



Roadmap inom Processindustriell automation.

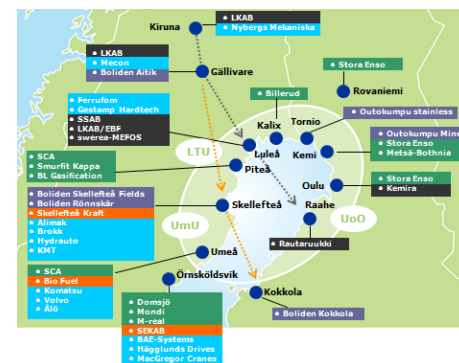
Nationella och europeiska aktiviteter



Regional – National – European /International

• Regional

- RDI-projects (in different stages - Pre-studies, pre-projects, projects and need finding activities)
- Project portfolios (SCOPE, GRAM, “SK”)
- Technology clusters (Optisk mät, Interaktion, simulering)



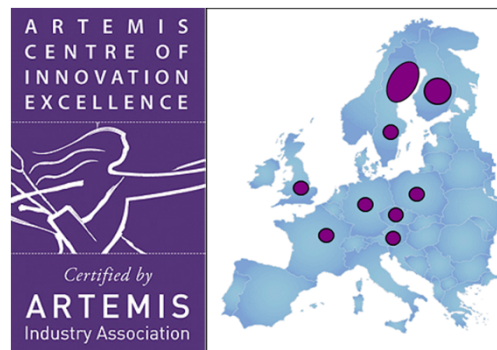
• National (Swe - Finland)

- National strategic agenda
”Automation for Process Industries”
- Project portfolios. Competence provision.
- Collaboration. Automation region, PPI, PIC, FindIT etc.



• European / International

- ProcessIT.EU
- Projects. Arrowhead.
- Roadmap



Regional

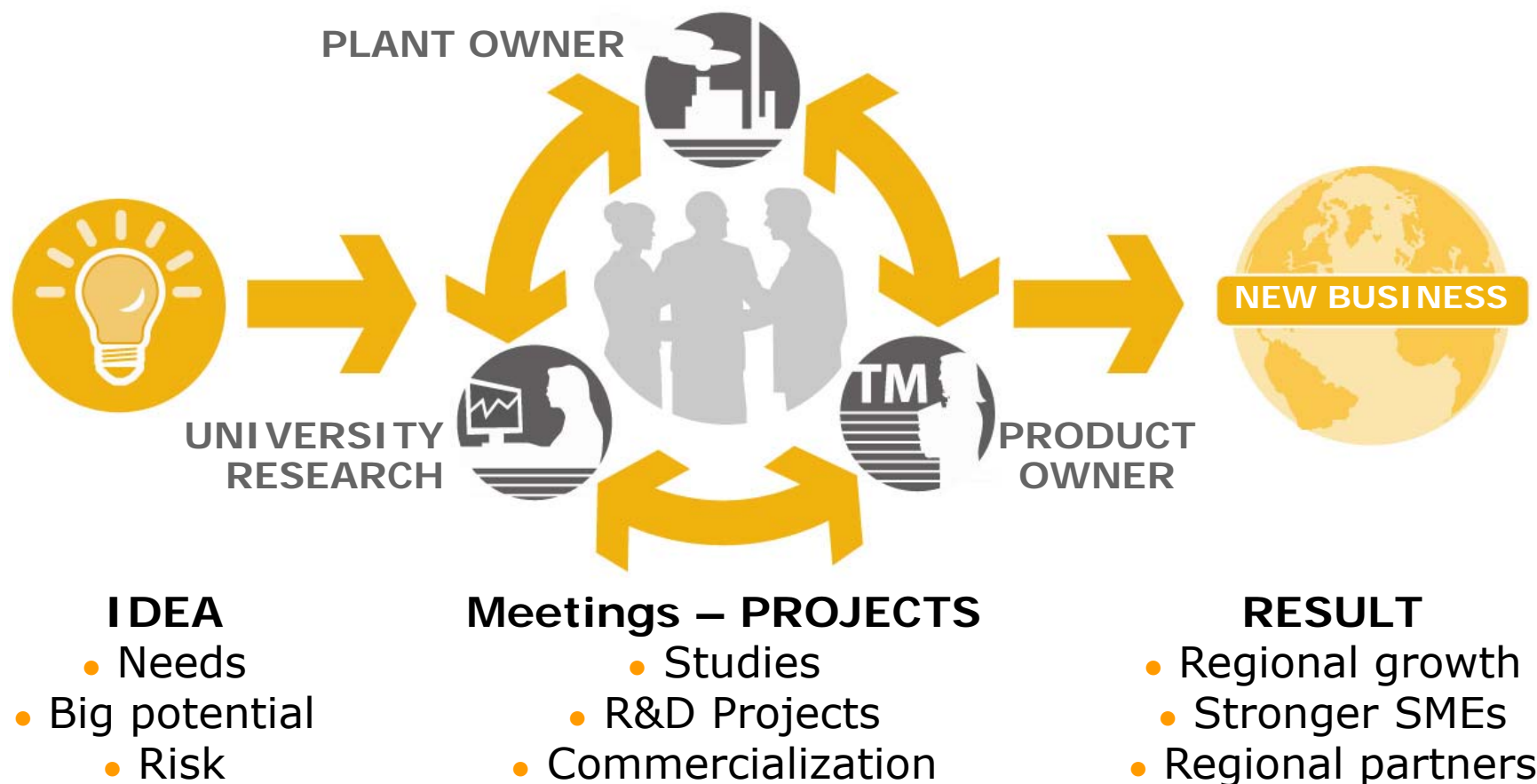
ProcessIT "tools / methods"

- Project portfolios for different industry segments
SCOPE (P&P),
GRAM (Mining and minerals)
- Technology clusters
Adapticum (industrial optics),
Interaction (with Interactive Institute)
Two additional planned
- Establishment of R&D programs
With Luleå University of technology
and Umeå University
- Pre-studies, pre-projects and
need finding activities
- R&D projects

Regional

From Idea to International Product

the strategic idea



Nationellt

Steg 1:

Framtagning av en nationell agenda för Processindustriell automation
Initierad Feb. 2012. Presenterad Feb 2013.

Steg 2:

Etablera agendan.

Startad Aug/Sept 2013.

Avslutas Sept 2014. Automation Summit 5-6 Sept.

Projektagare: Helena Jerregård Automation Region / SICS Västerås

Projektledare: Anders OE Johansson ProcessIT Innovations

I projektledningen: Bernt Nilson Processindustriellt Centrum Lund

Steg 3:

Branschprogram och samverkansplattform igång

Start hösten 2014

Med detta som grund. Projektsamverkan med Finland/Norden samt
Nationell påverkan på EU program

Investing in your future



Processindustriell automation

Förslaget / arbetet – Steg 2

www.processindustriellautomation.se



Effektivare och bredare företagssamarbeten:

1. Etablerar ett **Industriellt nationellt ledarskap** och en nationell **samverkansplattform** för området.

Starkare integrering mot universitets- och högskolevärlden:

2. **Koordinerar projekt- och nätverksaktiviteter** tillsammans med universitets- och högskolenära FIU-miljöer som identifieras som särskilt starka och relevanta för området.
3. Koordinerar och genomför **samordnade kompetensutvecklingssatsningar** tillsammans med både näringslivs- och forskningspartners.

Position i de nationella och internationella innovationssystemen:

4. Gör **substantiella satsningar** på Nationella **FIU-program** inom detta område.

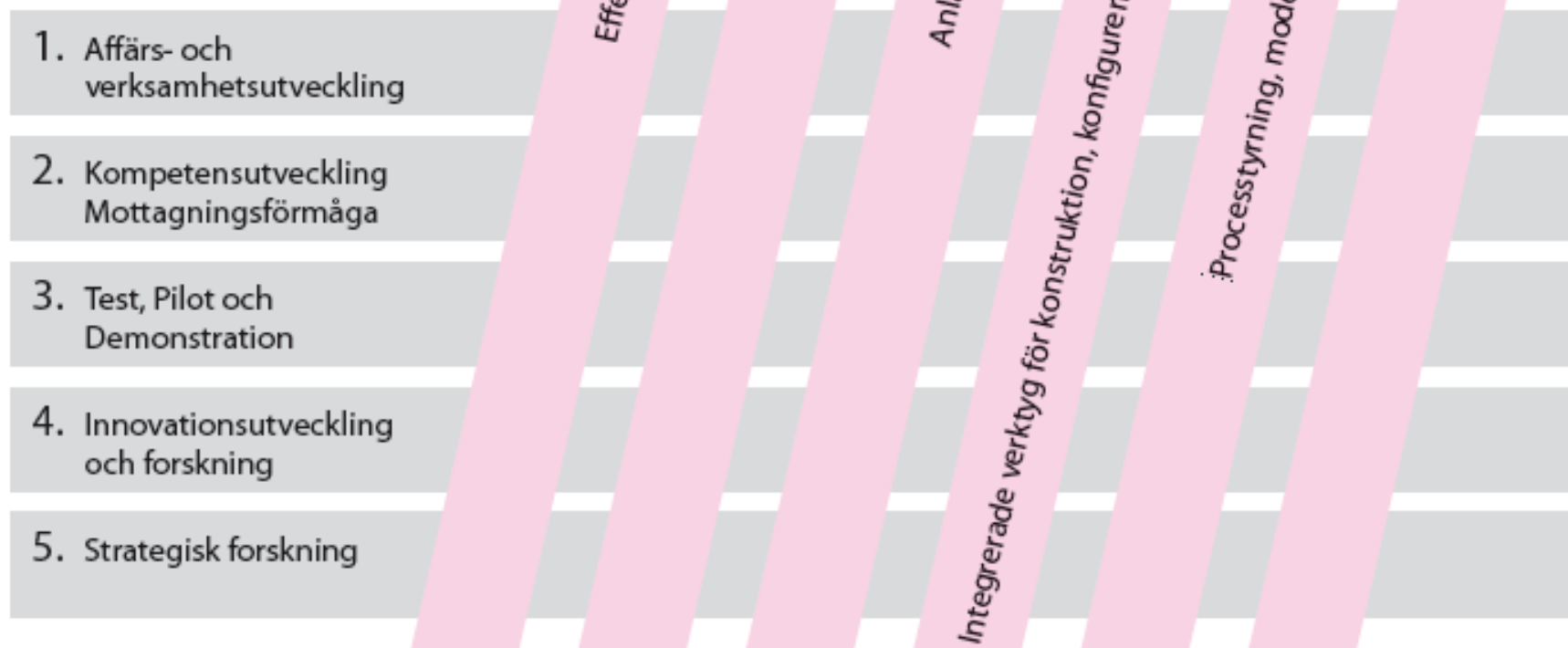
Investing in your future

Processindustriell automation



SATSNINGSOMRÅDEN

AKTIVITETSTYPER





- Roadmap inom Processindustriell automation.



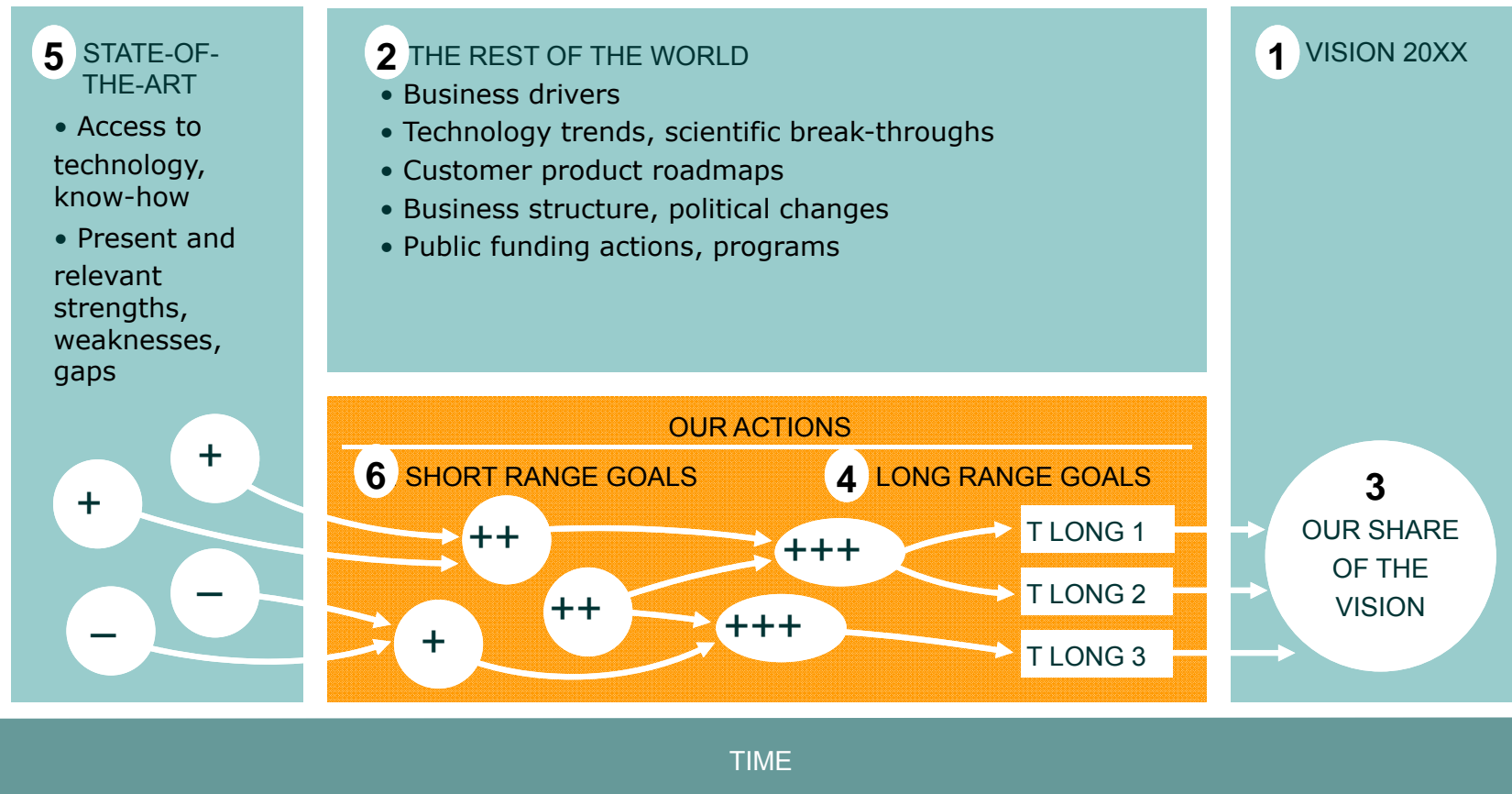
PURPOSE

Our ambition is to highlight industrial process automation as a key enabler for the future European process industry.

In the area

- Accelerate growth and technology development in Europe
- Innovations in ICT and automation technology.
- Incubation and implementation of strong R&D projects.
- European automation world class research thru access to highly challenging industry contexts.

Methodology



Sources of information

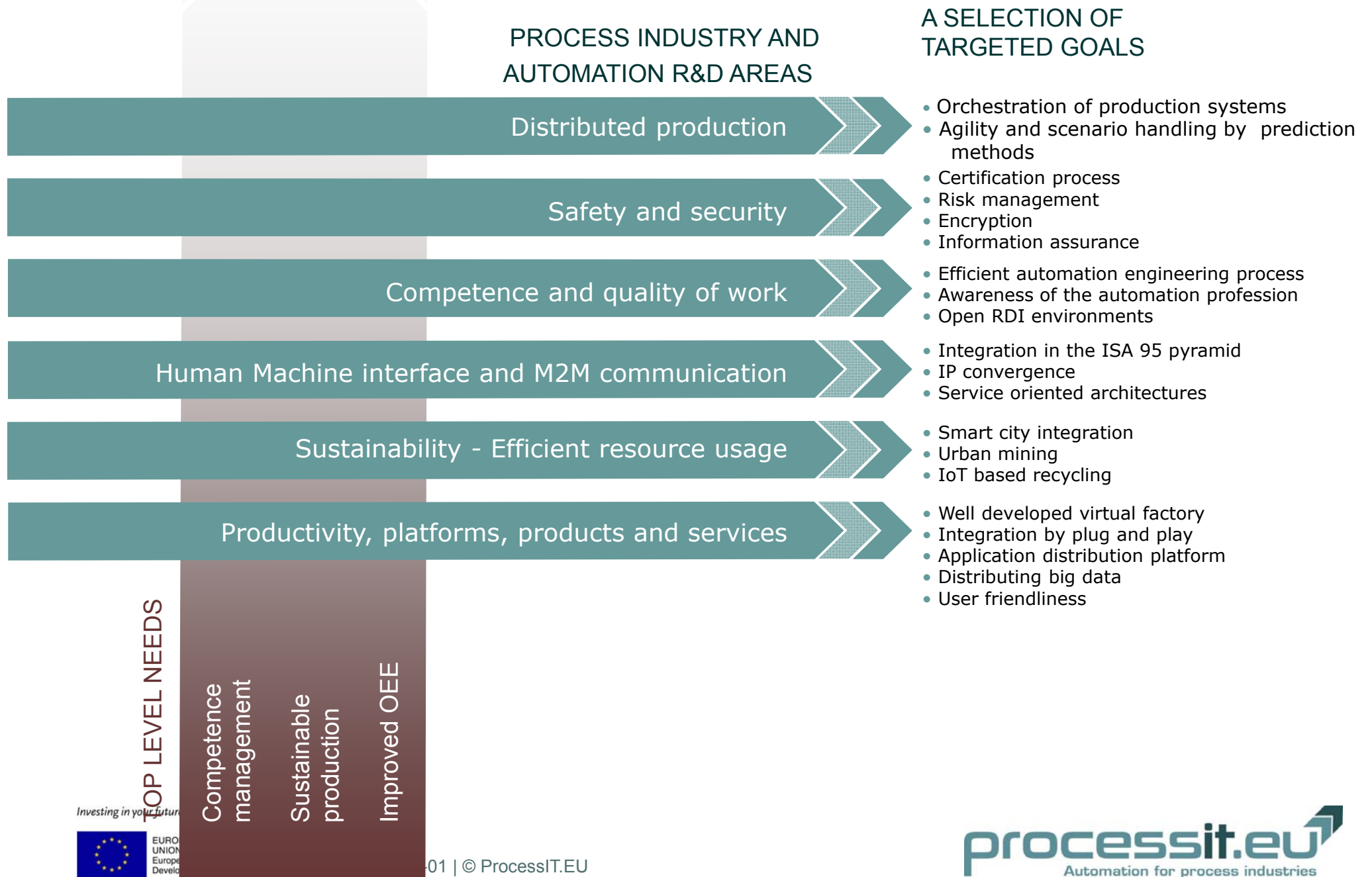
In addition to national agendas for SWE and FIN, RDI-project findings and industrial input we have mainly reviewed ETPs to form a starting point for trends and business environments.

Individual ETPs

Energy	ICT	Bio-based economy	Production and processes	Transport
Biofuels	ARTEMIS	FABRE TP	ECTP	ACARE
SmartGrids	ENIAC	Food	ESTEP	ERRAC
TPWind	ISI	GAH	ETP SMR	ERTRAC
Photovoltaics	Net!Works	NanoMedicine	Manufuture	Waterborne
ZEP	NEM	Plants	FTC	ESTP
SNETP	NESSI	Forestry	WSSTP	
RHC	EUROP		SusChem	
	EPoSS		EuMaT	
	Photonics21		IndustrialSafety	

Invest Last updated on: 2011-06-01

From top level needs to concrete goals



Ideal concepts describes the path towards long range goals considering ongoing trends and thereby making a contribution to the future business environment.

DESCRIBED WITH:

- Vision
- Description and examples
 - Trends supported by the ideal concept
 - Visions and long range goals supported by the ideal concept
- State-of-the-art
- Proposed actions
- Business potential

AND ALSO:

- Reachable within 2020
- An inspiration to new RD&I projects

Ideal concepts.

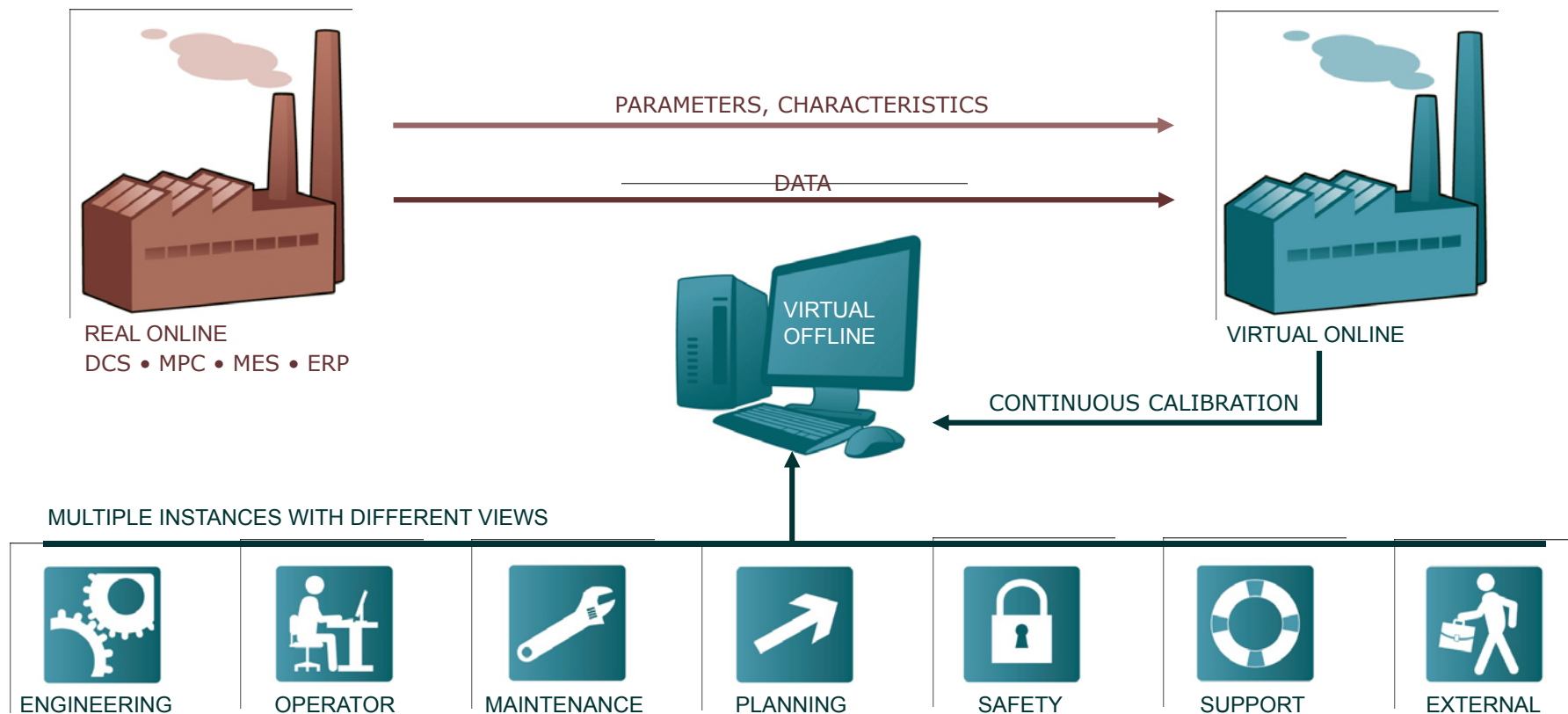
Identified “white areas” that require further development

ROADMAP IDEAL CONCEPTS ARE:

1. Instant access to virtual dynamic factory
2. Increased information transparency between field devices and ERP
3. Real-time Sensing & Networking in Challenging Environments
4. Process industry as an agile part of the energy system
5. Management of Critical Knowledge to support Maintenance
Decision Making
6. Automation service and function engineering
7. Open simulator platform
8. Automation system for flexible distributed production
9. Secure production

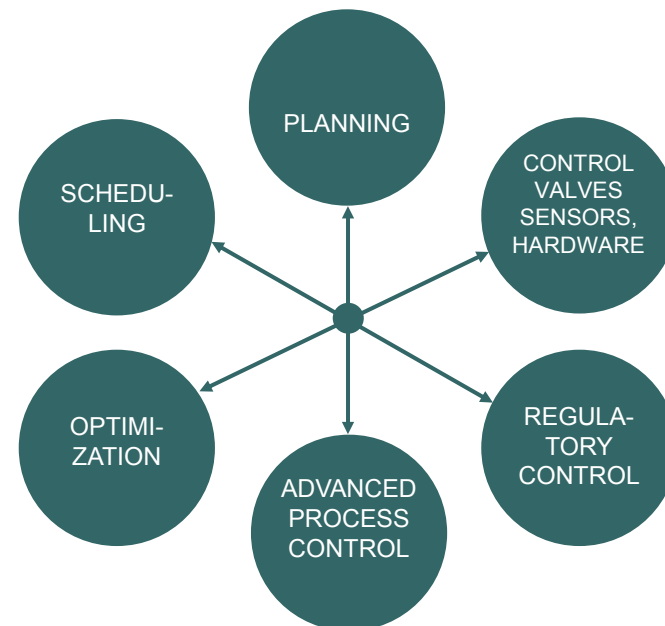
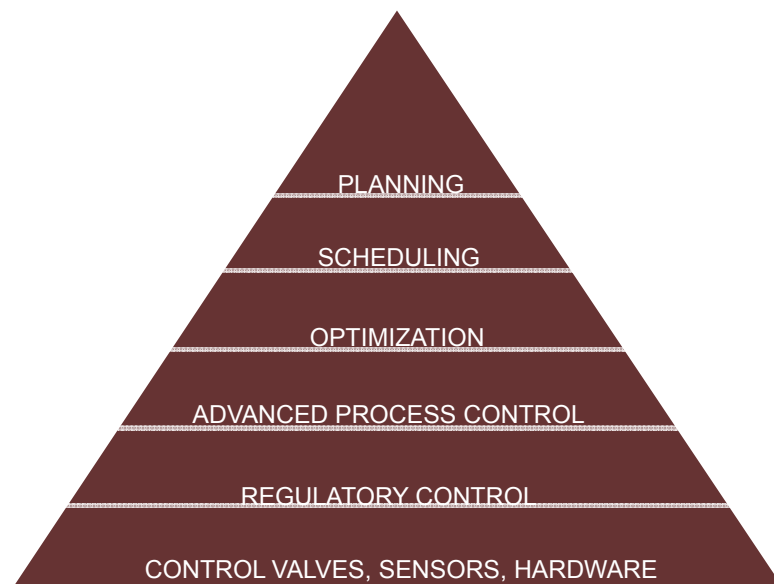
1. Instant access to virtual dynamic factory

VISION: To have instant, organization wide, and inter-organization wide access to the virtual real-time plant in order to provide the right service to the right persons in the right time.



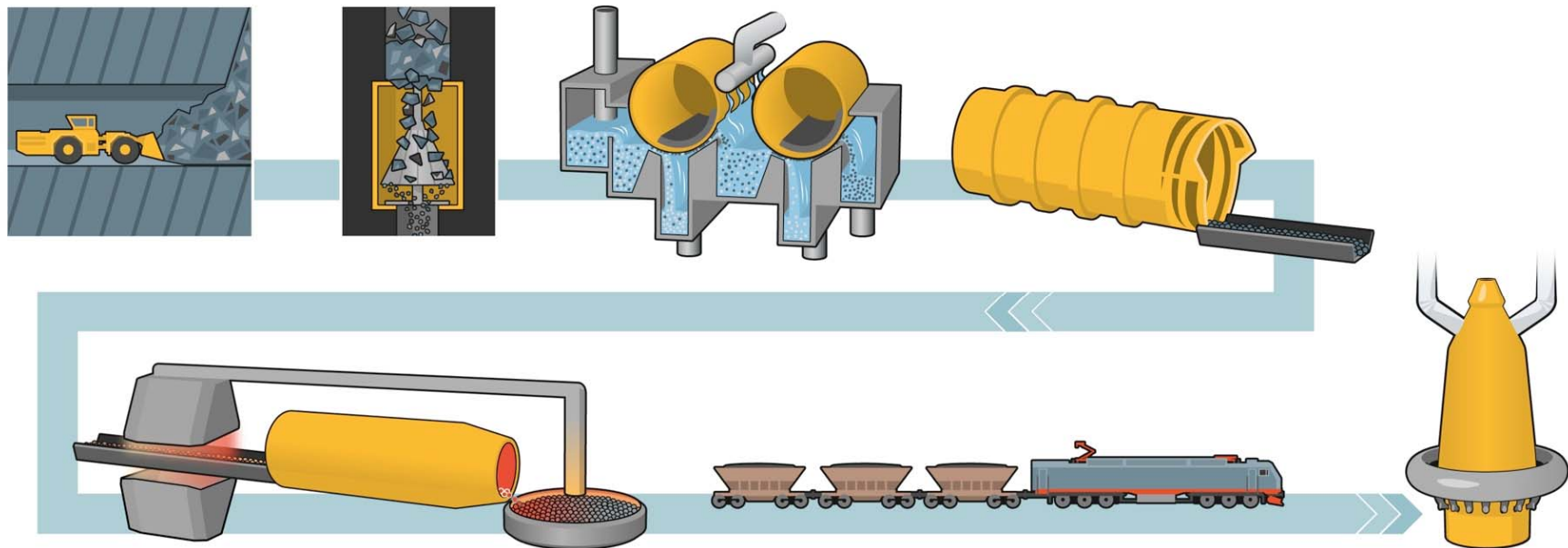
2. Increased information transparency between field devices and enterprise wide systems

VISION: To enable full interoperability and configurability with zero configuration characteristics between computational devices from different organizational levels using open network and communication technologies.



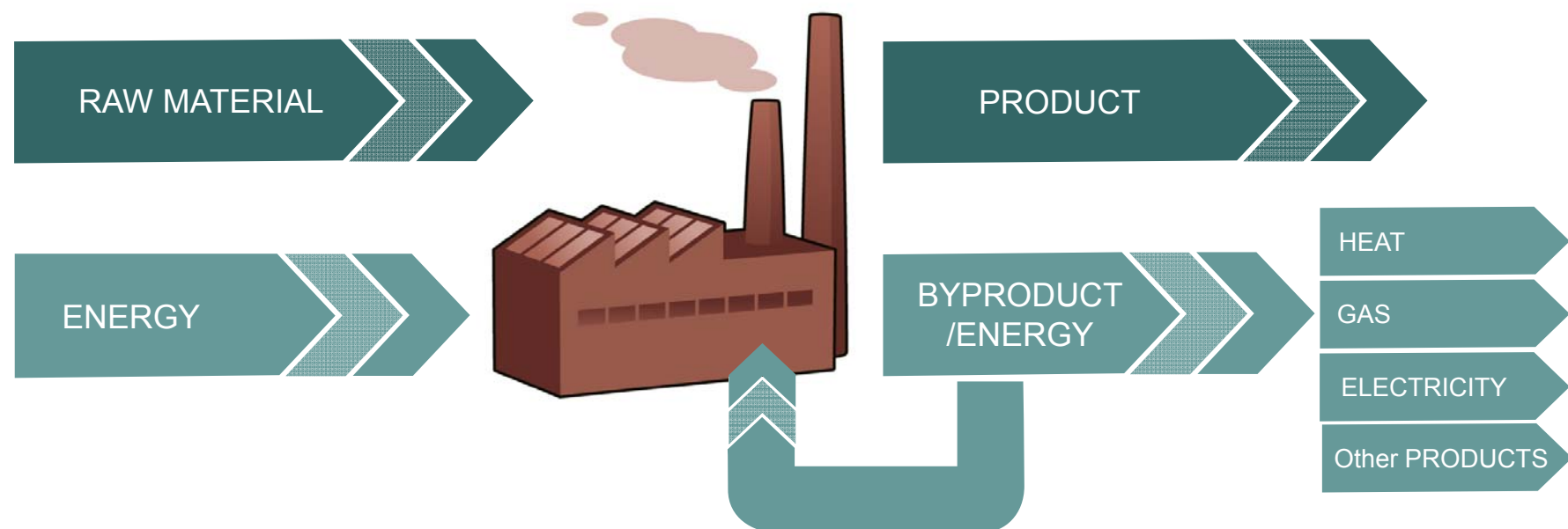
3. Real-time Sensing & Networking in Challenging Environments

VISION: In real-time measure any parameter of interest, anywhere in an operating industrial process to increase process knowledge and improve automation performance.



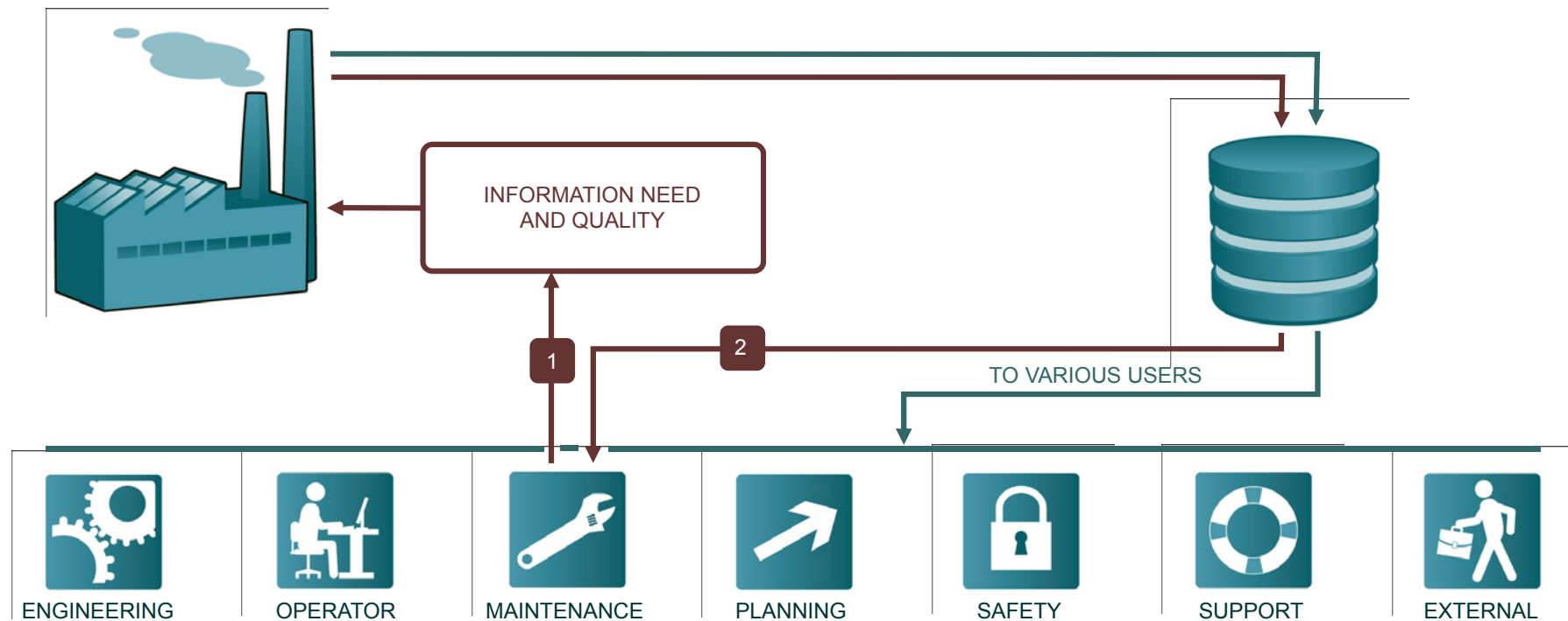
4. Process industry as an agile part of the energy system

VISION: To make process industries a natural part of the energy grids to maximize utilization of energy resources and reduce environmental impact.

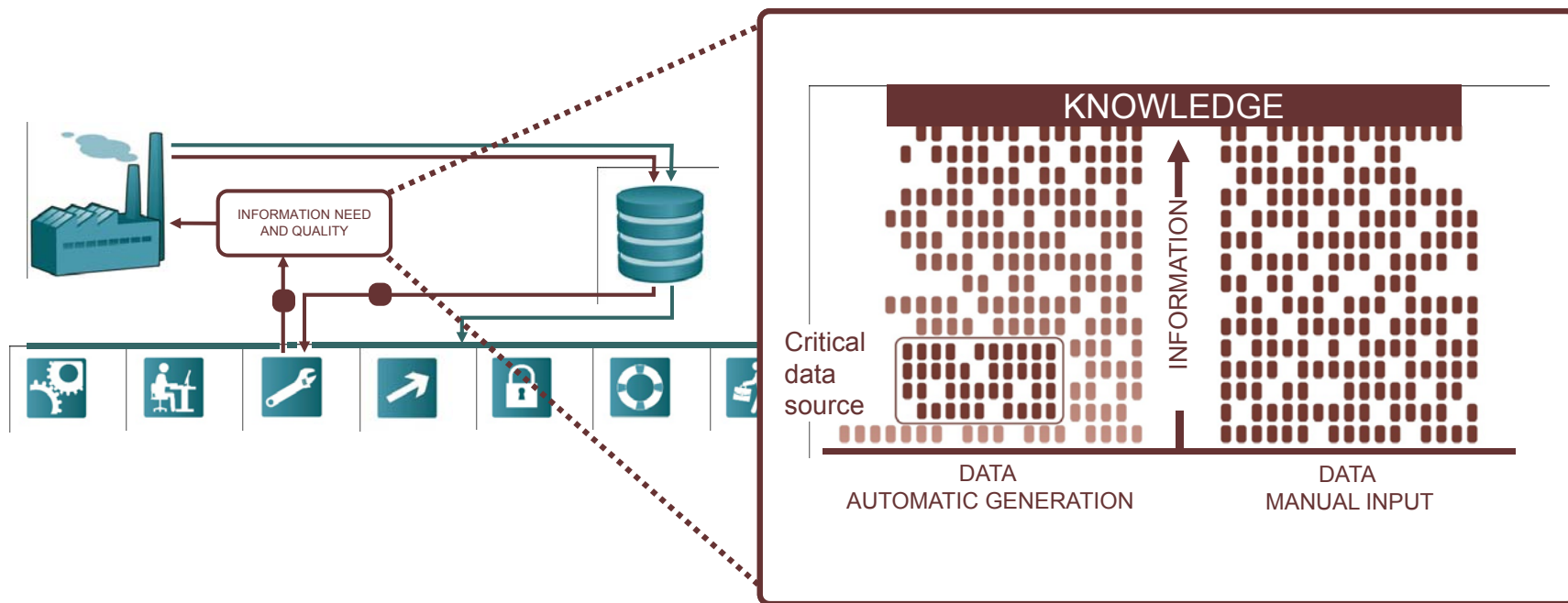


5. Management of Critical Knowledge to support Maintenance Decision Making

VISION: Right and correct information in right form to right persons in right time in right place to support maintenance related decision making on different organizational levels & reliable KPIs for sub-processes.



5. Management of Critical Knowledge to support Maintenance Decision Making



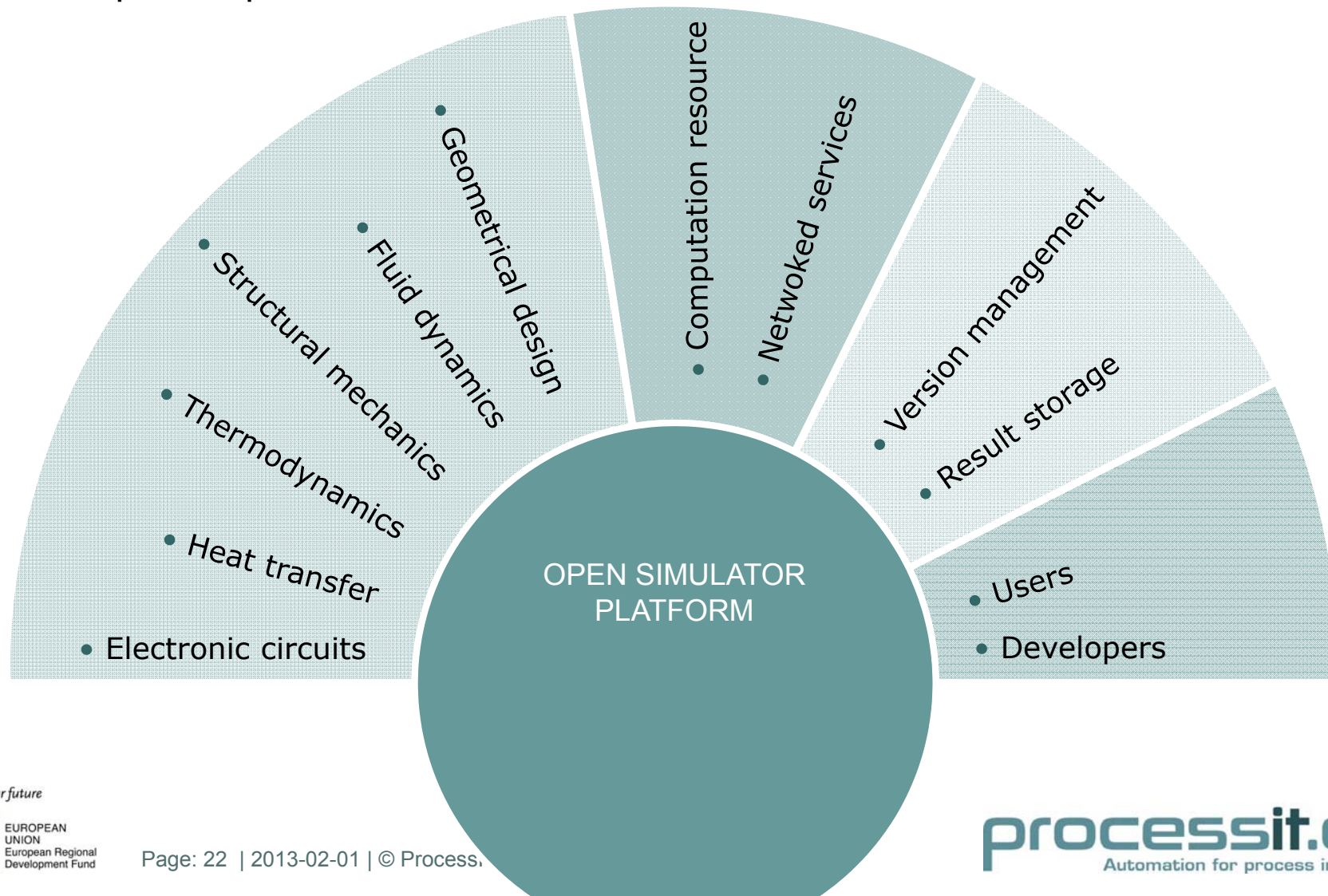
6. Automation service and function engineering

VISION: Industrial process automation service and function engineering that is capable of meeting the challenges from globalization and technology trends.



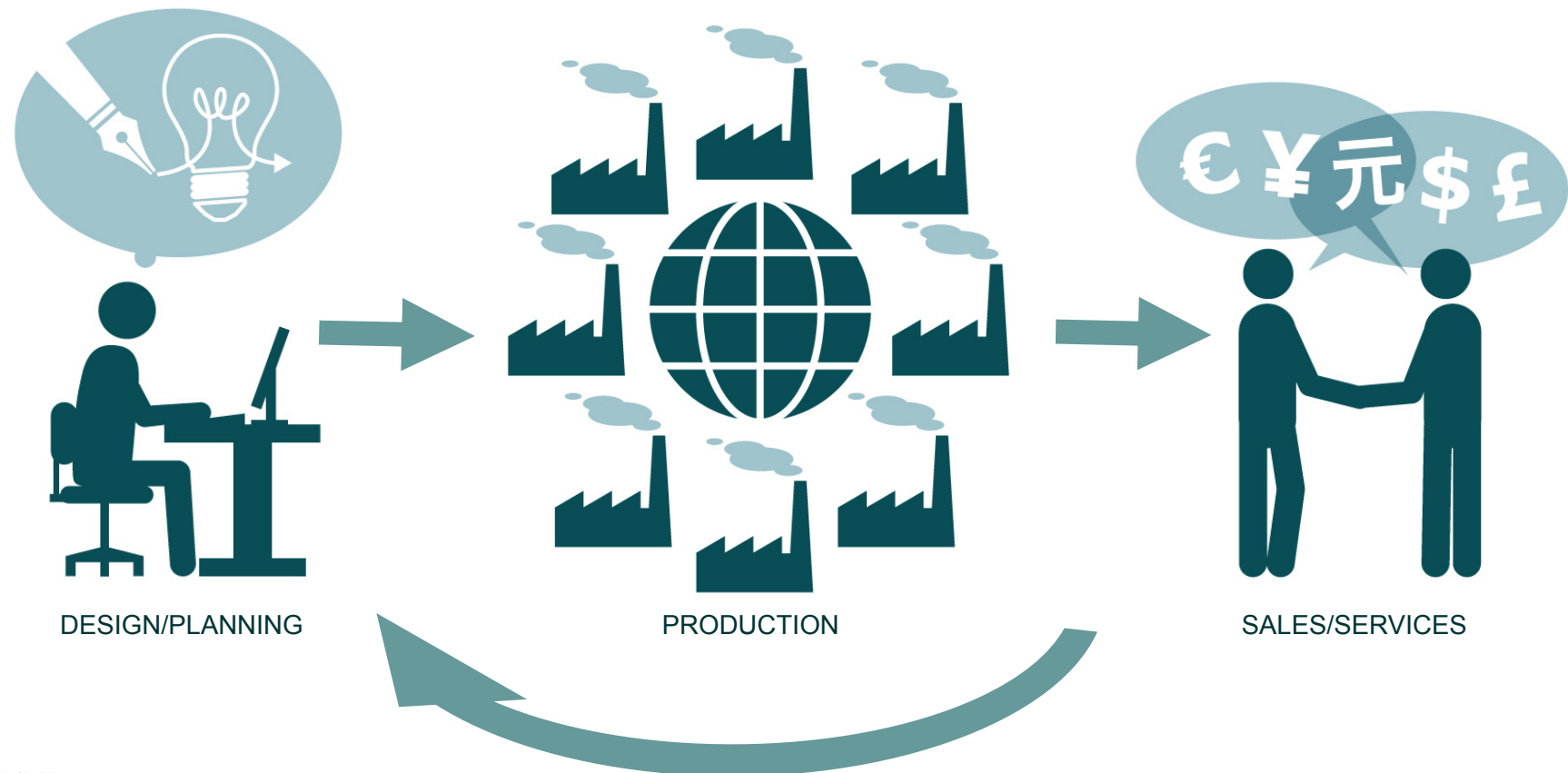
7. Open simulator platform

VISION: To optimize the efficiency of simulation based development by full interoperability between simulation tools over the complete development process.



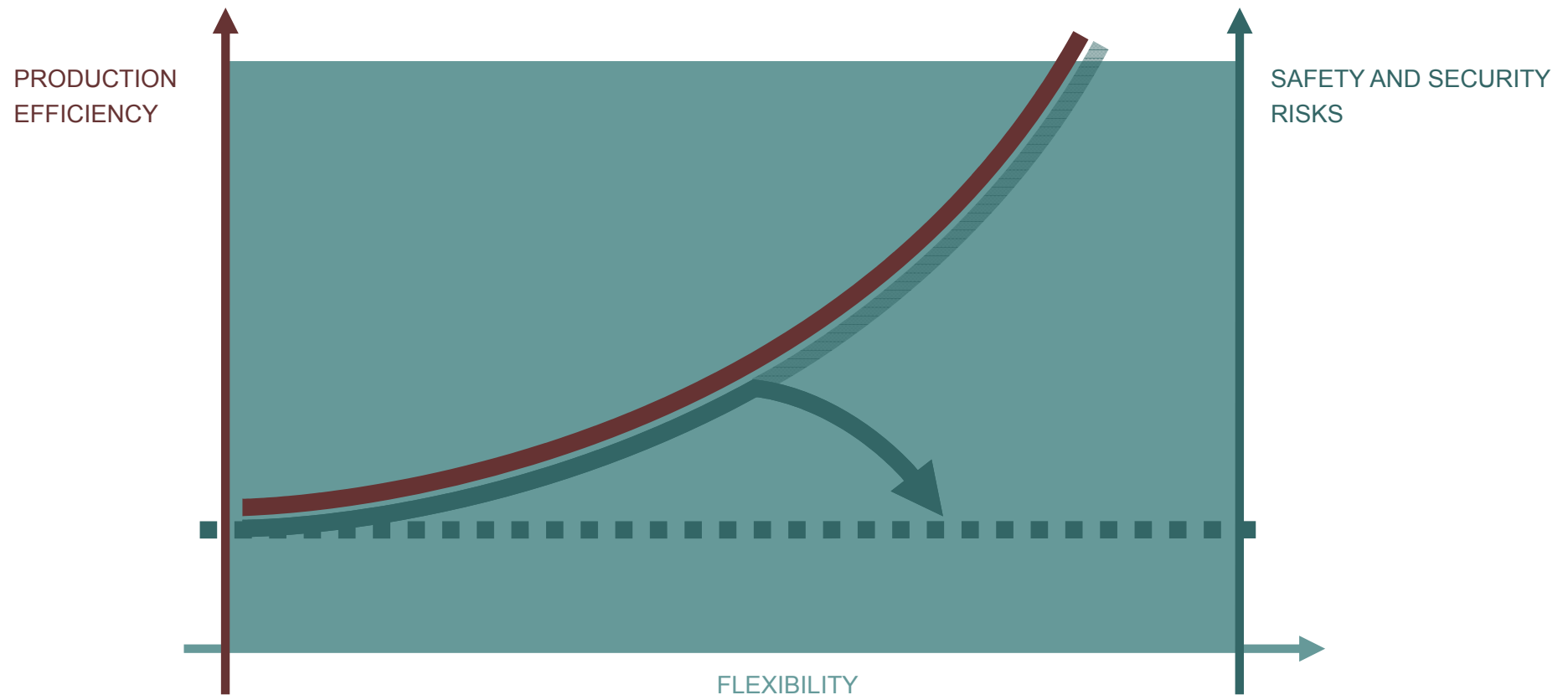
8. Automation system for flexible distributed production

VISION: To have production capacity anywhere for anything. The production capacity scales up (and down) timely. Production start-up costs are low.



9. Secure production

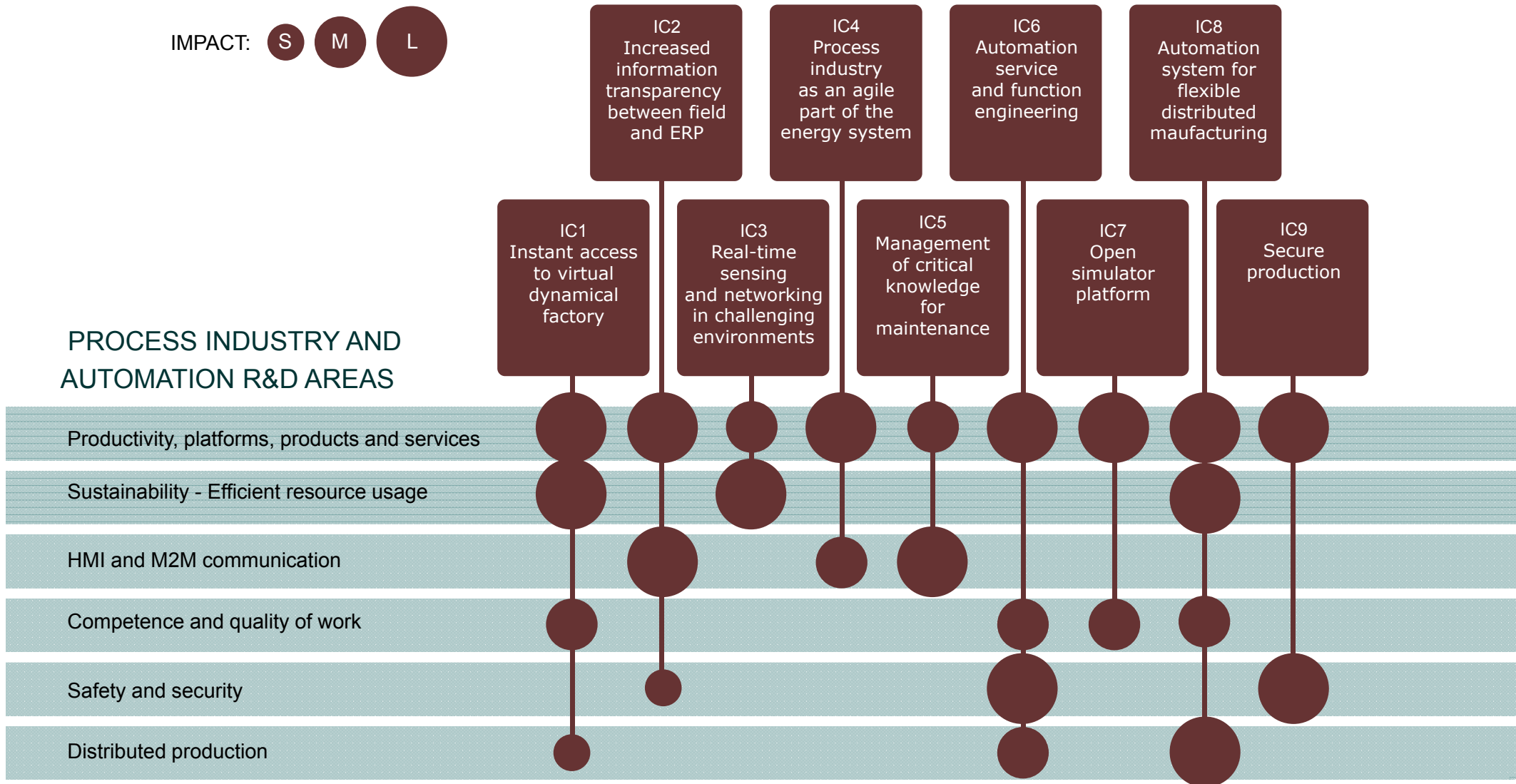
VISION: To ensure production availability and plant safety through system wide information assurance and data validation.



Contribution to trends

IMPACT: S M L

PROCESS INDUSTRY AND AUTOMATION R&D AREAS



Short time goal → Target and goals in new projects

1. *Instant access to virtual dynamic factory*

Automatic model life cycle management, computational resources, business service development. Data to information. User interface. Training.

2. *Increased info. transparency between field devices and ERP*

IP everywhere, middleware nowhere, seamless integration, industry requirements.

3. *Real-time Sensing & Networking in Challenging Environments*

Robustness, calibration, availability, energy harvesting, IoT, disposable, in situ sensors

4. *Process industry as an agile part of the energy system*

Agile Integration, production flexibility. Automation for short and long term variations. Technologies for “look up, loosely coupling and late binding”. Arrowhead complement

5. *Management of Critical Knowledge to support Maint. Decision Making*

Quality assurance, context awareness, personalization, timing of information, business models

6. *Automation service and function engineering*

Functionality for systems of systems, configuration and requirement management, model based development,

7. *Automation system for flexible distributed production*

Faster product changes, faster ramp-up/down. Scheduling. Material tracking.

8. *Open simulator platform*

Interoperability, numeric's, reusability, development tools.

9. *Secure production*

Risk management. Cryptography and intrusion detection & prevention. Infrastructure



Tack, från oss

Roadmap Workgroup

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www.processitinnovations.se

www.processit.eu

www.processindustriellautomation.se

