



**La Ciutat un ecosistema de dades:  
Eficiència, ciutats i mecanismes  
d'impuls a la recerca.**



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Juliol 2014 | ICGC (Barcelona)

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## Guió

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- Breu introducció a ASCAMM
- Geolocalització i Smart Cities
- Impuls a la Recerca
- Exemples projectes



## Presentació ASCAMM

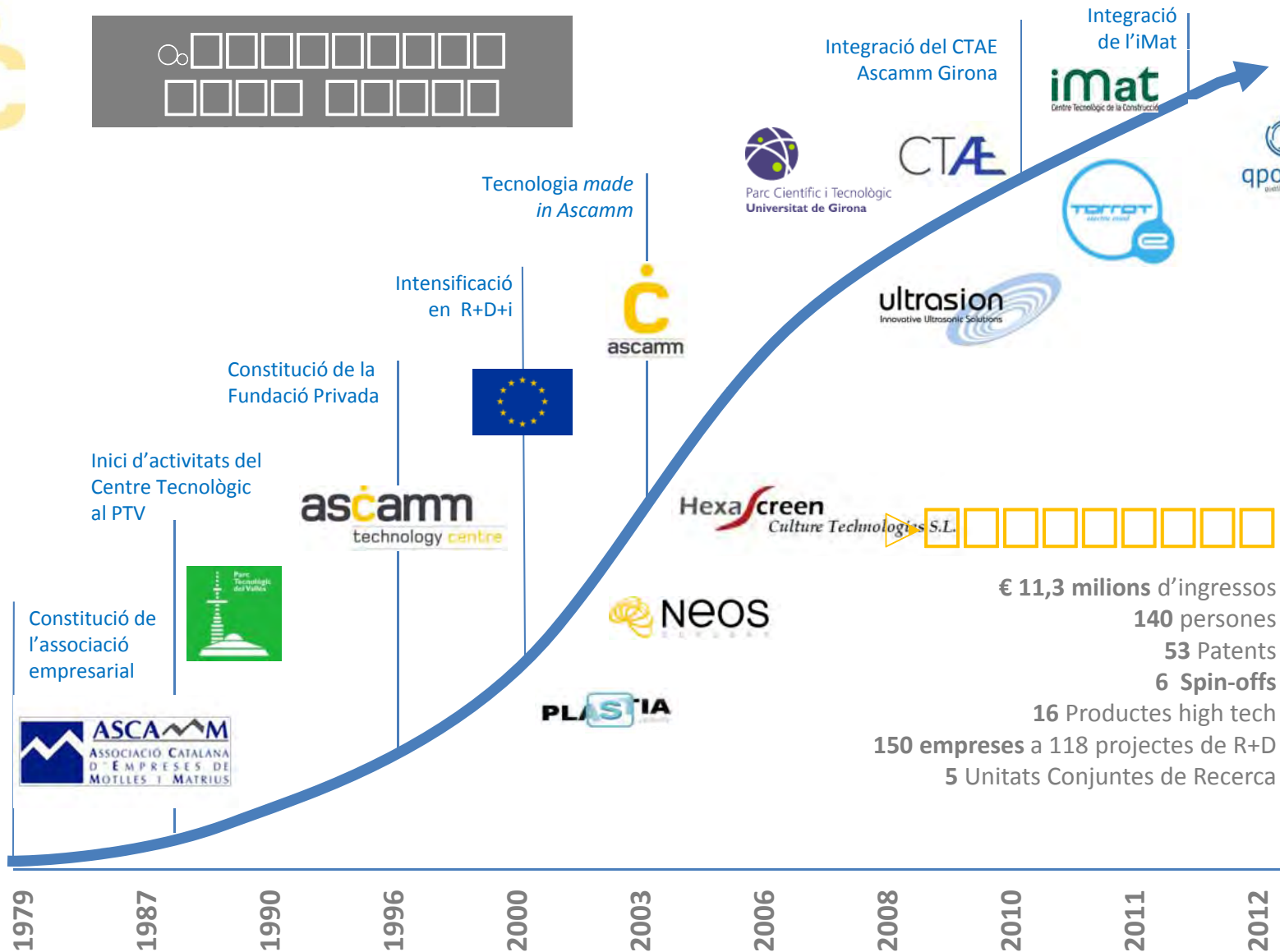
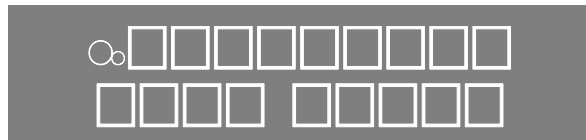
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# Dels orígens industrials a un futur basat en el coneixement



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Indústria



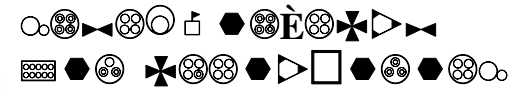


# Qui Som

entre tecnològic



Generació de tecnologia  
(pròpia) de producte i  
procés

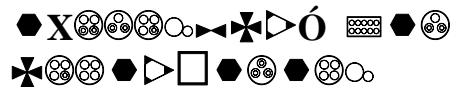


aplicacions avançades

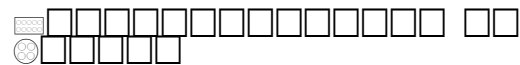
assistència tècnica a la  
industrialització

serveis de suport a la innovació

formació



alorització tecnològica



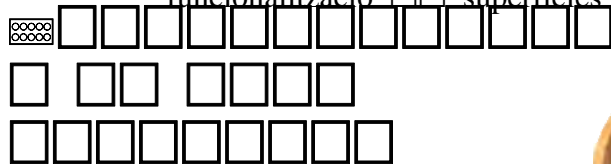
reacció d'empreses de base tecnològica



# Àrees de coneixement

## Materials i processos

- Polimèrics, metàl·lics, ceràmics i compòsits
- Processos de fabricació i tractament de superfícies
- Indústria i funcionalització de superfícies



- Modelització, simulació i anàlisi
- Procediments de fabricació i tractament de superfícies

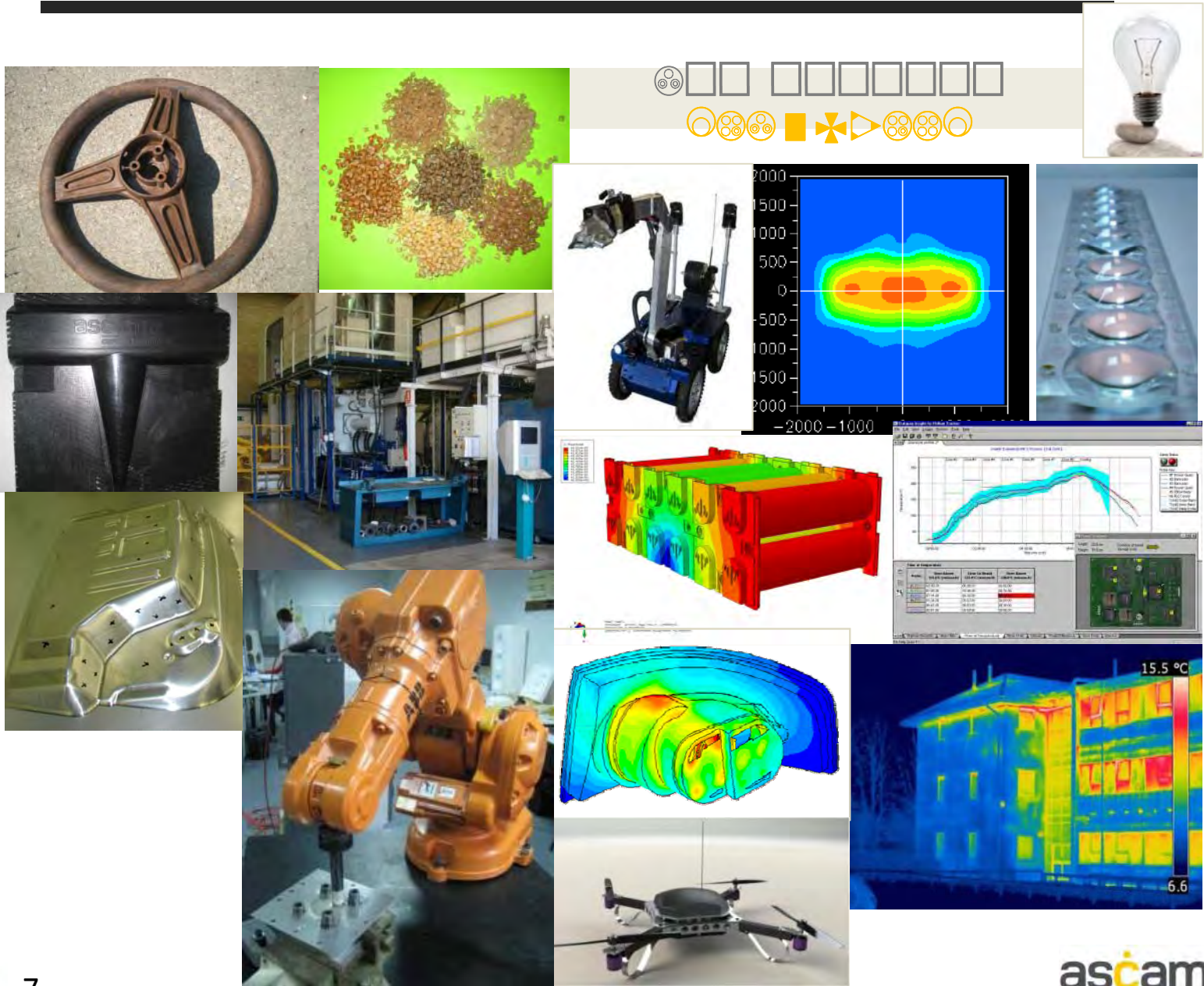


## Sistemes intel·ligents

- Robòtica i mecatrònica
- Informàtica i sistemes de gestió
- Integració del coneixement: intel·ligència artificial i sistemes d'ajuda a la decisió
- Robòtica i mecatrònica en navegació i sistemes de guiatge

## Tecnologies de procés i fabricació

- Injecció i fabricació avançada
- Procediments de fabricació i tractament de superfícies
- Procediments de fabricació i tractament de superfícies
- Procediments de fabricació i tractament de superfícies
- Procediments de fabricació i tractament de superfícies
- Fabricació additiva i deformació metàl·lica
- Processos híbrids
- Metodologia de disseny d'experiments
- Indústries industrials (plàstic, ceràmic, etc.)
- Robòtica industrial
- Veicles elèctrics i híbrids
- Sistemes de guiatge i navegació



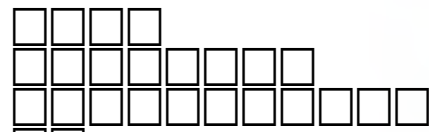
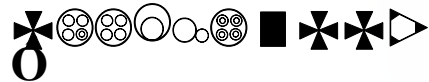
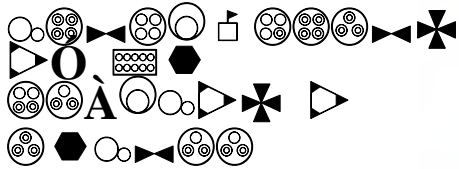


# SECTORS

Transferència tecnològica



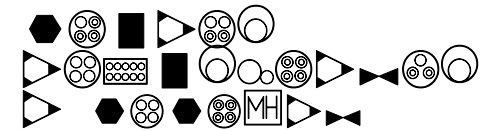
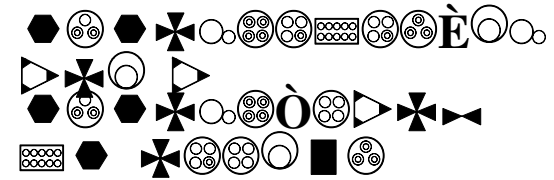
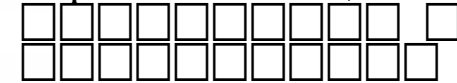
automoció (mobilitat elèctrica), ferroviari, aeronàutic



il·luminació



dispositius mèdics,



istemes òptics

istemes d'emmagatzemament d'energia







## Alguns dels nostres CLIENTS i PARTNERS

🌐 a indústria, □ □ □ □ □ □ □ □ 🏠 📊 🔗 🌐 🌐





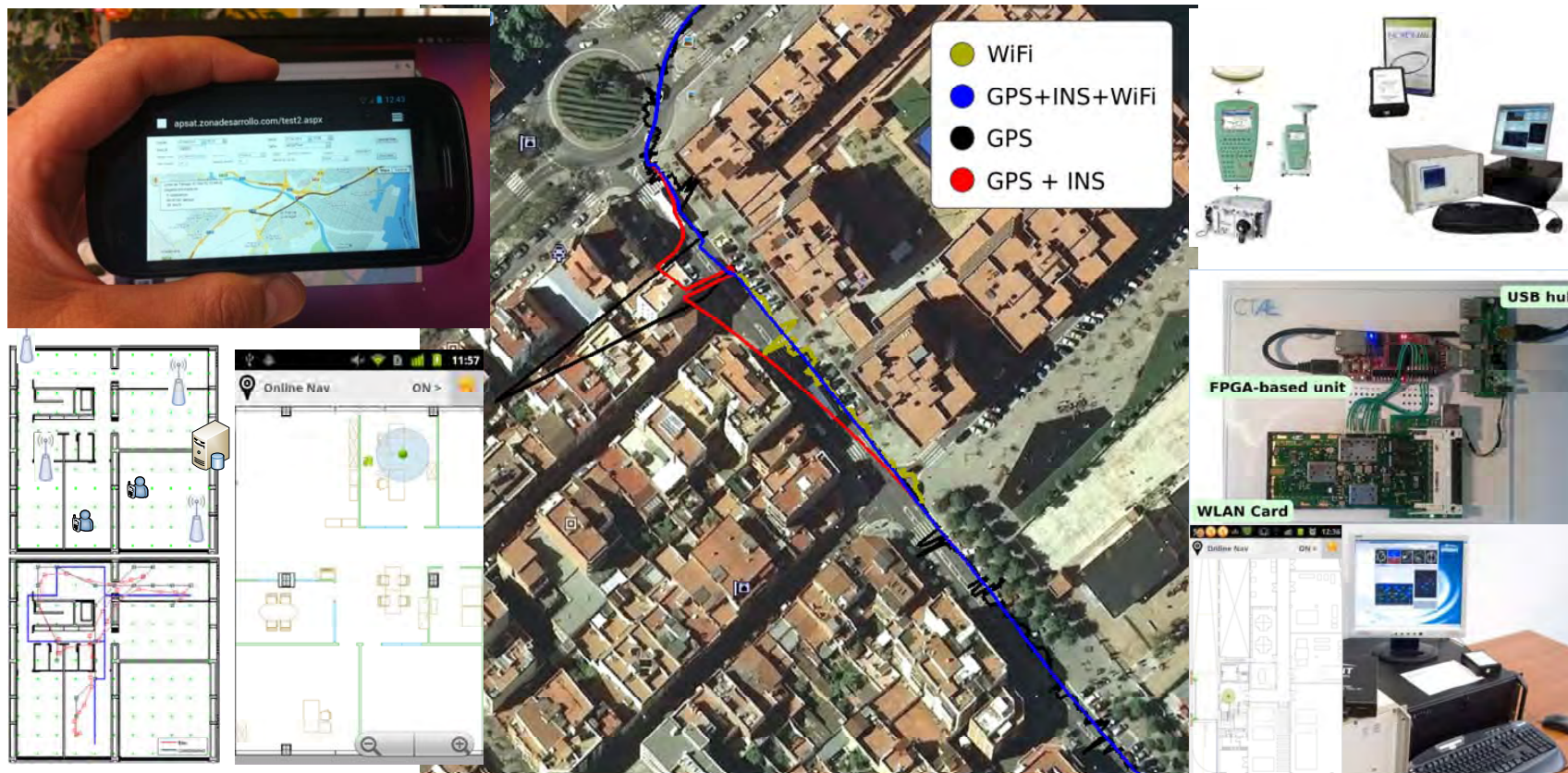
# Sistemas intel-ligents





## Sistemas Intel-ligents

### POSICIONAMIENTO UBICUO Y NAVEGACIÓN CONTINUA (en interiores y exteriores)





## Sistemas Inteligentes

### ROBÓTICA MÓVIL Y AUTÓNOMA PARA APLICACIONES CIVILES Y ROBÓTICA INDUSTRIAL



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# Sistemas Inteligentes

## MONITORIZACIÓN Y CONTROL DE PROCESOS Y OPTIMIZACIÓN DE RECURSOS (inteligencia artificial y sistemas mecatrónicos)





## Smart Cities i Geolocalització





## Geolocation & Smart City

- Cities could become SMART due to an intensive use of technologies, in particular, Information and Communications Technologies. And among all of them, positioning it is revealing to be essential, since its behind of most of the services. It is a must to geolocate the City elements composing the different complex systems to make it work properly.



**Smart City**



## Efficient Urban Mobility

- Goals (challenges):
  - Increase safety and comfort
  - Decrease trip time and cost
  - Energy efficiency and environmentally friendly
- Different actors with different behaviours and priorities: pedestrians, bike, public and private vehicles...

Efficient mobility requires a deep knowledge of the system, modeling, ....

Knowledge of the location (and associated status) in RT of all the fixed and mobile components of the city



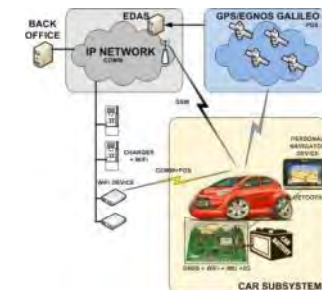




## Energy Efficiency & Smart Grid

- Energy efficiency and energy intelligent distribution
- Bidirectional energy distribution
- Sustainable buildings and districts
- Electric vehicle adds a mobile component in the network

Energy demand Management System based on positioning (allowing intelligent charging)





## Citizen Participation & Crowd Sourcing

- Citizens informing in RT of any kind of incidents:
  - Broken pavement
  - Accident
  - Annoying noise
  - ....

LBS incident reporting from smart phones  
(geotagged pictures, ...)





## Safety and Emergency Management

- RT information
- Precise people location in the area
- Maps
- Rescue teams
- Evacuation routes

Clear picture of the emergency area means accurate information of the different components, actors and its positions





## Environment

- RT information from sensors: fixed sensors and on-board sensors in opportunity mobile platforms (buses, cars...)
- Information management and decision support systems
- Actuators
- Waste collection and management (vehicle fleet management)

### Geotagging and vehicle tracking





## Tourism, Culture and Leisure

- RT information of events (sport, cultural....)
- How-to-arrive info
- Traffic status
- Public transportation info and status

Location Based Services enhances City experience

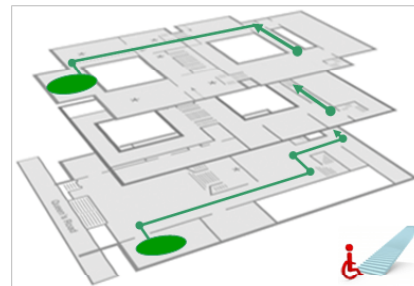




## Independent Living and Accessibility

- Guarantee to all the citizens the use, enjoyment and exploitation of the City
- ICT for Independent living

- Accessible guidance (positioning and navigation)
- People monitoring





## Mecanismes d'impuls a la recerca





## H2020



### Tackling Societal Challenges

- Health, demographic change and wellbeing
- Food security, sustainable agriculture and the bio-based economy
- Secure, clean and efficient energy
- Smart, green and integrated transport
- Climate action, resources efficiency and raw materials
- Inclusive, innovative and reflective societies
- Secure societies

### Creating Industrial Leadership and Competitive Frameworks

- Leadership in enabling and industrial technologies
  - ICT
  - Nanotech, Materials, manuf, and Processing
  - Biotechnology
  - Space
- Access to risk finance
- Innovation in SMEs

### Excellence in the Science Base

EIT  
JRC

- Frontier research (ERC)
- Future and Emerging Technologies (FET)
- Skills and career development (Marie Curie)
- Research Infrastructures

### The Energy Calls in H2020

- Energy efficiency
- Competitive low-carbon energy
- Smart Cities and communities
- SMEs and fast track to innovation energy

### Other parts of H2020 of direct relevance to Energy:

- LEIT - KET materials, nano, electronics, manufacturing, processing
- FET-open and FET-pro-active
- Research Infrastructures
- ERC, EIT
- SME Instrument (directly paid from Energy SC budget)
- JRC direct actions (IET, IPTS)





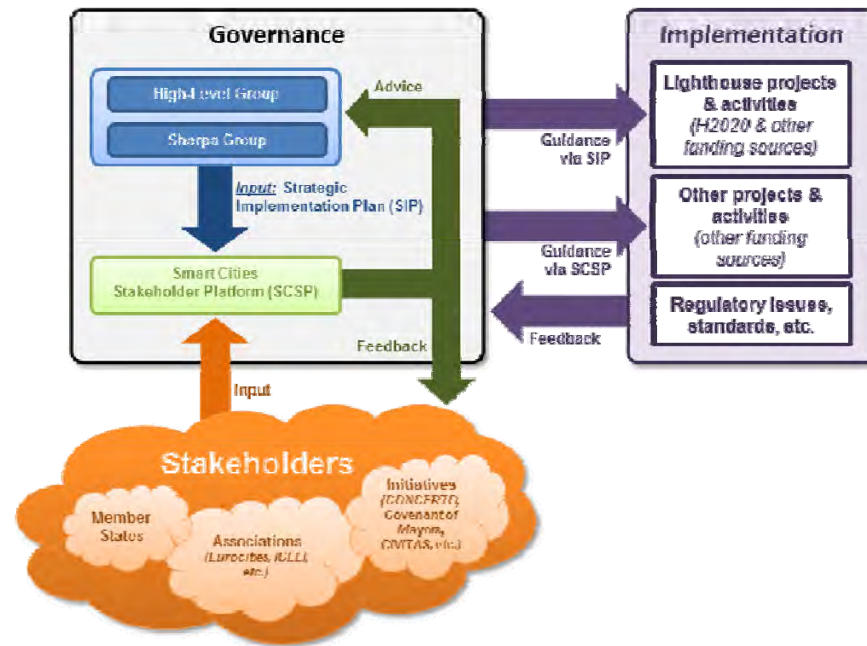
## H2020



- Reptes de la Societat:
  - Energia segura, neta i eficient:
    - Energy Efficiency
    - Low carbon Technologies
    - SCC (smartcities and communities)



## EIP SCC



- The European Innovation Partnership on **Smart Cities and Communities** (EIP-SCC) brings together cities, industry and citizens to improve urban life through more sustainable integrated solutions.
- This includes applied **innovation**, better **planning**, a more **participatory approach**, higher **energy efficiency**, better **transport** solutions, intelligent use of Information and Communication Technologies (**ICT**), etc.



## Plataforma stakeholders



- Stakeholder platform
  - [eu-smartcity.eu](http://eu-smartcity.eu)



Energy Efficiency and Buildings



Energy Supply Networks



Mobility and Transport



Finance and Market Uptake  
Group




Smart City Roadmap Group



ICT4Smart Cities Group



# H2020: Convocatories Smart Cities



## RESEARCH & INNOVATION



### Participant Portal



European Commission > Research & Innovation > Participant Portal > Opportunities

HOME FUNDING OPPORTUNITIES HOW TO PARTICIPATE EXPERTS SUPPORT  LOGIN REGISTER

#### Horizon 2020

Search Topics

Calls  

Call Updates  

#### Other EU Programmes 2014-2020



Research Fund for Coal & Steel

COSME

3rd Health Programme

Consumer Programme

#### FP7 & CIP Programmes 2007-2013

Calls  

### CALL – SMART CITIES AND COMMUNITIES

H2020-SCC-2015 Sub call of: [H2020-SCC-2014-2015](#)

<b>Publication date</b>	11-12-2013	<b>Deadline Date</b>	03-03-2015 17:00:00 (Brussels local time)
<b>Budget</b>	€108,180,000	<b>Main Pillar</b>	Societal Challenges
<b>Status</b>	<span style="background-color: green; color: white; padding: 2px;">Open</span>	<b>OJ reference</b>	<a href="#">OJ C361 of 11 December 2013</a>

Call description [Call documents](#) [Get support](#)

#### Topics and submission service

- [SCC-01-2015: Smart Cities and Communities solutions integrating energy, transport, ICT sectors through lighthouse \(large scale demonstration - first of the kind\) projects](#)
- [SCC-03-2015: Development of system standards for smart cities and communities solutions](#)



## E2B



- Convocatories EE (incluent E2B PPP)

**Societal Challenges**

Energy Efficiency - Market Uptake  
PDA

H2020-EE-2015-4-PDA

**Deadlines:** 10/06/2015

**Pub.Date:** 11/12/2013

**Societal Challenges**

Energy Efficiency - Market Uptake  
H2020-EE-2015-3 MarketUptake

**Deadlines:** 10/06/2015

**Pub.Date:** 11/12/2013

**Societal Challenges**

Energy Efficiency Research &  
Innovation

H2020-EE-2015-2-RIA

**Deadlines:** 10/06/2015

**Pub.Date:** 11/12/2013

**Societal Challenges**

Energy Efficiency - PPP EeB and  
SPIRE topics

H2020-EE-2015-1-PPP

**Deadlines:** 09/12/2014

**Pub.Date:** 11/12/2013

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## Oportunitats Espanyoles i Catalanes

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- Acción estratégica en economía y sociedad digital (MINETUR)
- Programa estatal orientado a los retos de la sociedad (MINECO)
- Nuclis d'innovació tecnològica (ACC1Ó)
- Bcn open challenge (Aj Barcelona –BSM)



## Projectes Rellevants

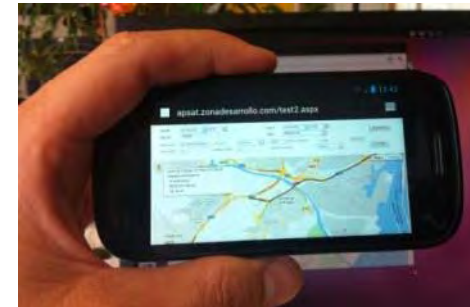
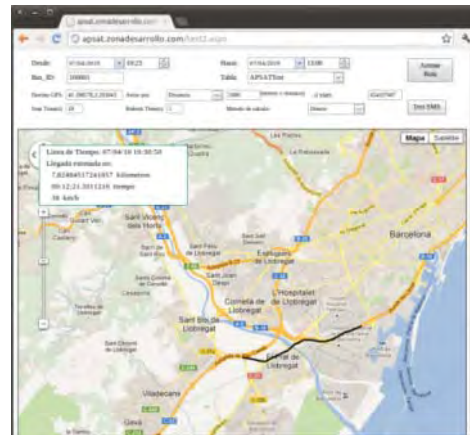




# GlobalBus

## Mobility on Demand (school buses)

### Intelligent Public Transportation system







# Living-Lab for electromobility in "Park" environments - Parkinetics

Electromobility Living Lab in science, technology and business parks near Barcelona (30km, periurban perimeter)



VE fleet



battery/cells testing lab

simon



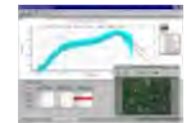
Intelligent charging solutions

TRADISA  
Operador Logística



New business models

AIA  
GRUPO AIA



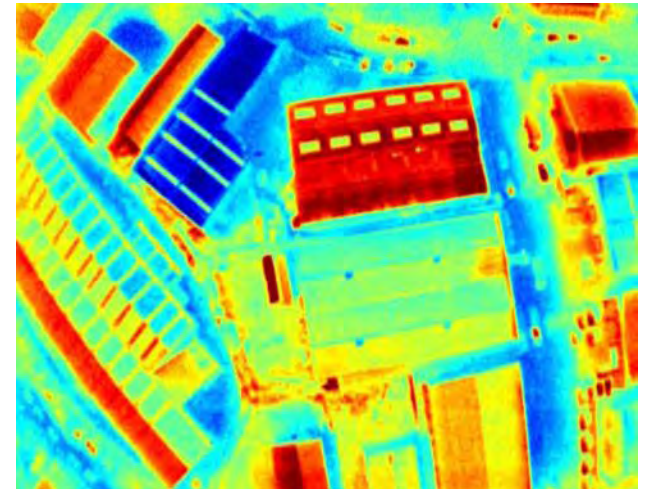
Improved Battery Management Systems



# Thermocopter



Mini drones for energy efficiency studies  
An improvement in the enclosure isolation can reduce energy consumption around 30%.

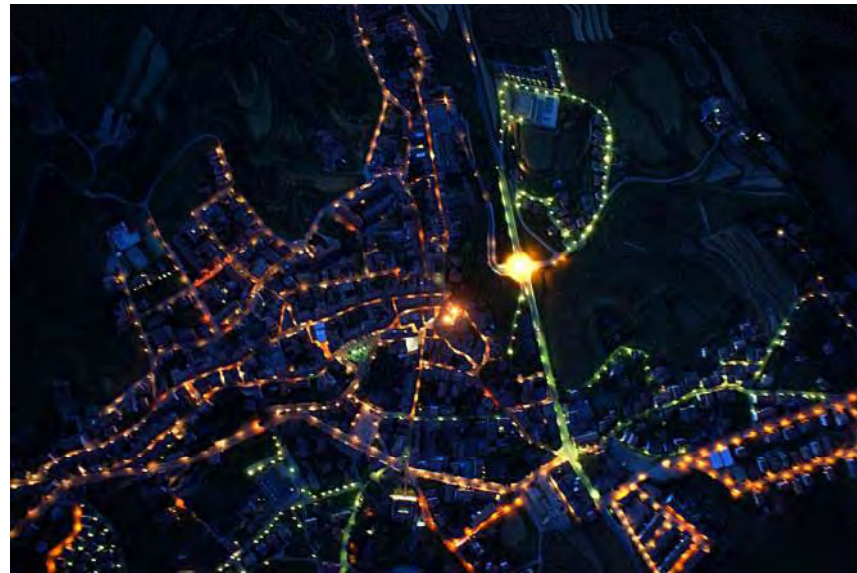




## Illuminodrone

**CAT UAV**

Night orthophoto that enables the assessment of the urban lighting system and can be used to derive recommendations for efficiency improvement



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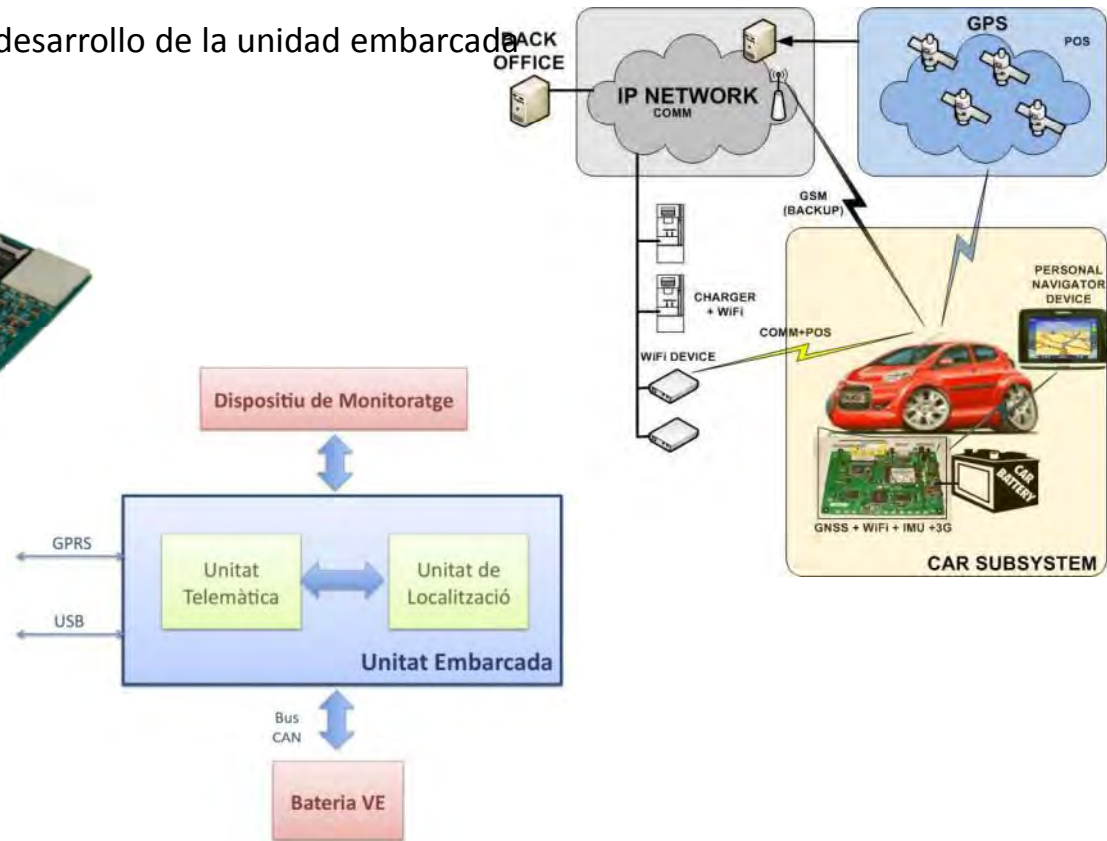
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# EVIC – Electric Vehicle Intelligent Charging

Colaboración en el diseño y desarrollo de la unidad embarcada para vehículos eléctricos



Unió Europea  
Fons Europeu de Desenvolupament Regional  
"Una manera de fer Europa"





## Per acabar.....

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- La Ciutats Intel·ligents (mobilitat sostenible , eficiència energètica i TIC) no és només una necessitat per a la societat sinó també una prioritat de les administracions públiques (des dels ens locals als europeus)
- Són necessaris esforços en recerca i desenvolupaments innovadors per part de les empreses i centres poder assolir/implementar els reptes



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