

A UPM initiative

The city of the future



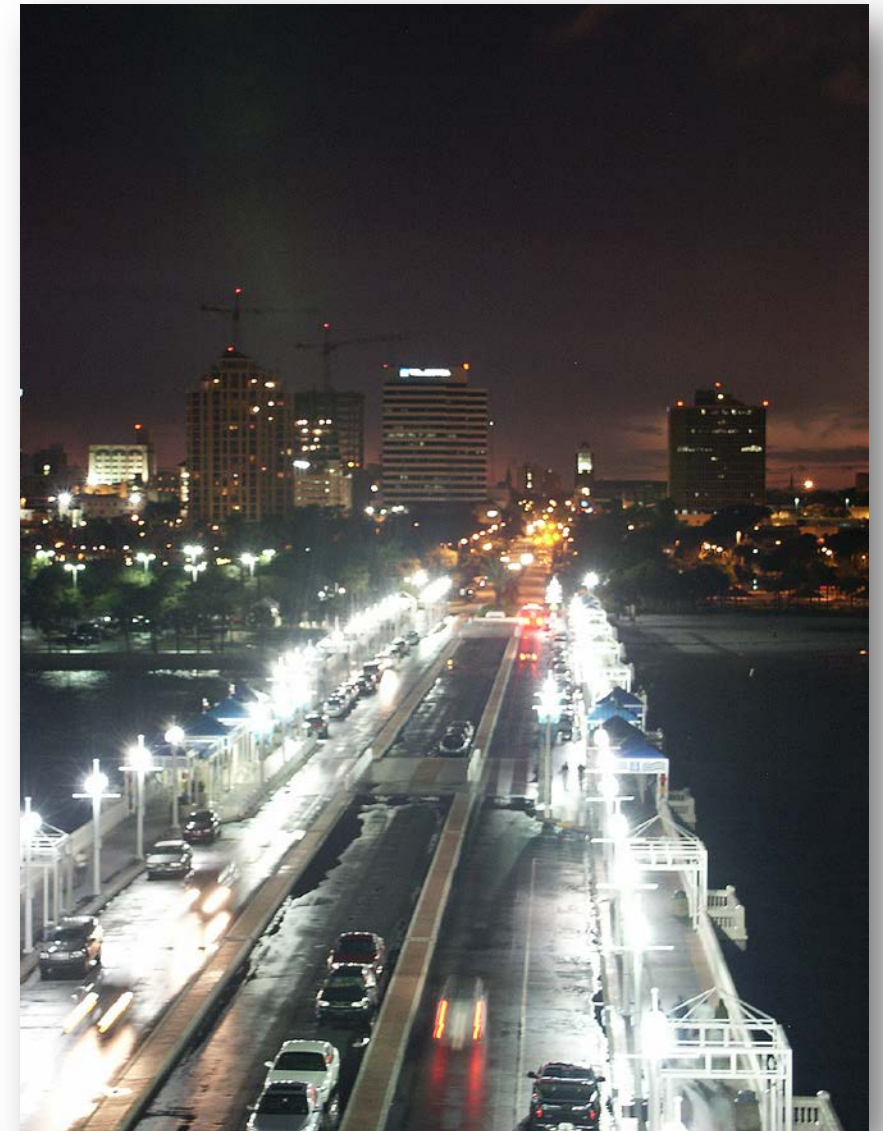
Ciudad del **Futuro** | Universidad **Politécnica**
de Madrid

Some facts

- Today, more than 50% of world population live in cities.
- There is a continuous flow of people from rural to urban areas. Urban population is growing in 5 million people every month.
- Today, we have 450 cities with more than a million of inhabitants.

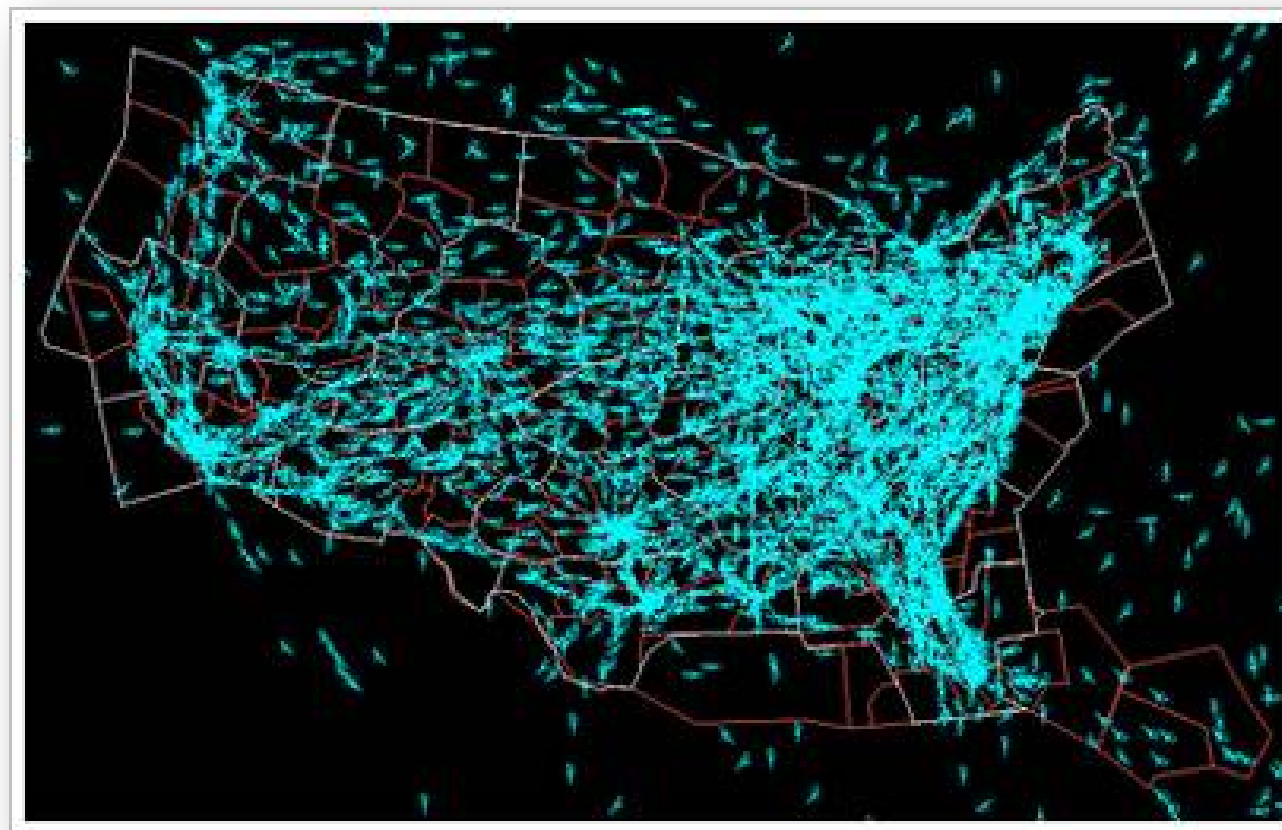
Some facts

- There are 20 megacities having more than 10 million inhabitants. Half of them in developing countries.
- More than 75% of world energy is used in cities.
- 42% of the total energy is consumed in urban buildings.



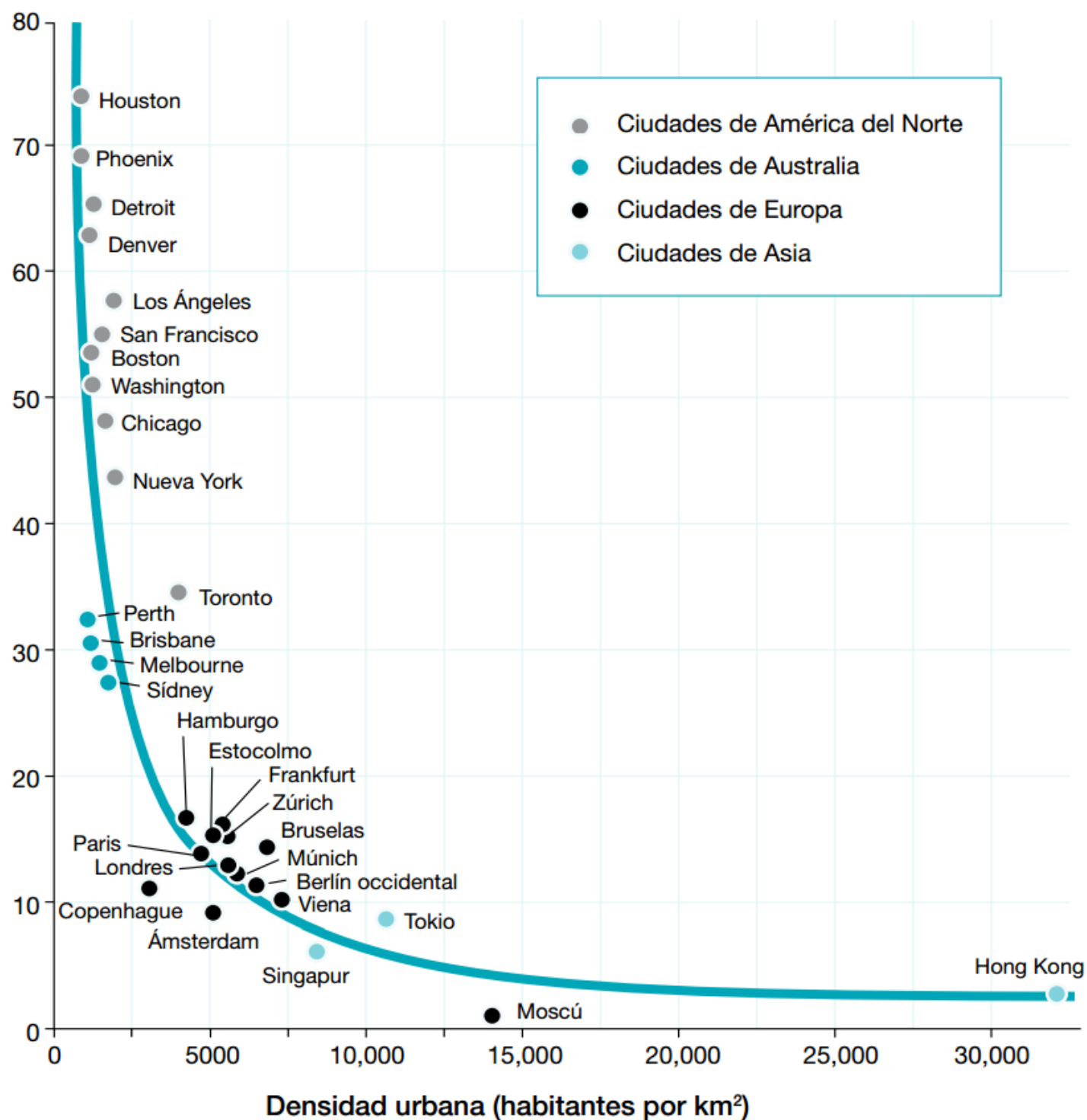
Some facts

- In China, during next 15 years, 300 million people will move from rural areas to cities
- This fact will imply to build houses for a population equivalent to the population of USA.



Algunos hechos hoy

Consumo de energía relacionada con el transporte
Gigajoules per cápita / año

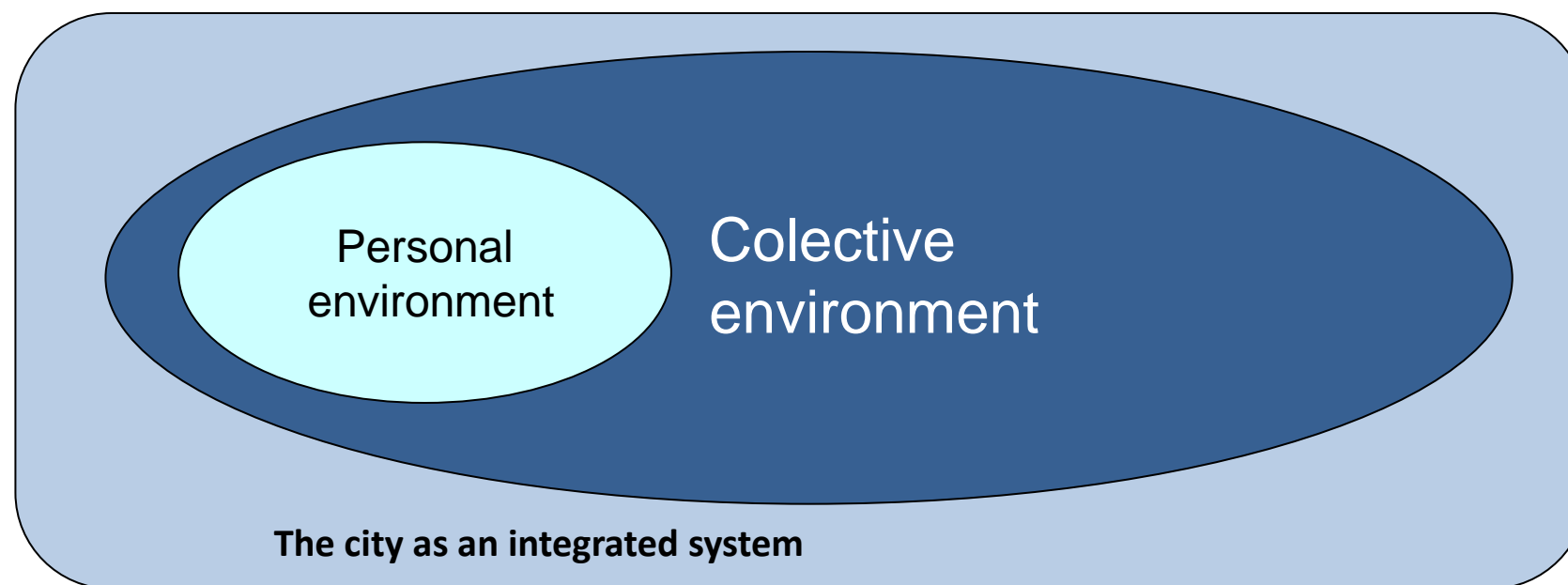


Some facts, some trends

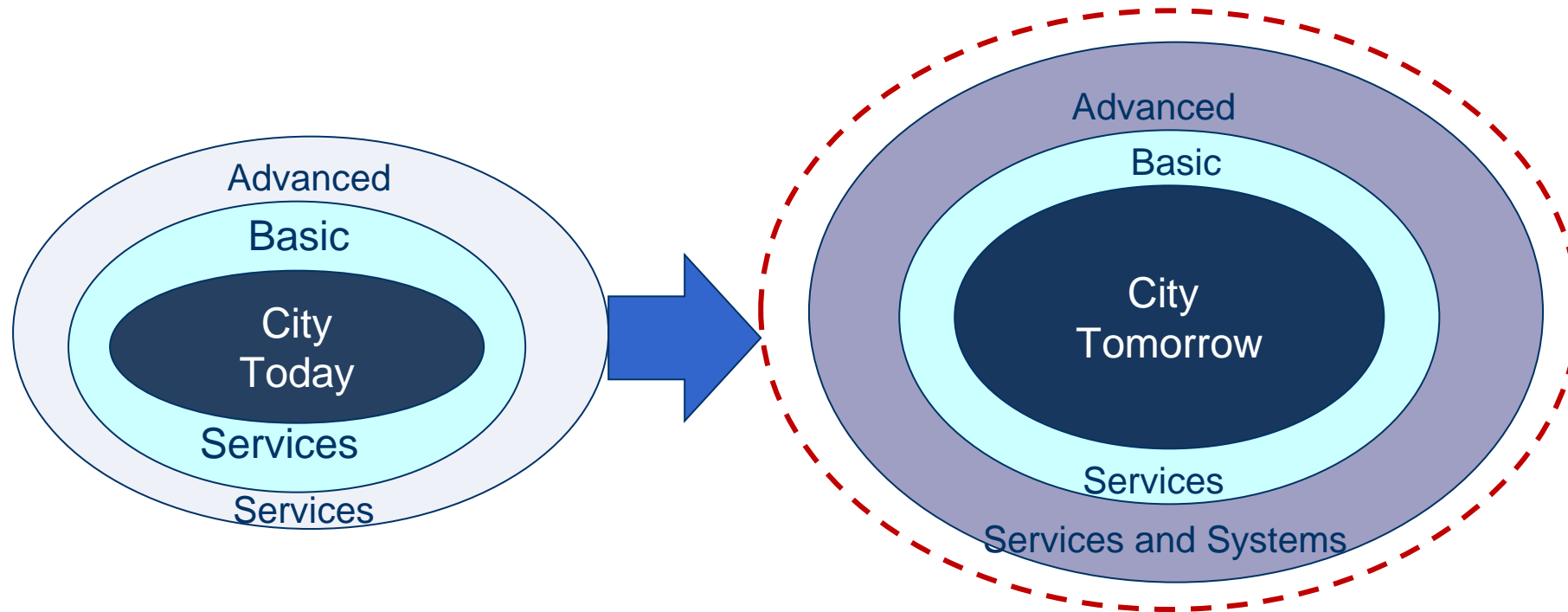
- In 2030, the population living in cities will be 60%, in 2050, this figure will be 75%.
- Cities generate more than 60% of CO₂.
- Today, 64% of the distance covered by cars is in urban displacements.
- In 2050, the urban inhabitants will last 106 hours in traffic jams, three times more than today.



- The expected future growth of the cities could not be developed by extrapolating current solutions.
- New concepts about cities are required to ensure a sustainable development.
- The future development requires an integrated perspective focuses on the individuals as part of a complex society.



- *The need for high quality advanced services and integrated systems will grow encompassed with the growth of economical and cultural development of urban population.*



- **The city is the basic environment for human development and an index for international competitiveness of nations.**
- **Around the evolution of cities an enormous market is developing.**

It is essential to have an integrated vision of the city, its needs and future development.



What to do with the extreme urbanization challenges?



Some innovative proposals

- Developing **models based on available data**, having the ability to understand the complexity of the urban environments and foresee their behaviour
- Designing **new concepts and strategies** based on emerging techniques
- Profiting from the opportunities offered by the technology to propose innovative solutions from the entire city scale to partial challenges at lower scales

At UPM we have made the same question



We are not the first one!!!



MIT City Sciences Lab

MASSACHUSETTS INSTITUTE OF TECHNOLOGY

CITY SCIENCE

- ABOUT CITY SCIENCE
- RESEARCH THEMES
- PROJECTS
- PRESS
- EVENTS
- PEOPLE
- CONTACT US

an MIT Media Lab initiative


1 URBAN ANALYTICS AND MODELING	2 INCENTIVES AND GOVERNANCE	3 MOBILITY NETWORKS
4 PLACES OF LIVING AND WORK	5 ELECTRONIC AND SOCIAL NETWORKS	6 ENERGY NETWORKS

MIT

City Science is building on the current work at the MIT Media Lab

These six initial research themes represent a cross section of interdisciplinary Media Lab research relating to cities...

[MORE](#)



Some proposals: *Mobility on demand*



MIT City Sciences Lab

- 100x Reduction in CO2 emissions
- 10x Reduction in traffic congestion
- 5x Improvement in livability
- 2x Improvement in creativity



Barlett Centre for Advanced Spatial Analysis

- Urban Modelling and Simulation.
- Visualisation and mapping
- Smart cities



A UPM initiative

The City of the Future

The vision

- UPM develops a high number of educational and R&D activities related to cities
- UPM is one of the small number of organizations able to offer an integrated vision of the city challenges and their probable solutions from the architecture and engineering perspective

The City of the Future is an institutional initiative long term planned to convert the UPM in an international reference in the future city challenges



cityofthefuture-upm.com



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“City of the Future” is an institutional initiative of [Universidad Politécnica de Madrid \(UPM\)](#) aimed to fostering education, research, development and innovation activities in the field of [City Sciences](#).

With over forty technical Schools of Engineering and Architecture, Research Centers and University Institutes, UPM has a broad teaching and research experience in multiple disciplines related to the development of cities. Thus, the goal is to leverage the enormous potential offered by UPM's research teams to holistically address, through a multidisciplinary approach, the challenges of the City of the Future.

The initiative “City of the Future” is open to collaboration with companies, governments and other organizations interested in developing solutions for the cities of the future. Contact us [here](#).

Projects



News



Presentation of the Initiative “City of the Future”

jun 17, 2014



The Cities we want - UPM Summer School

jun 11, 2014



UPM's research project on Smart Cities funded by European Investment Bank

mar 19, 2014

What is the difference between the “City of the Future” initiative and other existing ones?

- It is not just “another initiative” about Smart Cities, this one covers other topics about the city
- It offers an integrated view about the city, converting UPM in a “Integrated Lab of the City”
- It stimulates the interdisciplinary cooperation at the UPM
- It is created for fostering the cooperation between private sector and public administrations (mainly City Halls and Regional Government)

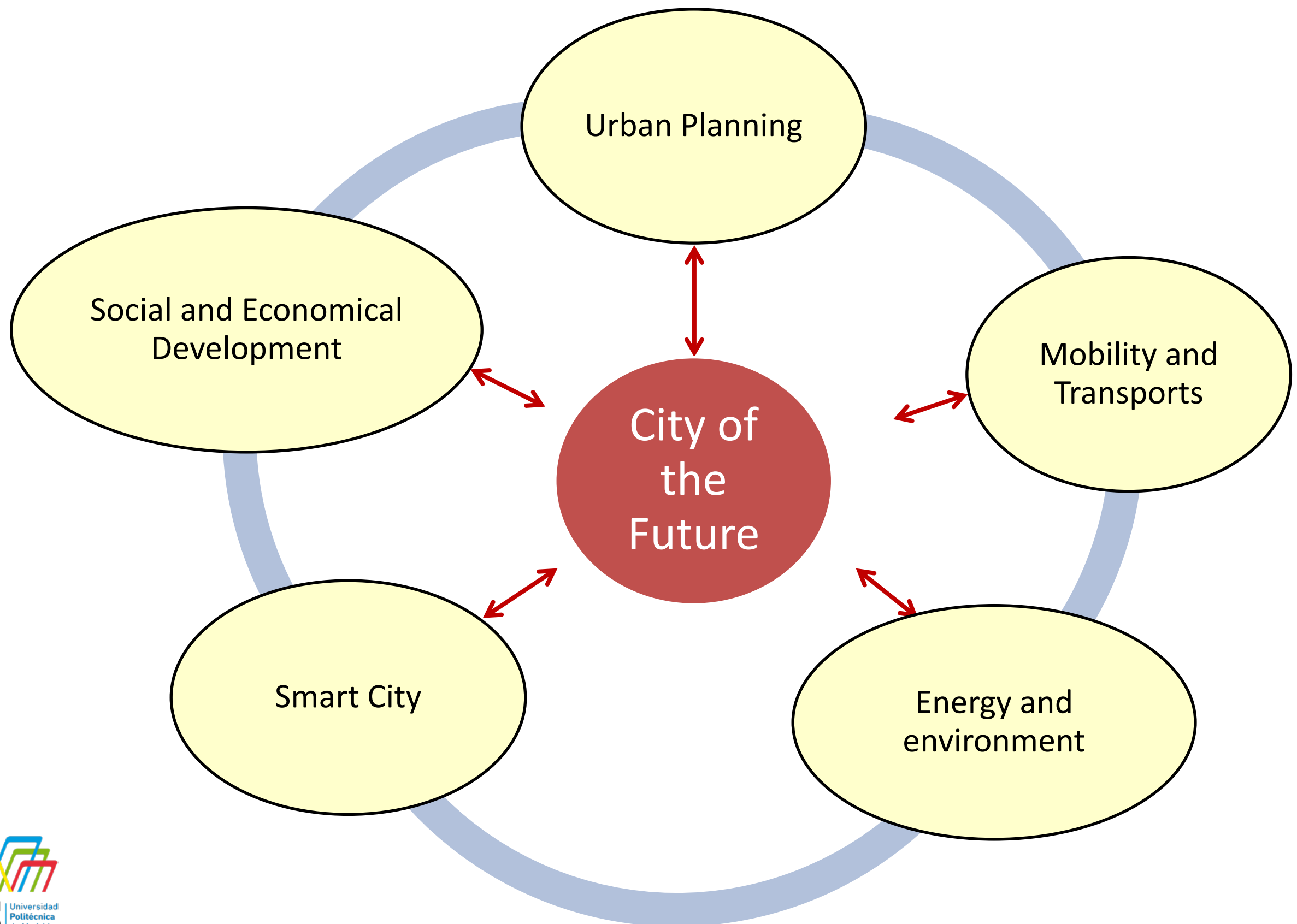
Strategic objectives for UPM

- Increase the attractiveness of UPM as a reference for the City of the Future
- Create an innovative technological ecosystem with our Campuses
- Provide a new frame to foster the cooperation between public and private entities
- Increase the long-term funding from several sources
- Foster international partnership to address global challenges

Objectives for the development of the Initiative

- Design, simulate and analyze different scenarios for the development of the Cities
- Develop systems and components to face some of the existing challenges in the current and future Cities
- Demonstrate the feasibility of systems and services through pilots and demonstrators
- Support Knowledge transfer and provide consulting services
- Conduct training activities for creating multidisciplinary profiled graduates on “Science of the Cities”

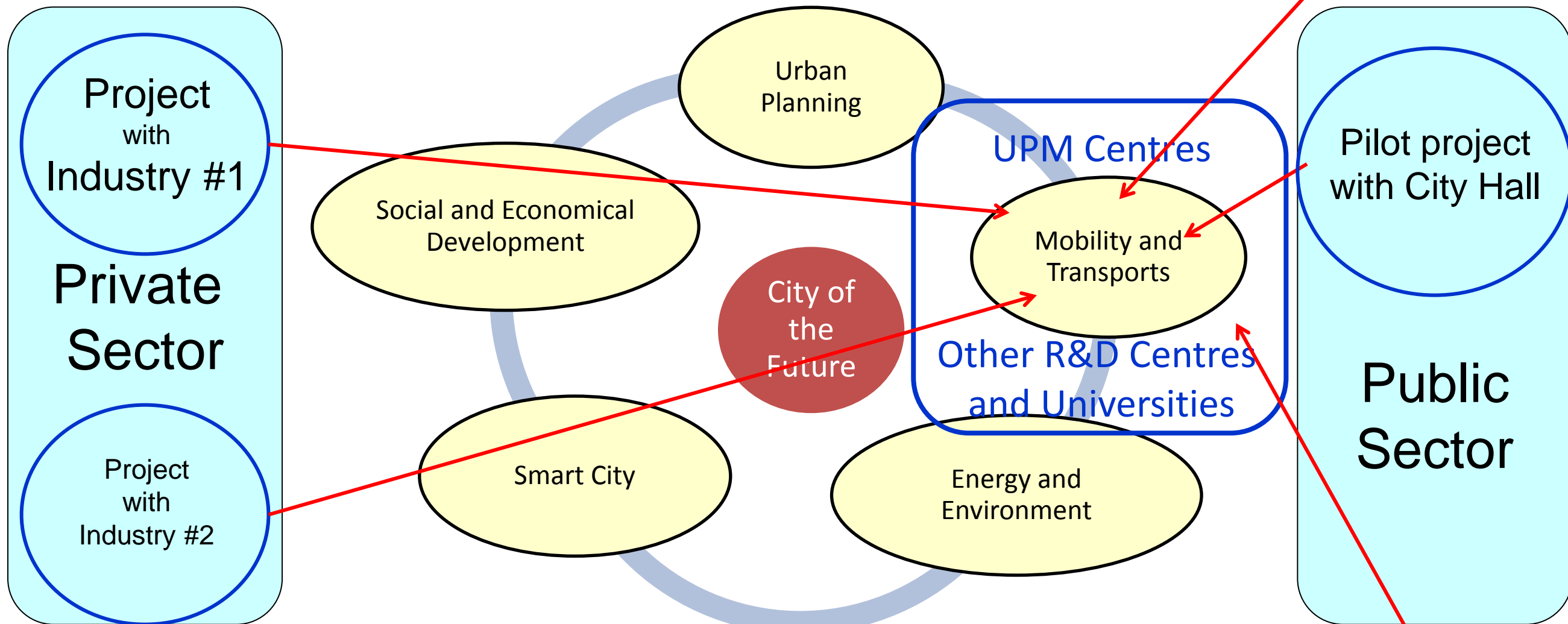
Areas



Perspectives

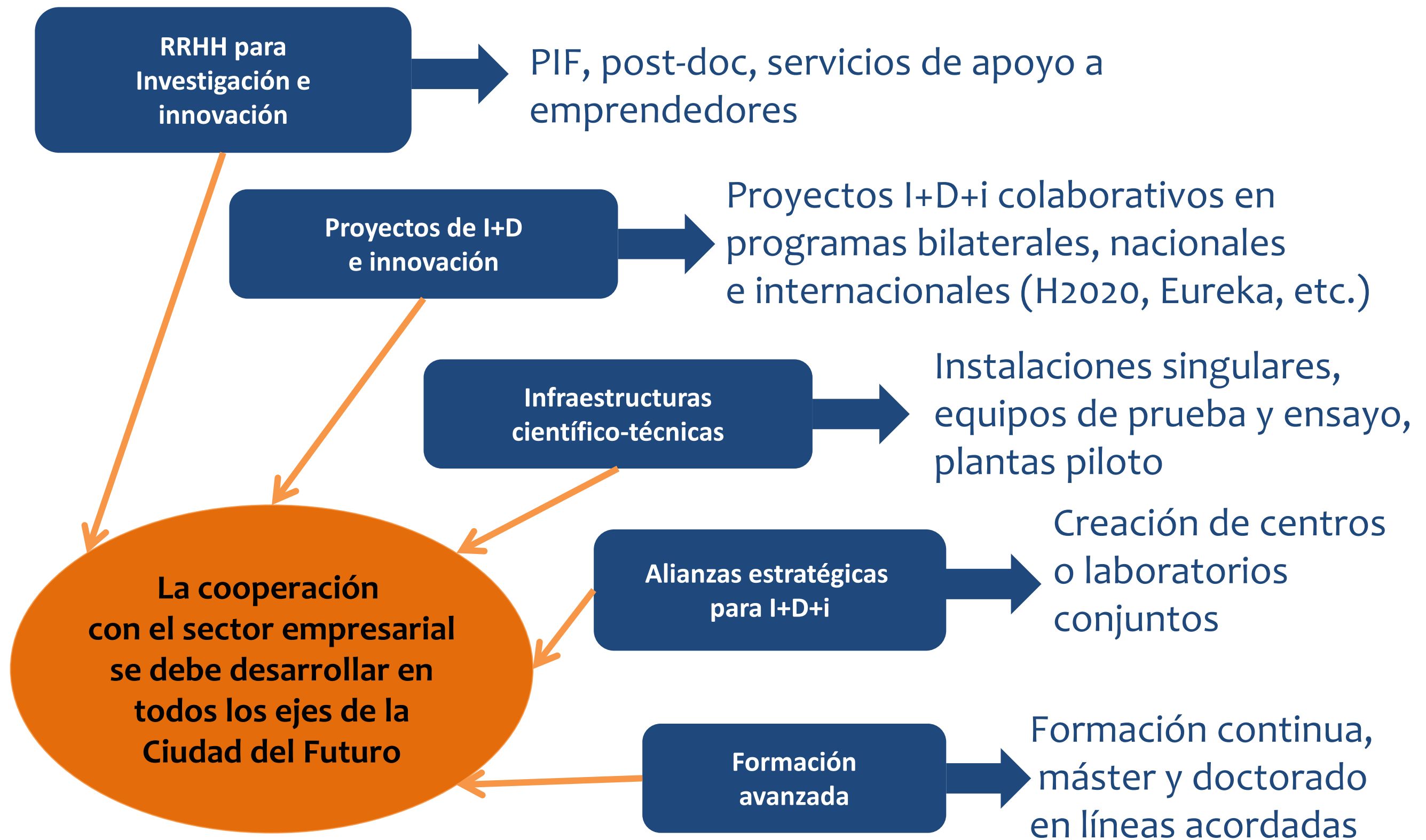
R&D International perspective
(Horizon 2020 and Regional Strategy)

H2020
Project

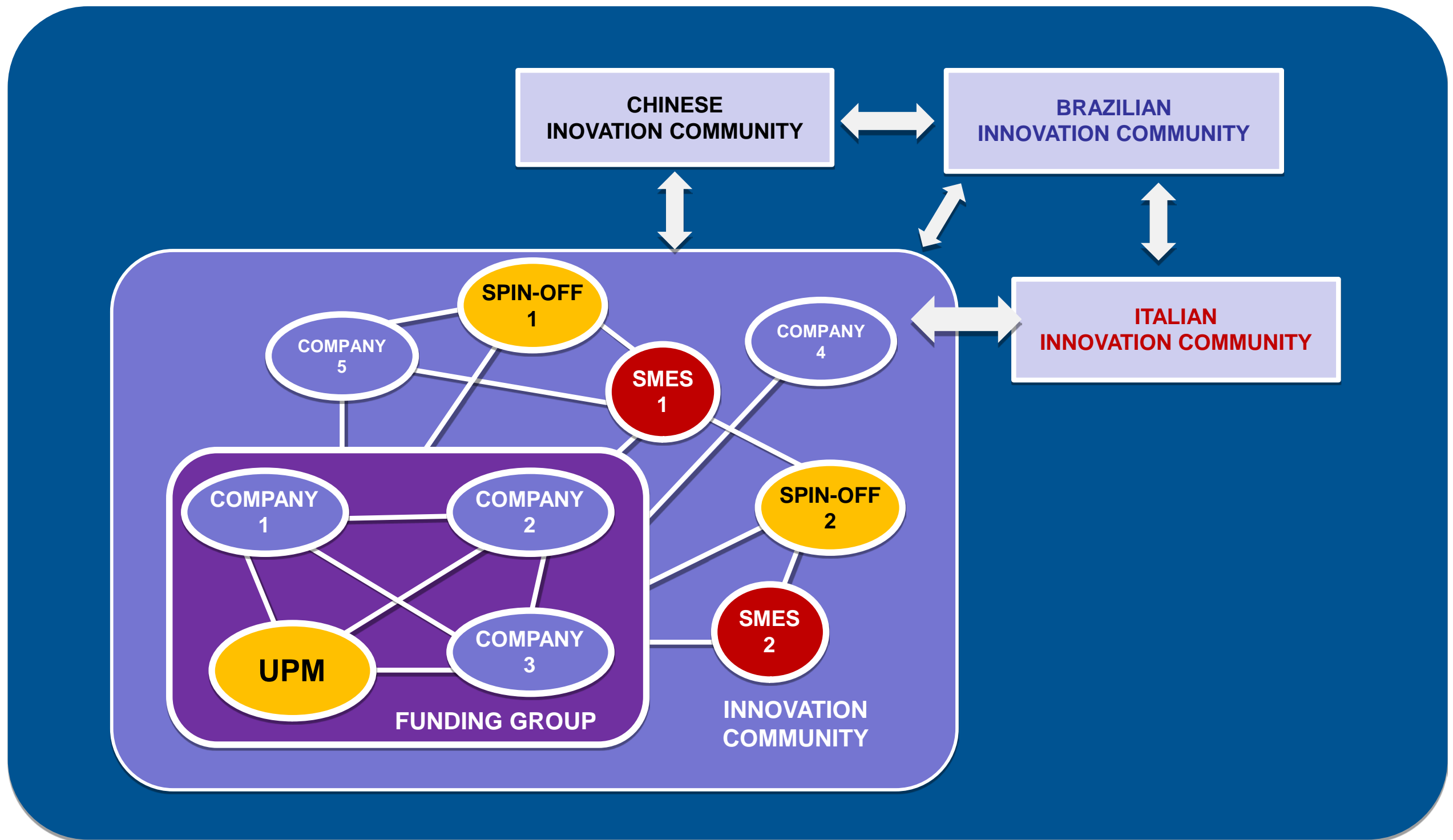


R&D National perspective
(National and Regional R&D Programmes)

Project



International Perspective





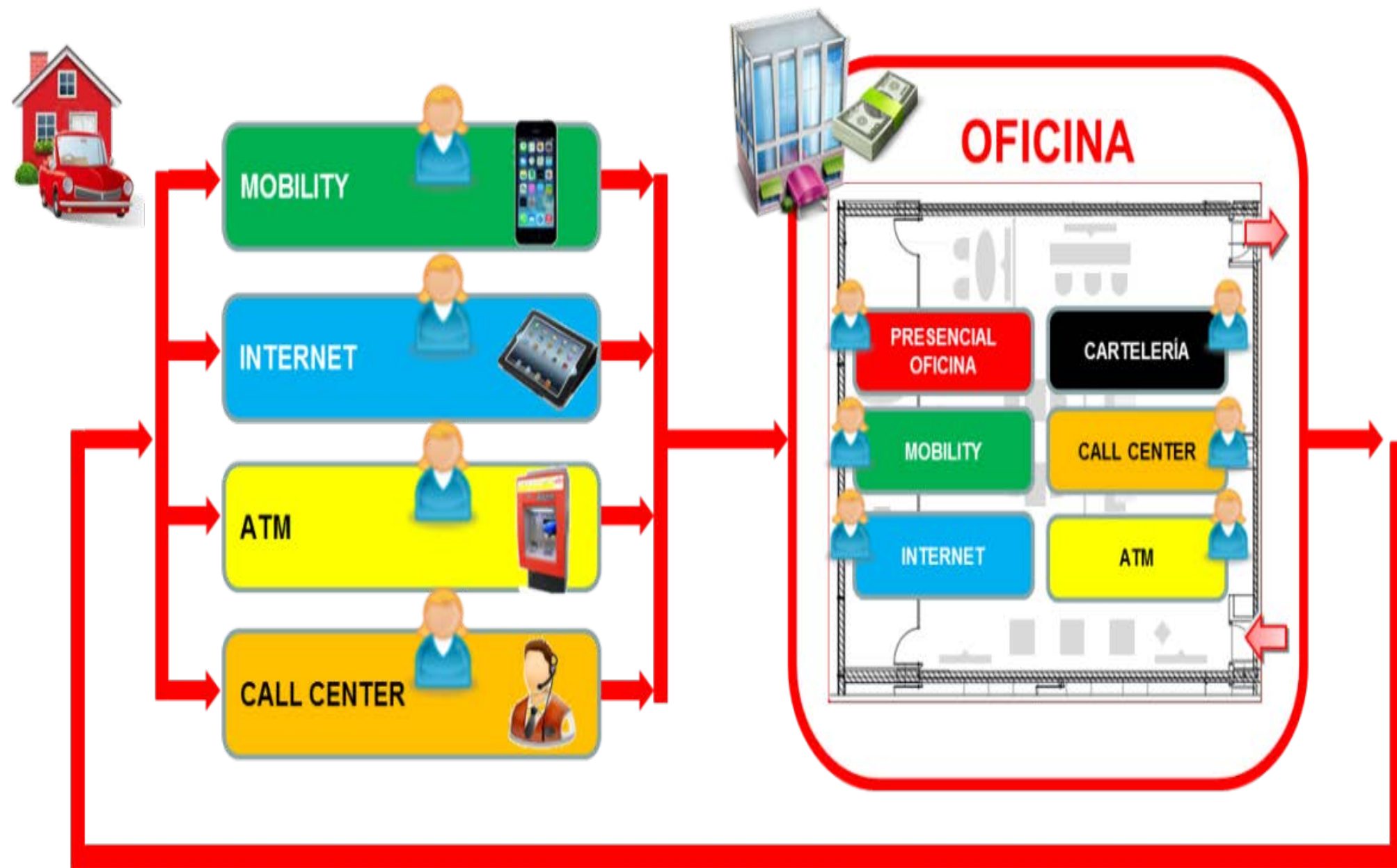
It is the first time that the Universidad Politécnica of Madrid promotes a cross-cutting postgraduate program between the schools of **engineering** and **architecture**, with the ambition to become an international benchmark. The **Master in City Sciences** is an advanced program that provides a holistic view on the development of the city.

Nowadays, the city is the first economic and social engine worldwide. It is the object of interest of the most

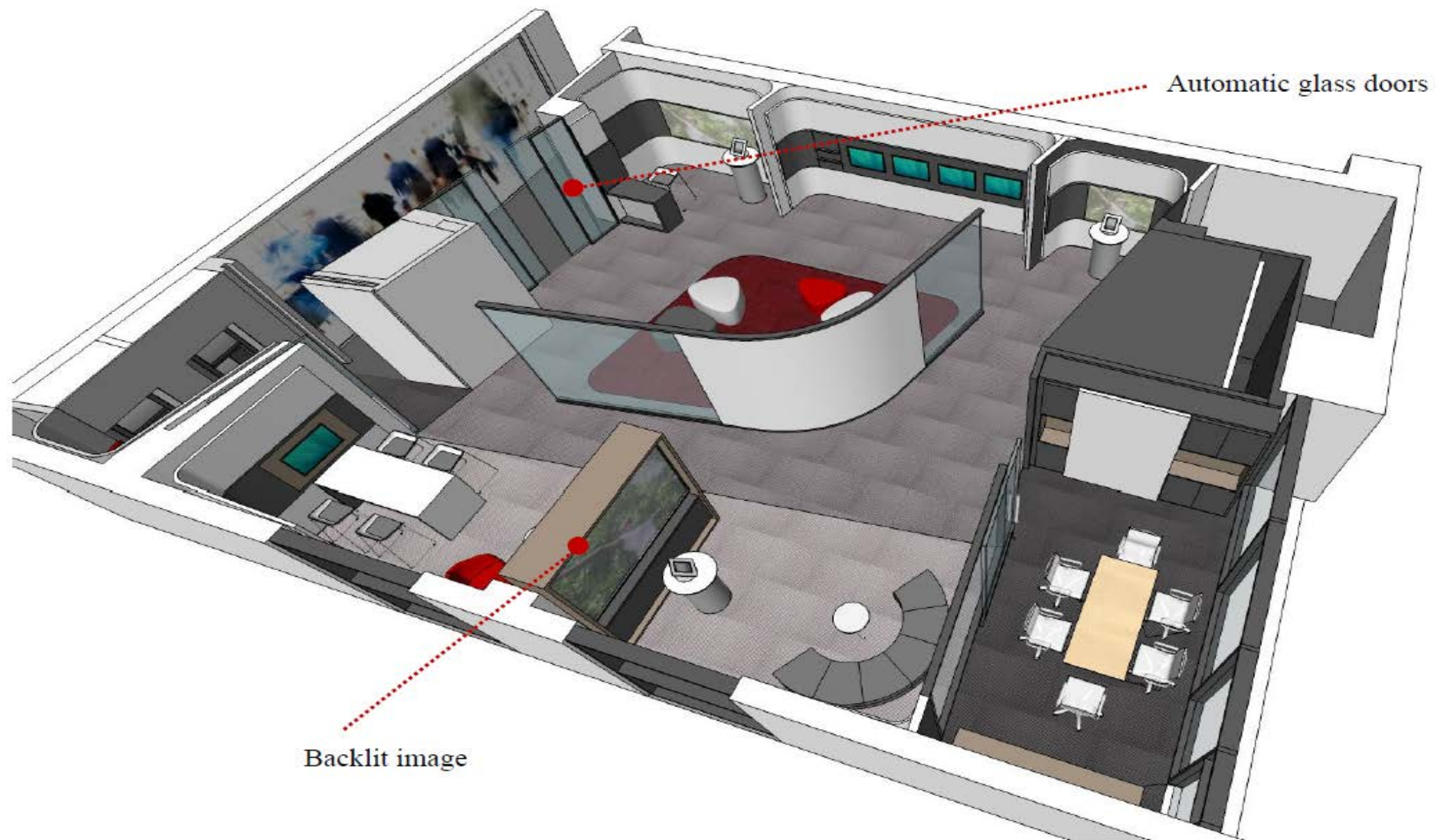
**Scholarships
available!**

NEED MORE INFO?

Living lab Branch of the future



Living lab Branch of the future



Spaces for the future





ASCIMER

Assessing Smart City Initiatives for the Mediterranean Region is a 3-year research project supported by the European Investment Bank under the EIB University Research Sponsorship Programme (EIBURS)

The overall goal of this research program is to develop a comprehensive framework to help public and private stakeholders to make informed decisions about Smart City investment strategies and to build skills to evaluate and prioritize these kinds of projects, including solving difficulties regarding deployment and transferability. The project will address the following objectives:

1. To define the Smart City concept and to understand how it can contribute to meeting urban development priorities
2. To develop a methodology to assess and prioritize Smart City projects
3. To develop guidelines to implement and manage Smart City Projects
4. To Characterize Mediterranean City challenges and to develop a transferability strategy of Smart City projects. This objective will be part of the other three above

LATEST EVENTS

Wed Jul 16 @08:00 - 05:00PM
[First Workshop of the ASCIMER project.](#)

Thu Jul 17 @08:00 - 05:00PM
[First Workshop of the ASCIMER project.](#)

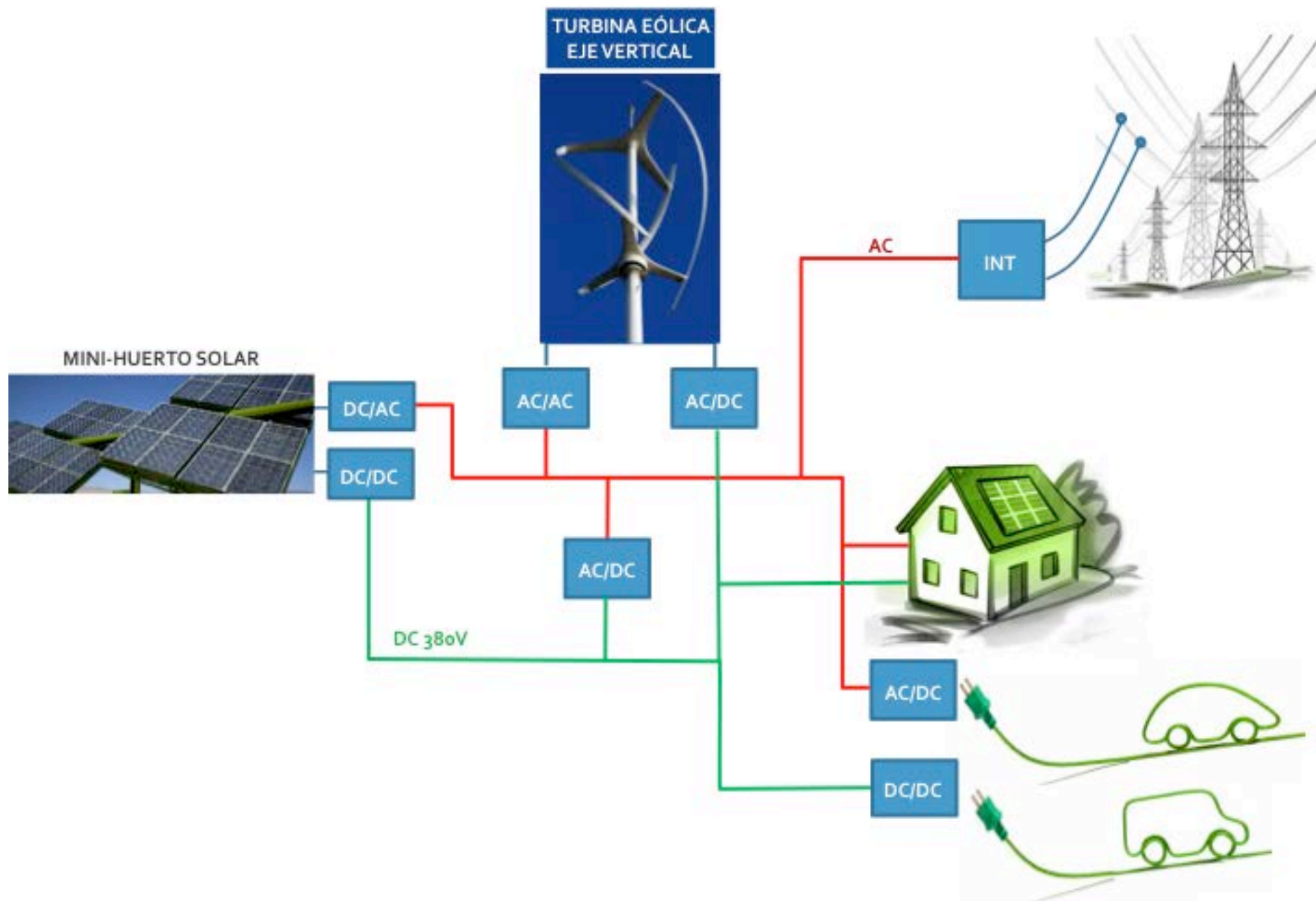
LATEST NEWS

[La tecnología en la mejora de la vida](#)

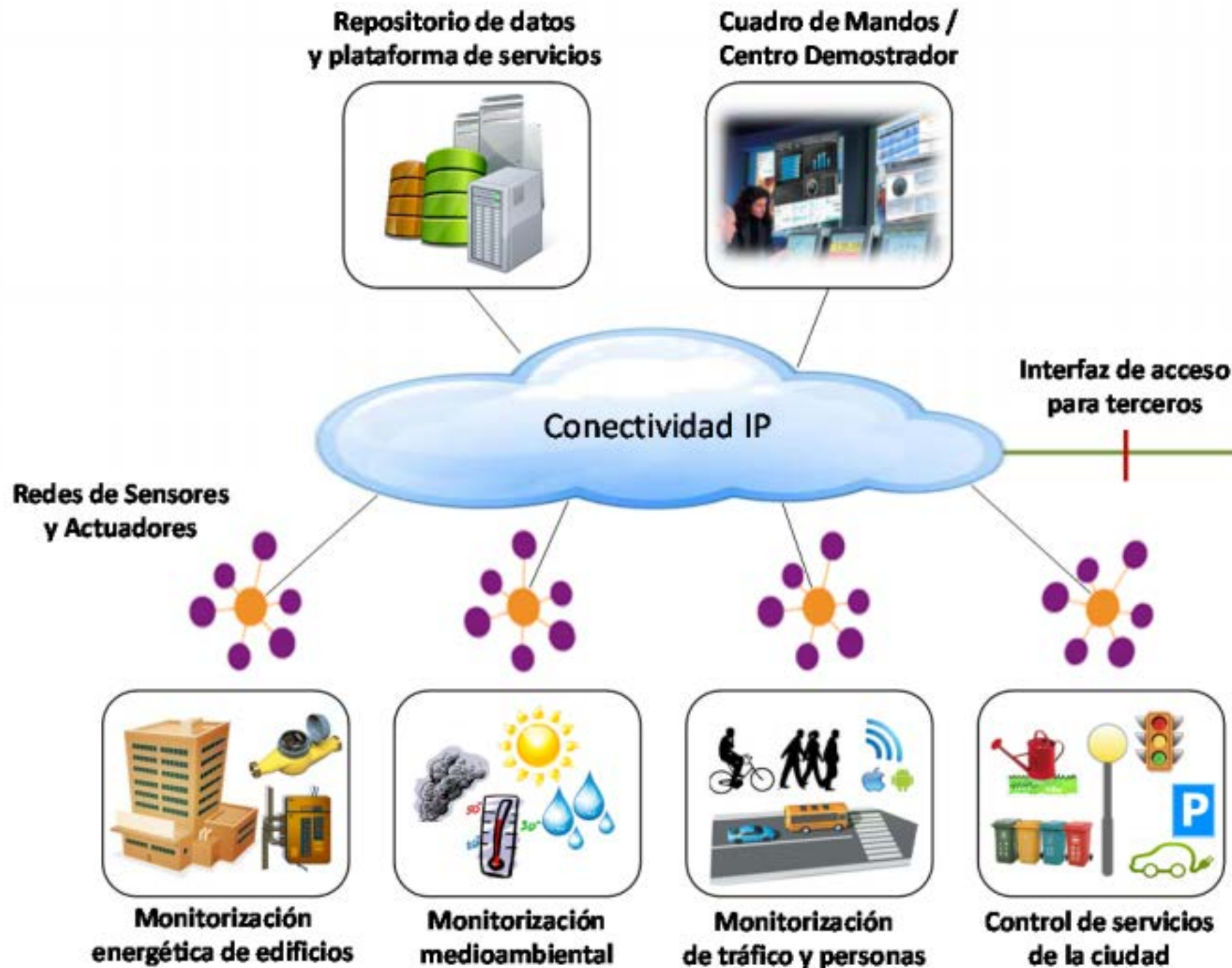
[Studentship opportunity](#)



Smart Nano-grid Platform



Sensor Integration Platform



UPM Institutional Initiative

“City of the Future”

An open space for new ways and new approaches for cooperation with Industry

