

The logo features a stylized letter 'A' in red, which is partially enclosed by a grey square. To the right of this icon, the word 'ASTER' is written in a grey, serif, all-caps font.

ASTER

innovazione attiva

IMPROVING
Energy Efficiency
IN ELECTRIC VEHICLES

**THE ELECTRIC VEHICLE VALUE CHAIN INSIDE
THE EMILIA ROMAGNA SMART
SPECIALIZATION STRATEGY: A THEME FOR
EUROPEAN INDUSTRIAL MODERNIZATION
PLATFORM?**

Bologna, November 24th

Francesco Paolo Ausiello

Emilia Romagna High Technology Network evolution

2009-2016

Emilia Romagna High
Technology network

6 Platforms

1500 Researcher

5 University

90 Industrial Research labs

Turn over 170 M€/5 years



PIATTAFORMA
MECCANICA
MATERIALI

PIATTAFORMA
SCIENZE DELLA VITA

PIATTAFORMA
COSTRUZIONI

PIATTAFORMA
ENERGIA
AMBIENTE

PIATTAFORMA
AGROALIMENTARE

PIATTAFORMA
ICT E DESIGN

2012- 2014

The Smart
Specialization
Strategy enters in
the HTN as guide
line

5 Areas are identified as
relevant in the Regional
scenario

AGROFOOD

COSTRUCTION

MECHATRONICS &
MOTORS

HEALTH & WELLNESS

CULTURAL & RECREATIVE
INDUSTRY

ZOOM
IN

Specialization strategy S3 Regional Interest

**STRATEGIC
INTEREST
SYSTEMS**

**HIGH
GROWTH
POTENTI
AL**

Agrifood

Construction

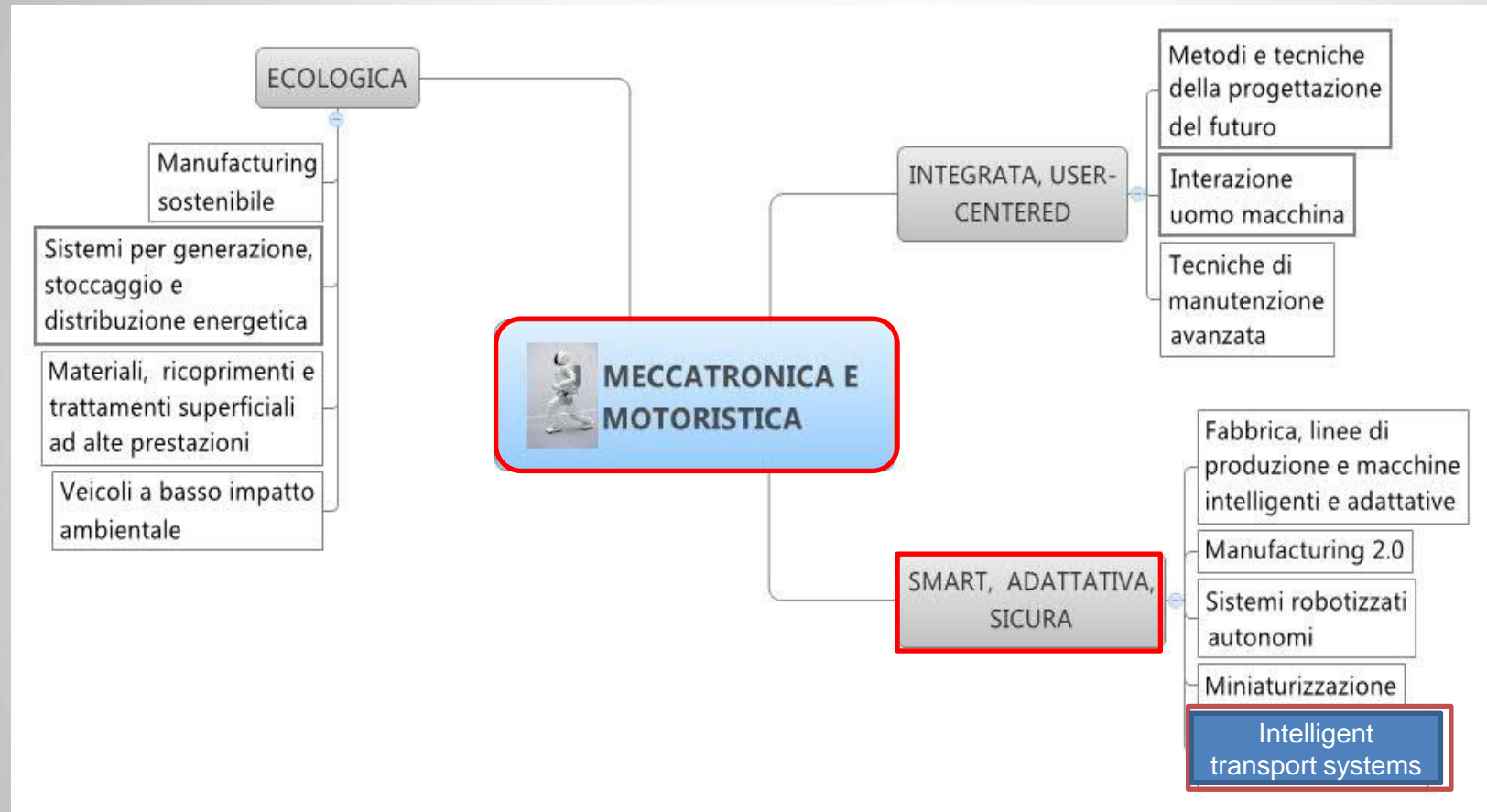
**Mecathronic
s & Motors**

Health and
wellness

Cultural and
Creative
Industry

IMPROVING ENERGY EFFICIENCY IN
ELECTRIC VEHICLES

Mechatronics: the roadmap



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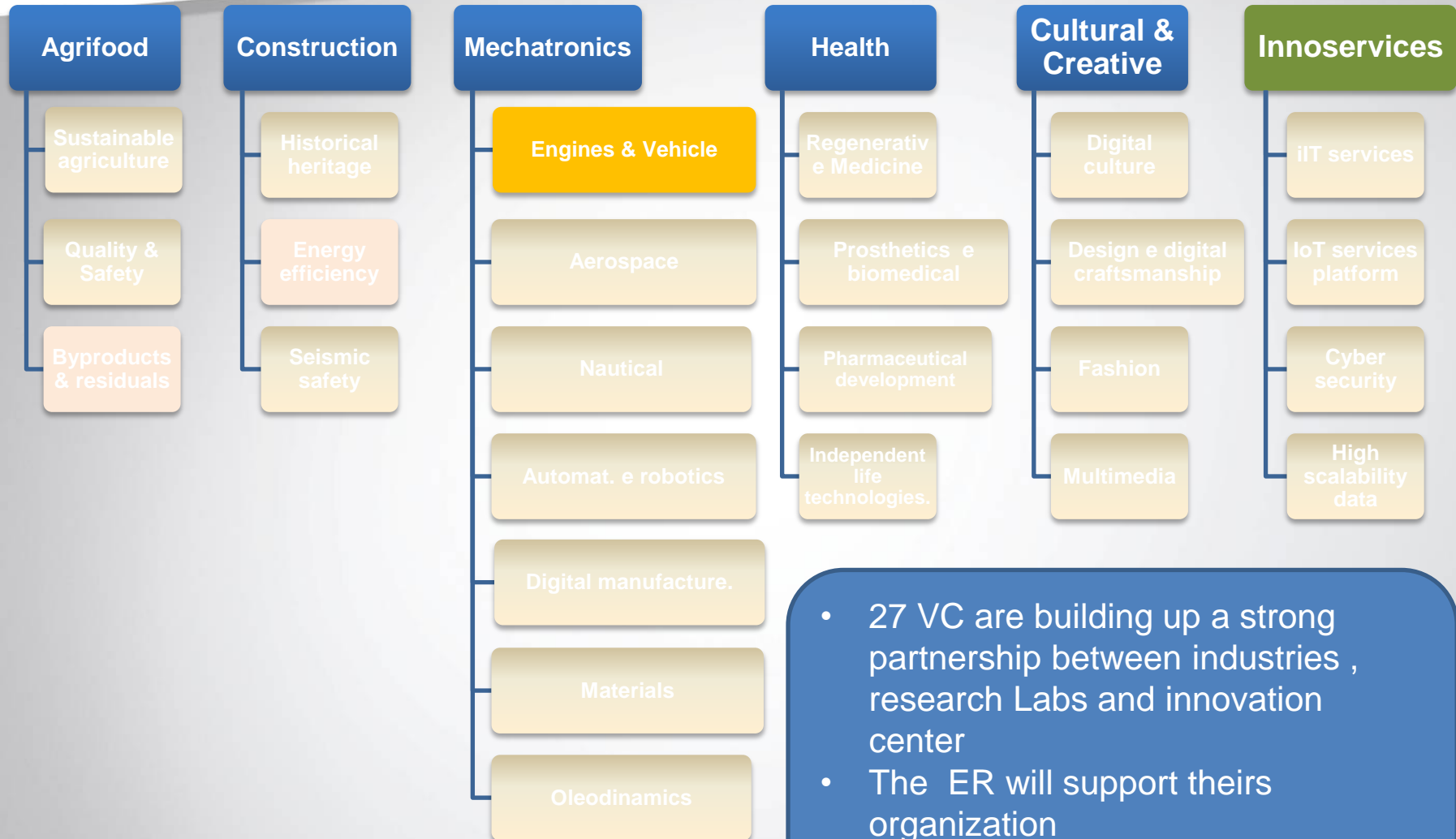
2016- 2017

A new S3 based structure
of the HTN is launched

- Each S3 area becomes an association
- **Value chains are the aggregation structure for Industry and Research**
- **HTN labs and resources is remapped over the S3 grid**

ZOOM
IN

S3 associations – value chains



- 27 VC are building up a strong partnership between industries , research Labs and innovation center
- The ER will support their organization
- Each value chain will deliver a

pipeline of strategic projects in the next ERSF program.

E-Rmes

The “E-R” association:
“Emilia Romagna sustainable
electric mobility”
2014: a new cluster has been launched

- **Create** a privileged observatory
- **Define** supply chain strategies
 - with attention given to developments required by regulations
 - interpreted by the international automotive players
- **Set up** industrial cooperative projects
- **Work** according to/in support of Emilia-Romagna regional government

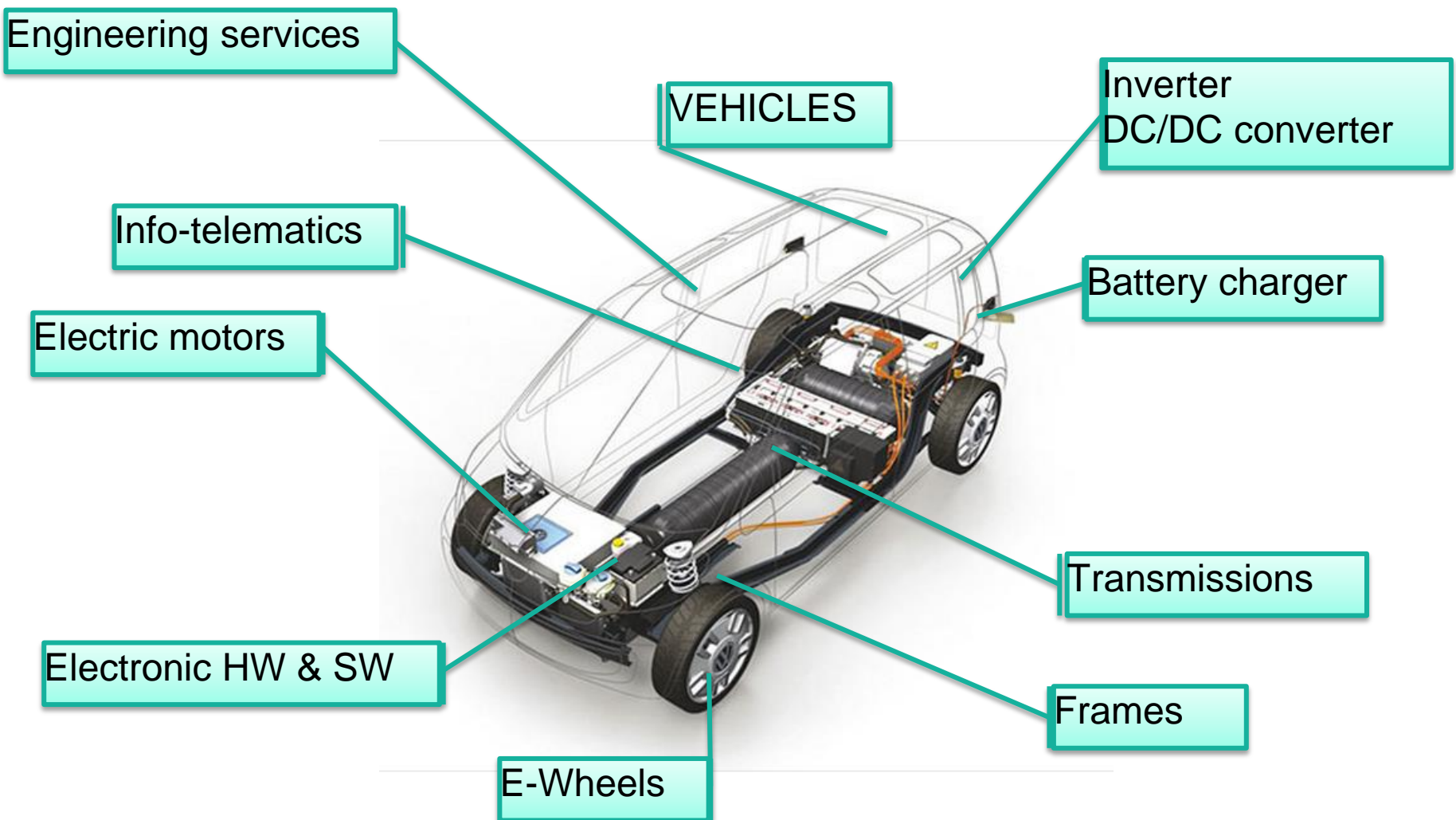
Members

- **24** companies
- **3** research centers

“A COMMON UNDERSTANDING”

- **Individual mobility:** undeniable expression of human freedom
- **Sustainable mobility:** the new way to design and manage environmentally friendly means of transport

Electric vehicle components: suppliers



Electric vehicle components: suppliers

E-Rmes

CENTRO INTERDIPARTIMENTALE **MAM** DI RICERCA INDUSTRIALE
MECCANICA AVANZATA E MATERIALI

UNIMORE
UNIVERSITÀ DEGLI STUDI DI MODENA E REGGIO EMILIA

MECAPROMTM

VISLAB.IT
Extend Your Vision

RE:Lab

Lucchi R
Elettromeccanica S.r.l.

ELANTAS
Electrical Insulation

Active Technologies
AT

MAGNETI MARELLI

LANDIRENZO

Electric Vehicles s.r.l.

DUCATI energia

TAZZARI EY
ZERO EMISSION MOBILITY

IA
INDUSTRIA ITALIANA AUTOBUS

WAYEL
Electricbikes

MAGNETI MARELLI

SEVCON

bassi

kaitek
power solutions



benevelli
TRANSAXLES & POWER DRIVE UNITS

MUSP
Macchine Utensili e Sistemi di Produzione



E-Rmes: background and fields of competences



E-Rmes members work in **complementary fields**: the union of their productions constitute a range of competences, products and services.

The regional tradition in top Class cars (e.g. Ferrari, Lamborghini, Maserati) also **opens the opportunity** to use skills and knowledge of suppliers and the industrial context to pour those skills even in **top range electric cars**.

Mobility of people

- Minibuses and buses from 9 to 50 people (EV conversion)
- Passenger cars (EV conversion)
- Microcars and other small vehicles for individual mobility
- Heavy quadricycles, motorcycles and cycles with pedal assistance (EV conversion)

Mobility of goods

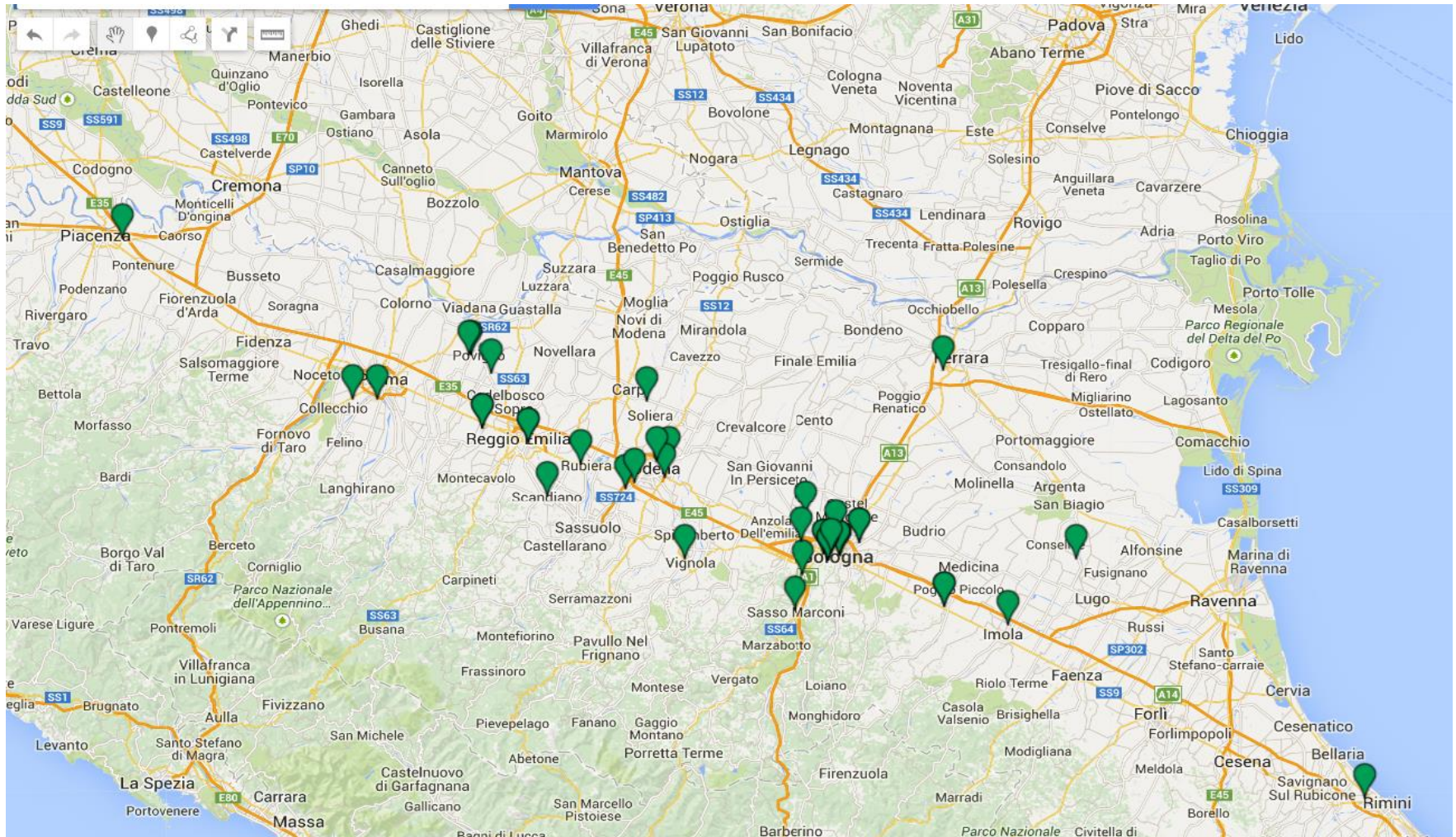
- Vehicles for freight, different types and functional feature, from 0,5 up to 7 t of useful capacity: vans, refrigerated (cool/cold) vehicles, etc. (EV conversion)

Charging systems

- Quick, high power
- Normal, during the stop and private nocturnal recharge

E-Rmes: presence in Emilia-Romagna

E-Rmes



An Emilia-Romagna Competences atlas

E-Rmes

E-Rmes

Emilia-Romagna
mobilità elettrica sostenibile



- All information are included in an on-line catalogue

ERMES experience:

- Communication
 - Ecomondo 2015, official cluster presentation
 - Baden Wuerttemberg e-mobility Cluster fair in Stuttgart in 2015
 - R2B (Research to Business fair in Bologna) last 2 years' editions
 - ERMES Tech-day and exposition addressing the Regional administration
- Projects
 - The 2.5 M€ POR ERSF project “TIME” was approved.
 - Vehicle integration of an electric powertrain
 - Structural and Dynamic interface, HMI, **Air conditioning system**
 - 11 researcher involved over 2 years
 - Several E-Rmes members are contributing to the project

Evolution

- **After 2 year of networking E-Rmes is looking for strengthening its organization by entering the ENGINE & VEHICLE Value Chain**

S3 associations – value chains

Mechatronics

Engines & Vehicle

Aerospace

Nautical

Automat. e robotics

Digital manufacture.

Materials

Oleodinamics

E-Rmes

**A STEP INSIDE EUROPE MAY BE
EVALUATED AS NEW OPPORTUNITIES
ARE NOW ON STAGE**

Emilia Romagna High Technology Network meets the international Organizations

Emilia Romagna has a New set up for the post 2020 European evolution

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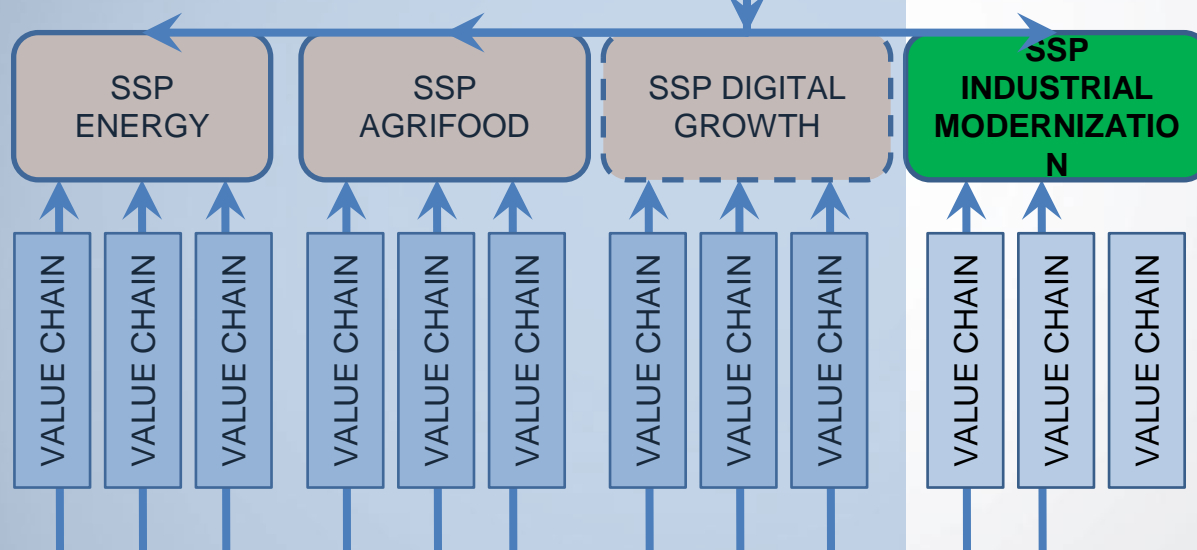
This new structure FITS with the new EUROPEAN approach for an industrial renovation



EMILIA ROMAGNA INDUSTRY & RESEARCH



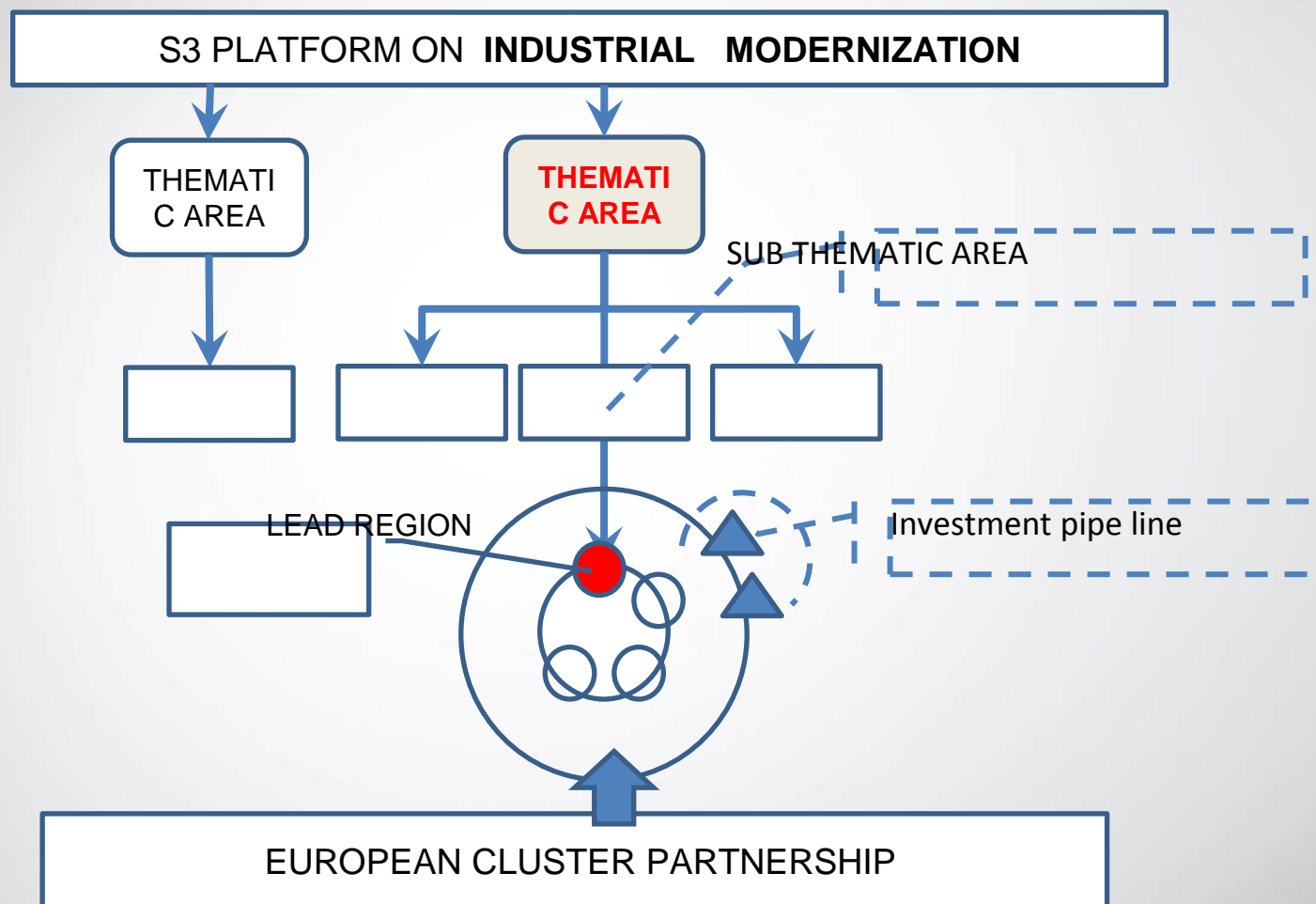
**EU LEVEL STRATEGIES
JUNKER COMMISSION PRIORITIES**



**Just
Started 1
week ago**

**INTERREGIONAL COOPERATION
BOTTOM UP REGIONAL STRATEGIES FOR SMART SPECIALIZATION**

S3P Governance will include leader & Co-leader regions



EV Thematic AREA has not been proposed so far: a new opportunity !

- EV thematic area **may be proposed** to the EC through the JRC Seviglia
- A call is open for preliminary expressions of interest
https://ec.europa.eu/eusurvey/runner/S3thematicplatform_expression_of_interest
- A partnership must include 3 regions
- A program of activity and a project pipeline must be highlighted
 - IDEAS
 - Thermal to Electric vehicle conversion
 - EV fitting innovative components , e.g. air conditioning
 - Niche EV vehicle full manufacturing

This conference may be the initial kick to
connect interested participants
to jump in a **new industrial phase**
Inside the EV evolution

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THANKS