

IHM - Logistics 4.0 - Biomedical / e-Health - Railway Certification

IoT - Smart Cities - Industry 4.0 - ITS - Cybersecurity



LE FONDS EUROPÉEN DE DÉVELOPPEMENT RÉGIONAL  
ET LA WALLONIE INVESTISSENT DANS VOTRE AVENIR

digital  
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**Multitel**  
INNOVATION CENTRE



**Boost**  
business innovation

MONS | TOURNAI | LILLE  
[info@multitel.be](mailto:info@multitel.be) / [www.multitel.eu](http://www.multitel.eu)



## Multitel asbl

NON PROFIT RESEARCH CENTRE

1999

Created in 1995 by the Engineering Faculty of the University of Mons (ERDF - Objective 1), with activities focused mainly on computer networks, photonics, voice technologies and signal processing. Multitel is one of the research centres recognised by the Walloon government.

## Railway Certification

2008

Based on the skills of the center and taking advantage of new development opportunities, Multitel is a player in the certification of railway signaling equipments. Multitel is one of the 3 recognized certification centers in Europe.

## EuroMultitel SA

2014

Creation of EuroMultitel SA, Multitel's commercial company, to address Asian and international markets, in the railway certification sector.

## EuraTechnologies (Fr)

2016

Opening new offices at EuroTechnologies, first french incubator, to develop new business services.

## Charleroi

2019

Multitel is thinking about a new installation in Charleroi.

## Railway laboratories

2015

New building dedicated to certification and R&D activities in the railway sector.

## Tournai - Smart Cities

2012

2012 really marks the sectoral approach that Multitel is now following with its first activities in Smart Cities and the installation of Multitel in new offices in Tournai.

## Parc Initialis - Mons

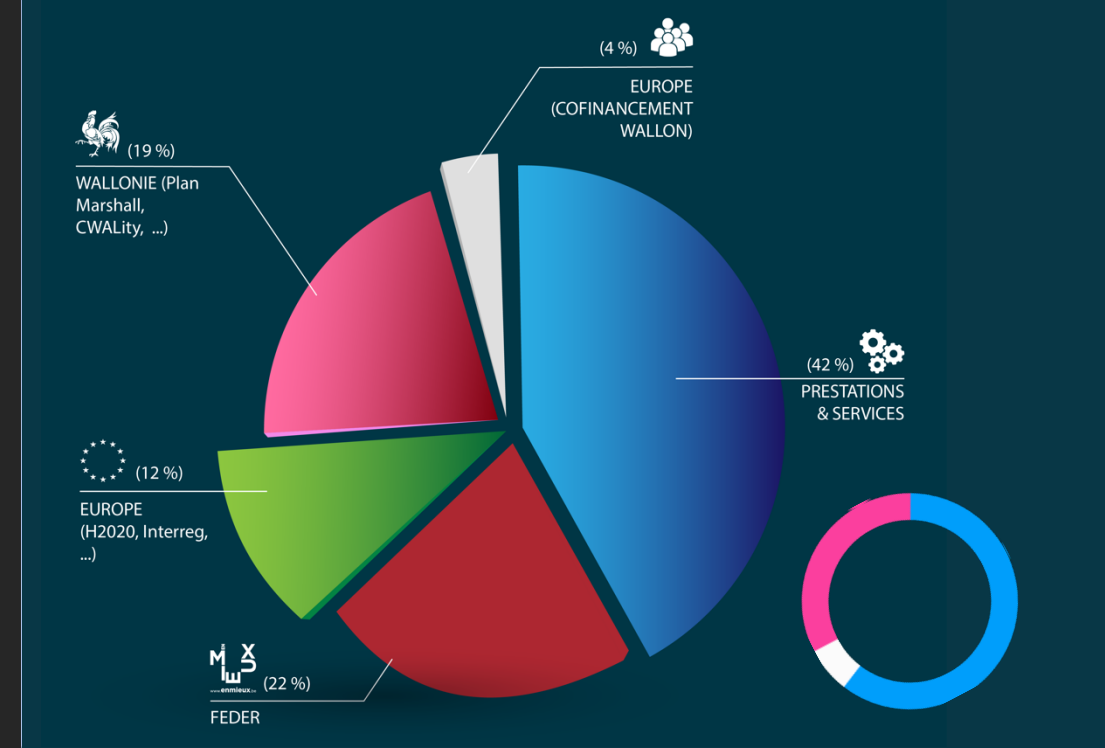
2006

Installation of Multitel in its premises of the park Initialis in Mons.

Multitel 20  
➤ WE ARE

# KEY FIGURES

- MULTITEL: NON-PROFIT RESEARCH CENTER
- EUROMULTITEL: ENGINEERING COMPANY



# BOOST BUSINESS INNOVATION

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FROM FEASIBILITY TO YOUR MINIMAL VALUABLE PRODUCT

- RESEARCH & INNOVATION
- DESIGN & IMPLEMENTATION OF INNOVATIVE SOLUTIONS(FEASIBILITY, TECHNICAL SUPPORT, PROTOTYPING)
- TECHNOLOGICAL TRANSFER



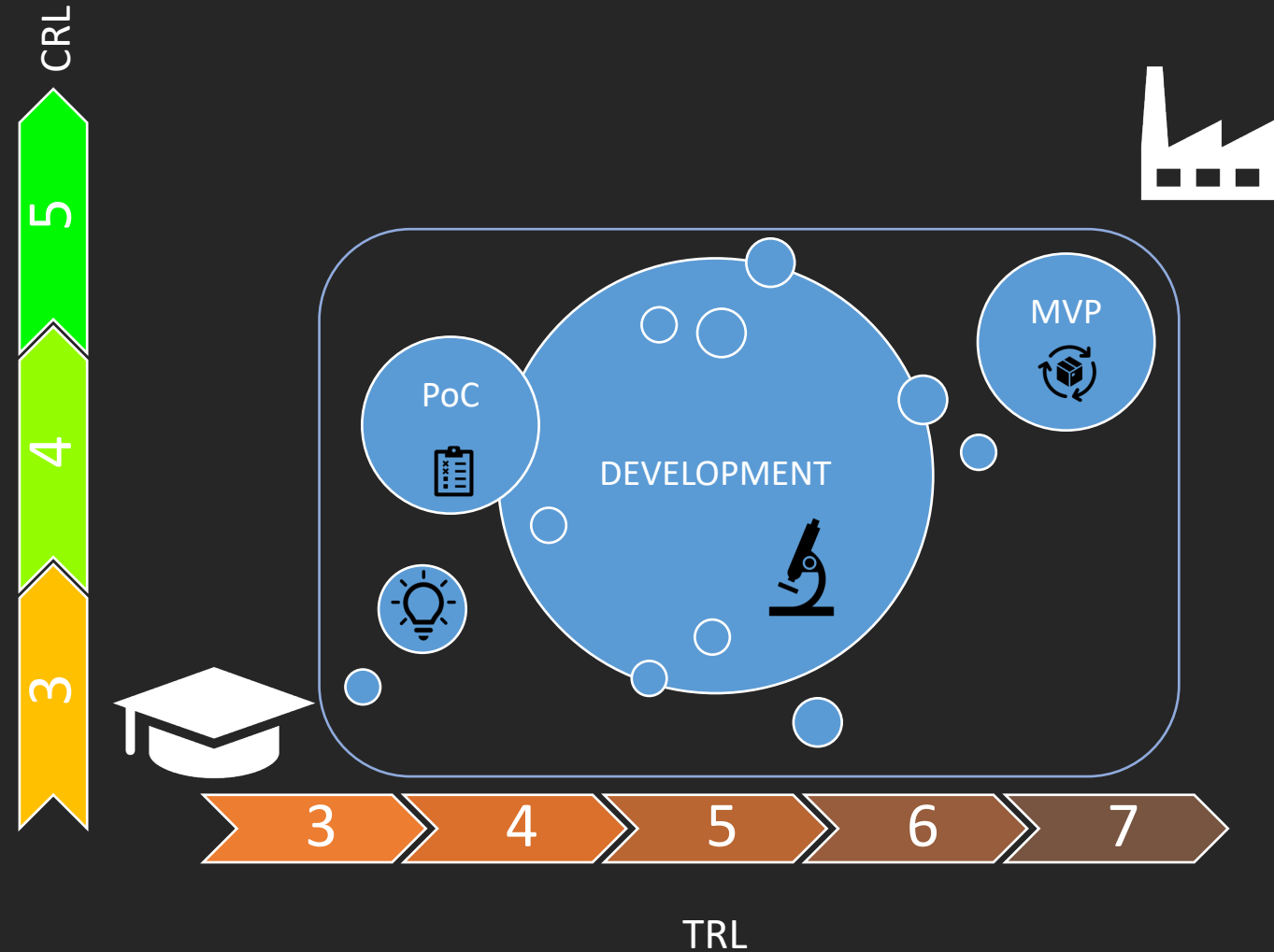
- HIGH-TRL R&D IN STRATEGIC SECTORS AND TIME-TO-MARKET DEVELOPMENTS
- SPECIFIC ON-DEMAND SERVICES FOR STARTUPS, SME AND CORPORATES
- LONG-TERM PARTNERSHIPS IN OPEN ECOSYSTEMS
- TECHNOLOGICAL TRANSFER OF MULTITEL RESULTS

MULTITEL

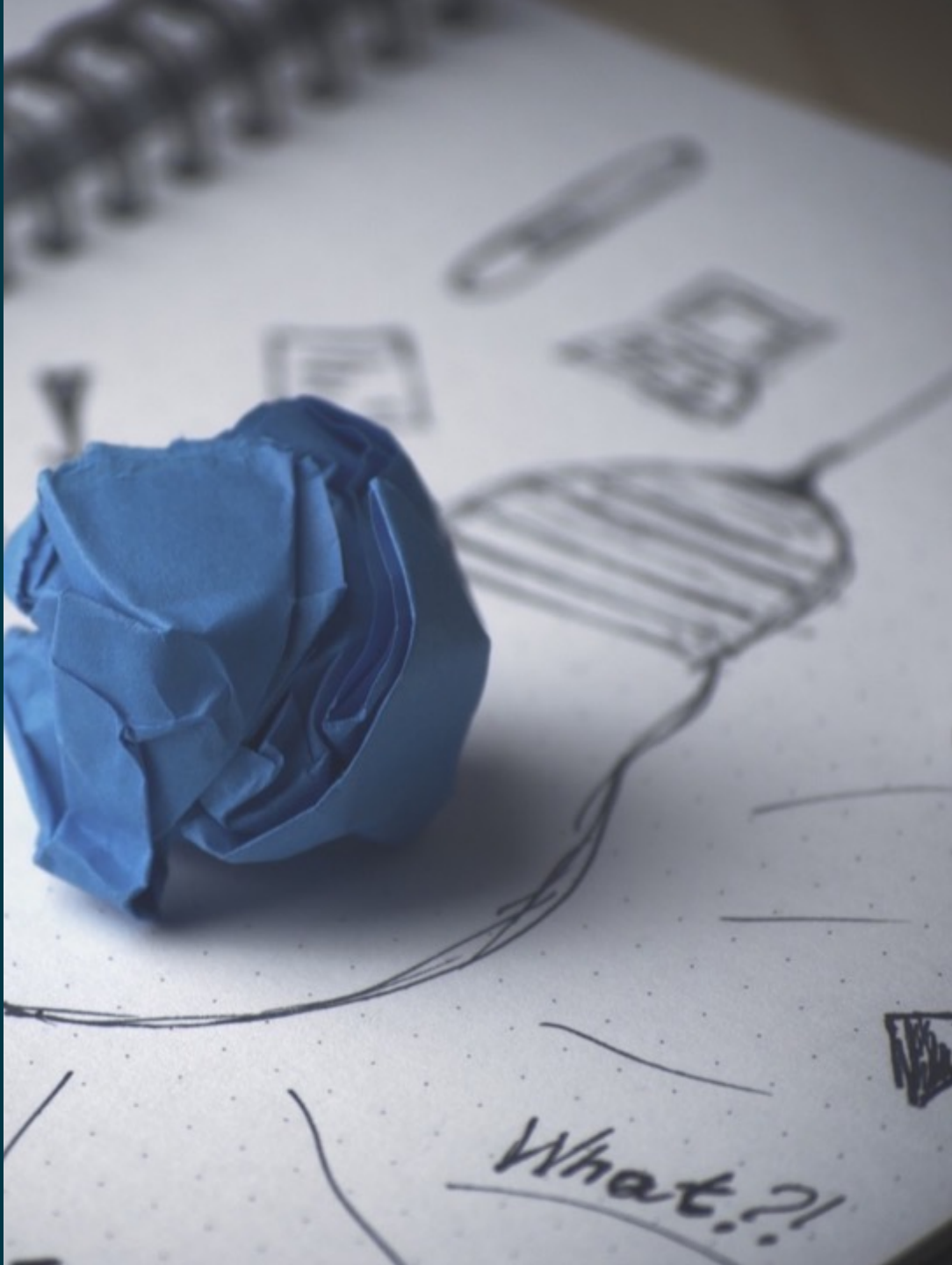
EUROMULTITEL

# THE KEY ELEMENT OF YOUR VALUE CHAIN

- FINANCIAL LEVERAGE
- HUMAN ENGAGEMENT
- TECHNOLOGICAL PUSH







# SUPPORTING YOUR DIGITAL TRANSFORMATION

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- APPLIED PHOTONICS
- NETWORK ENGINEERING
- IOT & EMBEDDED SYSTEMS
- ARTIFICIAL INTELLIGENCE
- RAILWAY CERTIFICATION





## APPLIED PHOTONICS

Fibre lasers  
Biophotonic sensors  
Embedded fiber optic sensors  
Optoelectronic systems  
Laser micromachining platform  
VIS and THz imaging and spectroscopy  
Metrology and calibration



## ARTIFICIAL INTELLIGENCE

Computer Vision  
Audio/speech processing  
Signal processing  
Optimization & Digital Twins

## NETWORK ENGINEERING

Wireless and local area networks  
Mobile technologies  
System and network architectures  
Performance analysis and network audit  
IPv6 analysis and migration  
Cybersecurity, Blockchain  
Technical specifications



## IoT & EMBEDDED SYSTEMS

Electronics (Firmware, digital, analogue, RF, antennas)  
IoT (WSN, I-IoT, RTLS ...)  
Printed electronics  
Traceability (RFID, GS1-EPCIS)



## RAILWAY CERTIFICATION

Tools and services for ERTMS / CBTC:

- Tests Eurobalise & BTM
- Tests EVC, RBC (Subset-RBC), Subset-111, IXL, DMI
- Validation on Track (EVC, Radio)
- System level tests (M-SILAB)
- ERTMS Test equipments (maintenance, production)
- GSM-R, LTE for Railway
- JRU2TRACK







# #SMARTCITIES

- Vehicles and/or people detection & re-identification for mobility (FEDER)
- Sound detection & classification for noise pollution analysis (FEDER)
- New portable & remote IR spectroscopic characterization solutions for gazes / particles analysis (fire smoker, uncontrolled discharge on sites at risk ...) (INTERREG FWVI)
- New roadsign materials & manufacturing process integrating IoT for management and monitoring of roadsign fleet (CWALITY)







# #INDUSTRY4.0

- Digitalized process for manufacturing of electronic product (COOTECH)
- LoRa®-based I-IOT with ruggedized characteristics for predictive maintenance (Wind power, Extractive industries ...) (MECATECH)
- LASER-based solution for the functionalization of metallic surfaces with textures  $\sim 1\mu\text{m}$  or less on mass production (H2020)
- THz spectroscopy & imaging for non-ionizing, non-invasive and non-destructive, quality control or substance detection (FEDER)
- Laser decoating for electromagnetic transparency of glazing (COOTECH)







# #LOGISTICS / #TRANSPORT

- Voice-based conversational agent for cars (**MECATECH**)
- IT solution to connect urban logistics operators in order to offer shippers a one-stop shop optimizing costs and environmental impacts (**LiW**)
- Management solution for shipment by inland waterway transport (**INTERREG NWE**)
- Multimodal optimisation process across the EU Transport System, increasing the modal share of IWT and supporting the EC's ambitions to reduce transport GHG emissions by two thirds by 2050 (**H2020**)







# #AERONAUTICS

## #SPATIAL

- Temperature controller for photonics systems, compliant with spatial standards (**BUSINESS**)
- Voice-based crew assistant in aircraft cockpit environment (**CLEAN SKY**)
- Instrumentation / micro-machining for electric aircraft de-icing (**PIT AERO**)
- Implementation of AI development tools compliant with navigability standards (**PIT AERO**)







# #FARMING

- Bio-reader based on image processing of reactors illuminated by regulated light for proteins detection (**BUSINESS**)
- Development of a new generation of biosensors in order to early detect specific pathogens and to monitor the action of bio-pesticides (**INTERREG FWVI**)
- Object detection & classification for remote sensing (drone application) (**SKYWIN**)
- TeraHertz applications (Measurement of fusarium-damaged wheat grains, Monitoring the fermentation of cocoa beans. In the literature, some labs have done the same type of study on rice. Measurement of skin thickness (affecting food preservation), Detection of foreign bodies (in flour for example) (**FEDER**))







## #ENERGY

- Sensors installation by drone on high-voltage lines (**SKYWIN/MECATECH**)
- Macro and microeconomic analysis for the optimization and replicability of energy communities (**TWEED Living Labs**)





## #HEALTHTECH

- Versatile multimodal platform combining fluorescence technics for ex-vivo biopsies (**EUROSTARS**)
- Follow-up of Parkinson patient based on various biomarkers such as human pose estimation, voice or activity (**BIOWIN**)
- Wearables for real-time monitoring of SPOx (**BUSINESS**)
- Optical holography imagery for hematopathology (**EUROSTARS**).







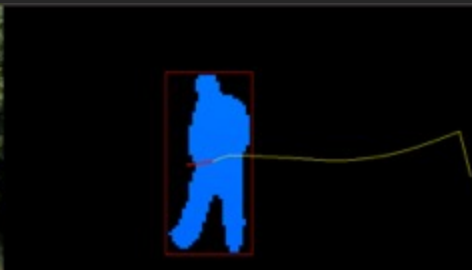
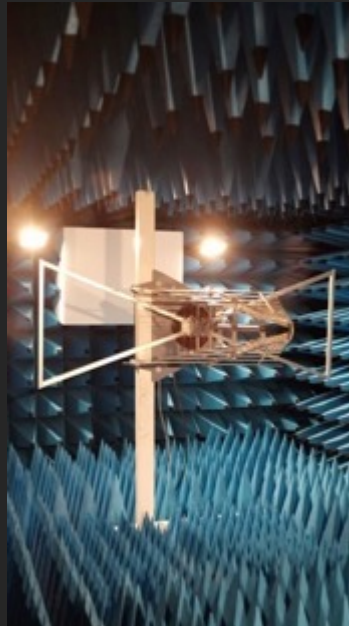
# #SPORTECH #LEISURE

- Petank ball detection and distance measurement by image processing (BUSINESS)
- Object detection & classification for kayak counting (BUSINESS)
- Development of a communication system, by satellite, for alert leveraging (BUSINESS)



# AND MORE ...

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## 500+ SUPPORTED SME & COMPANIES







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Industrie du futur | digital wallonia .be

#smartregion

digital wallonia 4.ai

AI4Belgium

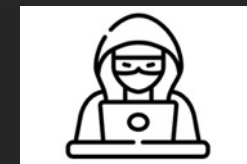
DIGITAL EUROMETROPOLIS  
First European cross-border digital hub

Le Campus Numérique  
by Entreprendre.wapi

digital wallonia .be by DIGITAL ATTRAXION

eurometropolitan e campus

TRAIL



CyberWal

# AXES STRATÉGIQUES

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- INTELLIGENCE ARTIFICIELLE
- SECURITE NUMERIQUE
- IoT & IIoT
- SYSTEMES PHOTONIQUES



- ITS, TRANSPORT & LOGISTIQUE, MOBILITE URBAINE
- CHAINE ALIMENTAIRE
- SMART CITIES
- SANTE DU FUTUR
- INDUSTRIE 4.0





### HEADQUARTERS

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7000 Mons • Belgium

### CAMPUS NUMÉRIQUE

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ZI Tournai Ouest I  
7503 Tournai • Belgium

### A6K

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6000 Charleroi • Belgium

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