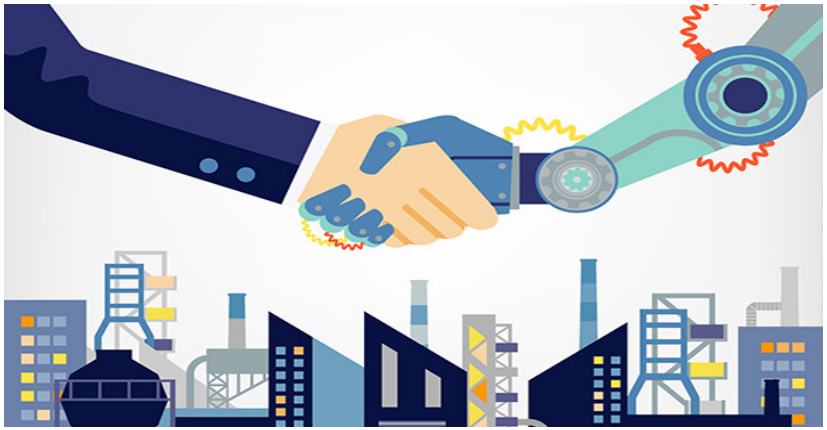
INDUSTRY 4.0 SEMINAR

ACCIÓ

Generalitat de Catalunya

EURECAT APPROACH TO I4.0



Joan L. Mas Albaigès

Barcelona

18/01/15

eurecat

EURECAT

the role of Technology Centers

R&D PUBLIC SYSTEM

RESEARCH PUBLIC ORGANIZATIONS + UNIVERSITIES

KNOWLEDGE GENERATION

APPLIED RESEARCH AND TECHNOLOGICAL DEVELOPMENT

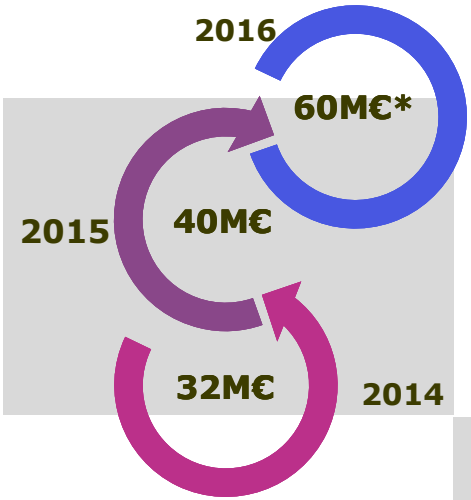
PRODUCTION SYSTEM

COMPANIES

VALUE GENERATION

EURECAT

Relevant figures



TURNOVER
*forecast

1.000 CUSTOMERS

73 PATENTS

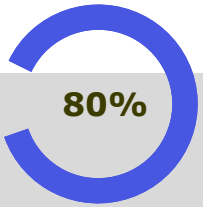
160 LARGE R&D PROJECTS

7 SPIN-OFF

450 professionals

60%

40%



R&D PROJETS

INTERNATIONAL PROJECTS

Customers


AQUALOGY
Where Water Lives
CONSELL DE COL·LEGIS FARMACÈUTICS DE CATALUNYA
Carlson Wagonlit Travel
Estrella Damm
endesa
AIRBUS
B BRAUN
SHARING EXPERTISE
LA PAERIA
Ajuntament de Lleida
SEAT
Sabadell
Generalitat de Catalunya
ZANINI
ABB
indo
BBVA
gtd
Bugaderia Industrial Garraf
Gestamp
hp
Diputació Barcelona
VinciLab
FLUIDRA
BARDEHLE PAGENBERG
Diputació de Girona
ALSTOM
SIEMENS
vodafone
EsteveTeijin Healthcare
INSTITUT GUTTMANN
HOSPITAL DE NEURORREHABILITACIÓ
Institut Universitari adscrit a la UAB
SENER
arsys
indra
Valeo
Telefónica
WellKom
CaixaBank
gasNatural fenosa
FICOSA
Mier
COMUNICACIONES
AOC
simon
VIAJES El Corte Inglés
abertis telecom
Ajuntament de Barcelona
CSIC

Index

EURECAT @ Industry 4.0

Eurecat's approach to the digital revolution

e-Health | Retail | Tourism | Utilities | Public Administrations | Industry & Energy

Information value

Intel·ligència
Coneixement
Informació
Dades

SMART SYSTEMS

VISUALIZATION AND USER EXPERIENCE

INFORMATION & KNOWLEDGE EXTRACTION

INFRAESTRUCTURE & STORAGE

DATA MANAGEMENT


Wereables

Mobile

IoT
M2M

Smart Machines

Social Media
Open Data

EURECAT @ Industry 4.0

Eurecat's approach to the digital revolution

Data Science and Analytics

- **Data Mining**
  Data Persistance
- **Data Analytics**
  AI, recommendation engines, semantics, clustering, segmentation, profiling, pattern recognition, etc.
- **Visualization & UX**

Digital Businesses solutions

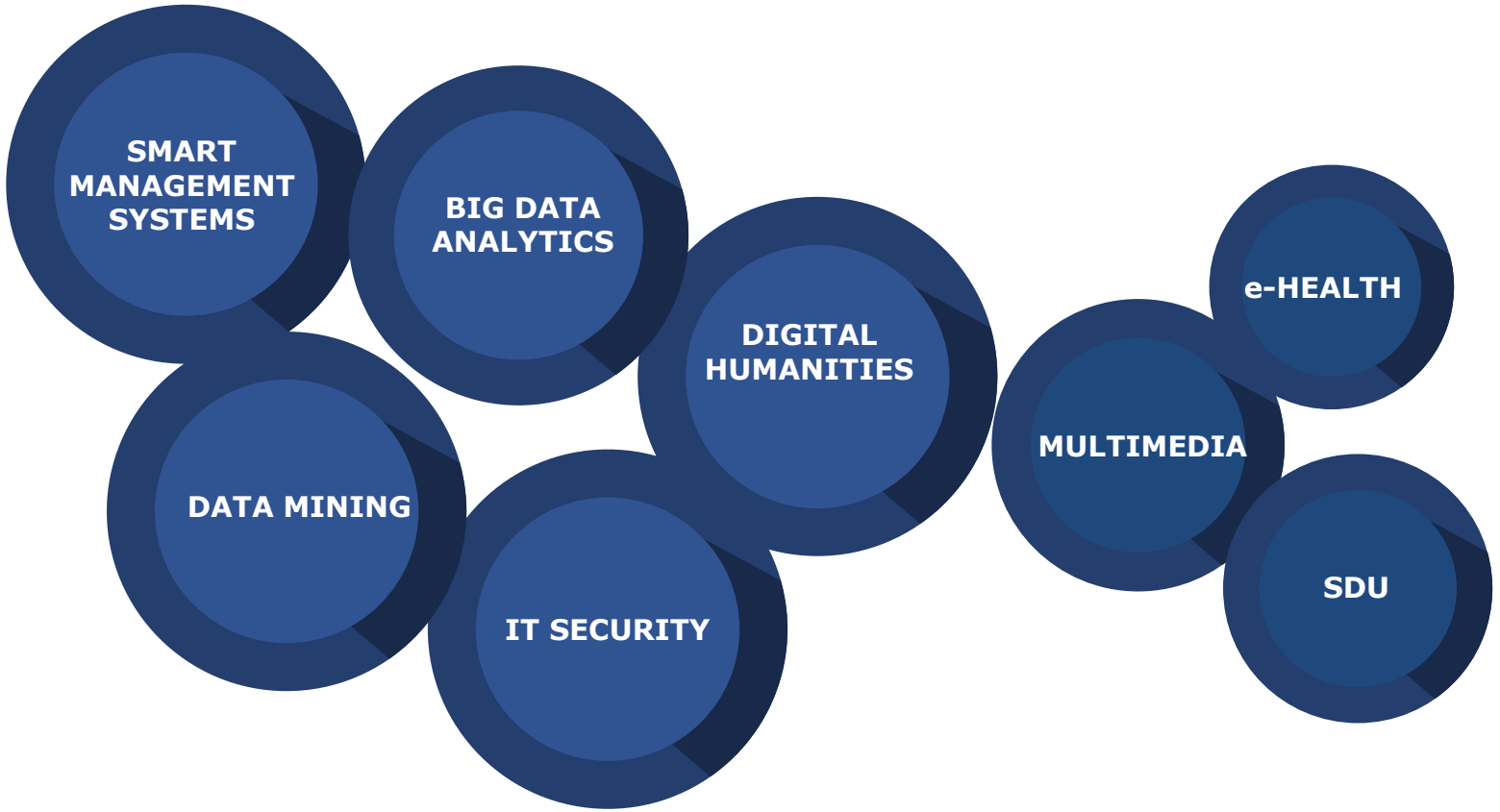
- **e-HEALTH Solutions**
- **Energy Efficieny Solutions**
- **Sustainability Solutions**
- **Industry Solutions**
- **Multimedia Solutions**
- **Indoor Positioning Solutions**

Horizontal Capacities

- **IT Security**
- **Cloud , Big Data Infraestructures**
- **Consultancy**
- **SW Development**

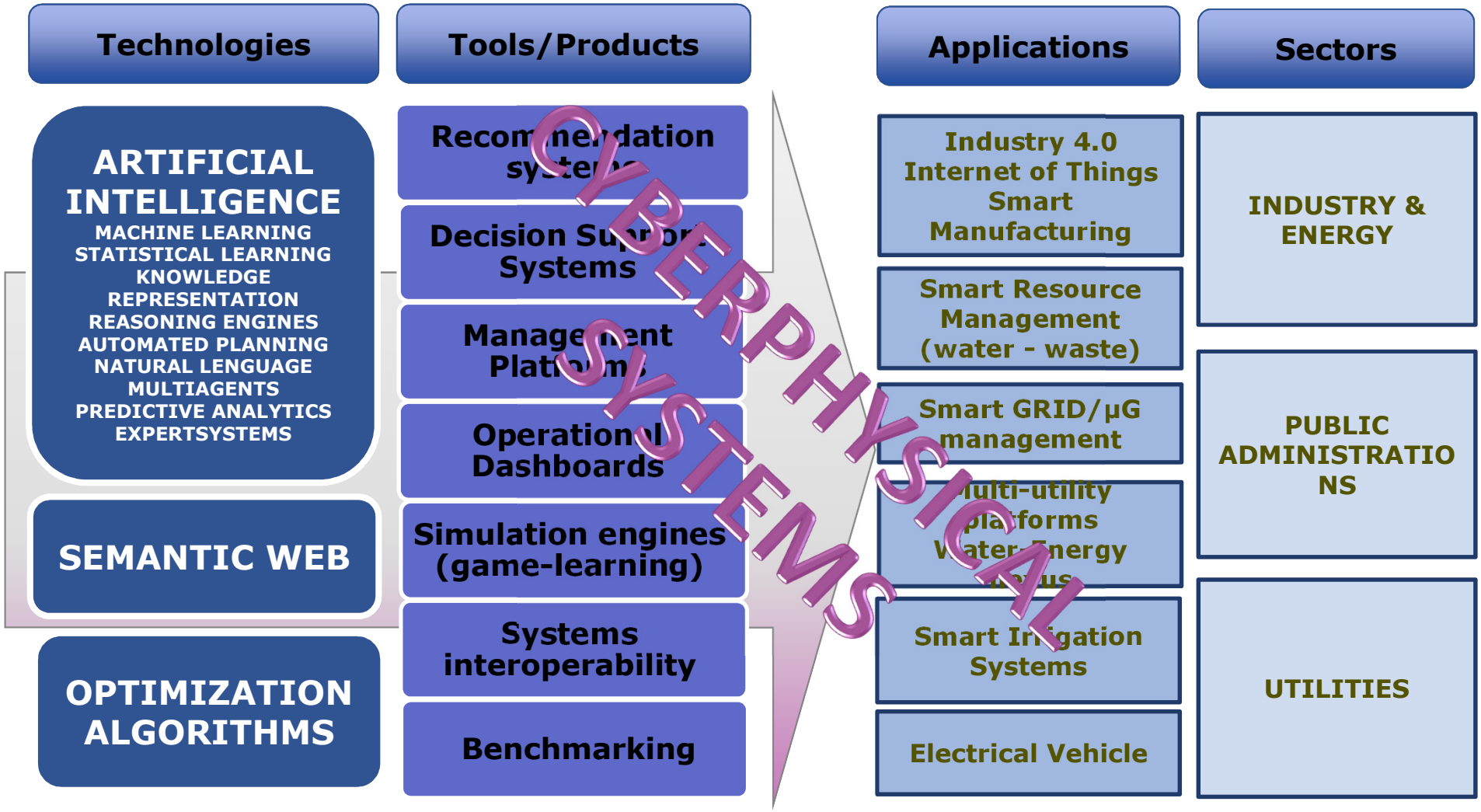
EURECAT @ Industry 4.0

Eurecat's approach to the digital revolution



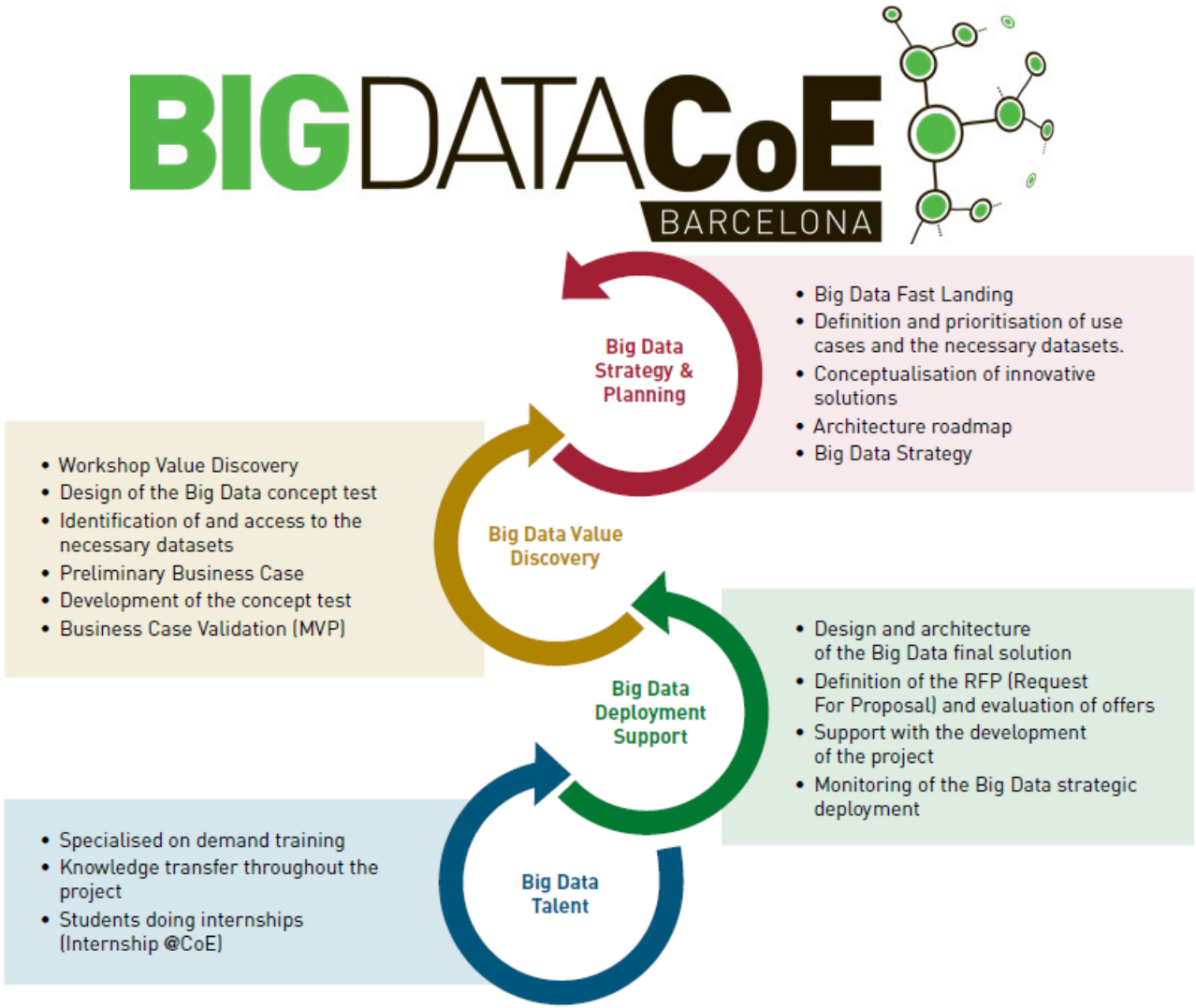
EURECAT @ Industry 4.0

Eurecat's approach to the digital revolution



EURECAT @ Industry 4.0

Eurecat's approach to the digital revolution



EURECAT @ Industry 4.0

Eurecat's approach to the digital revolution

IT SECURITY

AUTOMOTIVE SECURITY LABS

- Cybersecurity for the connected car
- Analysis of threats, vulnerabilities, attacks, etc.
- Standardization
- Eurecat – IDIADA joint iniciative
- Far reaching

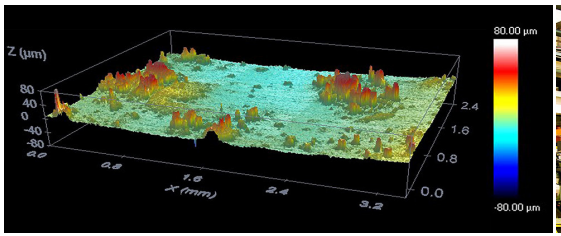
INDUSTRIAL IOT SECURITY LABS

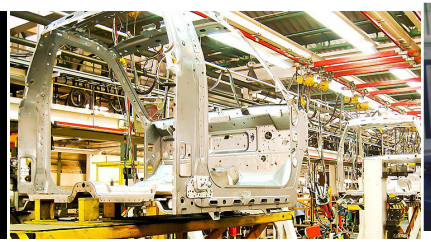
- Cybersecurity for connected industrial systems (CPS)
- Analysis of threats, vulnerabilities, attacks, etc.

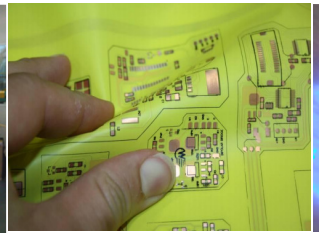
EURECAT @ Industry 4.0

Industrial Technologies

- Simulation and development of innovative and "Smart" products
- Autonomous and industrial robotics
- Surface functionalization (printed electronics)
- New flexible manufacturing processes, multi-technology, reconfigurable
- Wearable Applications
- Plastic, metal, ceramic and compound materials
- Product / process sustainability







EURECAT @ Industry 4.0

Aportar conocimiento y desarrollar tecnología para cada una de las etapas del ciclo

DIGITAL REVOLUTION

Data Extraction and Collection

Interface breakthrough (Wearable, mobile, M2M, Social Media, IoT)

Data Science

New aglorithms, methods and platforms to face new challenges

Data storage and Infrastructure

Big Data and Cloud Computing Architectures

Visualization and User Experience

Simulation environments, virtual environments. Audiovisual technologies

SUSTAINABLE, DIGITAL & SMART: INDUSTRY 4.0

Today's science is tomorrow's technology

ADVANCED MANUFACTURING

New Efficient Technologies

Sustainable processing

Functionalized Materials

Incorporating properties for products of the future

Intelligent Systems

Sensors, embedded SW, IoT

Backing the concept of the intelligent factory

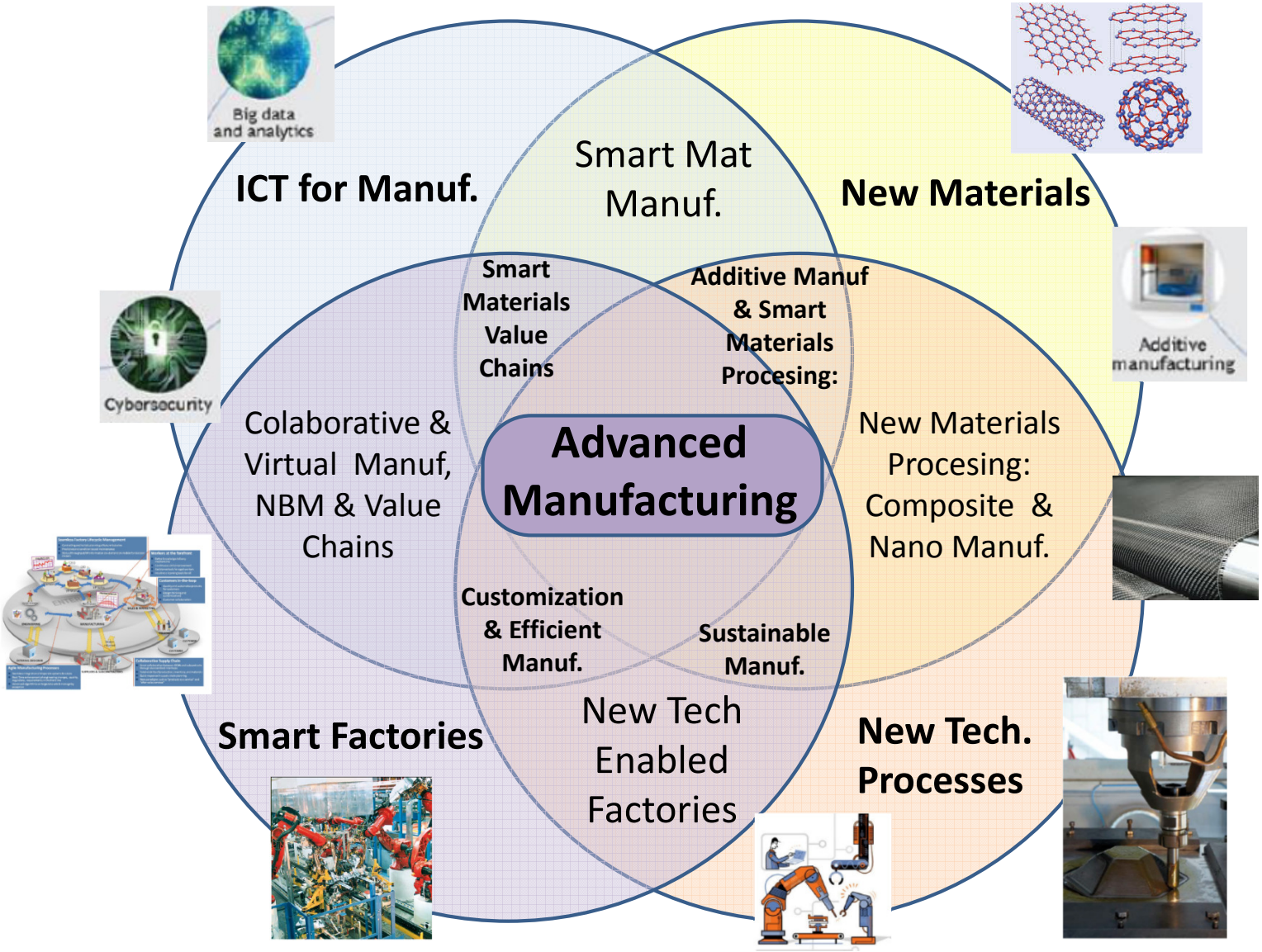
Industrial Laboratories of the Future

From concept to industry

VALUE GENERATION

EURECAT @ Industry 4.0

A view to Advanced Manufacturing



Eurecat CoE for Industry 4.0

HOW CAN WE HELP INDUSTRY

R&D and TECHNOLOGY TRANSFER AND CONSULTING

- Promoting R&D projects and developments with Industry
- Development of proof of concept and innovation projects for businesses to implement I4.0 solutions

TRAINING AND EDUCATION

- Providing training to upgrade current work-force skills to new I4.0 environment
- Knowledge transfer during the projects life cycle

TECHNOLOGY SCOUTING

- Ensure SoA,
- Dissemination of technological advances

Eurecat CoE fot Industry 4.0

MAJOR CONTRIBUTIONS


Infrastructure


Analytic Tools


Data Sets

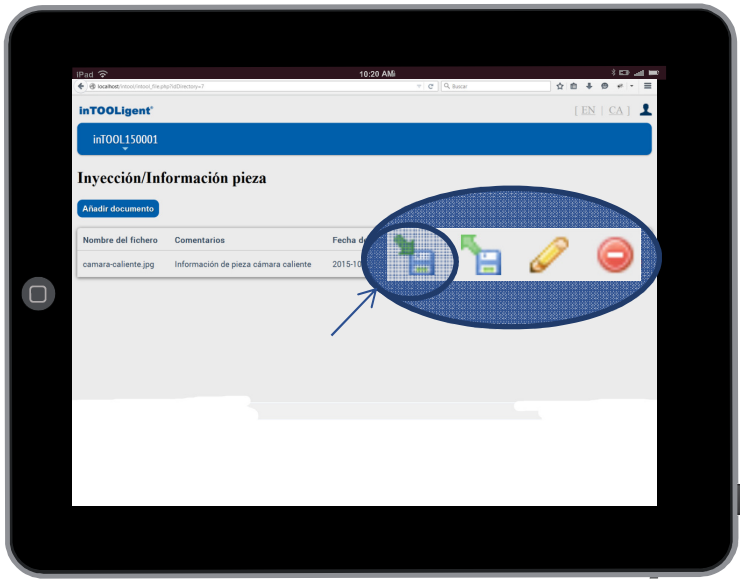

R&D and Development specialists

Success Cases & Best Practices


LABS, Innovation & Demo Spaces

Examples

inTOOLigent®: Solution for information control and traceability applied to production machinery (injection moulds)



PLASTIA.com

Examples

inTOOLigent®

1 **Key data permanently integrated inside the tool: part and tool drawings, parts and meterials lists, preventive maintenance schedule, etc.**

2 **Captures specific data in every production cycle: temperature, pressure, part validation, etc.**

3 **During the learning phase, inTOOLigent generates a diagnostic model**

During runtime, the model triggers closed loop actions, in real time

Examples

Smart Encoders

Evolution to a *"SMART PRODUCT"* with the following innovations:

- **New firmware**
- **New USX**
- **Adding connectivity**

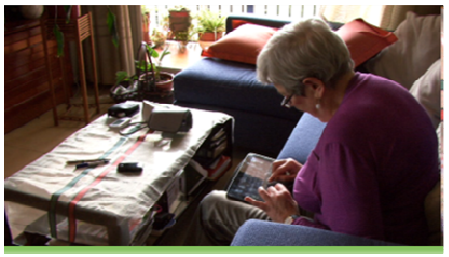
Positioning in Advanced Manufacturing, FoF

hohner AUTOMATICOS

Examples

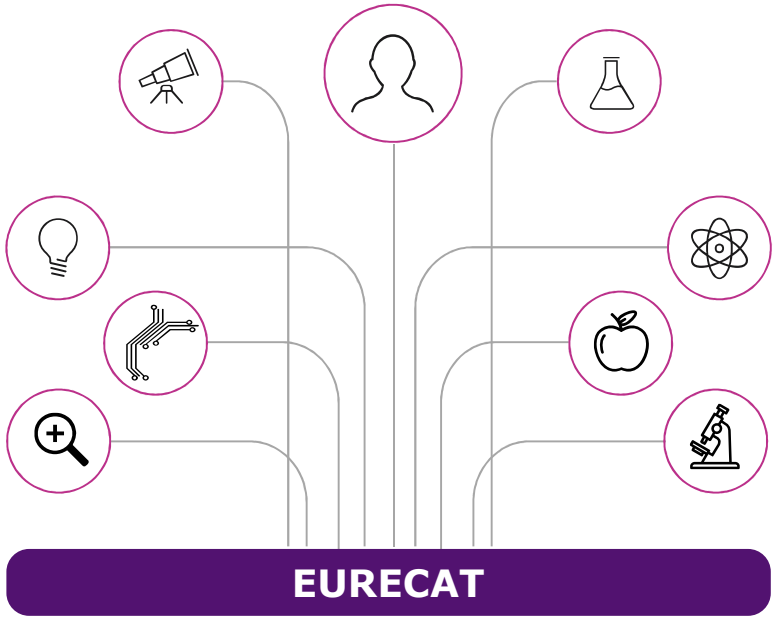
IoT based eHealth (teleassistance) solutions

- Domestic Sensor Network
- Measuring device network
- Cloud Architecture
- Mobility (tablets, smartphones)
- Back-end
- Teleassistance companies
- Farma & Hospitals



Summary

Contributing to a sustainabe technological development



Eurecat & Industrial Research :

- ✓ We research on future applications
- ✓ We strive in the generation of applied knowledge
- ✓ We want to innovate along companies and organizations
- ✓ We have experienced professionals in house
- ✓ Multidisciplinary approach allows us to design optimal solutions

Summary

We are convinced that ….

- ✓ Industry is the lever for the multi-sector innovation and economical and social progress in modern economies. We need a competitive, sustainable Industrial Sector.
- ✓ The 4th Industrial Revolution (Industry 4.0) relies on the industrial digitalization and the use of advanced production technologies
- ✓ An efficient use of the technology must contribute to increase of revenues and the definition and implementation of new business models
- ✓ This effort needs to be in place at regional and national level in Europe, as other worldwide players may threaten leadership in many areas

THANKS !

www.eurecat.org

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