's scale of operations - especially in relation to selling costs).
- The company has taken steps to limit the increase in costs and since Q1 2023, profitability has improved both at the EBIT and EBITDA levels.

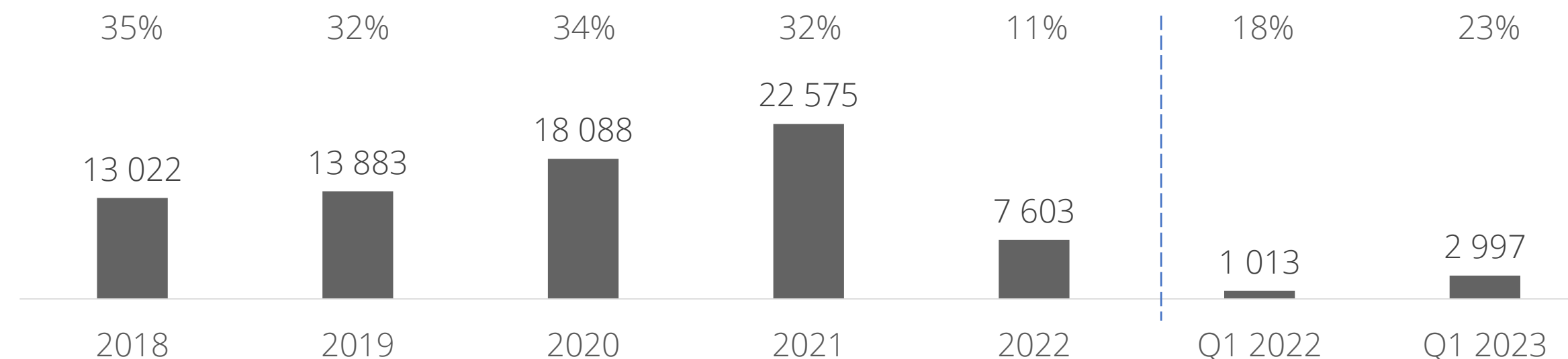
ADJUSTED EBITDA (PLN THOUSAND) AND EBITDA MARGIN



EBIT (PLN THOUSAND) AND EBIT MARGIN



ADJUSTED NET PROFIT (PLN THOUSAND) AND NET MARGIN



CASH FLOW IN Q1 2023

- Cash flows from operating activities: reduced level of inventories and reduced level of receivables
- Cash flows from investing activities: higher proceeds from subsidies received (PLN 7.2 million) and higher investment expenditures (PLN 11.3 million)
- Cash flows from financing activities: PLN 8.4 million received and PLN 11.9 million of capital installments and PLN 0.6 million of interest repaid

CASH FLOW STATEMENT [PLN THOUSAND]	01.01.2023 - 31.03.2023	01.01.2022 - 31.03.2022
Total adjustments:	2 450	6 328
Amortisation and/or depreciation	2 832	1 776
Change in provisions	-211	-646
Change in inventories	-1 742	-2 887
Change in receivables	2 844	8 942
Change in liabilities, excluding loans and borrowings	764	-556
Other	-2 038	-301
A. Net cash flows from operating activities	5 447	7 341
Inflows	7 217	2 772
Funding received	7 208	2 771
Proceeds from the sale of fixed assets	9	1
Outflows	-9 070	-18 513
Purchase of intangible assets and tangible fixed assets	-3 484	-10 723
Expenditure on acquisition of shares	0	-670
Expenditure on investment funds	-16	0
Outlays on development work in progress	-5 570	-5 909
Loans granted	0	-1 211
B. Net cash flows from investment activities	-1 852	-15 741
Inflows	8 408	6 782
Credits and loans	8 408	6 782
Outflows	-11 256	-2 450
Repayment of credits and loans	-11 847	-2 232
Interest and commissions	590	-218
C. Cash flows from financial activities	-2 848	4 332
D. Total net cash flows	747	-4 068
G. Cash at the end of period	3 028	1 591

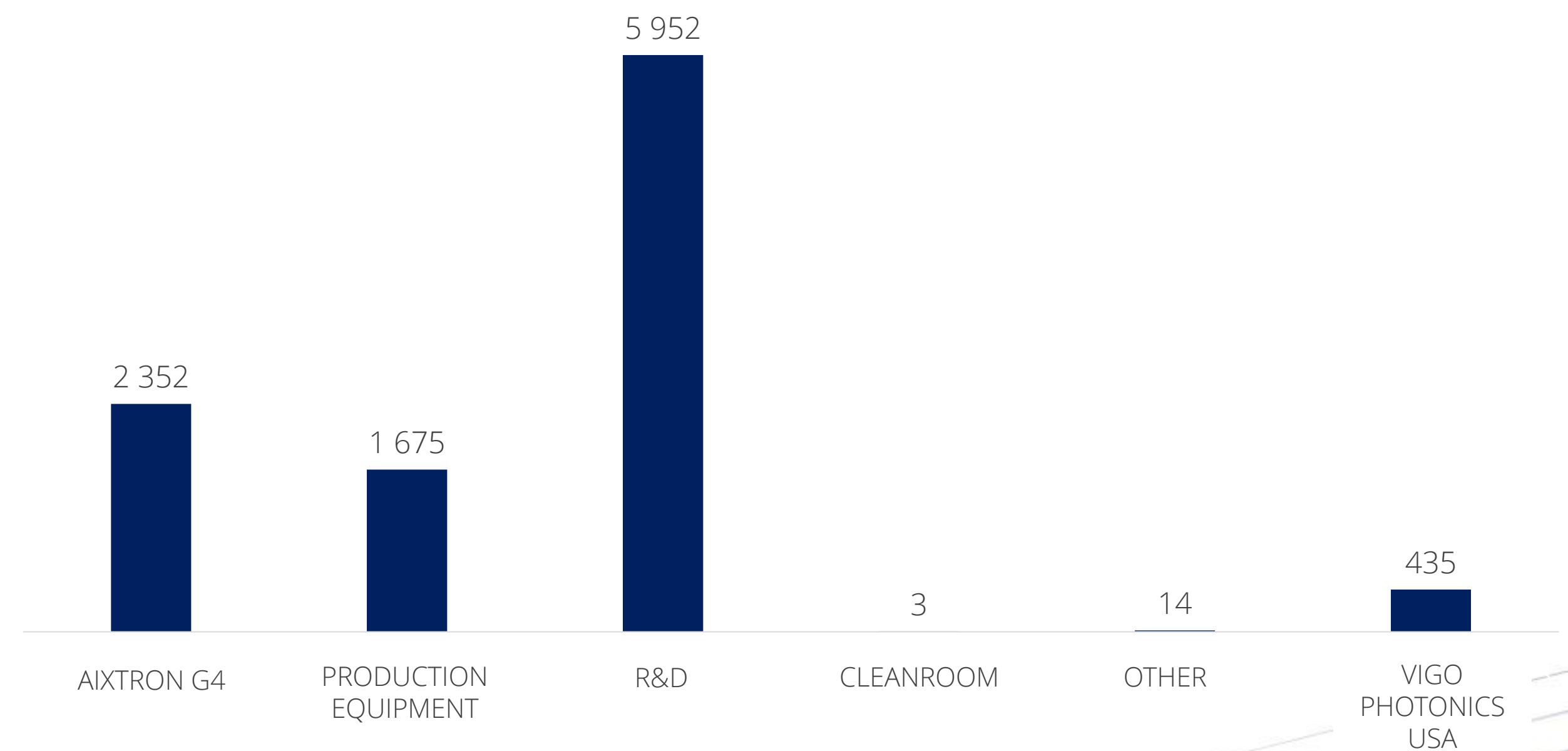
CAPITAL EXPENDITURE



CAPEX IN Q1 2023

- CAPEX in Q1 2023 amounted to PLN 10.4 million (on an accrual basis), of which the most important expenses concerned:
 - R&D expenses: PLN 6.0 million,
 - new MOCVD Aixtron reactor: PLN 2.4 million,
 - production equipment: PLN 1.6 million
- Capital expenditure plan in 2023: - PLN 42.5 million

CAPITAL EXPENDITURES INCURRED IN Q1 2023 (PLN THOUSAND)



NEW COFINANCING FOR R&D WORKS ON A WATER QUALITY SENSOR

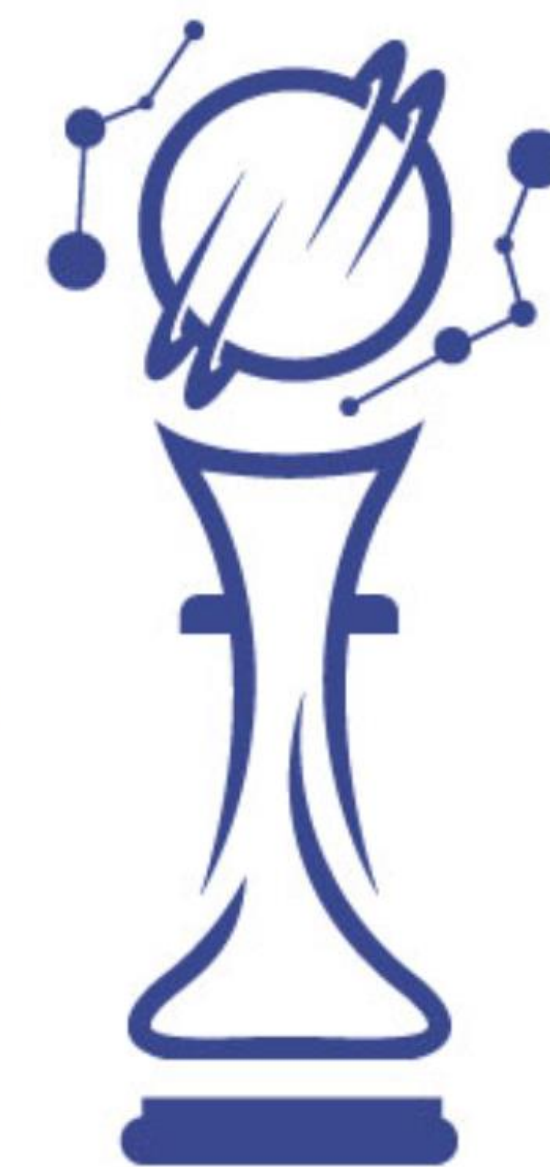


VIGO ON THE LIST OF PROJECTS FOR CO-FINANCING PLN 9.4 MILLION UNDER THE FIRST COMPETITION OF THE HYDROSTRATEG GOVERNMENT STRATEGIC PROGRAM "INNOVATIONS FOR WATER MANAGEMENT AND INLAND SHIPPING"

- Project name: Development of an innovative photonic water resources monitoring system
- Consortium: VIGO (leader), Warsaw University of Technology, European Regional Center for Ecohydrology of the Polish Academy of Sciences
- The total amount of eligible costs of the Project: PLN 24.0 million
- Amount of co-financing: PLN 20.2 million (84.4% of total costs eligible for support). VIGO eligible costs: PLN 13.1 million
- Co-financing for VIGO: **PLN 9.4 million**
- Duration of the Project and co-financing: 36 months; implementation will start on October 1, 2023
- Project work
 - developed and verified new photonic and non-contact measurement methods,
 - built autonomous probes for remote monitoring of selected quality parameters of water resources (i.e. monitoring the content of nitrates, nitrites and phosphorus compounds).

Detection of signals will allow for miniaturization, automation and cost reduction with an increased level of security of the monitored areas.

Program strategiczny
HYDROSTRATEG



OUTLOOK

FURTHER DEVELOPMENT ON A WAVE OF LONG-TERM MEGATRENDS CREATING A STRONG DRIVE FOR VIGO OPERATING DEVELOPMENT

TECHNOLOGY TRENDS

SYSTEM MINIATURISATION

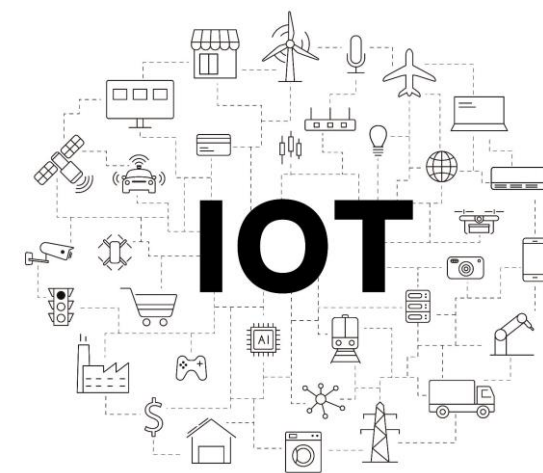
Miniaturization and integration are the future of IR in mass applications



INTERNET OF THINGS (IoT)

Explosion of chip applications in the IoT

- USD 114 bn - estimated value of the IoT sensor market in 2025
- 15.6% CAGR 2022-2025



CONSUMER ELECTRONICS

IR as the catalyst of *wearable lab-on-chip* development

- USD 186 bn - estimated value of the wearables market in 2030
- 14.6% CAGR 2023-2030



AUTOMOTIVE

The growing importance of IR solutions (LIDAR sensors/ *self driving vehicles*)

- USD 4.5 billion - estimated value of the LIDAR market in 2030
- 28.5% CAGR in 2022-2030



GEOPOLITICAL TRENDS

SECURITY AND DEFENCE

Significant investments due to current political tensions - increase in budget spending by Western countries, incl. Poland

- 3% of GDP - planned Polish defense spending in 2024
- EUR 70 bn - planned EU defense spending until 2025



VALUE CHAIN STABILITY IN CHIP PRODUCTION AND DEVELOPMENT OF THE SEMICONDUCTOR INDUSTRY IN EUROPE AND THE USA

Securing chip production in Europe and the US and freeing from the risk of their concentration in Asia, incl. fabless manufacturing. Streams of money from governments in the form of subsidies and tax breaks for the construction of foundations in Europe (EUR 45 bn)* and the USA (USD 280 bn)*.

- USD 1,033 bn - estimated value of the global semiconductor market in 2031
- 20-30% - target of EU share in the global semiconductor market by 2030 (from 9% currently)



ECOLOGICAL TRENDS

ROHS AND ECOLOGY

RoHS** changes the mid-infrared (MIR) market – introduced i.e. ban on the use of mercury, cadmium, lead in industrial applications. Still a possibility of use in the military, aerospace and large industrial infrastructure.



ENVIRONMENTAL PROTECTION

The growing importance of environmental protection in many industries, incl. air and water quality monitoring, gas analysis, CO₂ emissions.

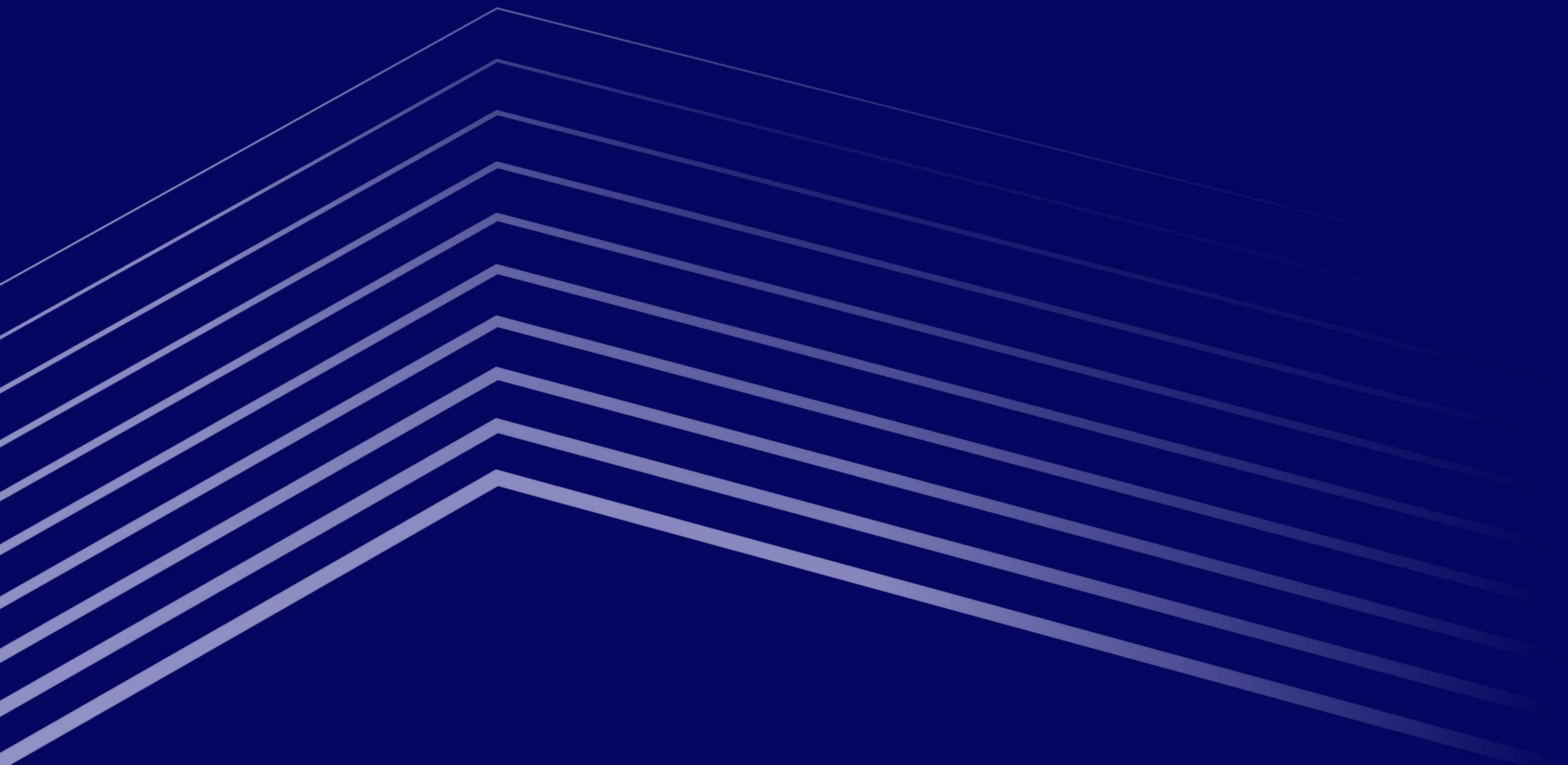
- USD 33 bn - estimated value of the gas and oil analytics market
- 23.8% CAGR 2022-2030



CONTINUE TO EXECUTE THE 2023 AND 2026 STRATEGY WITH A FOCUS ON STRATEGIC INITIATIVES AND PRODUCTION EFFICIENCY BASED ON VIGO'S UNIQUE TECHNOLOGIES AND ACCELERATE COMMERCIALISATION OF NEW SOLUTIONS IN A FAST-GROWING AND FORWARD-LOOKING PHOTONIC MARKET, SUPPORTED BY NUMEROUS MEGATRENDS

MARKET	COMPANY	STRATEGY
<ul style="list-style-type: none"> ✓ a number of business opportunities enabling further dynamic growth of operations on the global, intensively developing markets of photonics and mid-infrared sources ✓ numerous market megatrends supporting dynamic development: system miniaturization, Internet of Things (IoT), consumer electronics, automotive, environmental protection ✓ global trends in securing the value chain in chip production and the development of the semiconductor industry in Europe and the USA, as well as significant investments in security and defense 	<ul style="list-style-type: none"> ✓ presence at the global forefront of industrial innovation - the company has only 3 direct competitors ✓ a unique advantage using an integrated value chain and a full range of product applications for customers from numerous industries, including their customization ✓ established market position and brand recognition - over 30 years of experience in the production of semiconductor materials, with a world-class R&D department ✓ investments made in recent years allow for long-term scaling of production 	<ul style="list-style-type: none"> ✓ implementation of an ambitious development strategy addressing market changes and challenges in the long term, using a unique advantage in the value chain that will move VIGO to a higher utility curve (infrared matrices, PIC) ✓ active sales development and acquisition of new customers, including a growing portfolio of orders ✓ an appropriate level of investment in R&D and infrastructure in order to maintain a strong market position ✓ investments in innovative projects through the VIGO Ventures ASI fund

Q&A



THANK YOU FOR YOUR ATTENTION

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