



Digital & Green Transitions of the European Manufacturing Sector through beyond 5G-enabled technologies & innovations

Project Overview

The Manufacturing Partnership Day

26th September @ Bluepoint Brussels



Dr. Pouria Sayyad Khodashenas
Huawei Technologies Sweden AB

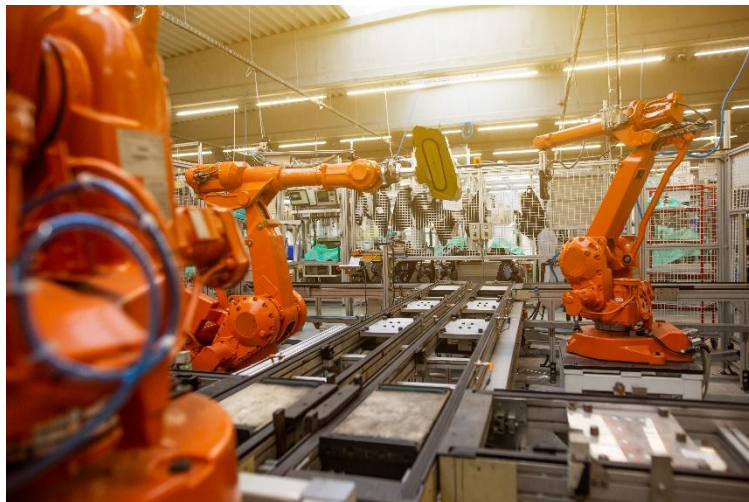
PROJECT'S ID CARD

Full Title: *ZERO-enabling smart networked control framework for agile Cyber Physical Production Systems of Systems*

- **Call:** HORIZON-CL4-2021-TWIN-TRANSITION-01
- **Topic:** HORIZON-CL4-2021-TWIN-TRANSITION-01-08
- **Project Grant Agreement:** No. 101057083
- **Budget:** 9.899.912,00 €
- **Funding:** 8.052.023,00 €
- **Project Start Date:** 01/06/2022 (M01)
- **Project End Date:** 30/11/2024 (M30)
- **Project Coordinator:** Dr. Anastasios Drosou (CERTH)
- **Project Technical Manager:** Dr. Pouria Sayyad Khodashenas (Huawei)
- **Project Officer:** Mrs. Elena Angiolini

TITLE DECOMPOSITION

- Within shopfloors, each resource (e.g., machines, robots, transporters, etc.) is an autonomous entity, (i.e., a Cyber-Physical System), equipped with cognitive capabilities (e.g., perception, reasoning, learning & cooperation). A **Cyber-Physical System of Systems** is a collective of networked CPSs.
- Promoted by the Sustainable Products Initiative (SPI), **Zero-X** (e.g., zero-emission, zero-pollution, zero-waste, zero-inventory, zero-ramp-up time, zero-accidents, etc.), render products fit for a climate neutral, circular economy whilst enhancing their sustainability levels.





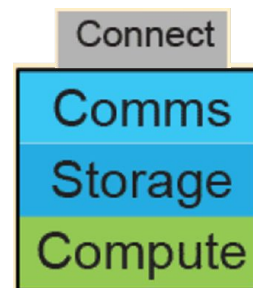
CONSORTIUM

No	Name	Ctry.	Abb.	No	Name	Ctry.	Abb.
1*	Ethniko kentro erevnas kai technologikis anaptyxis	EL	CERTH	14	SMS digital GmbH	DE	SMS
2	Huawei Technologies Sweden AB	SE	HWE	15	Visual Components	FI	VIS
3	ABB OY	FI	ABB	16	TTS Technology Transfer System S.r.l.	IT	TTS
4	nxtControl GmbH (a fully own subsidiary of Schneider Electric)	AT	NX-SE	17	Research wings S.r.l.	IT	RWG
5	Reepack S.r.l.	IT	REPK	18	Asociación De Investigación Metalúrgica Del Noroeste	ES	AIM
6	Sick AG	DE	SICK	19	Nextworks S.r.l.	IT	NXW
7	Opticom GmbH	DE	OPT	20	International Data Spaces Association EV	DE	IDSA
8	Accelleran	BE	ACC	21	Aalto-Korkeakoulusäätiö	FI	AALTO
9	EICe Aachen GmbH	DE	CCI	22	Asociación de Empresas Tecnológicas Innovalia	ES	INNO
10	Ubiwhere LDA	PT	UBI	23	S21Sec Gestión SA	ES	S21
11	Fundingbox Accelerator Sp zoo	PL	FBA	24	i2cat Foundation	ES	i2CAT
11.1	Fundingbox Community	PL	FBC	25	Luleå University of Technology	SE	LTU
12	Fraunhofer-Gesellschaft zur Förderung der angewandten Forschung e.V.	DE	FhG	26	Universidad Miguel Hernández de Elche	ES	UMH
13	RWTH Aachen University	DE	ITC	27	Neutron Technologies S.L.	ES	NEU

THE ZERO-SWARM VISION

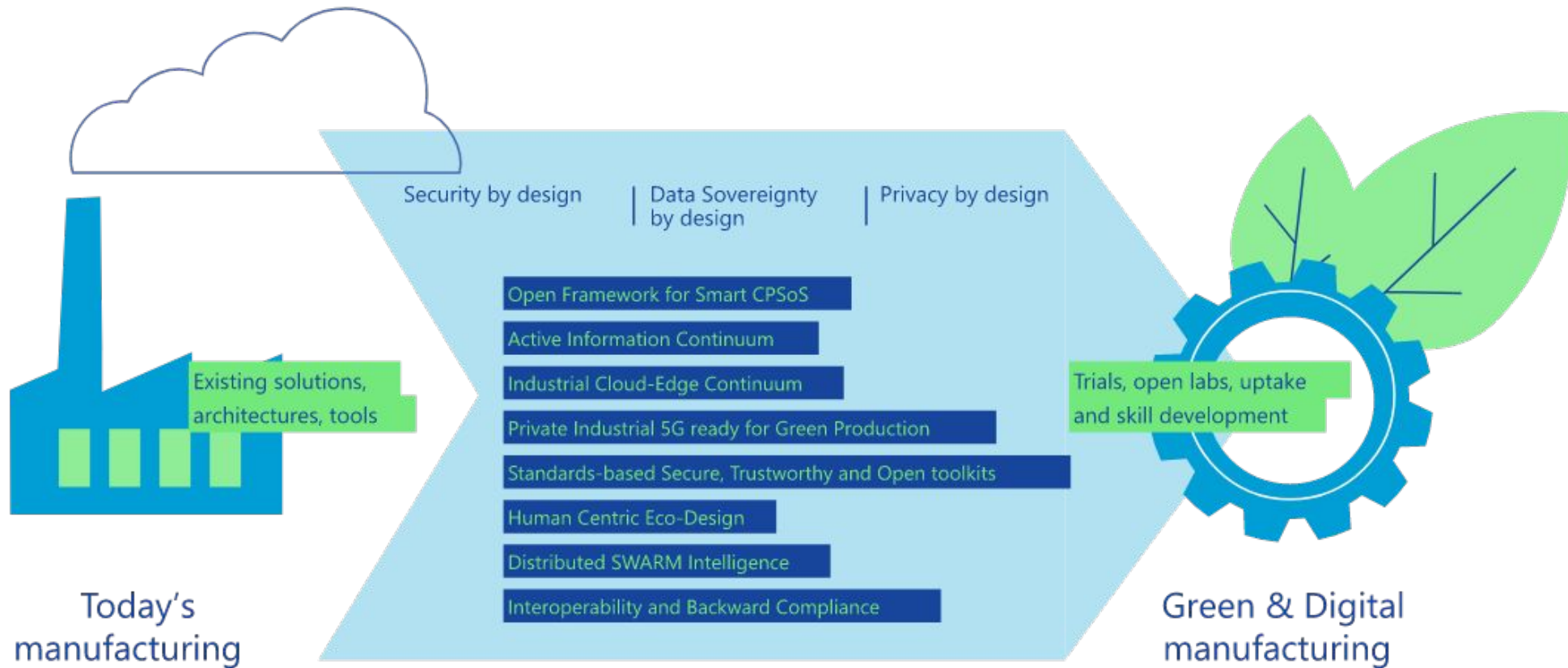
Zero-SWARM aims to provide a **methodological & technological framework, modular, open & reusable**, for the engineering of the following major aspects of a **data-driven, connected, CPSoS-based, trusted (safe/secure) production**, via:

- a **HW/SW runtime platform** that sustains CPSoS operations
- an **Active Information Continuum (AIC)** for distributed and orchestrated data-driven intelligence
- an extension of CPSoS “Digital Twin Orchestration”

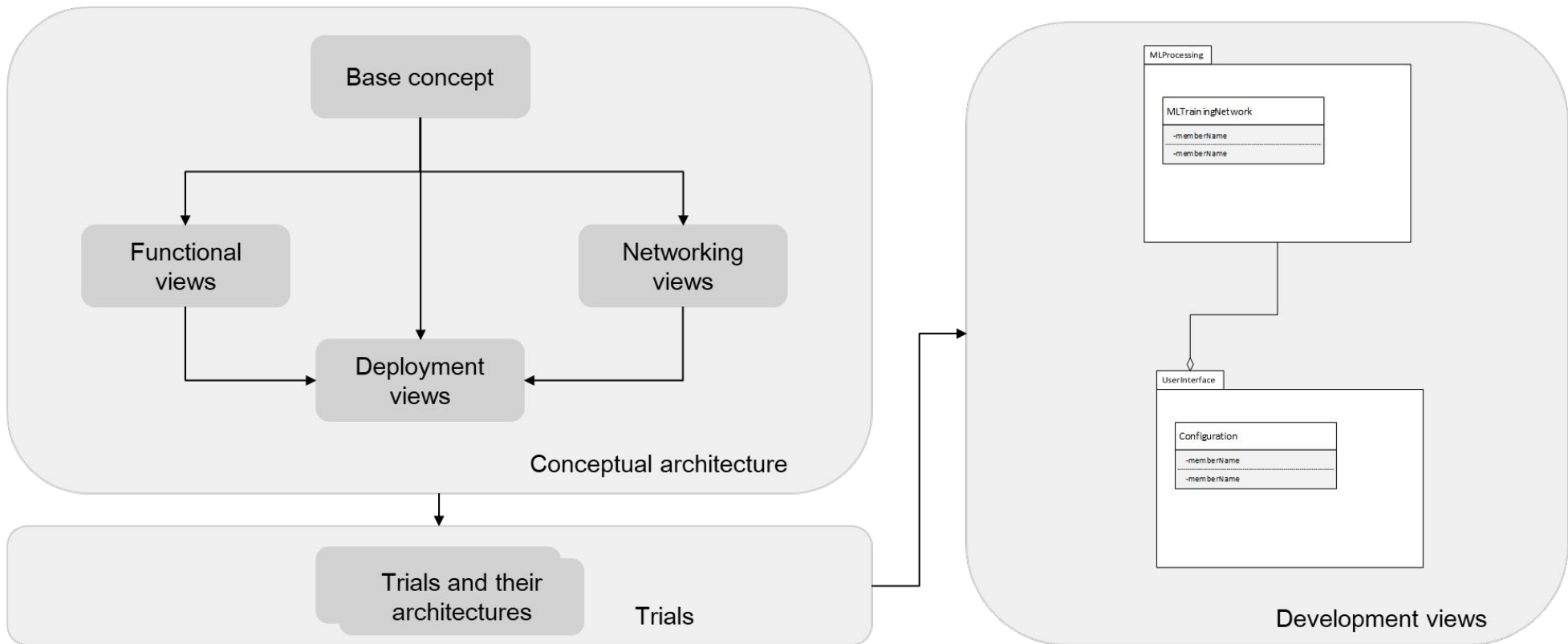


Base Model. IA(Industrial
Automation)-Edge Entity

THE ZERO-SWARM CONCEPT

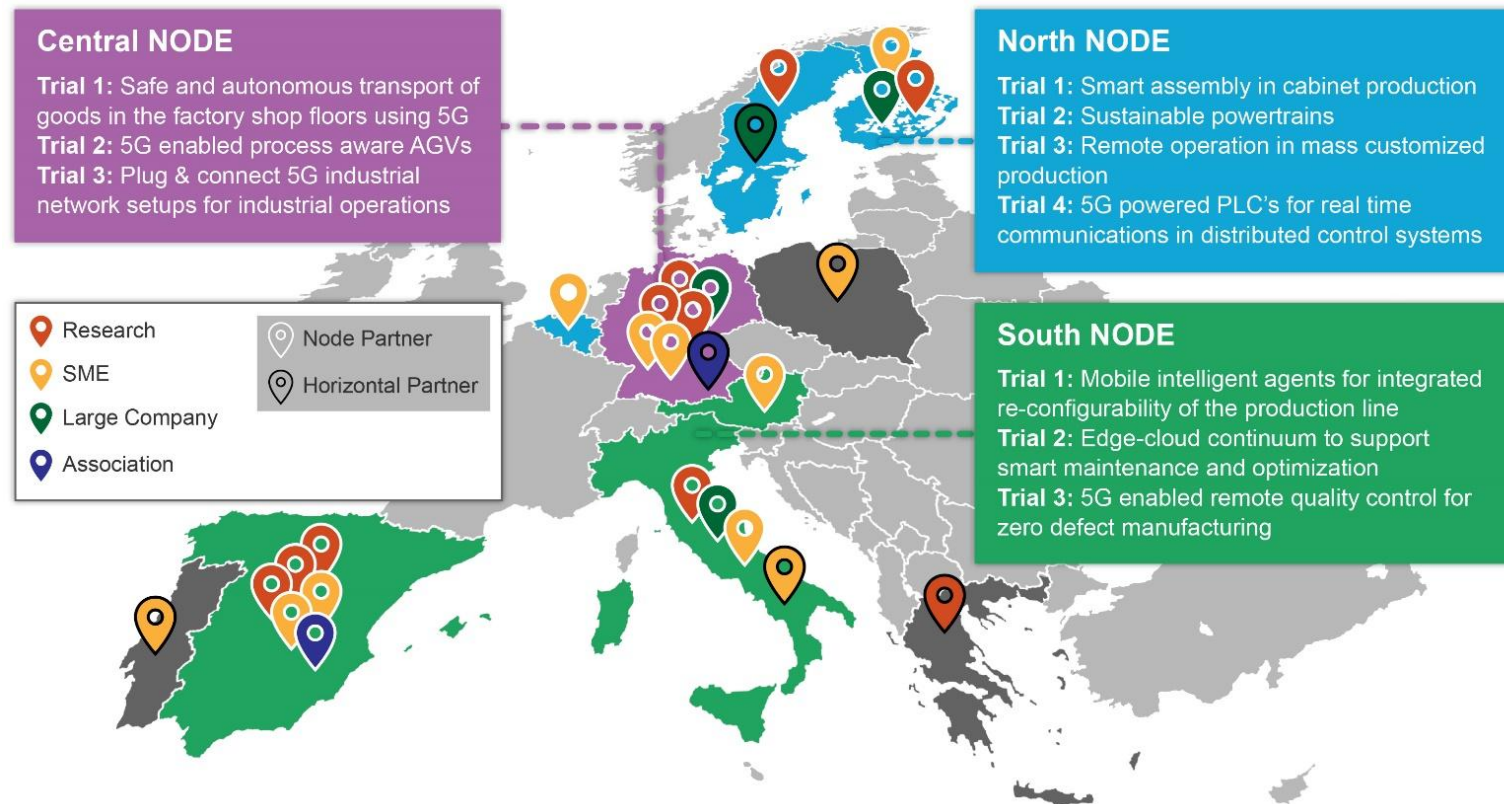


THE ZERO-SWARM APPROACH

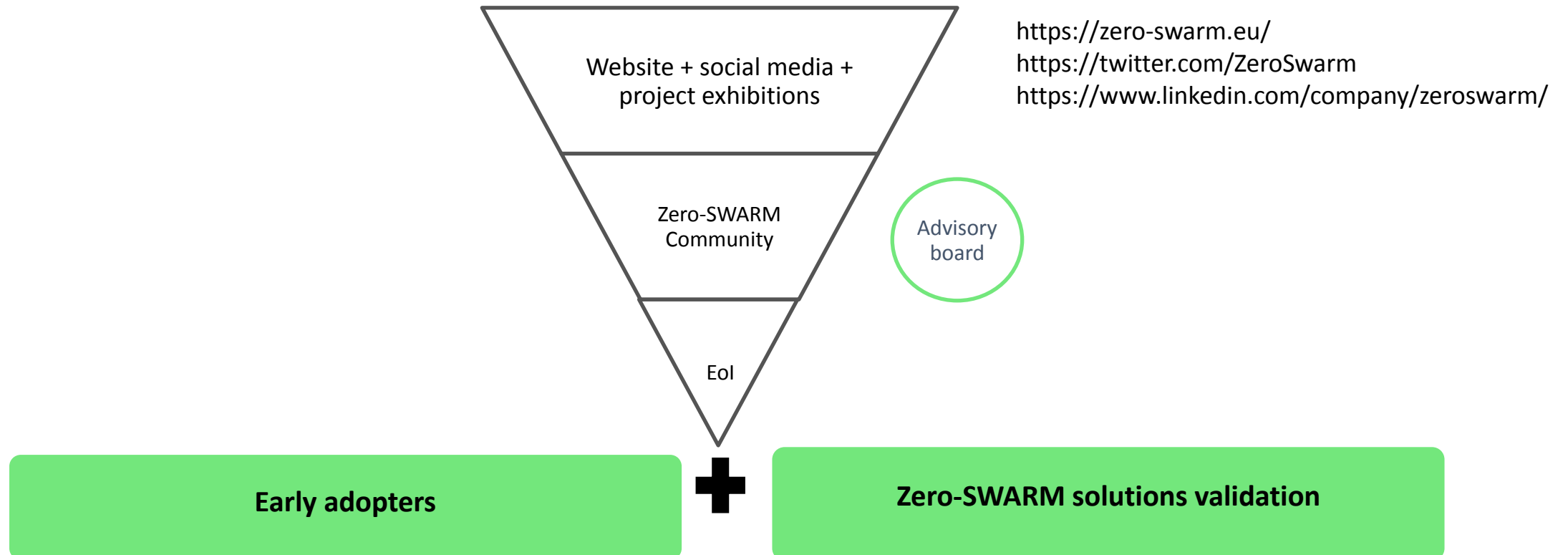


INDUSTRIAL TRIALS

Zero-SWARM includes the following **10 real life industry scenarios** (trials) over **3 geographical nodes in Europe**:



Zero-SWARM communication & dissemination funnel



Smart Manufacturing / THE-TESTING-PLACE / ZERO-SWARM



ZERO-SWARM

👉 About? Aims to accelerate the adoption of advanced 5G technologies in European manufacturing SME, through an innovative approach that combines open swarm framework and non-public 5G networks. 🤖 Who for: Manufacturing SME 🚀 What do you get? Access to 5G-enabled technology to optimize your manufacturing processes

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How... are revolutionizing the Smart Industry

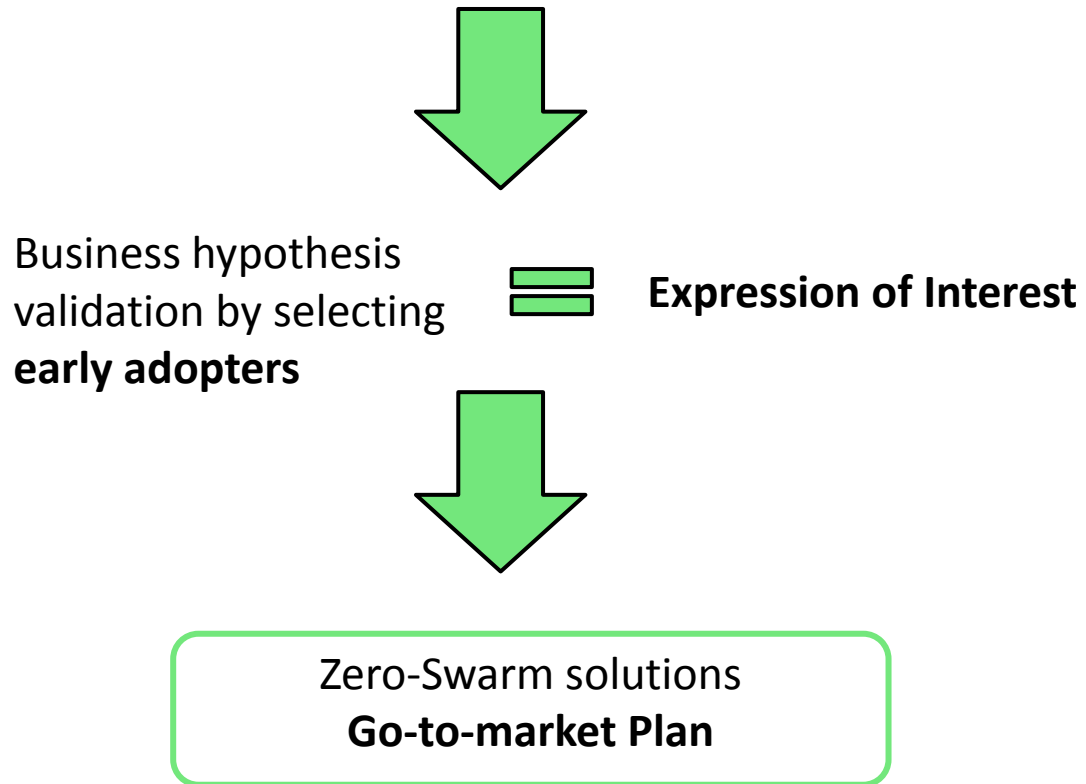
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article

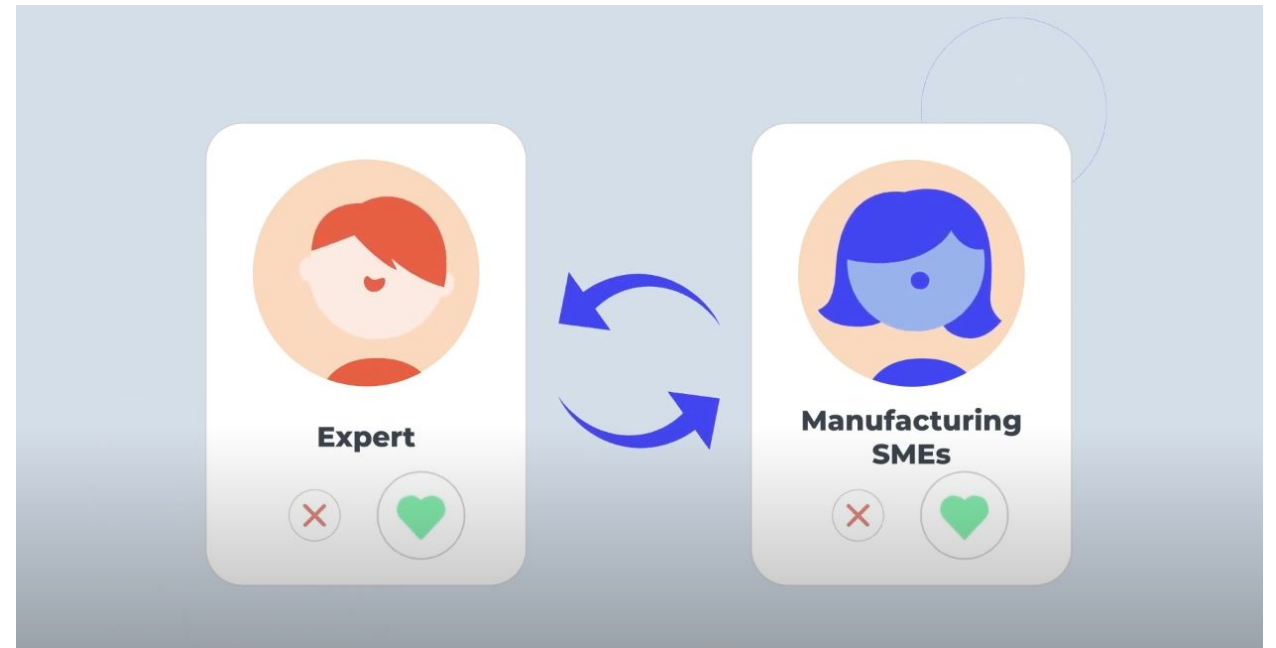
Investigating the Use of 5G in the Audi Factory
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announcement

Exploring Circular and Human-Centric Approaches in European Manufacturing
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Uncover the Path to a Sustainable and People-Focused Future for Manufacturing SMEs
announcement

30 Zero-Swarm Solutions will help the uptake of advanced **5G technologies by European manufacturing SMEs.**



What is an Expression of Interest?



Do you want to know more about this methodology?

The Expression of Interest will help the Zero-Swarm partners to:

- ✓ Verify the **assumptions** of the technologies **business cases**.
- ✓ Discover the Zero-Swarm technologies main **audience/buyer persona**.
- ✓ Understand the **market reality** and **real problems**.
- ✓ Take **market-driven decisions**.



Join us here!



Thank you!

Any Questions?