

First

EPOSS: European Technological Platform on
Smart Systems Integration

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on behalf of EPOSS Office

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Future Internet Assembly (FIA)



European Commission
Information Society and Media



SEVENTH FRAMEWORK
PROGRAMME

Summary

1. About EPoSS
2. EPoSS Research Areas
3. EPoSS Composition
4. EPoSS in FI and ICT Components
5. EPoSS Potential Cooperation with LAPTTPs



About the EPoSS: Domain/Scope

From the Past to the Future: from Microsystems to Smart Systems

from Microsystems...

are miniaturised devices combining

- sensing
- signal processing
- actuation

through monolithic or hybrid integration.

**Smart Systems are not
just Electronics !**

to Smart Systems...

- are able to describe a situation and diagnose it,
- are predictive,
- mutually address and identify each other
- are able to decide or help to decide,
- enable the product to interact with the environment.

They are as small as possible, networked & energy autonomous



Smart implant



Smart RFID



Smart tire

The Future is with Smart Systems

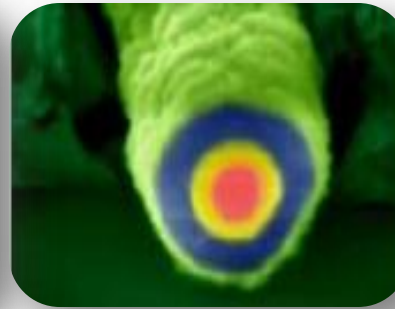
Implantable electronics



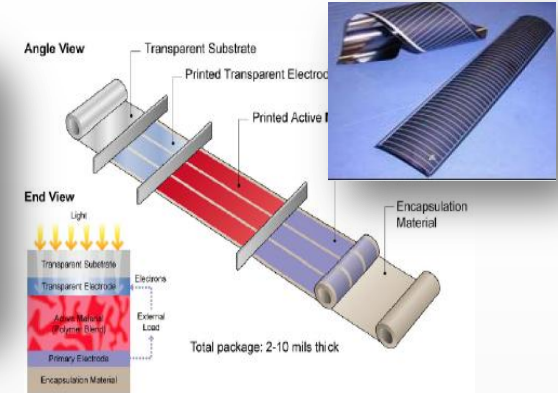
Electronics on Plastic



Solar nanowire



Organic transparent PV



Flexible Green Consumer Electronics

Electronics for Environment



Improved Medical Diagnostic and Monitoring



Portable Fitness





Bridging the gap from the component to the product -

Forming an interface for bridging order of magnitudes

Smart Systems will enable technology breakthroughs that provide solutions for health and aging, and sustainable mobility, safety & security, communication and ambient intelligence

Integrated design
and manufacturing

Integration at systems level: realisation of
miniaturised systems

Integration into the macro-system

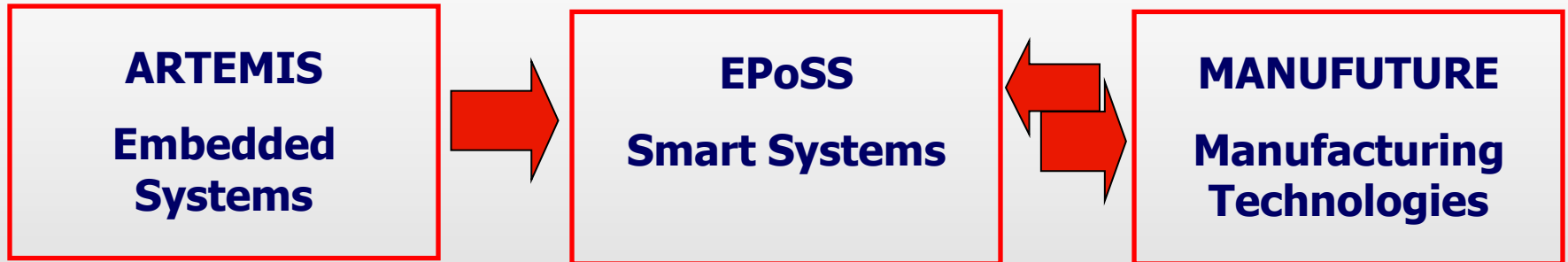
Integration into the application environment

EPoSS in the Supply Chain with other ETPs

Component Level



Systems Level



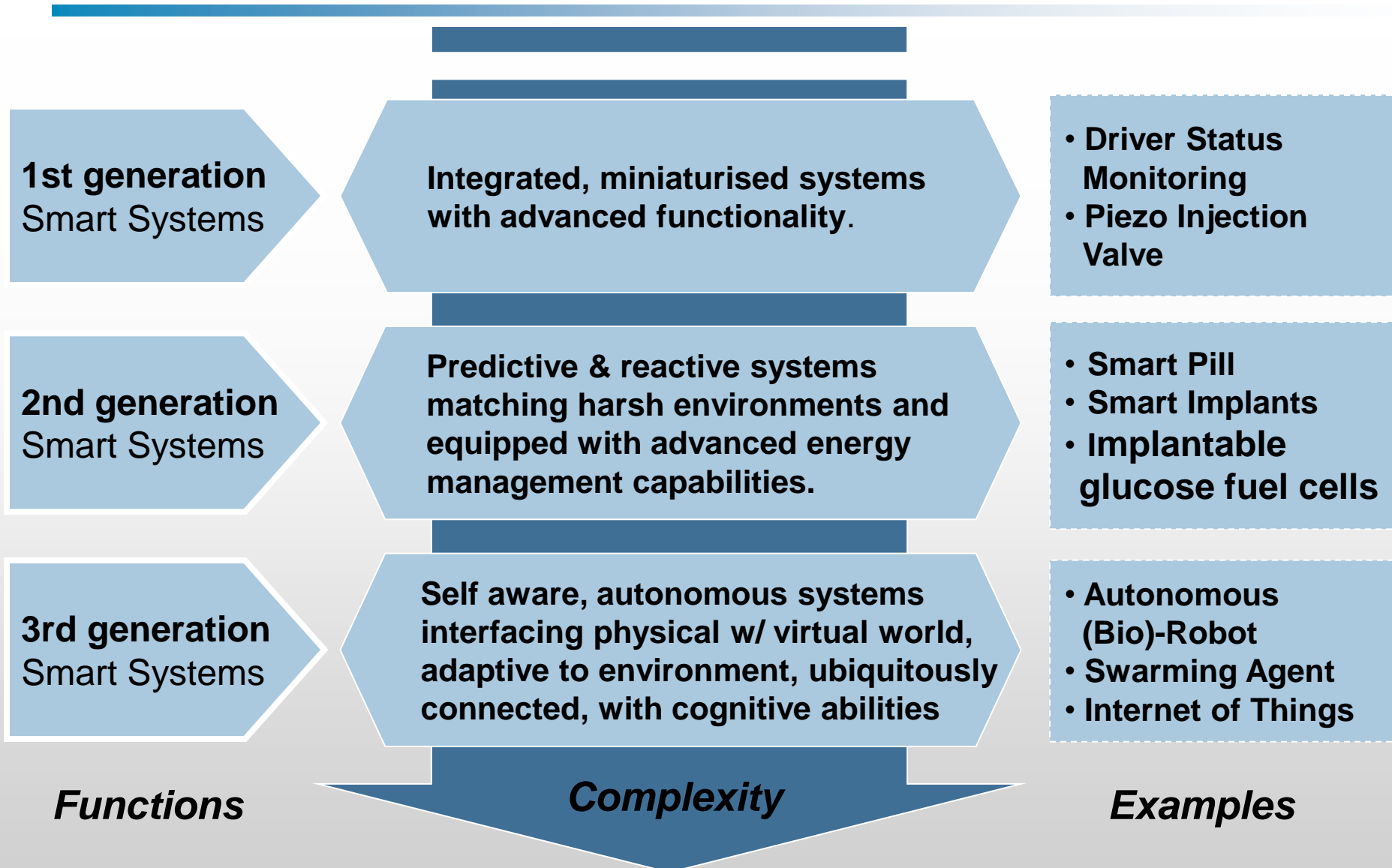
Application Level





EPoSS Research Areas and R&D Priorities

The Evolution of Smart Systems

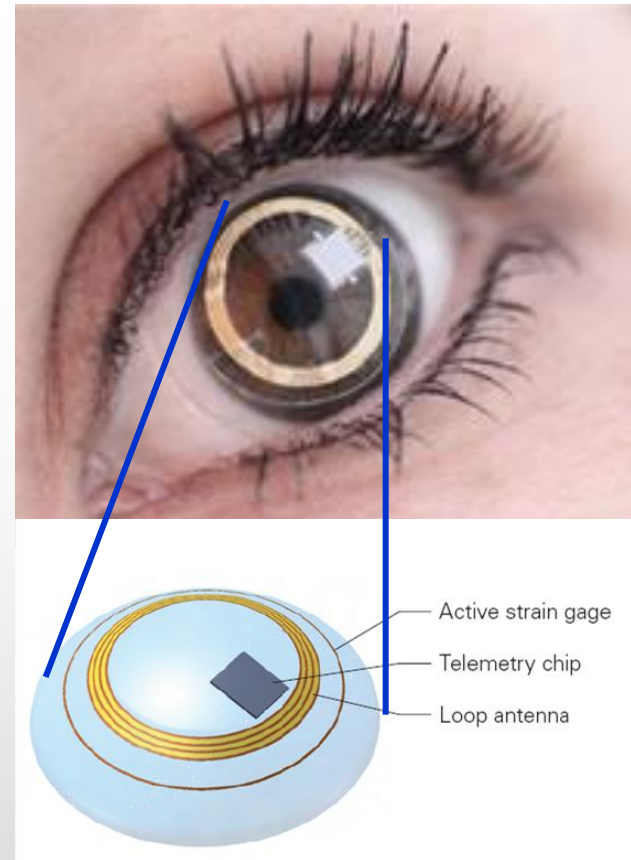


Example

- Entering the world of vision
- Smart monitor for intraocular pressure
- Smart lens, containing passive and active strain gauges
- Output signal sent wirelessly
- Adhesive Antenna



- Non-invasive and convenient
- Monitoring IOP continuously up to 24 hours
- Ambulatory or in-hospital use
- Recording during sleep and normal activities



Source: Sensimed, STM



EPoSS Composition

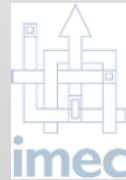
Membership composition

(% industry, SME, academia, research centres, etc)

Founding Members



EPOSS
European Technology Platform
on Smart Systems Integration





Members as of 28 September 2011

- 82 organisations represented in EPoSS
- 470 individual members
- 19 European countries represented in EPoSS

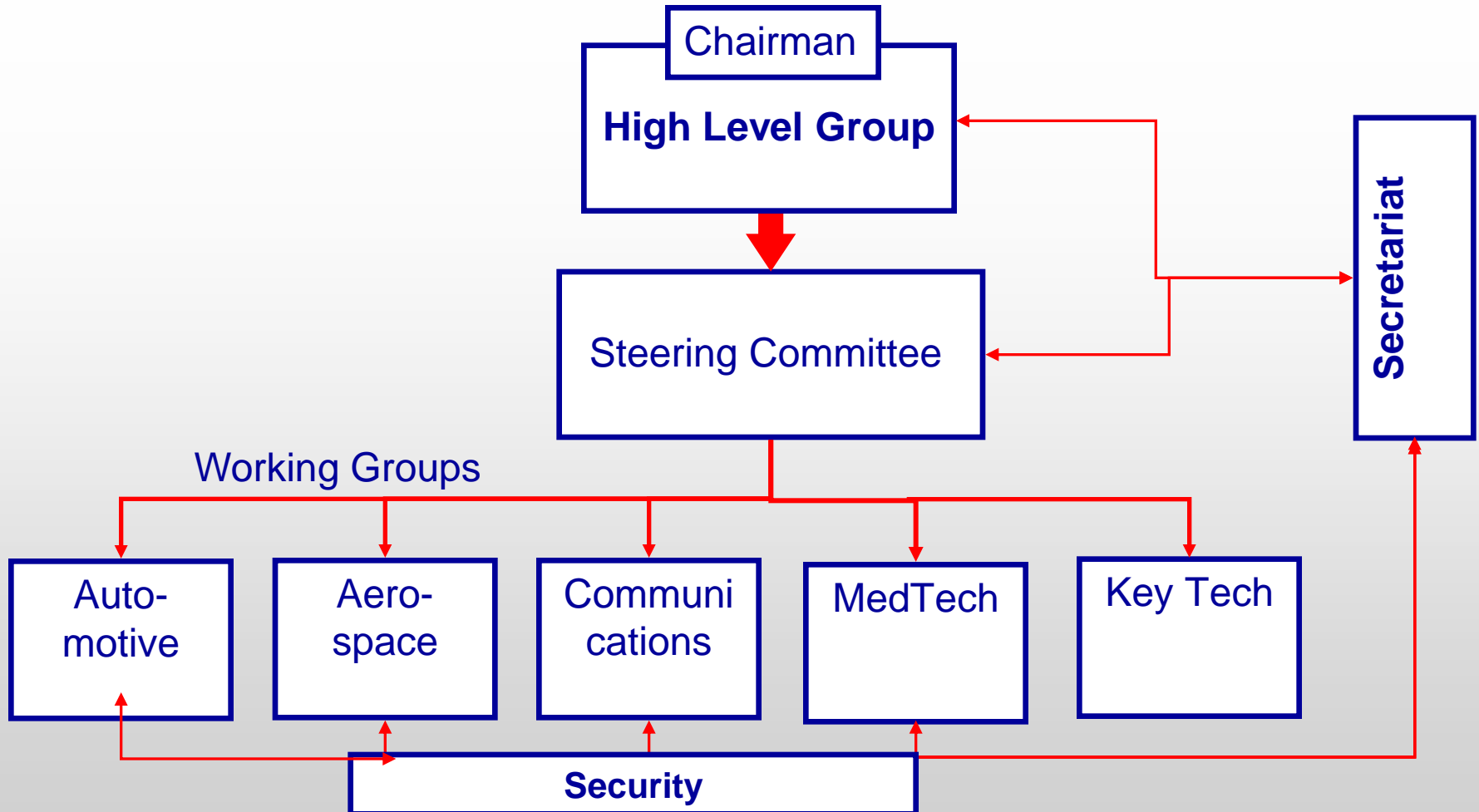
Types of Organisations represented in EPoSS	
Large Companies	22
SMEs / Public Research	43
Universities	11
Other	6

European countries represented in EPoSS			
Austria	Germany	Netherlands	Spain
Belgium	Greece	Norway	Sweden
Denmark	Ireland	Poland	Switzerland
Finland	Italy	Romania	United Kingdom
France	Lithuania	Russia	



Governance rules and EPoSS Structure

EPoSS Structure



EPoSS Chairman and Vice-Chairmen

Chairman of the EPoSS Executive Committee



Dott. Carmelo Papa
ST Microelectronics
Executive Vice President
Industrial & Multisegment
General Manager



Dr. Giulio Ruffini
Chief Executive Officer and
Chief Technology Officer
Starlab



Dr. Alain Ripart
Senior Vice-President and
Chief Scientific Officer
Sorin Group CRM



Hannu Laatikainen
Executive Vice President
Transportation Business
VTI Technologies Oy



Nevio Di Giusto
President and
Chief Executive Officer
Centro Ricerche Fiat S.C.p.A.
and Elasis S.C.p.A.



Dr. Richard Arning
Formerly: Vice President
EADS Innovation Works, Head
of Technical Capability Centre
"Sensors, Electronics & Systems
Integration"
EADS Corporate Research



Dr. Günter Lugert
Vice President Corporate Technology
Sensor & Actuator Systems
SIEMENS AG

EPoSS Working Group Chairmen and Co-Chairs



Renzo Dal Molin, Sorin
Chairman
WG Med Tech
WG MNBS



Alessandro Bassi, Hitachi
Chairman
WG Smart Com



Rainer Günzler, HSG-IMIT
Co-Chair
WG Med Tech



Bernard Candaele, Thales
Chairman
WG Security



Jesús Ruano, IKERLAN
Chairman
WG MNBS



Alex Dommann, CSEM
Chairman
WG Key Tech



Pietro Perlo
Chairman
WG Automotive



Michael Scholles, IPMS
Co-Chair
WG Key Tech



Medical Technologies



- > Health & in-vivo monitoring
- > Assisted therapy
- > In-vitro diagnostics
- > Assisting the independence of living

Automotive



- > Electric Vehicle
- > Energy efficiency
- > Driver assistance
- > Autonomous sensors
- > Smart actuation
- > HMI
- > Wireless communication

Aerospace



- > Structural monitoring
- > Communication/networks
- > Safety functionalities
- > RF solutions

Security



- > Biometric technologies
- > Infrastructure security
- > Safety

Communications for Smart Devices



- > Machine-to-machine communications
- > Internet of Things
- > RFID
- > Sensors & actuators networks
- > Power management

Key Technologies



- > Materials & processes
- > Micro-Nano-Bio integration
- > Device & system level packaging
- > Design tools & methodologies
- > Reliability

First

ETP in FI and ICT Components



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EPoSS in FI and ICT Components

- **EPoSS main link with MNT and SSI activities in FP7- ICT:**
 - Challenge 3 alternative paths to components and systems
 - Challenge 1 networks , 2 robotics, 5 Health and Ageing, 6 Low Carbon Economy, 7 Manufacturing, 10 INCO,....
- **But also fully involved in All PPP (as “smart hardware solution providers”):**
 - Future of Internet
 - Green Car
 - Energy Efficient Buildings
 - Factories of the Future
- **And also with other important ETPs, and Organisations:**
 - Nanomedicine, AAL, AMAA,

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ETP potential cooperation with LATPs



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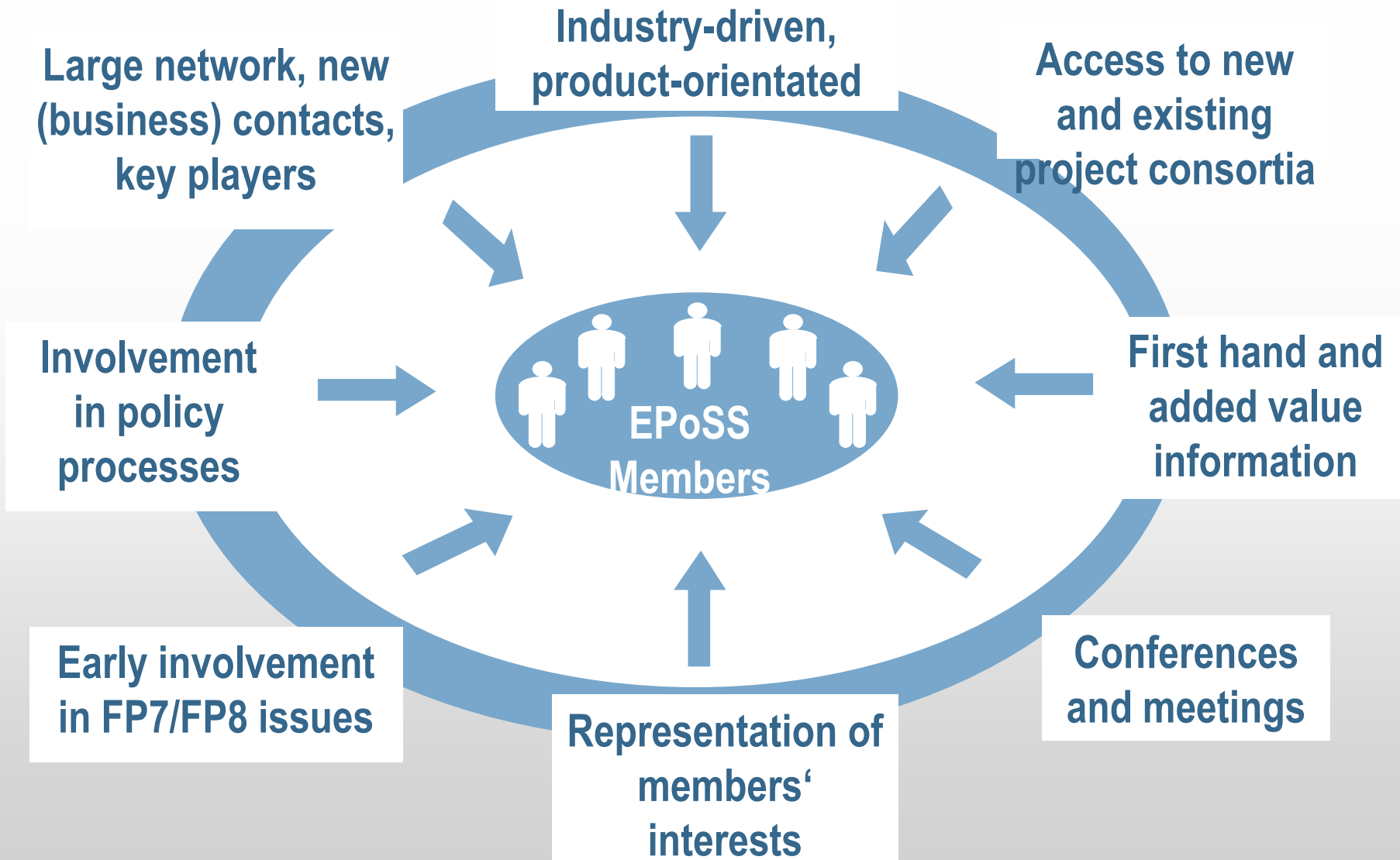


SEVENTH FRAMEWORK
PROGRAMME

ETP potential cooperation with LATPs

- **Give a voice from the European Smart Systems Community**
- **Promote Smart Systems R&D involving new disruptive technologies and leading to innovative marketable products**
- **Address areas of economic and societal relevance**
- **Provide roadmaps and Strategic Research Agendas**
- **Contribute to competitiveness of industry, esp. of SMEs**
- **Produce advantages for the Platform's members: i.e. Access to FP**

Members' Benefits – A Reminder



Participation in EPoSS Forums



- Meet with key representatives from industry, research and the European Commission
- Get involved in research & innovation in areas such as manufacturing, MNBS, health, energy, new materials, green cars
- Join the EPoSS Community in the commercialization of innovative Smart Systems
- Take on an active role in defining research priorities and roadmaps
- Disseminate results from your current FP7 projects
- Receive valuable and customized information on open calls and funding opportunities (worth 200 M€)
- Present project ideas, proposals and technology offers
- Take part in the proposal and consortium building process
- Benefit from a special training session on handling of IPR issues in research projects

Contacts:

- <http://www.smart-systems-integration.org>
- Secretariat:
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