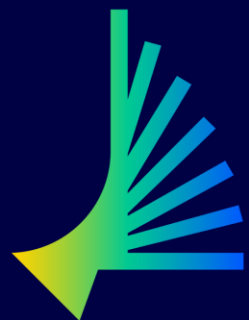




18 Gener 2023

Horizon Europe – Infoday Catalunya CL4: Digital i Indústria



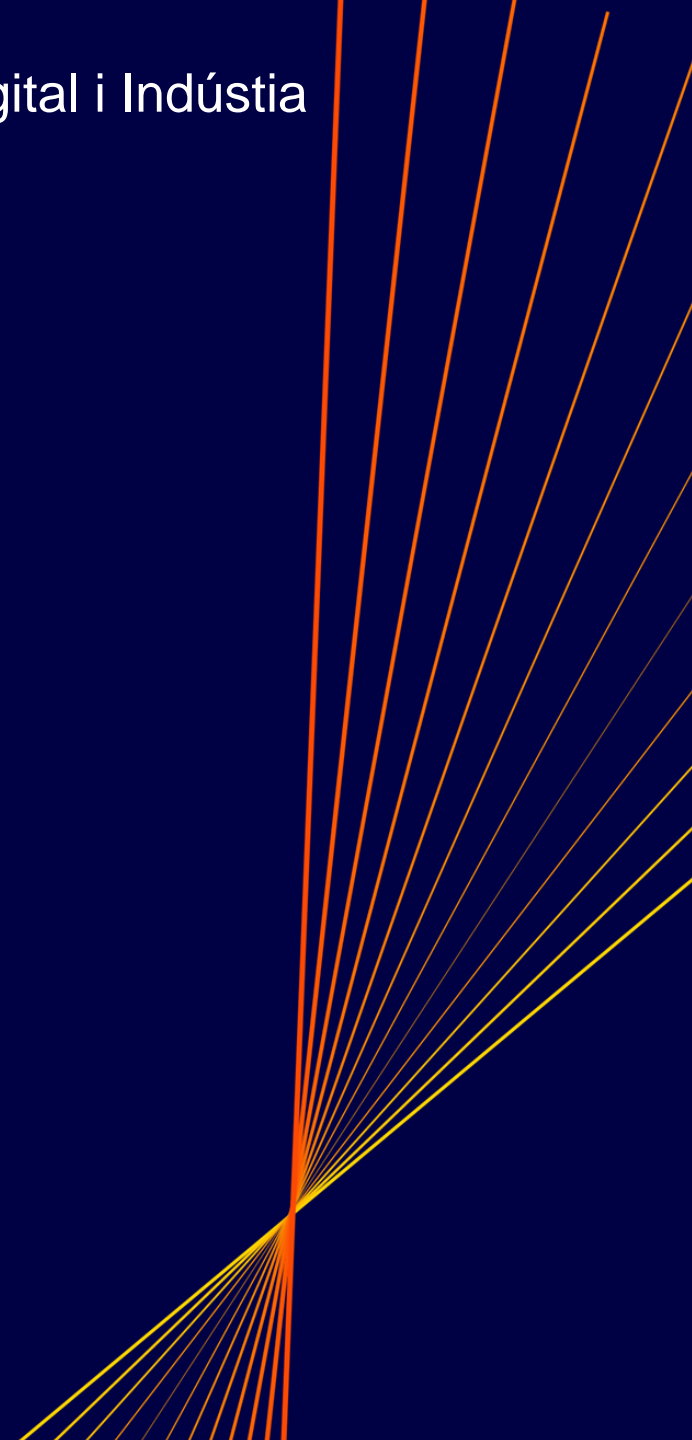
IRIS

Photonics & Industrial AI Solutions

Digitally Engineering Industry

Aldo R. Reyes, PhD
Project and Innovation Manager

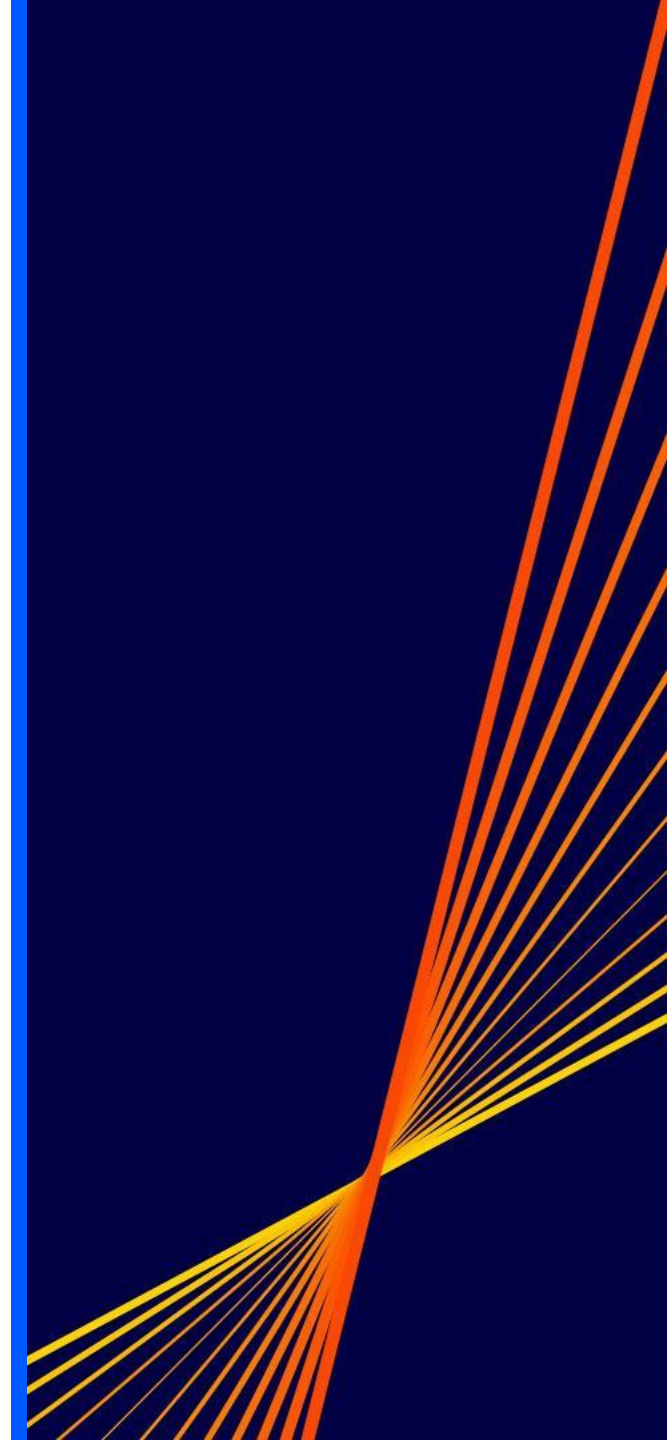
www.iris-eng.com



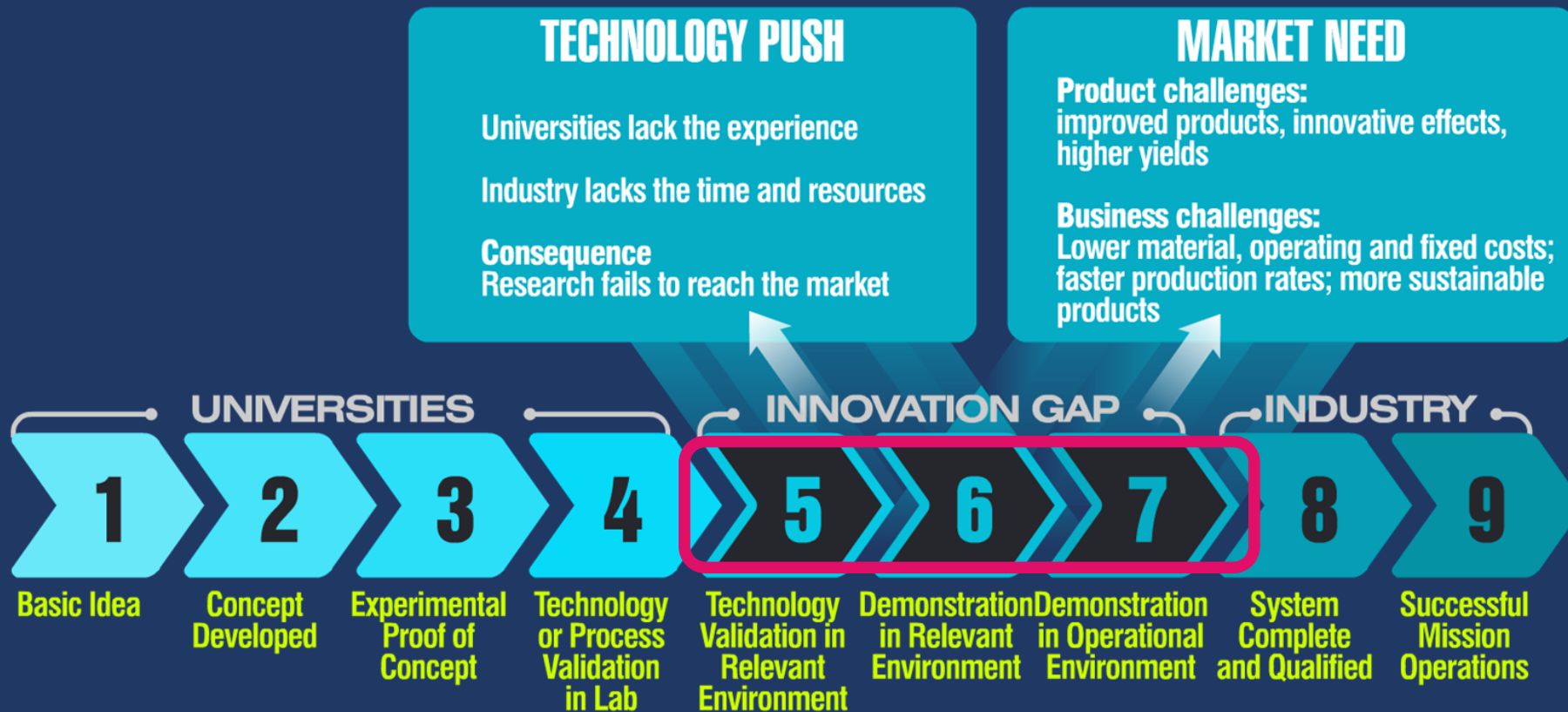
ABOUT US

IRIS is an advanced engineering company specialised in Photonics and Artificial Intelligence key enabling technologies for the digitisation of industrial processes:

Making industry Smarter, more
Sustainable & Efficient in Industry 4.0



Our beginnings back in 2007



Now a days

- ✓ >70 highly qualified multidisciplinary staff
- ✓ > R&D: >45M€, > 100 projects, > 15 patents
- ✓ Combination of Photonics and AI to develop and integrate inline monitoring solutions with Spectroscopy-based analyzers
- ✓ Manufacturers of industrial-grade NIR analyzers under the Visum trademark
- ✓ Developers of Data Management Platforms, Industrial AI Decision Support Tools and Digital Platforms
- ✓ Innovation lab for pioneering in industry. Key Enabling Technologies (KETs) introduction through international and collaborative R&D Projects





Experts in Real-time Monitoring

Helping food, pharma, chemical, bio-based & process industries to improve their quality control and process standardisation

- Engineer IR absorption spectroscopy-based analysers and other photonics tools (e.g. fluorescence) into rugged devices for in-line integration into manufacturing lines or for at-line use and along the value chain
- Chemometric models for extracting actionable information from the spectral data
- Machine Learning, Deep Learning & Data fusion for augmented IR and model predictive control

- ✓ Improved Process Understanding
- ✓ Improved Quality Control & Standardisation
- ✓ Increased Process & Resource Efficiencies
- ✓ Prevent Off-Spec Product
- ✓ Reduce Waste & Losses

Connecting & Digitising Value Chains

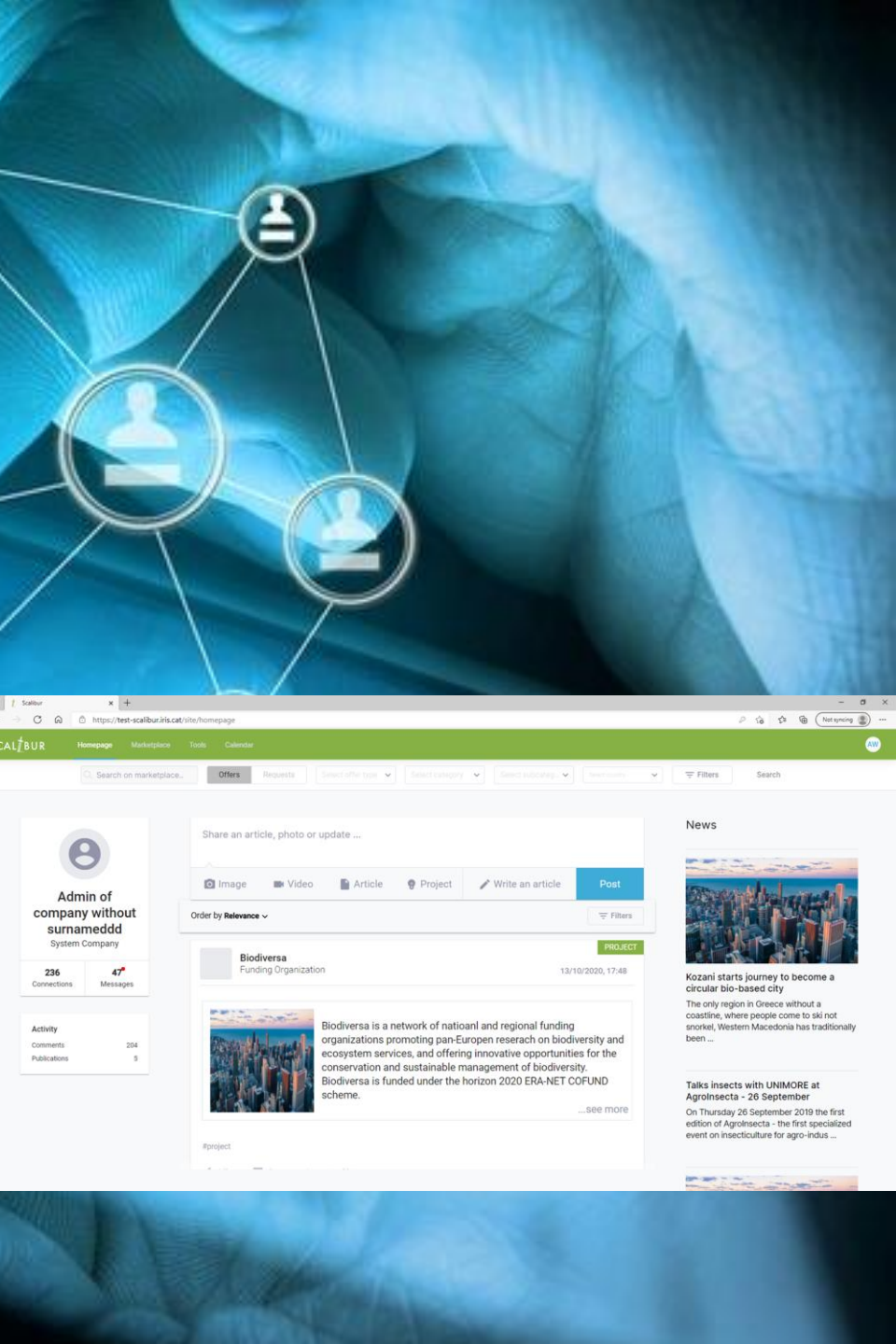
Design and building of Digital Platforms for Stakeholder Management/Collaboration, for linking actors along the value chain, consumer-level platforms...

Based on existing library of configurable modules from our proprietary Moap® stakeholder platform builder-modules can be mixed and matched & customised for early MVP release in projects.

Application Programming Interface (API) for integration with existing data sources.

User Experience & User Design Expertise: User First Designs to ensure Web-based, Smartphone & Tablet applications that are easy to use for high user success.

Cocreation experts.





Scadalytics: Data acquisition, fusion & AI

Predictive model control blackbox as an upper layer of intelligence that acquires multivariate data from the analysers and fuses it with other traditional monovariate sensors (Temperature, Pressure, pH, etc.).

Processes the fused data with purpose built process hybrid models: combining both first principles rules and simple empirical rules, with multivariate-data-based rules.

Interacts with the existing process controls for closed loop advanced process control.

- ✓ Decision Support Systems for repetitive tasks which require higher level cognitive operations (e.g. situation awareness) in combination with complex data processing tasks
- ✓ Detection of causality and correlation (e.g. of quality defects)
- ✓ Data-driven Manufacturing
- ✓ Predictive Maintenance

VISUM Products: Process Analytical Technologies (PATs)



VISUM
Palm



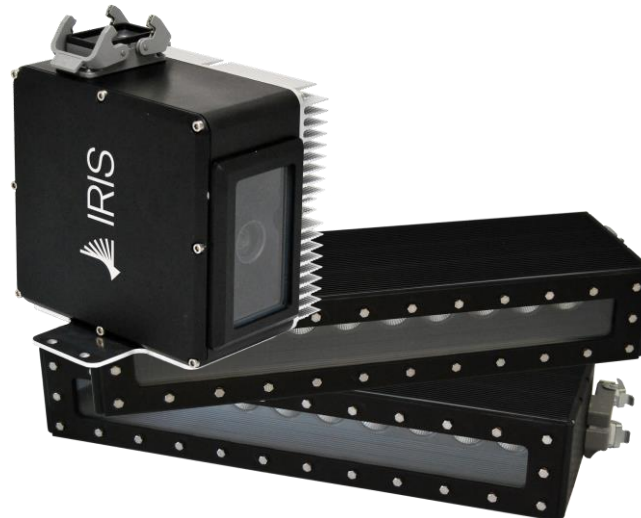
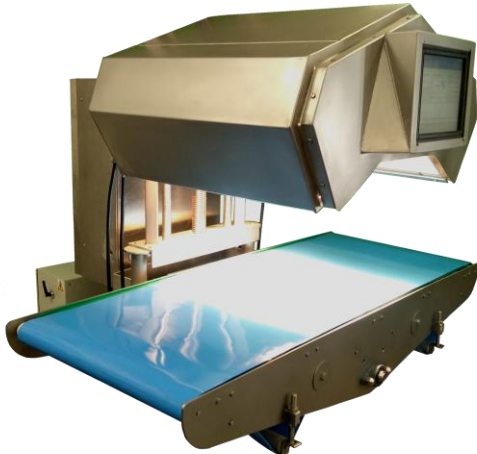
VISUM
InLine



Process Analytical Technology (PAT): System for designing, analysing and controlling manufacturing processes through measurements of critical quality and performance attributes of raw and processed materials to ensure final product quality to become more efficient while reducing over-processing, enhancing efficiency and minimising waste

Traditional automation is geared towards maintaining process conditions according to a given recipe, while PATs focus on **ensuring process outcomes**, which, combined with AI tools, can reveal hidden information.

VISUM
HSI



timegate



DICIM – HORIZON-CL4-2022-TWIN-TRANSITION-01-07 – GA:

Participant No. *	Participant organisation name	Short	Country
1 (Coordinator)	Masaryk University	MU	Czech Republic
2	Kungliga Tekniska Högskolan	KTH	Sweden
3	Technical University of Chemnitz	TUC	Germany
4	University of Ljubljana	ULFS	Slovenia
5	IDENER RESEARCH & DEVELOPMENT AIE	IDE	Spain
6	IRIS Technology Solutions	IRIS	Spain
7	Signifikant Svenska AB	SIG	Sweden
8	Circular Economy Solutions GmbH	C-ECO	Germany
9	Gorenje gospodinjski aparati, d.o.o.	GOR	Slovenia
10	Arcelik	ARCE	Turkey
11	Lexmark	LEX	Hungary
12	Crowdhelix	CHX	Ireland
(Advisory role)	Automotive Parts Remanufacturers Association, Europe	APRA	Belgium
(Advisory role)	European Reman Council	ERC	EU Assoc.

The **aim of the project** is to develop a set of integrated digital solutions that makes use of Internet of Things (IoT), Machine Learning (ML) based Artificial Intelligence (AI), Big Data, Image Processing and Augmented Reality (AR) to support different actors of the industrial value chain such as managers, engineers and operators in their decision making and to carry out value recovery activities for circular economy.

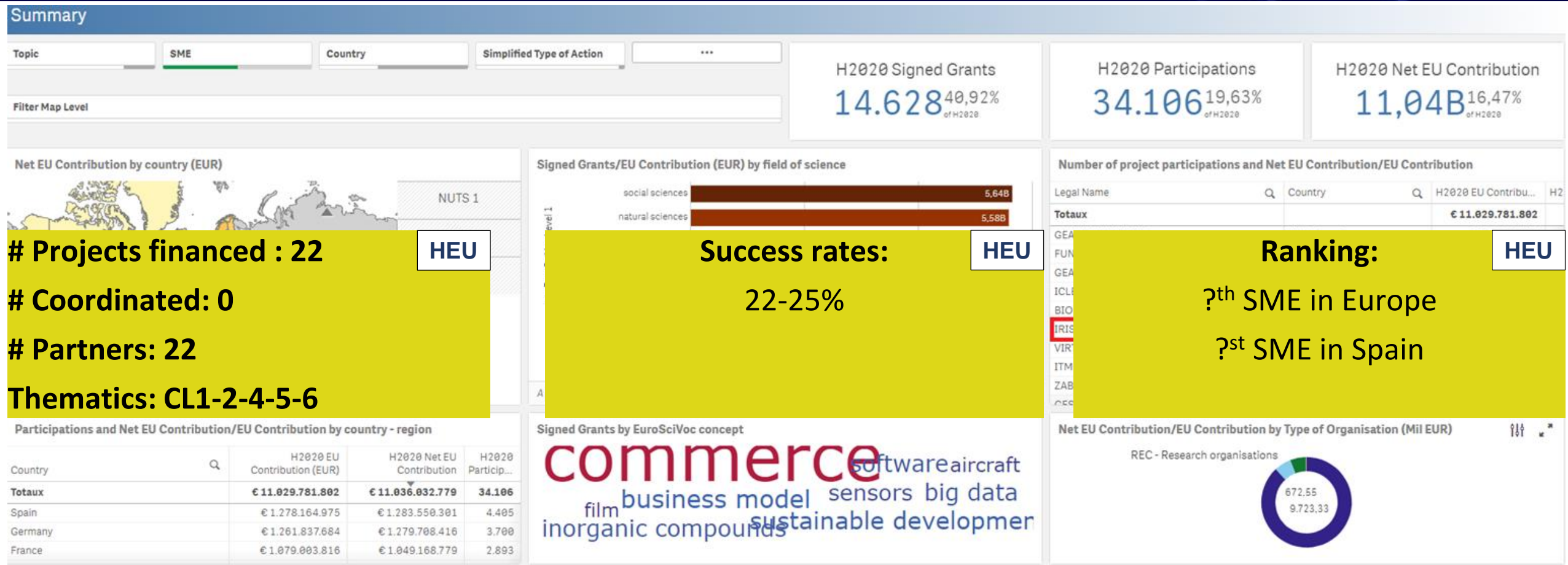
Full title	Digitalized Value Management for Unlocking the potential of Circular Manufacturing Systems with integrated digital solutions
Total Budget	€ 5.9 M
Start – End	01/01/2023 – 31/12/2026 (4 years)

IRIS role will be focused on applying Machine Learning based image processing for inspection, sorting, testing and value recovery operations to support the inspection of the refrigerators in Arcelik. Imaging acquisition systems-sensors will also be applied.

Adding value to consortia

- ✓ Expertise and commitment to support the core writing team (the 45 page format is challenging & requires strong communication and synthesis skills)
- ✓ Market facing business focus
- ✓ Networked with the industry (existing client base & members of Industry Clusters).
- ✓ Experienced Project Coordinator & Partner
- ✓ Have our product-base that we aim to enhance and innovate through Horizon Europe- strong 'pathway to impact'
- ✓ Strong Industry 4.0, digitization & Industrial AI skills (specially CL4)
- ✓ Understanding of Gender Dimension and how gender analyses can be a key innovation input.

H2020: RESULT



Projects financed : 22

HEU

Coordinated: 0

Partners: 22

Thematics: CL1-2-4-5-6

Success rates:

22-25%

HEU

Projects financed : 60

Coordinated: 12

Partners: 48

Thematics: SPIRE, LEIT, NMBP, BBI

Success rates:

25-35%

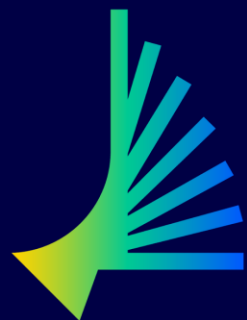
Ranking:

6th SME in Europe

1st SME in Spain



Digitising Industry



IRIS

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aldo.r.reyes@iris-eng.com

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Llobregat 08940 (Barcelona), Spain
Phone: +34 93 554 25 00

www.iris-eng.com