



ICT in H2020

Lucia Mazzoni
coord. Piattaforma ICT Rete Alta
Tecnologia

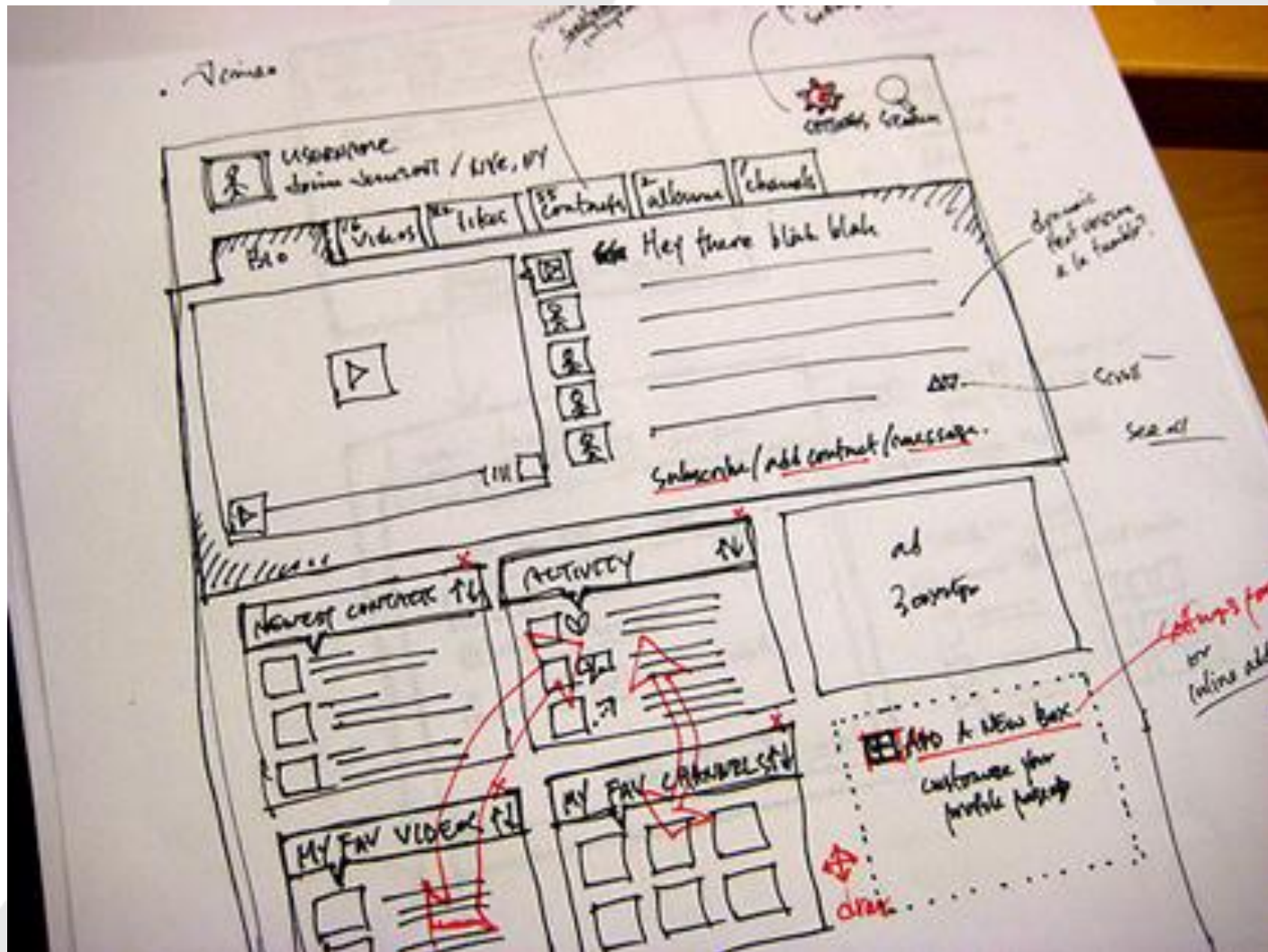
Un ruolo importante

- Spostamento verso il mercato \Rightarrow diverso dal 7PQ
- Ma il risultato si vende?

Cosa ci si può aspettare?



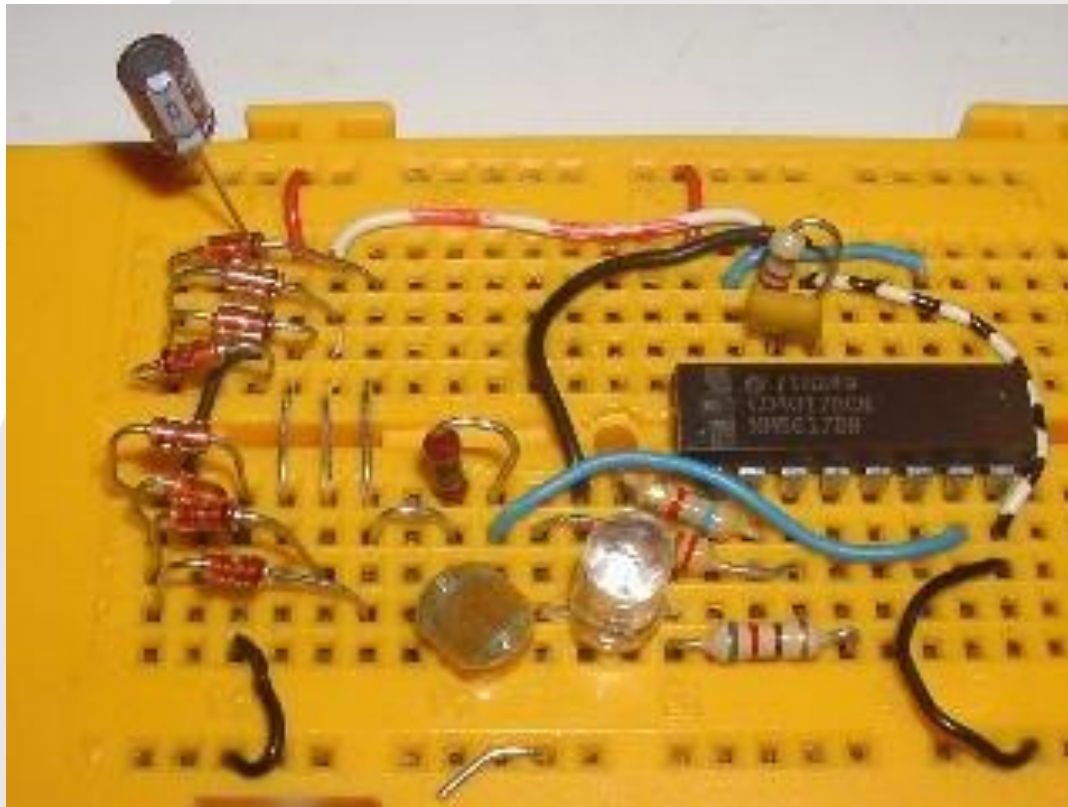
Cosa ci si può aspettare?



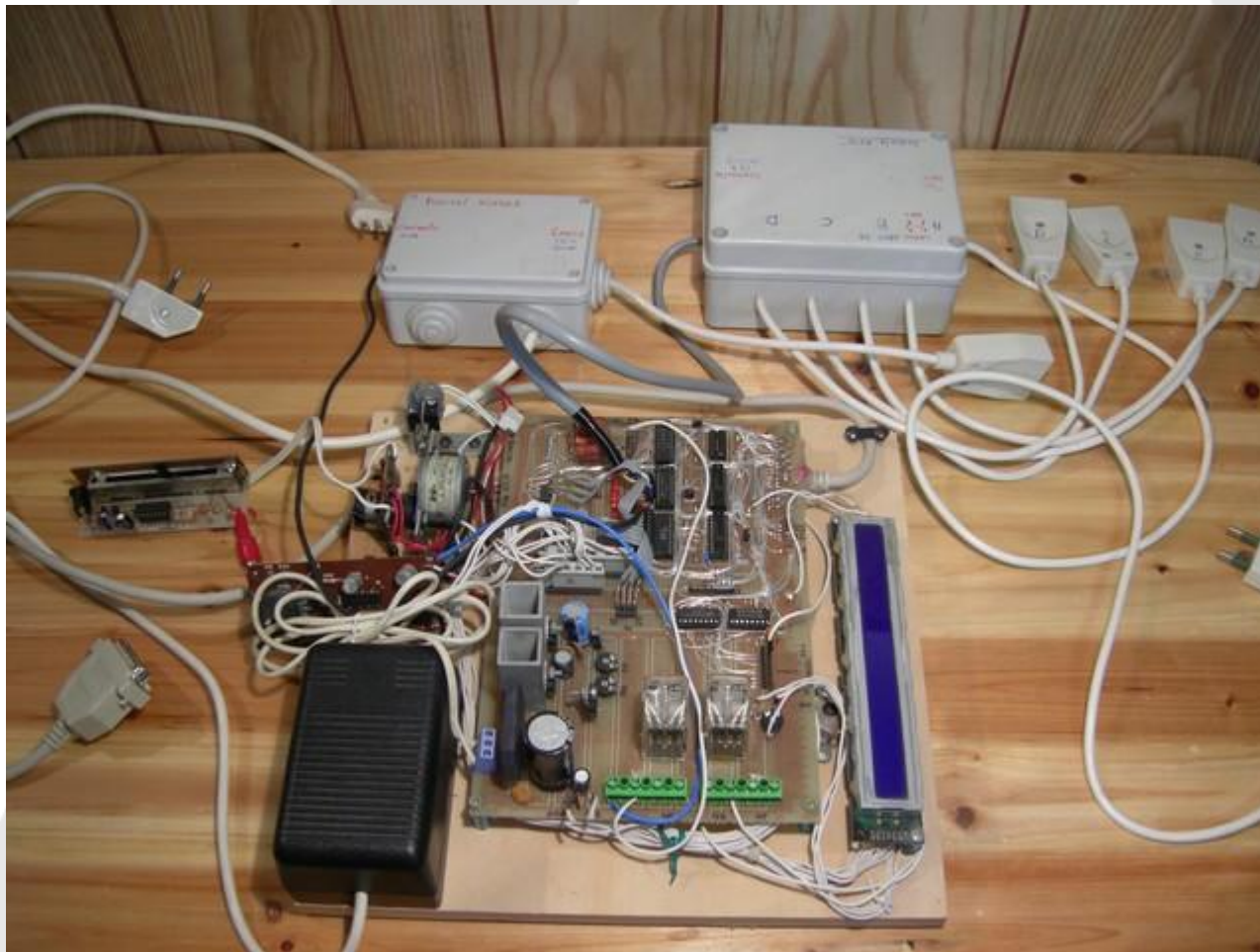
Cosa ci si può aspettare?



Cosa ci si può aspettare?



Cosa ci si può aspettare?



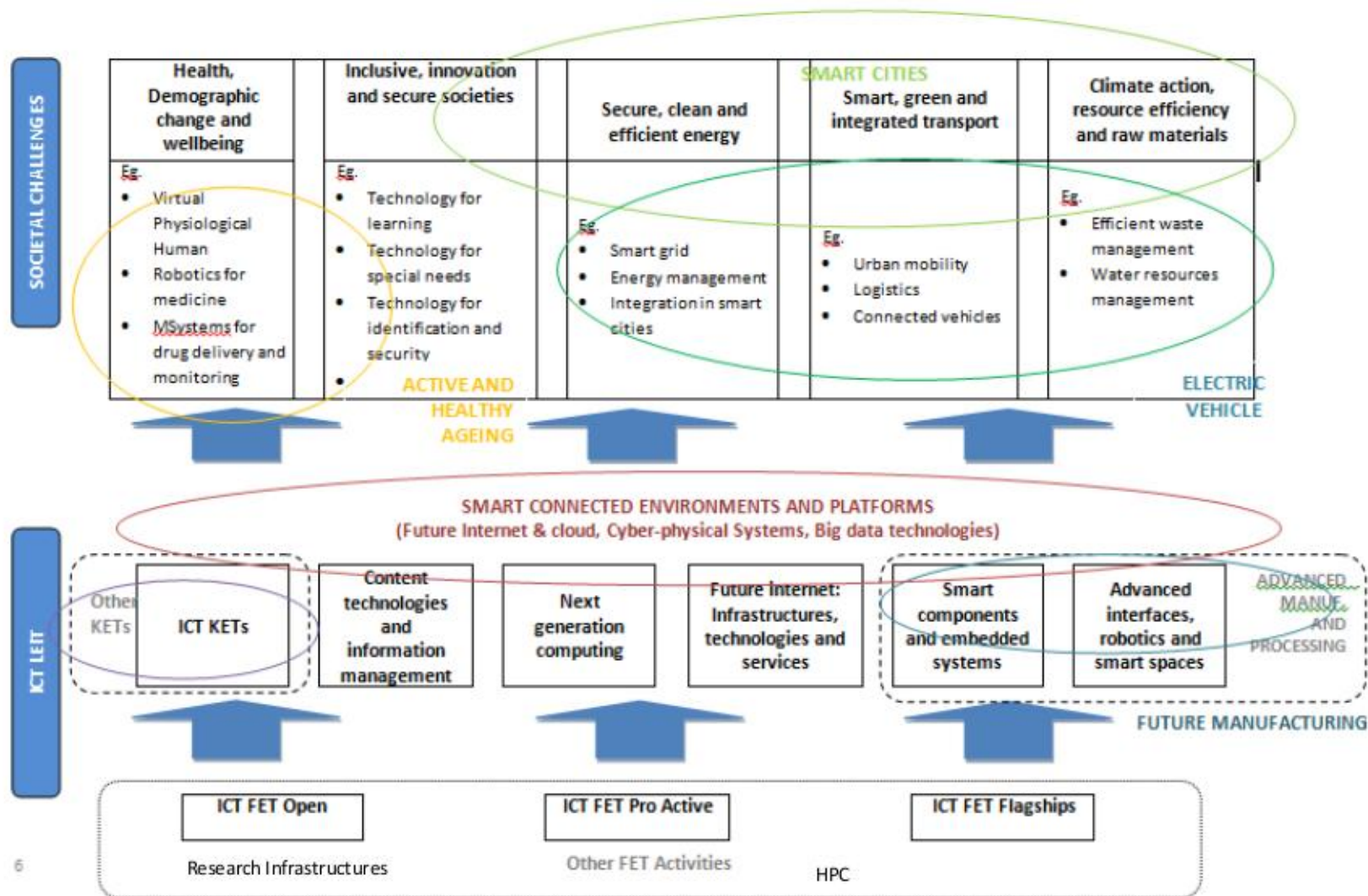
Agenda di oggi

- Informazioni di carattere generale (valide per i 7 anni)
- Alcuni suggerimenti
- Informazioni specifiche (per il periodo di validità dei WP)

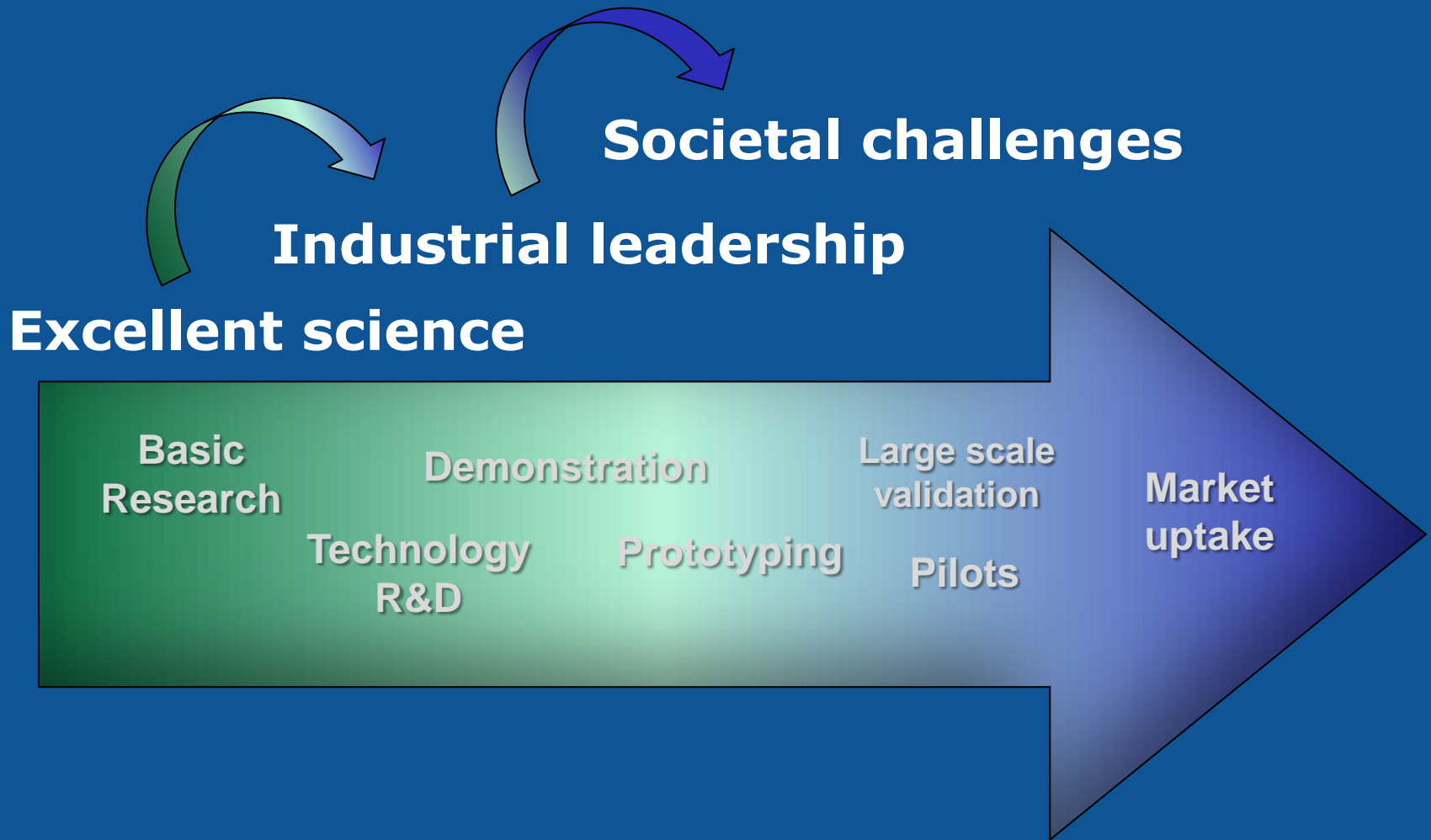
Three priorities



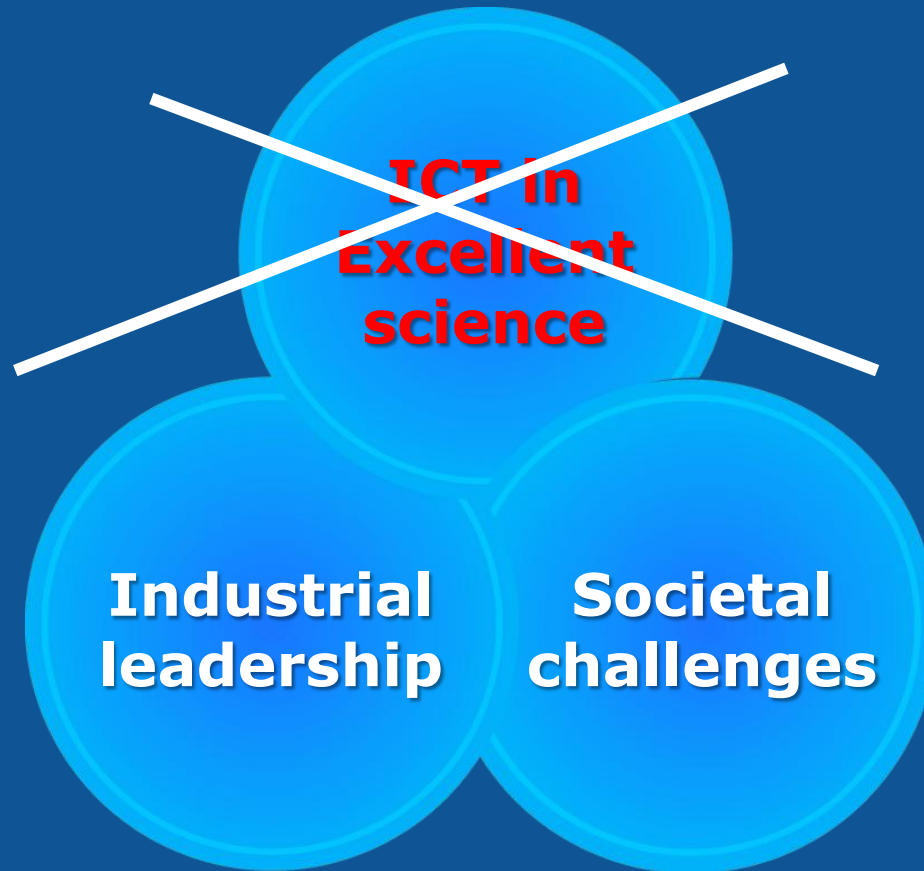
ICT in H2020



Coverage of the full innovation chain

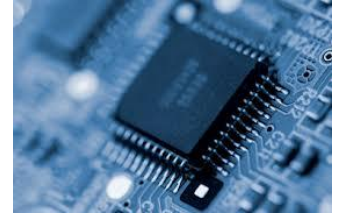


ICT in Excellent Science



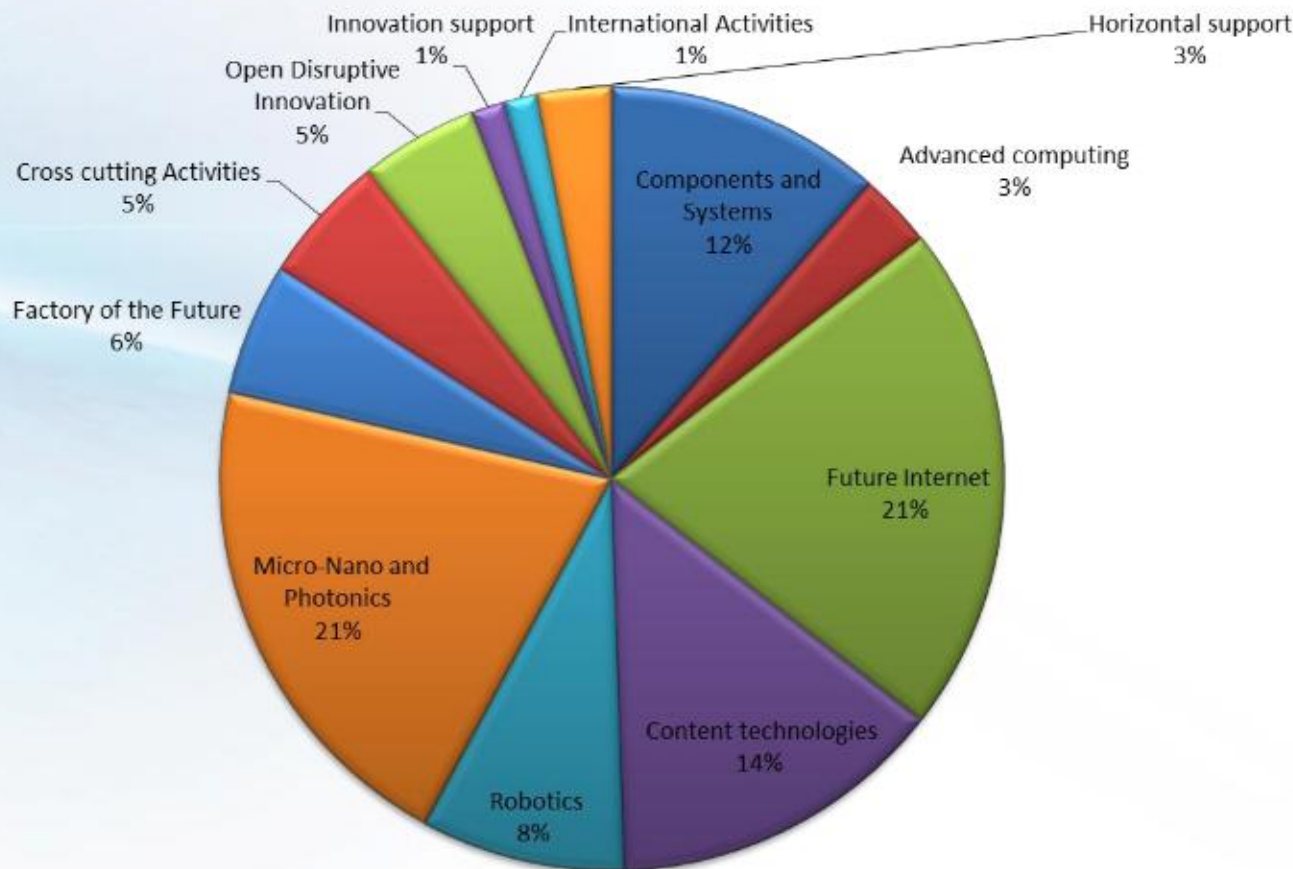
ICT in Industrial Leadership (LEIT)



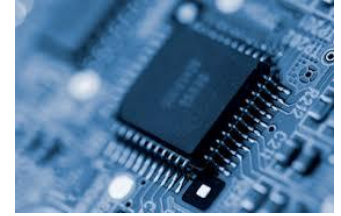


7.360 Meuro

ICT LEIT Budget Overview



Industrial Leadership - ICT



1. A new generation of components and systems: engineering of advanced embedded and resource efficient components and systems
2. Next generation computing: advanced and secure computing systems and technologies, including cloud computing
3. Future Internet: software, hardware, infrastructures, technologies and services
4. Content technologies and information management: ICT for digital content, cultural and creative industries
5. Advanced interfaces and robots: robotics and smart spaces
6. Micro- and nanoelectronics and photonics: key enabling technologies

ICT in Societal Challenges



Societal Challenges - ICT



1. Health, demographic change and wellbeing
2. Food security, sustainable agriculture, and forestry, marine, maritime and inland water research, and the bioeconomy
3. Secure, clean and efficient energy
4. Smart, green and integrated transport
5. Climate action, environment, resource efficiency and raw materials
6. Europe in a changing world – inclusive, innovative and reflective societies
7. Secure societies – protecting freedom and security of Europe and its citizens

Societal Challenges - ICT



1. Health, demographic change and wellbeing (15% ca)
2. Food security, sustainable agriculture, and forestry, marine, maritime and inland water research, and the bioeconomy
3. Secure, clean and efficient energy (5% ca)
4. Smart, green and integrated transport (6% ca)
5. Climate action, environment, resource efficiency and raw materials (3,5%)
6. Europe in a changing world – inclusive, innovative and reflective societies (25% ca)
7. Secure societies – protecting freedom and security of Europe and its citizens (25% ca)

Key principles for ICT R&I in the Societal Challenges

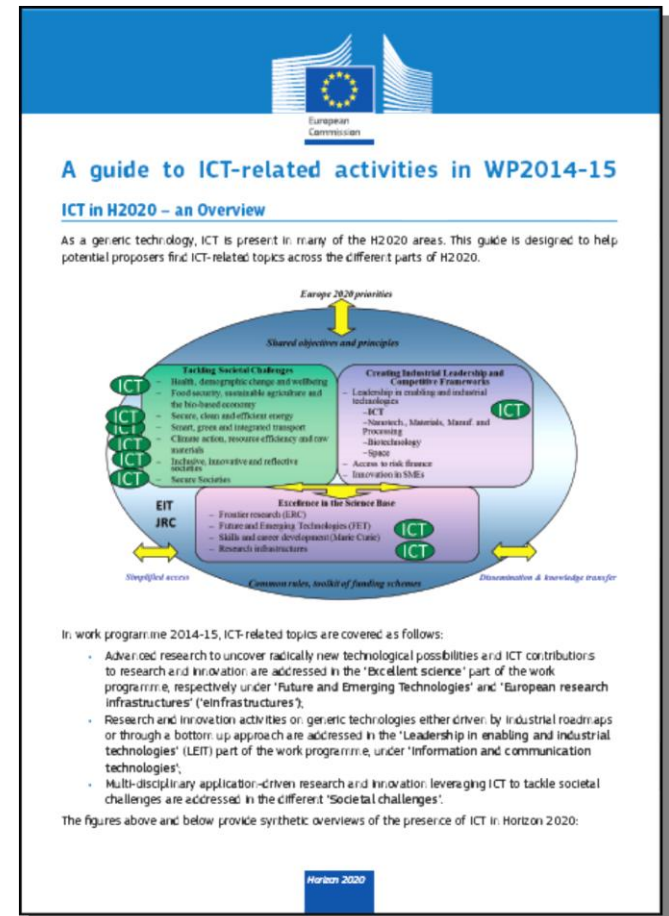


- Interoperability
 - Re-use and economies of scale
 - Demand led R&I with User involvement in all stages
 - Breakthroughs leveraging the transformative power of ICT
 - Preparation for market deployment
- +
- Information for future digital policy

Guide to the presence of ICT in H2020

- Comprehensive coverage of all three H2020 pillars
- Detailed list of calls and topics

- <http://bit.ly/1ewAhFZ>



Call planning overview

**Draft – Pending Committee Opinion
and Commission Decision**

- **LEIT**

- **H2020-ICT-2014 (ICT Call 1)**

- Publication date: 11 December 2013
- Deadline: **23 April 2014** (all topics except 5G Future Internet)
- Deadline for 5G Future Internet: **25 November 2014**

- **H2020-FoF-2014/2015 (Factory of the Future)**

- Publication date: 11 December 2013
- Deadlines: **13 March 2014** and **9 December 2014**

- **H2020-EUJ-2014 (EU-Japan Call)**

- Publication date: 7 January 2014
- Deadline: **10 April 2014**

- **H2020-ICT-2015 (ICT Call 2)**

- Publication date: 15 October 2014
- Deadline: **14 April 2015**

- **H2020-EUB-2015 (EU-Brazil Call)**

- Publication date: 15 October 2014
- Deadline: **21 April 2015**

COME PARTECIPARE?

Fare Rete con altri

PIATTAFORMA
ICT E DESIGN



CENTURIA CONFINDUSTRIA ER RICERCA CNA INNOVAZIONE CRIT
DEMOCENTER-SIPE LARCOICOS MUSP REI-REGGIO EMILIA INNOVAZIONE T3LAB

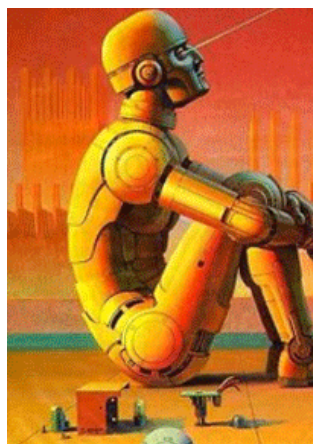
Dai distretti produttivi ai distretti tecnologici - 2

Iniziativa finanziata da



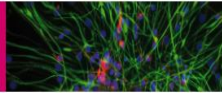
Ministero dello Sviluppo Economico

 **Regione Emilia-Romagna**



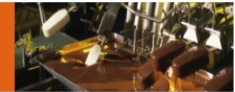
PIATTAFORMA ICT & DESIGN

PIATTAFORMA SCIENZE DELLA VITA



*Ict for biomedicine,
for medical imaging
genoma and data analysis, assisted living
e-hearlh, tele-medicine
sensors and devices*

PIATTAFORMA AGROALIMENTARE



*Data analysis, data mining, interoperability, new
sensors networks
Knowledge management.....*

PIATTAFORMA COSTRUZIONI



*Data anlysis, domotics, buidling
automation, security and
safety.....*

PIATTAFORMA ICT E DESIGN



PIATTAFORMA MECCANICA MATERIALI



*Support for manufacturing,
intelliget manufacturing,
robotics and automation
Machine vision
Product and process innovation..*

PIATTAFORMA ENERGIA AMBIENTE



*GREEN ICT, energy harvesting,
data analysis, sensors ,
communication networks*

“Performance” della piattaforma

CROSSTEC

REDOX
PROGETTI PER L'INDUSTRIA

MEEO
Meteorological Environmental
Earth Observation

ICT TECNOLOGIE INFORMAZIONI
E DELLA COMUNICAZIONE

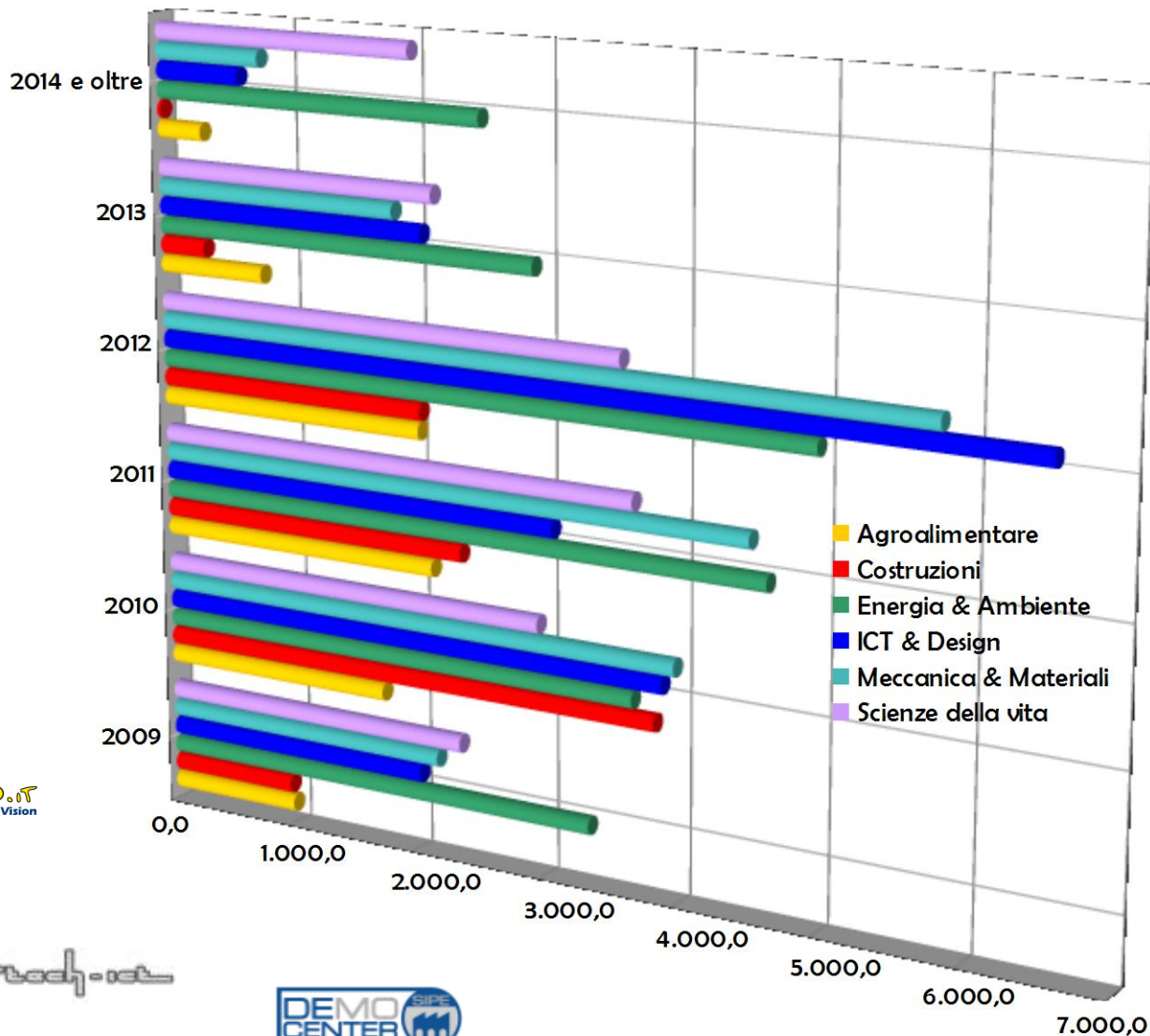


DataRiver



MechLav
Laboratorio per la Meccanica Analitica

MediCon



COSTRUIAMO INSIEME IL FUTURO

RETE ALTA TECNOLOGIA
EMILIA-ROMAGNA
HIGH TECHNOLOGY NETWORK

PIATTAFORMA
ICT E DESIGN

MICRONET

MICRONET



- **MICRO NET**
- Progetto per l'utilizzo della **camera bianca** dell'istituto IMM del CNR per la definizione di un **microchip smart** dedicato alla **integrazione wireless di sensori MEM** e non.
- **SCOPO**
- Supportare le PMI ICT per **riprogettare** i propri dispositivi grazie ad un **microchip customizzabile** e in quantità adeguate per il lancio di una **preserie**

MICRONET

■ II PROGETTO ECONOMICO E' PLAUSIBILE

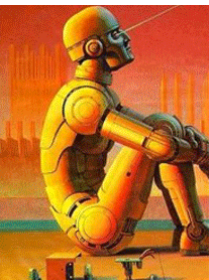
- La analisi dei costi mostra una area di competitività del prodotto soprattutto a livello di scale up di produzione

■ UN PRIMO RISULTATO :

- In corso di offerta il progetto per un micronet PS01 ,per la misura di pressione in process durante la manipolazione di contenitori

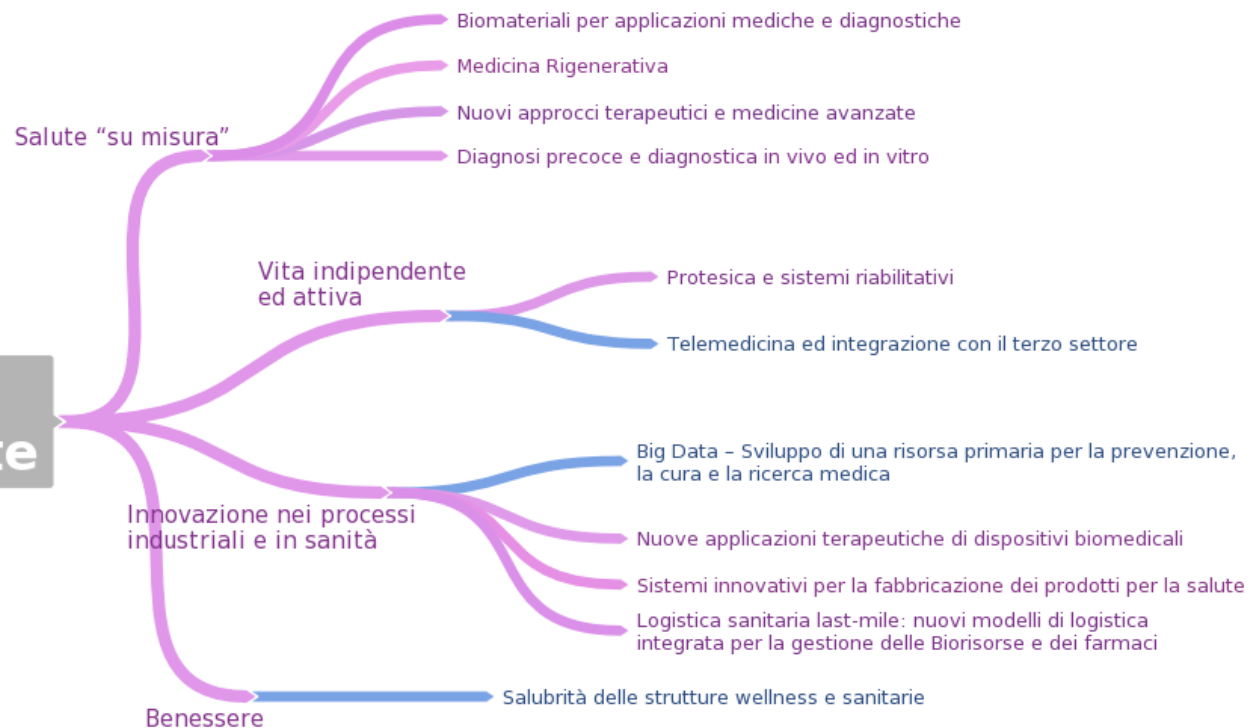
■ IN FASE DI LANCIO UNA RIUNIONE PER IL COINVOLGIMENTO DI “ SOCI DELLA RETE “

- Dal contesto “distretti 2 “
Con il supporto di soggetti attuatori
e di **VOLONTARI !!!!**

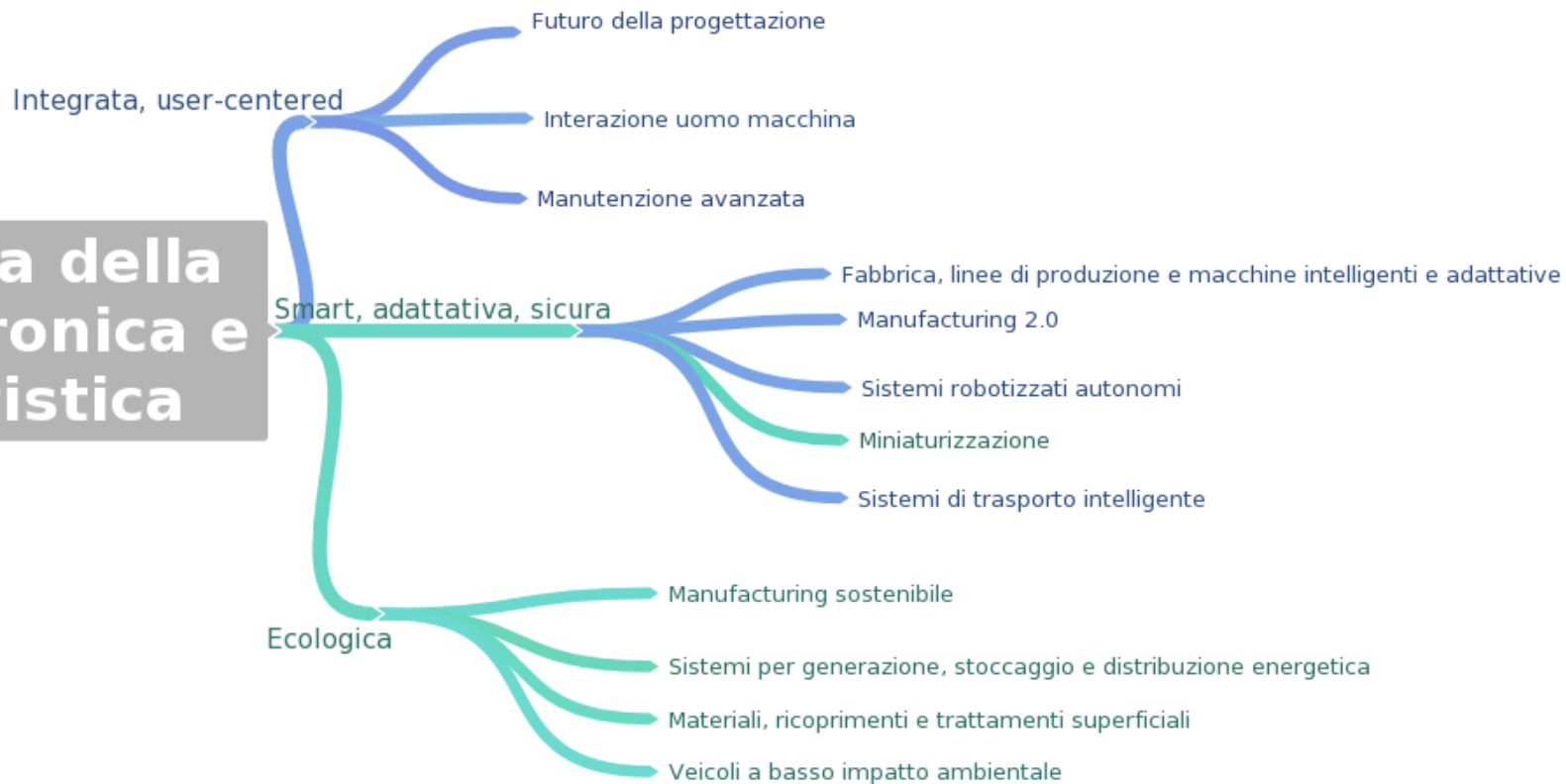


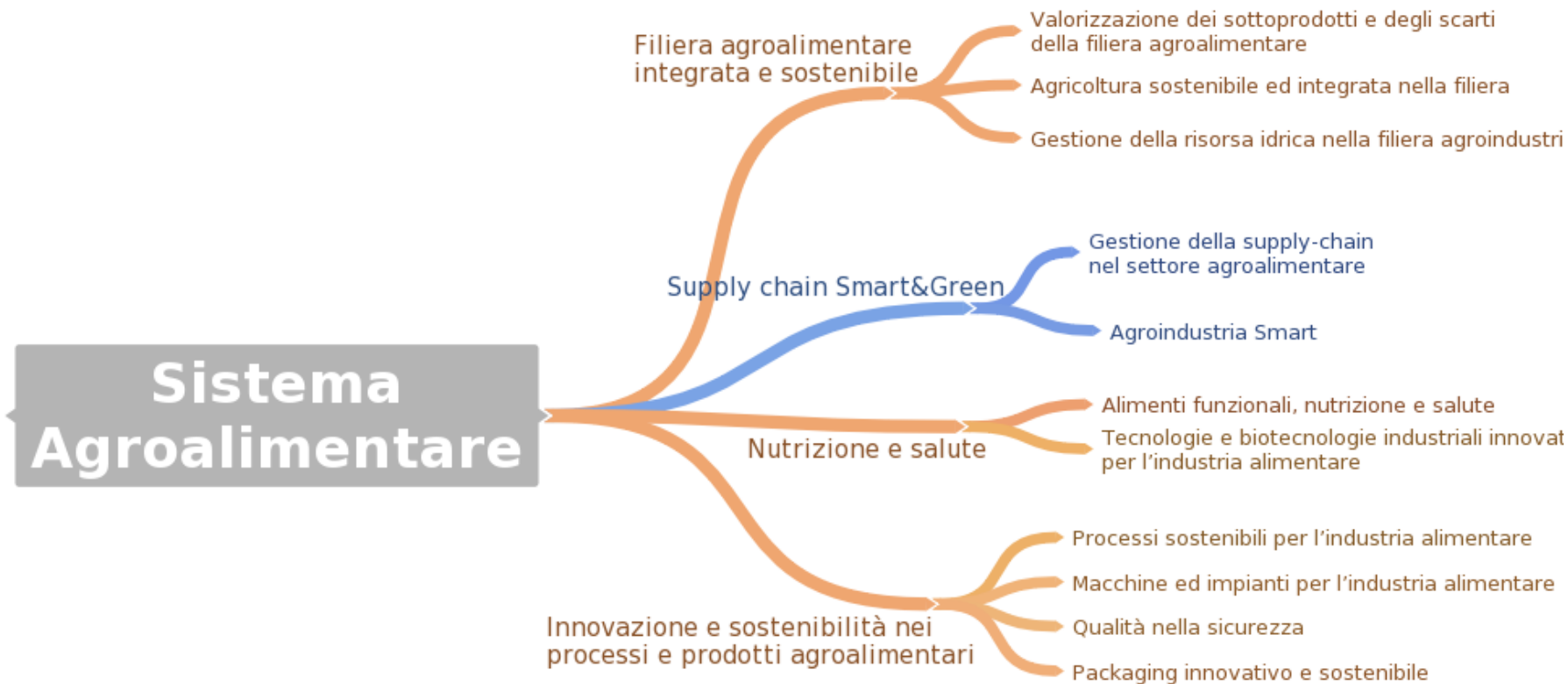
ALTRI STRUMENTI: S3

Sistema delle Industrie della Salute

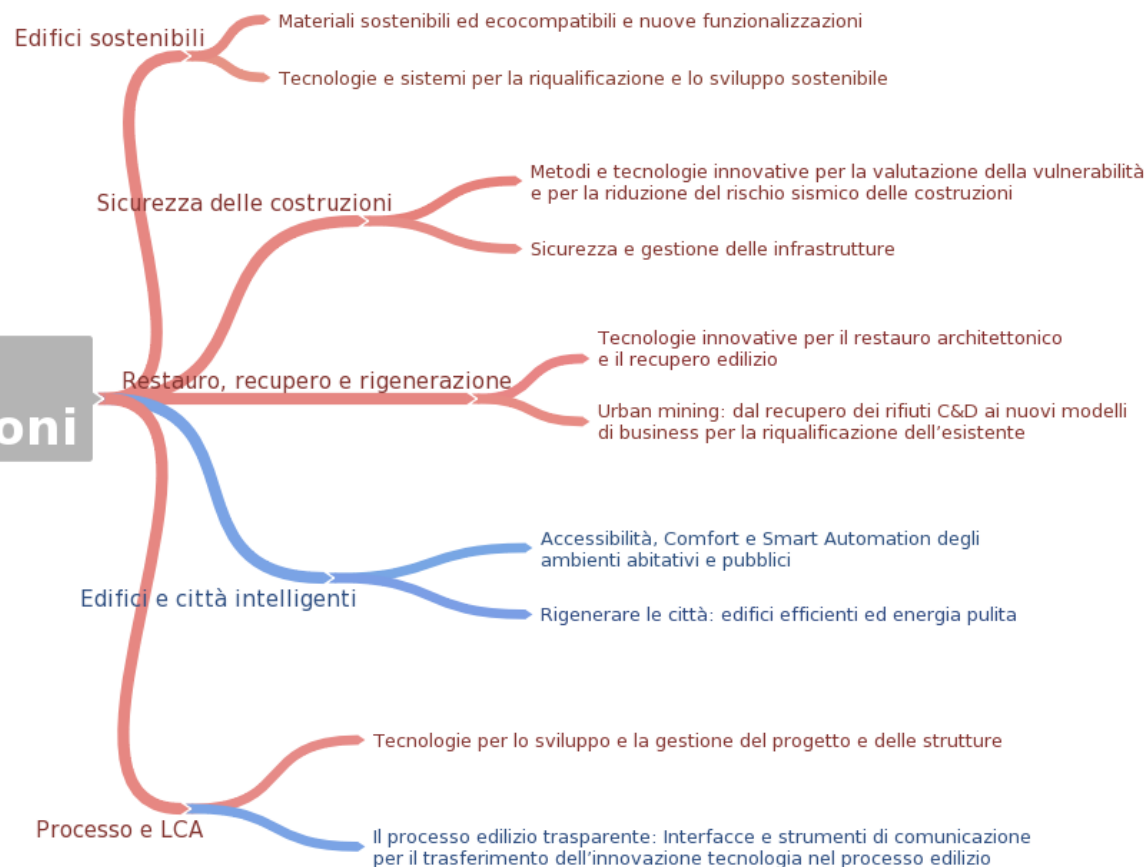


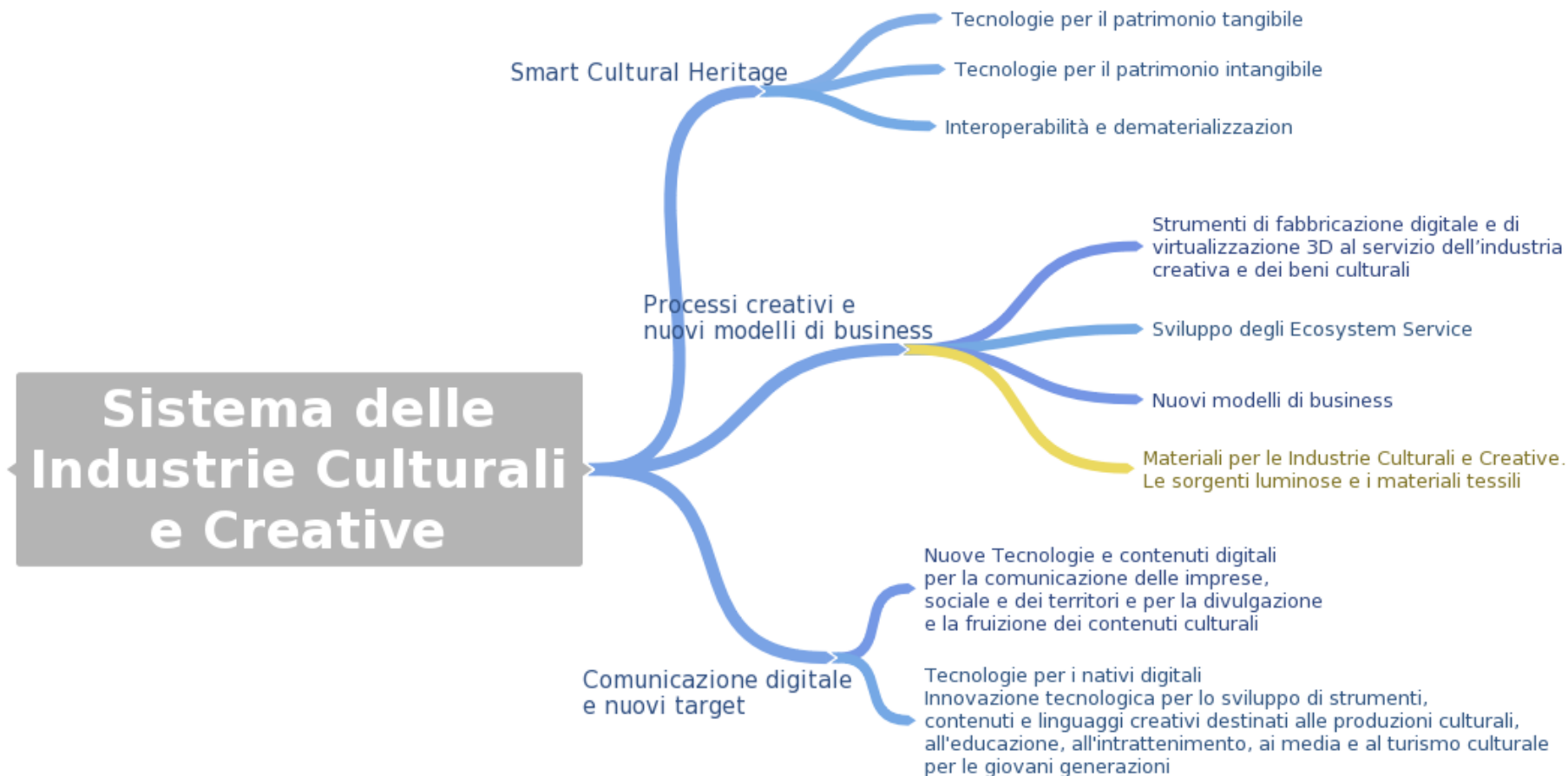
Sistema della Meccatronica e Motoristica





Sistema Edilizia e Costruzioni





TEMI SPECIFICI 2014-2015

LEIT

1. Components and systems / 2014-2015

Draft – Pending Commission Decision

- Covers **systemic integration from smart integrated components to cyber-physical systems**
- **Complementary to the JTI Electronic Components and Systems (ECSEL)**
- **Organised in three related topics:**
 - Smart cyber-physical systems
 - Next generation embedded and connected systems
 - Smart system integration
 - Integration of heterogeneous micro- and nanotechnologies into smart systems
 - Advanced Thin, Organic and Large Area Electronics
- R&I in this area will also contribute to the implementation of the **Strategic Research Agenda on Energy Efficient Buildings**

2. Advanced Computing / 2014-2015

- Reinforce and expand Europe's industrial and technology strengths in **low-power ICT**
- Focus is on **integration of advanced components on all levels in computing systems**
- **Complementary to and coordinated with work in the Future Internet area (on Cloud Computing) and in Excellence Science pillar under Research Infrastructures and FET (on High Performance Computing)**
- **Organised in one topic:**
 - Customised and low power computing

Draft – Pending Commission Decision

3. Future Internet / 2014-2015

Draft – Pending Commission Decision

- Focused on **network and computing infrastructures** to accelerate innovation and address the most critical technical and use aspects of the Internet
- **Organised in ten topics:**
 - Smart networks and novel Internet **architectures**
 - Smart **optical** and **wireless network** technologies
 - Advanced **5G** Network Infrastructure for the Future Internet (**→5G PPP**)
 - Advanced **cloud** infrastructures and services
 - Boosting public sector productivity and innovation through cloud computing services
 - Tools and methods for **Software Development**
 - **FIRE+ (Future Internet Research & Experimentation)**
 - More Experimentation for the Future Internet
 - **Collective Awareness Platforms** for sustainability and social innovation
 - **Web Entrepreneurship**

4. Content technologies and information management / 2014-2015

Draft – Pending Commission Decision

- **Addresses:**

- **Big Data** with focus on both innovative data products and services and solving research problems
- **Machine translation** to overcome barriers to multilingual online communication
- **Tools for creative, media and learning industries** to mobilise the innovation potential of SMEs active in the area
- **Multimodal and natural computer interaction**

- **Organised in eight topics:**

- Big data innovation and take-up
- Big data research
- Cracking the language barrier
- Support to the growth of ICT innovative creative industries SMEs
- Technologies for creative industries, social media and convergence
- Technologies for better human learning and teaching
- Advanced digital gaming/gamification technologies
- Multimodal and natural computer interaction

5. Robotics / 2014-2015

Draft – Pending Commission Decision

- **Roadmap-based research driven by application needs**
→ **Robotics PPP**
- Effort to close the innovation gap to **allow large scale deployment of robots and foster market take-up**: use-cases, pre-commercial procurement, industry-academia collaboration
 - Includes two pre-commercial procurement actions (health-care sector, public safety and environmental monitoring)
- Additional activities: shared resources, performance evaluation & benchmarking, community building and robotic competitions
- **Organised in two annual calls**

6. Micro- and nano-electronics and photonics Key Enabling Technologies / 2014-2015

Draft – Pending Commission Decision

- Covers **generic technology developments on micro- and nano-electronics** focused on **advanced research** and lower Technology Readiness Levels (TRLs)
 - Complementary to the JTI Electronic Components and Systems
- Addresses the **full innovation and value chain** in markets sectors where the European **photonics** industry is particularly strong (optical communications, lighting, medical photonics, laser technologies, etc.)
 - **Photonics PPP**
 - Includes calls for ERANETs as well as public procurement actions (roll-out and deployment of optical networking technologies)

Factory of the Future / 2014-2015

- Focuses on **ICT components of innovative production systems in all sectors** (for more personalised, diversified and mass-produced product portfolio and for rapid adaptations to market changes)
- Organised in **three topics**:
 - Process optimisation of manufacturing assets
 - ICT-enabled modelling, simulation, analytics and forecasting technologies
 - ICT Innovation for Manufacturing SMEs
- Part of **FoF PPP**

Draft – Pending Commission Decision

ICT Cross-Cutting Activities / 2014-2015

Draft – Pending Commission Decision

- **Internet of Things and platforms for Connected Smart Objects**

- Cutting across several LEIT-ICT areas (smart systems integration, smart networks, big data)
- Bringing together different generic ICT technologies and their stakeholder constituencies

- **Human-centric Digital Age**

- Understanding technologies, networks and new digital and social media and how these are changing the way people behave, think, interact and socialise as persons, citizens, workers and consumers

- **Cyber-security, Trustworthy ICT**

- Focuses on security-by-design for end to end security and a specific activity on cryptography
- Complementary to Cyber-security in Societal Challenge 7

- **Trans-national co-operation among National Contact Points**

- Mechanisms for effective cross border partnership searches, identifying, understanding and sharing good practices among ICT NCPs

ICT innovation actions / 2014-2015

Draft – Pending Commission Decision

- **Support for access to finance**

- Pilot action for business angels to co-invest in ICT innovative companies
- Implemented by EIF and closely coordinated with "Access to risk finance" part of H2020

- **Innovation and Entrepreneurship Support**

- ICT business idea contests in universities and high schools
- ICT entrepreneurship summer academy
- ICT entrepreneurship labs
- Campaign on entrepreneurship culture in innovative ICT sectors
- Support for definition and implementation of inducement prizes
- European networks of procurers
- Pre-commercial procurement

- **Open Disruptive Innovation Scheme**

- Support to a large set of **early stage high risk innovative SMEs in ICT**
- Implementation through the **SME instrument**
 - > Continuously open calls with several (3) cut-off dates/year
 - > 5% of LEIT budget

International cooperation actions / 2014-2015

Draft – Pending Commission Decision

- **Coordinated calls**
 - **EU-Brazil**
 - Cloud computing, including security aspects
 - High performance computing
 - Experimental platforms
 - **EU-Japan**
 - Technologies combining big data, internet of things in the cloud
 - Optical communications
 - Access networks for densely located users
 - Experimentation and development on federated Japan-EU testbeds
- **International partnership building and support to dialogues with high income countries (USA, Canada, East Asia and Oceania)**
- **International partnership building in low and middle income countries**

TEMI SPECIFICI 2014-2015

SFIDE DELLA SOCIETÀ

SC 1 - Health, demographic change and wellbeing / 2014-2015

Draft – Pending Committee Opinion and Commission Decision

- **Advancing active and healthy ageing with ICT**
 - **Service robotics** within assisted living environments
 - ICT solutions for **independent living with cognitive impairments**
 - ICT solutions enabling **early risk detection and intervention**
- **Integrated, sustainable, citizen-centred care**
 - ICT-based approaches for **integrated care** (beyond current state-of-art in tele-health and tele-care)
 - **Self-management of health and disease**
 - Public-procurement of innovative eHealth services
- **Improving health information and data exploitation**
 - Digital representation of **health data** to improve diagnosis and treatment
 - **eHealth interoperability**

SC 3 - Secure, clean and efficient energy / 2014-2015

**Draft – Pending Committee Opinion
and Commission Decision**

- **Energy efficiency / buildings and consumers**
 - Public procurement of **green data centres**
 - New ICT-based solutions for **energy efficiency through citizens' behavioural change**
- **Competitive low-carbon energy / modernising the single European electricity grid**
 - Distribution grid and retail market
 - Next generation ICT infrastructure for **smart metering and smart grids**
- **Smart cities and communities**
 - Integration of **energy, transport and ICT** through **lighthouse projects** (large scale demonstration)

SC 4 - Smart, green and integrated transport / 2014-2015

**Draft – Pending Committee Opinion
and Commission Decision**

- **Road**

- **Cooperative Intelligent Transport Systems**

- Connecting people, vehicles, infrastructures and businesses
 - Safe and connected **automation in road transport**

- **Green vehicles**

- **Electric vehicles'** enhanced performance and **integration into the transport system and the electricity grid**

- **Smart cities and communities**

- Integration of **energy, transport and ICT** through **lighthouse projects** (large scale demonstration)

SC 5 - Climate action, environment, resource efficiency and raw materials / 2014-2015

**Draft – Pending Committee Opinion
and Commission Decision**

- **Waste management**

- ICT solutions for waste traceability, waste material flow management

- **Water management**

- Development and deployment of advanced ICT solutions for water resources management in agriculture and urban areas

SC 6 - Europe in a changing world – inclusive, innovative and reflective societies / 2014-2015

**Draft – Pending Committee Opinion
and Commission Decision**

- **Reflective societies – Cultural Heritage**
 - Innovative ecosystems of digital cultural assets
 - Advanced 3D modelling for accessing and understanding European cultural assets
- **New forms of innovation**
 - **Innovation in the public sector** by using emerging ICT technologies
 - ICT-enabled **open government**
 - Personalised public services
 - M-government
 - Open participation
 - Transparency
 - ICT for **learning and inclusion**

SC7 - Secure societies – protecting freedom and security of Europe and its citizens / 2014-2015

**Draft – Pending Committee Opinion
and Commission Decision**

- **Digital security: cybersecurity, privacy and trust**

- Protecting our society by providing sustained **trust in the usage of ICT** and in securing the ICT underlying our digital society
- **Preventing cyber-attacks** on any component of the digital society
- **Ensuring freedom and privacy in the digital society**, protecting the fundamental values of our society and democratic rights of our citizens in cyberspace
- Protect the weak in our society from abuses over the internet and **giving the user control over his private data**
- Demonstrating the viability and maturity of state-of-the-art security solutions in **large scale demonstrators**, involving end users

PIATTAFORMA ICT E DESIGN

■ CIRI ICT (Università di Bologna)

■ Servizi e reti multimediali

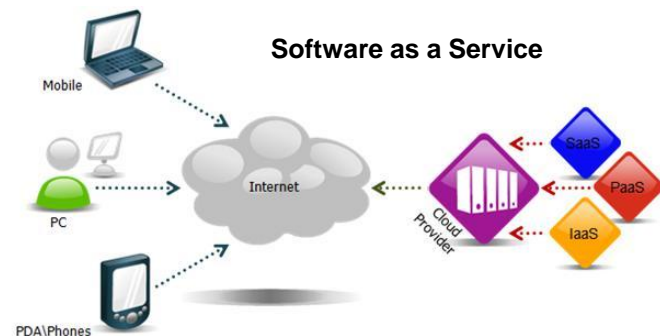
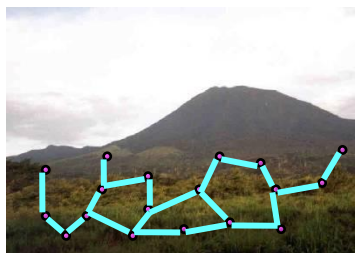
- ✓ Tecnologie middleware e piattaforme aperte per la fornitura di servizi adattativi, mobili e multimediali per scenari di uso da parte di cittadini ed enti pubblici
- ✓ Piattaforme per la gestione ed erogazione di servizi, e sistemi emergenti per il Cloud Computing per il settore privato e principalmente per la pubblica amministrazione
- ✓ Sistemi di supporto al lavoro cooperativo e a scenari di 'social networking' per le comunità di utenti supportate da risorse pubbliche e private

■ ICT Tecnologie e servizi per lo sviluppo sostenibile

- ✓ Controllo di processo e logistica (trasporti, gestione di flotte e stoccaggio)
- ✓ Tecnologie embedded per applicazioni di monitoraggio in ambiente industriale, classificazione di prodotto, domotiche e gestione dell'energia
- ✓ Business intelligence (integrazione dei sistemi di monitoraggio e controllo con i sistemi di gestione aziendali)
- ✓ Sistemi di sviluppo software automatizzati e sistemi di pattern recognition



Reti e Middleware per Sensori: Applicazioni



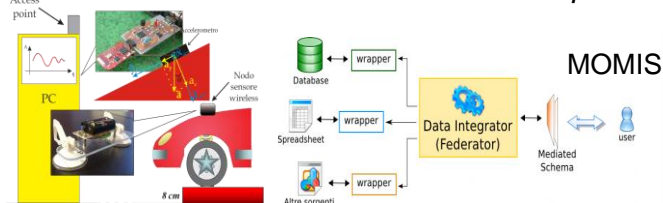
■ SOFTECH-ICT (Università di Modena e Reggio Emilia)

- Tecnologie e applicazioni informatiche (*ingegneria del software, interoperabilità, sicurezza, gestione della conoscenza, Web, sistemi mobili e Cloud*)
- Analisi dei processi, modelli organizzativi e di business; promozione e misura dell'innovazione.
- Tecnologie e applicazioni elettroniche (*dispositivi e sistemi embedded, sensori*)
- Tecnologie e applicazioni di telecomunicazioni
- Automazione industriale
- Multimedialità

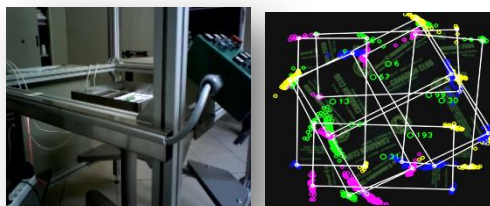


UNIVERSITÀ DEGLI STUDI
DI MODENA E REGGIO
EMILIA

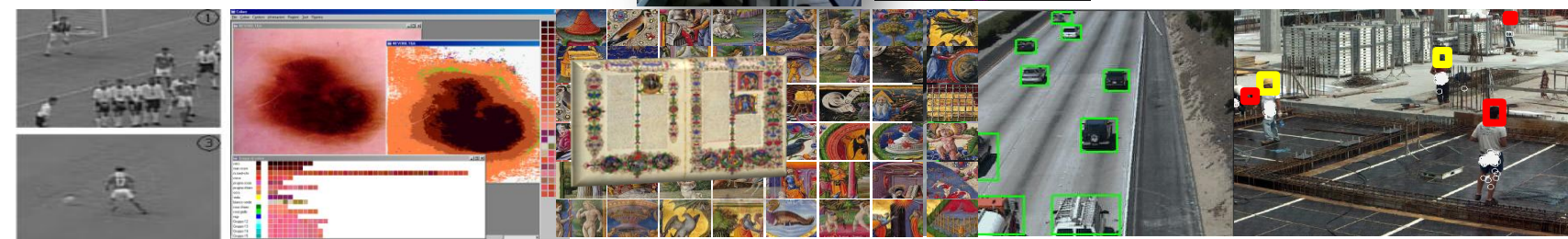
Sensor Networks - Solutions for interoperability



- Vision and Automation .



Electronics - Wireless Communication



Broadcast analysis - Medical Imaging - Image Retrieval .

. Video Surveillance - People Security



RFID & VIS-LABS (Università di Parma)

- RFID Logistics Pilot in Fashion
- RLP – from chain to networks nel settore food a largo consumo
- Cybercars e mobilità, E-Vehicles
- Building and factory automation
- Sicurezza industriale e controllo accessi

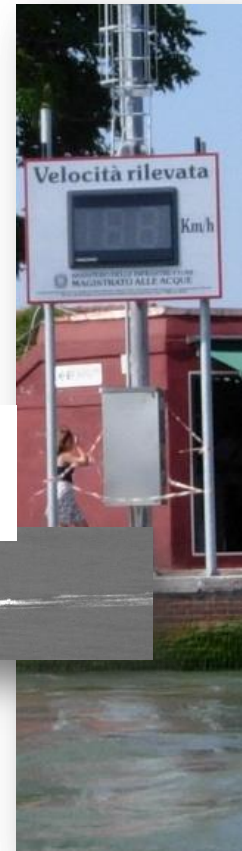
Precision farming e
agricultural automation



Prototipo di veicolo
con guida autonoma



Analisi traffico
Veicolare e marittimo



RFID-based
fashion store

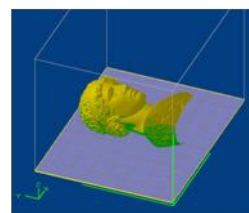
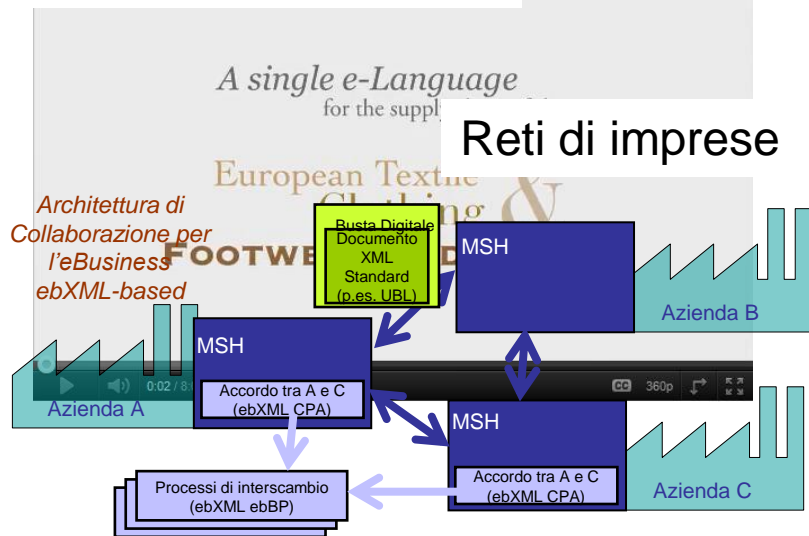




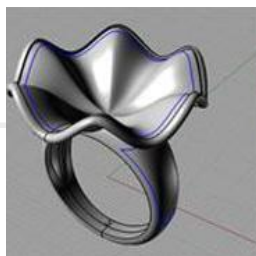
CROSSTEC (ENEA)

- Tecnologie dell'interoperabilità e reti di imprese
- Metodologie di progettazione in ambito cad/cam e nuove tecniche di produzione
- Prototipazione rapida
- Modelli di collaborazione per le smart energy grid

Linguaggi e standard per l'e-business



Applicazione CAD/CAM per Accessori Moda, Biomedicale, Design, Meccanico, Beni culturali



- Coord. ASTER
- SOFTECH-ICT Modena
- RFID&Vis-LABS Parma
- CIRI-ICT Bologna e Cesena
- ENEA CrossTEC Bologna

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