

SPANISH SMART CITIES MODEL

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- Market opportunities
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The Spanish Model

- Standardisation
- Governance
- Industry

BACKGROUND

WHAT IS A SMART CITY?

‘The Smart City concept is a holistic approach to cities that uses **ICT** to improve its inhabitants’ quality of life and accessibility and ensures consistently improving **sustainable economic, social and environmental development**. It enables cross-cutting interaction between citizens and cities, and real-time, quality-efficient and cost-effective adaptation to their needs, providing open data and solutions and services geared towards citizens as people.’

MARKET OPPORTUNITIES



In 2015, **54% of humanity was living in cities** and it is estimated that this figure will rise to almost **70%** by 2050

United Nations Conference on Sustainable Development



From 2010 to 2025 the **GDP of cities will rise** by over 30 trillion dollars - 65% of global growth

Urban world: Cities and the rise of the consuming class, McKinsey Global Institute



The global smart city market **will grow** at an annual rate of **22.5%**

MarketsAndMarkets Consultancy



The market potential of smart cities in 2020 may amount to **1,500 billion dollars**

Research by Frost & Sullivan



The IoT-related market in Europe is estimated at **80 billion euros**

Markus Borchert, Nokia



Strong **IoT market growth** in Spain (2/3 private and 1/3 public)

Jose Manuel Petisco, CEO of Cisco Spain



In Spain's second call for proposals for Smart Cities, **250 million euros** were requested for 100 submitted projects

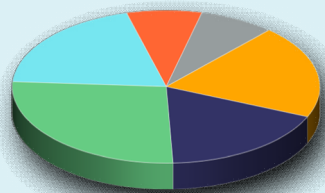


The National Statistical Institute predicts for 2031 a Spain more concentrated in the big cities. The highest percentage increases of inhabitants compared to 2016 will be in: **Baleares and Málaga**

Instituto Nacional de Estadística

EUROPEAN INNOVATION PARTHNSERSHIPS: “COMMITMENTS”

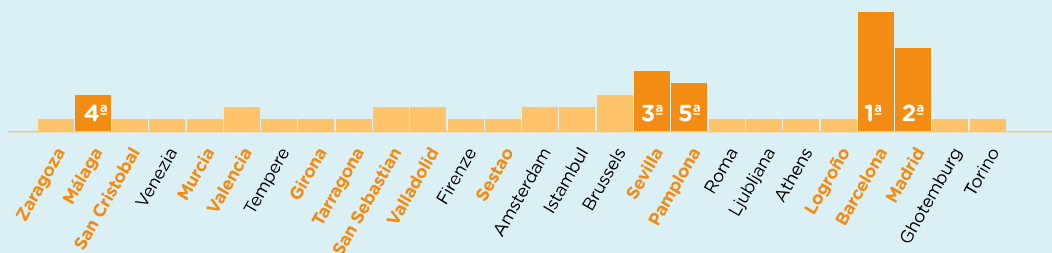
Areas:



- Bussiness models: 8%
- Planning, Politics and regulation: 17%
- Economy: 8%
- Environment : 20%
- Mobility: 27%
- Citizens: 20%

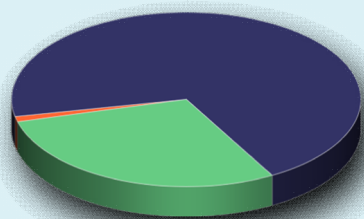
Cities Commitments:

Commitments register by EIPSCC, <http://eu-smartcities.eu>



EUROPEAN INNOVATION PARTHNSERSHIPS: “SOLUTIONS”

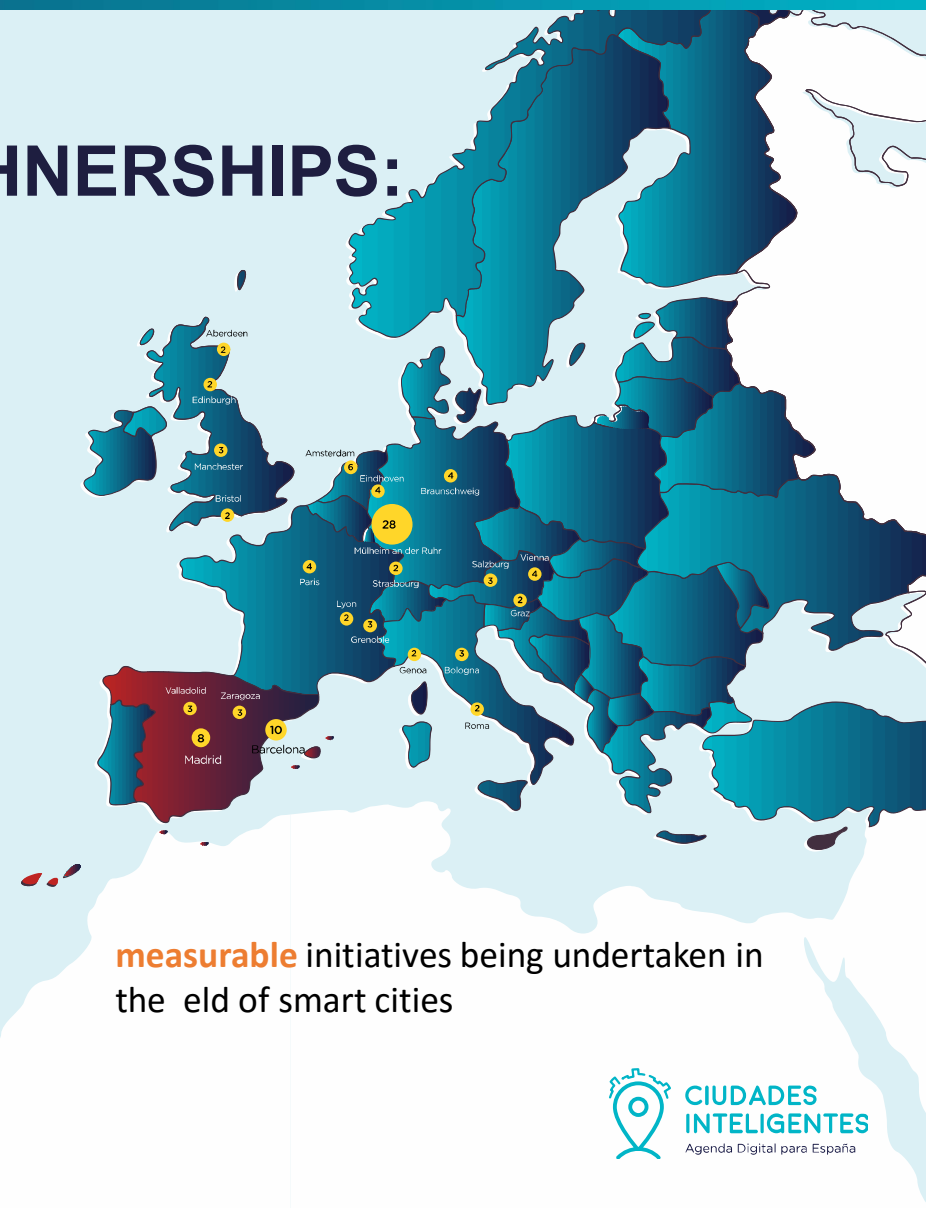
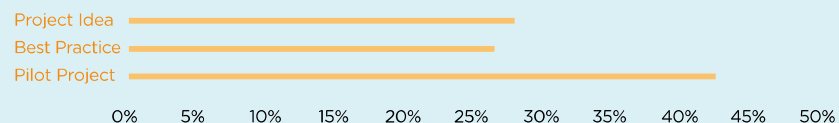
Areas:



- TIC: 1%
- Energy: 70%
- Mobility: 29%

Maturity of projects:

Solutions register by EIPSCC. <http://eu-smartcities.eu>



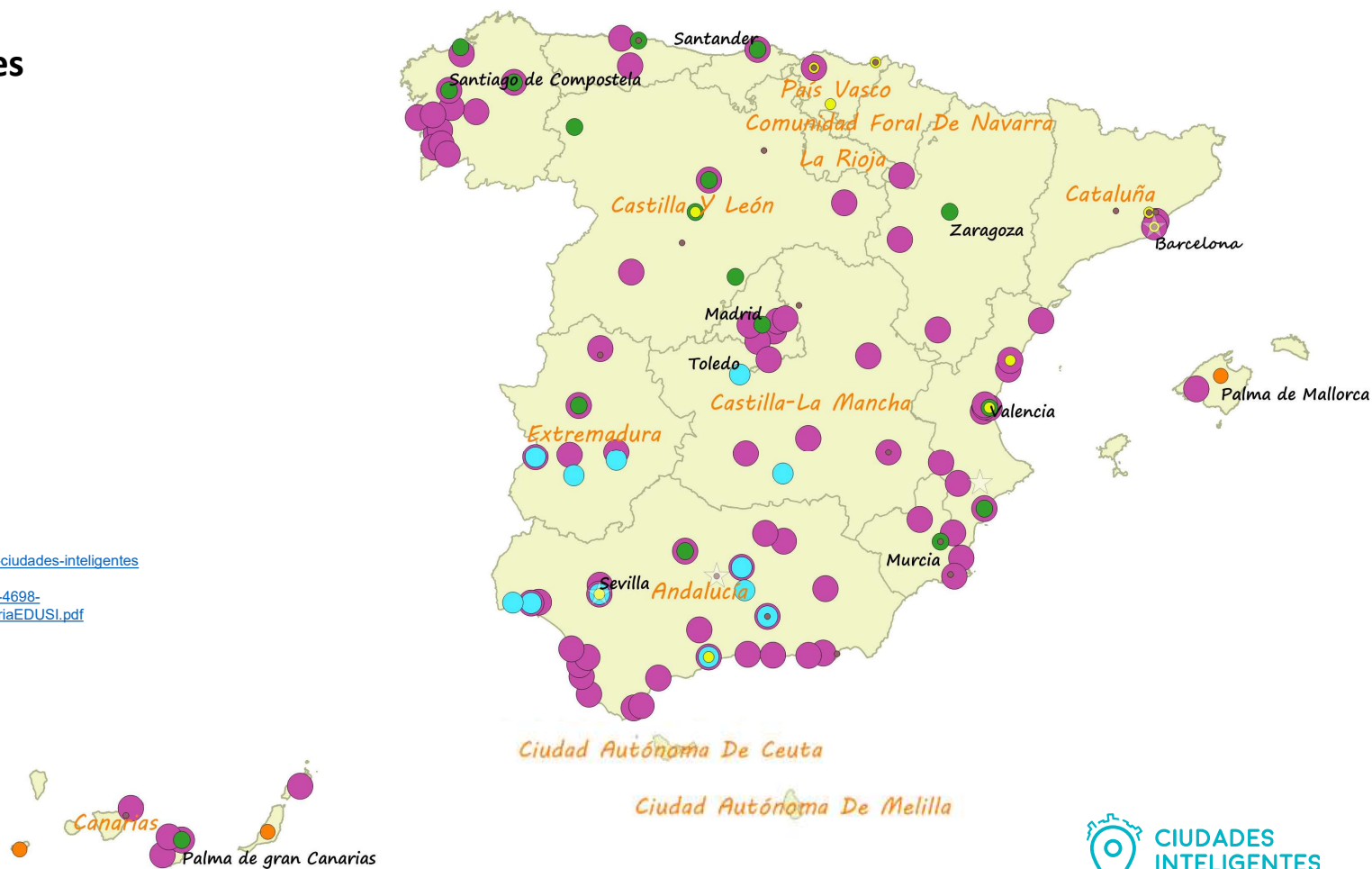
PROJECTS IN SPAIN:

24 european projects
28 projects of calls red.es
83 DUSI strategies

Spain's current situation :

- ☆ Call II (URBACT)
- Call I (URBACT)
- European projects EIPSCC
- Islands I (Red.es)
- Cities II (Red.es)
- Cities I (Red.es)
- Strategies (DUSI)

Source:
Calls red.es:
<http://www.red.es/redes/actuaciones/administracion-en-linea/plan-ciudades-inteligentes>
EIPSCC: <http://eu-smartcities.eu>
DUSI: http://www.fomento.gob.es/NR/rdonlyres/97DDEFB5-A4A5-4698-A118D3179CCA7488/133930/20151118_PresentacionConvocatoriaEDUSI.pdf



SPAIN NETWORKS:

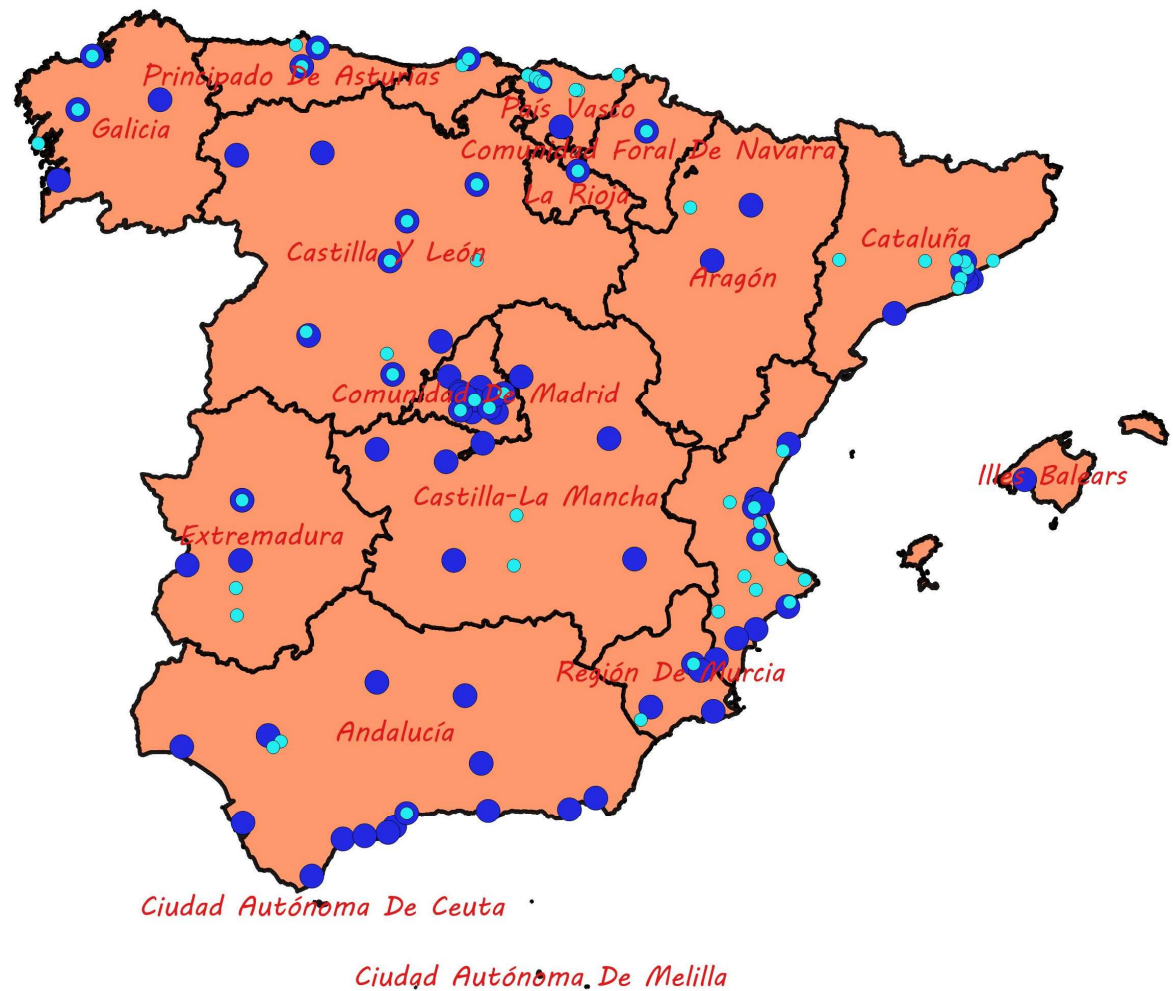
82 “RECI” Cities

62 “Red Innpulso” Cities

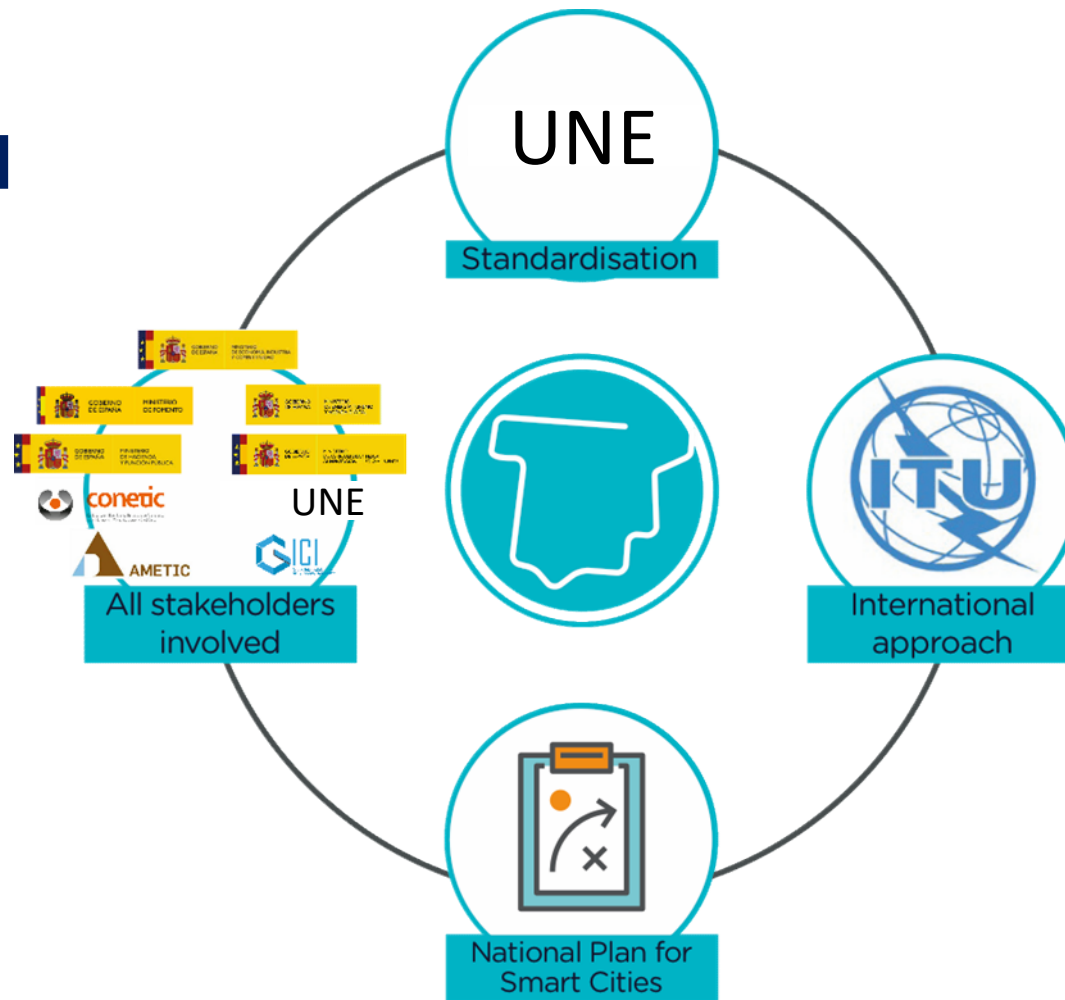
- Red Innpulso Cities
- RECI Cities



Source:
<http://www.redciudadesinteligentes.es/>
<http://redinnpulso.es/>



SPANISH SITUATION



THE SPANISH MODEL: A GLOBAL BENCHMARK



UN

Highlights the **National Plan for Smart Cities** as a **good example of public policy**

Broadband Commission (The State of Broadband: Broadband catalysing sustainable development, September 2016) Source:
<http://broadbandcommission.org/Documents/reports/bb-annualreport2016.pdf>



ITU

- Spain is working collaboratively on the development of **ITU standards** for Smart Cities (1 recommendation in progress and 3 work items)
- Spain is involved as a **vice-chair** in the SG20 Study Group on the Internet of Things (IoT)
- Spain is involved as vice-chair in an initiative “United 4 Smart Sustainable Cities (U4SSC)



EU

The Spanish model has been described as an **‘institutional innovation’** by EU representatives



INTEREST IN OTHER COUNTRIES

Other countries have partly emulated the Spanish model. It has inspired changes and is gaining acceptance in **Ibero-America and Europe**

NATIONAL PLAN

OBJETIVES

- Supporting industry
- Supporting local entities during their transformation process
- Promoting reuse, standards, and interoperability

AREAS

- Transformation of municipalities into Smart Cities
- Support for projects that validate the efficiency of ICT
- Development of the ICT sector

SCOPE OF ACTION

- Standardisation
- Governance
- Industry

IMPETUS CALLS FOR PROPOSALS

- Smart Cities I
- Smart Cities II
- Smart Islands I

SPANISH MODEL

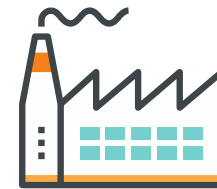
PILLARS



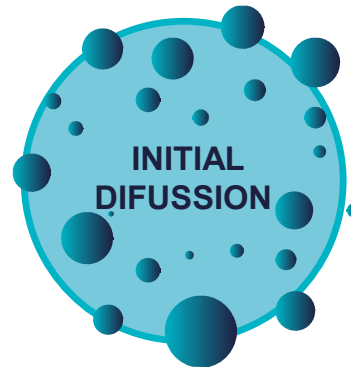
Standardisation



Governance



Industry



**INITIAL
DIFFUSION**

**LACK OF
STANDARDS AND
REGULATION**

**LACK OF
ELEMENTS FOR
THE
DEVELOPMENT
OF CITIES**

**LACK OF
ROADMAPS**

**LACK OF LARGE-
SCALE AND
SPECIALISED
EXPERIENCE**

**LACK OF PUBLIC
PERCEPTION OF
THE BENEFITS**

**CREATE STANDARDS
AND PROMOTE
ACTIVE REUSE
POLICIES**

- **TRAINING**
- **APPROVED LEGAL
FRAMEWORK**
- **DEFINED BUSINESS
MODELS**
- **APPROPRIATE
GOVERNANCE
MODELS**

**ESTABLISH STRATEGIC
PLANS WITH DEFINED
OBJECTIVES,
TECHNOLOGIES AND
OUTCOMES**

**CONCENTRATE
RESOURCES ON
INNOVATIVE AREAS
THAT MEET
THE NEEDS OF LOCAL
ENTITIES
OPEN DATA
INTEROPERABILITY**

**PROMOTE PUBLIC
AWARENESS OF
ACTIONS AND THE
BENEFITS THEY BRING
TO SOCIETY**

STANDARDISATION



Objectives

Defining **requirements, guidelines, techniques, indicators and tools** that contribute to cities' development into smart communities and that enable **REUSE**



Benefits

- **Standards** enable markets to be develop more easily
- Not advocating standards is the equivalent of dissatisfied customers, lost investments, lack of economies of scale, etc.
- 'The establishment of a standard means to stop competing **FOR** a market and move on to competing **IN** a market'

SC1 – INFRASTRUCTURES

- GT1 - Public service networks
- GT2 - Deployment of ICT infrastructures
- GT3 - Convergence of the Management Control Systems
- GT4 - Platform Interoperability for Smart Cities
- GT5 - Universal accessibility, urban planning and territory distribution



COLLABORATION REINFORCEMENT ITU
INTEROPERABILITY AND USE CASES



-COLLABORATION REINFORCEMENT ITU
SMART RURAL TERRITORIES
-COLLABORATION REINFORCEMENT **OPEN DATA**

SC2 - INDICATORS AND SEMANTICS

- GT1 - Definition
- GT2 - Indicators
- GT3 - Indicators of citizen's rights

SC4 - ENERGY AND ENVIRONMENT

- GT1 - Smart Buildings
- GT4 - Street Lighting
- GT5 - Basic services and water and electricity supply management in smart ports
- GT7.1 - Air pollution control system
- GT7.2 - Acoustic pollution control system
- GT7.3 - Smart irrigation system

SC3 - GOVERNMENT AND MOBILITY

- GT1 - Governance
 - GT1.1 - Open Data**
 - GT1.2 - City Assets Management
 - GT1.3 - Smart management of a rural territories**
- GT2 - Mobility
 - GT2.1 - Infrastructure of intelligent recharging for electric vehicles
 - GT2.2 - FPI for urban logistics or last mile distribution
 - GT2.3 - Accessible mobility

SC6 - PUBLIC SERVICES 4.0

SC5 - SMART TOURIST DESTINATIONS

- GT1 - DTI Management systems
- GT2 - Indicators and tools



COLLABORATION REINFORCEMENT ITU **DTI**
REFERENCE MODEL

CTN 178

Smart Cities

GT – BUSINESS MODELS

20 APPROVED AND PUBLISHED STANDARDS (I)

UNE 178101	Smart Cities - Infrastructures - Public service networks.
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UNE 178101-1	Part 1: Water networks
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UNE 178101-3	Part 3: Transport networks
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UNE 178101-4	Part 4: Telecommunications networks
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UNE 178101-5.1	Part 5.1: Energy networks - Electricity
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UNE 178102	Smart Cities - Infrastructures - Telecommunications systems.
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UNE 178102-1	Part 1: Municipal Multiservice Network
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UNE 178102-3	Part 3: Unified Communications System - UC
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UNE 178107 - IN	Guidelines for Smart City infrastructures - Access and transport networks.
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UNE 178107- 1 IN	Part 1: Fibre-optic networks
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UNE 178107- 2 IN	Part 2: Wide area wireless networks - WMAN
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UNE 178107- 3 IN	Part 3: Wireless local area networks - WLAN
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UNE 178107- 4 IN	Part 4: Sensor networks - WSN
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UNE 178107- 5 IN	Part 5: Safety, security and emergency mobile networks - SSE
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UNE 178107- 6 IN	Part 6: Radio links
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20 APPROVED AND PUBLISHED STANDARDS (II)

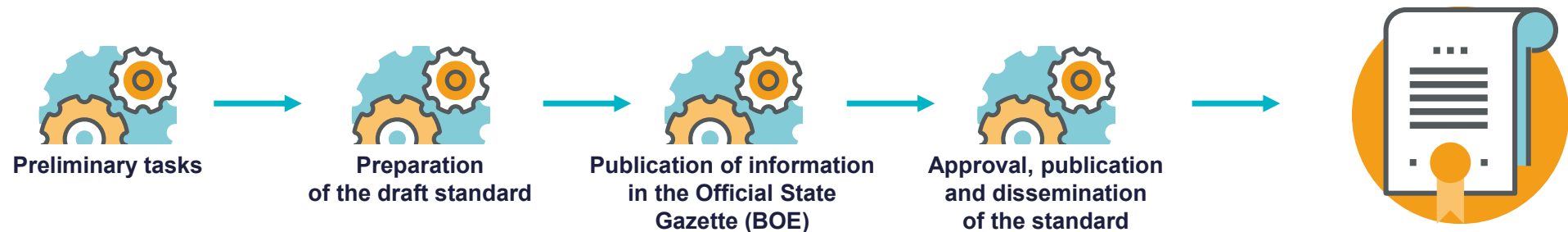
UNE 178104	Smart Cities - Infrastructures - Smart City integrated management systems
UNE 178301	Smart Cities - Open data
UNE 178303	Smart Cities - Management of city assets - Specifications
UNE 178402	Smart Cities - Management of basic services and water supply and electrical energy in smart ports
UNE-ISO 37120	Sustainable development of communities - Indicators for city services and quality of life
UNE 178201	Smart Cities - Definition, attributes and requirements
UNE 178202	Smart Cities - Management indicators based on city management dashboards
UNE 178501	Smart destination management system - Requirement

2 STANDARDS AT THE PUBLIC INFORMATION STAGE

UNE 178105	Smart Cities - Infrastructures - Universal accessibility, town and country planning
UNE 178401	Smart Cities. Public lighting - Levels, zoning and management architecture

*+26 in progress

APPROVAL PROCESS FOR STANDARDS



SPAN IS WORKING WITH ITU

ITU Study Group on the Internet of Things (IoT) SG20



INTEROPERABILITY (ITU)

Draft Recommendation Y.4454: "Platform Interoperability for Smart Cities and Communities"

Use Cases:

- Smart buildings
- Smart ports / airports / stations
- Delegation of services (mobility)
- Smart destinations



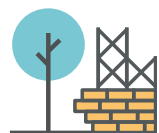
OPEN DATA (ITU)

Work Item: Doc.TD503Rev3 "Open Data Indicator in Smart Cities"



TOURIST DESTINATIONS (ITU)

Work Item: Doc.TD502Rev1 "Reference Model for Smart Tourist Destinations: platform interoperability and functionalities"

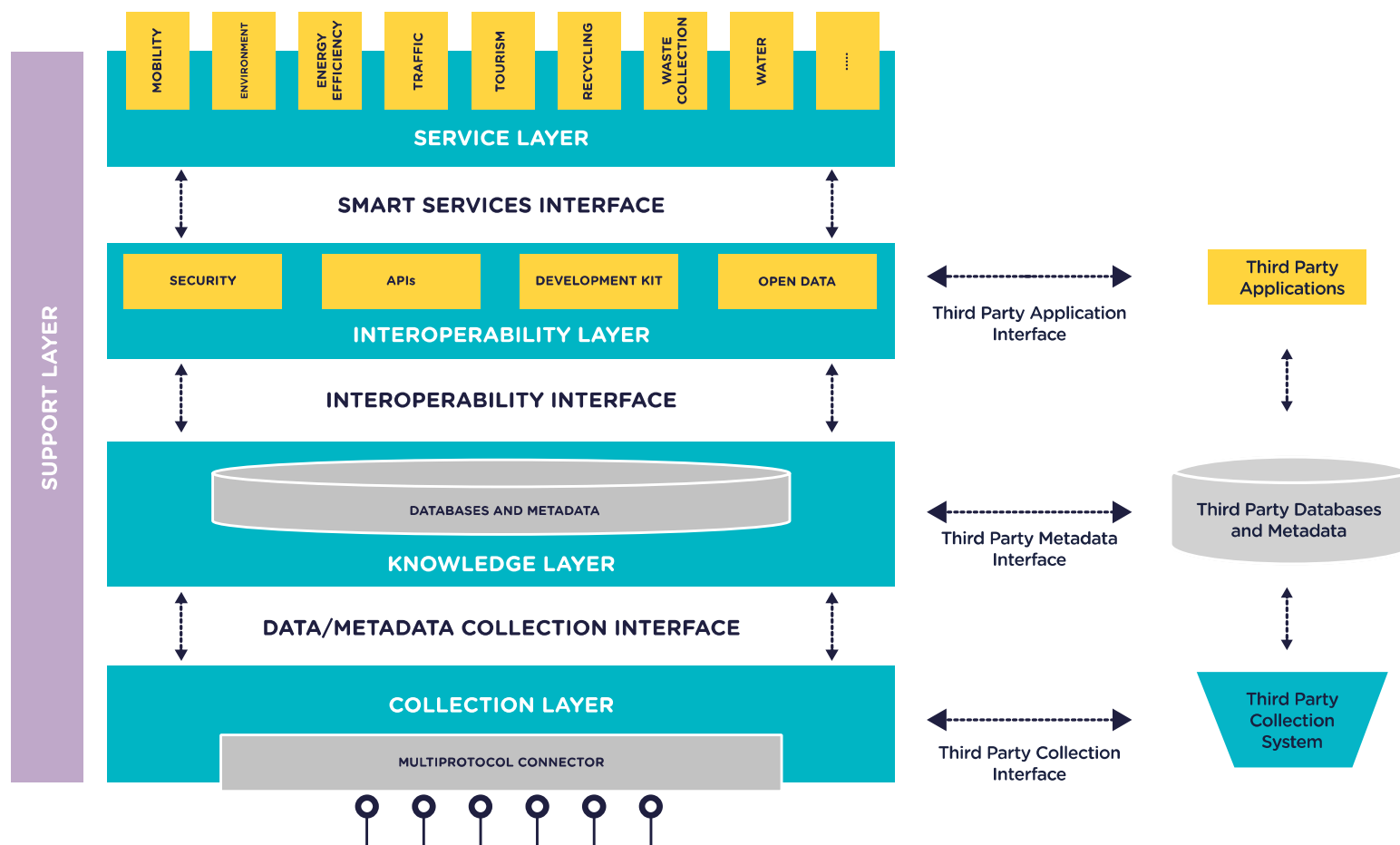


DEVELOPMENT OF RURAL ENVIRONMENTS (ITU)

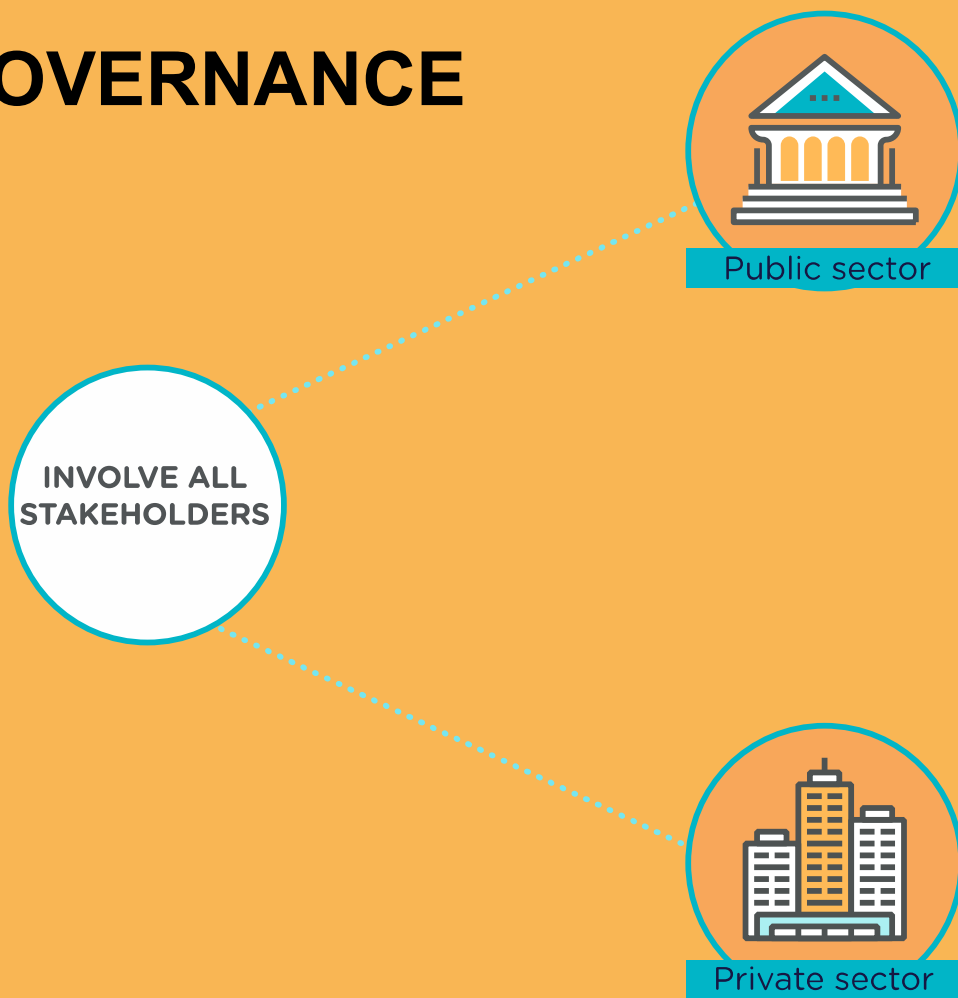
Work Item: Doc.TD454Rev1 "Requirements for deployment of smart services in rural communities"

DRAFT RECOMMENDATION Y.4454:

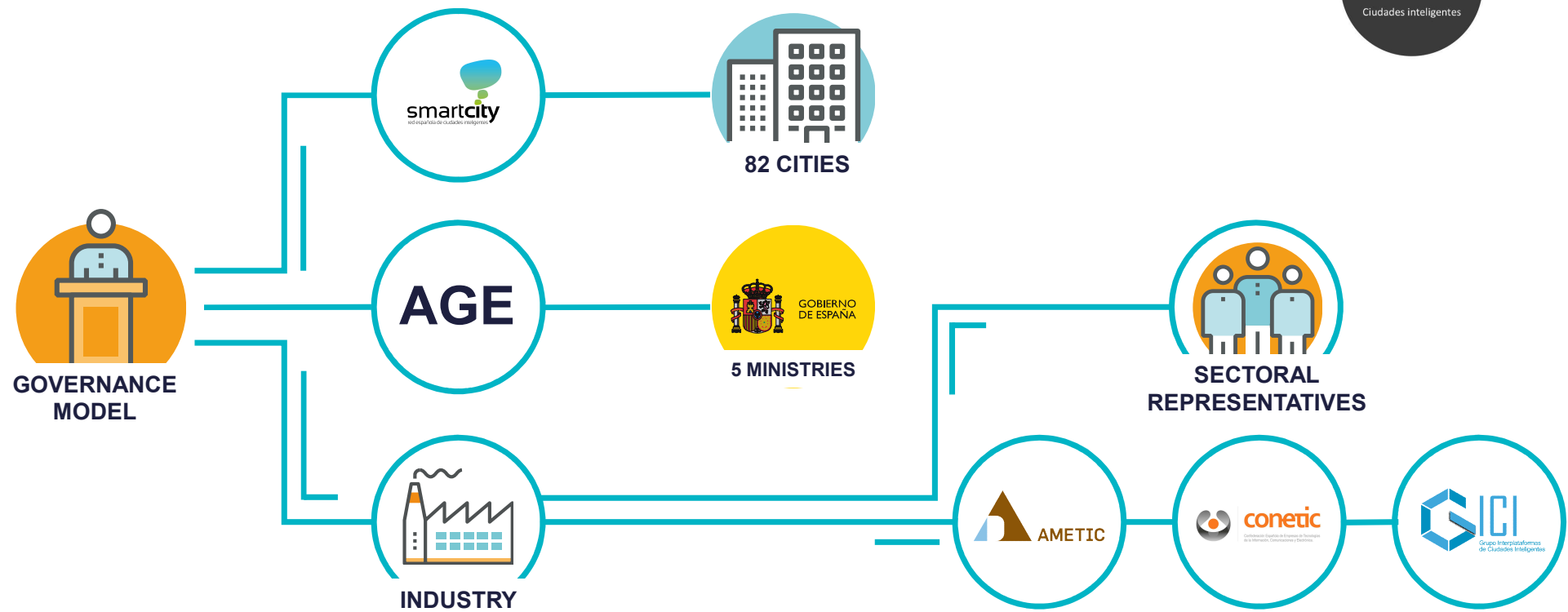
Plataform Interoperability for Smart Cities and Communities



GOVERNANCE



SPANISH MODEL



AMETIC (Multisectoral Association of Electronics, Information Technology, Telecommunications and Digital Content Companies)

CONETIC (Spanish Confederation of Information Technology, Communications and Electronics Companies)

GICI (Inter-platform Smart Cities Group)

TOOLS

SECTORAL FORUM FOR SMART CITIES

INSTITUTIONAL

INDUSTRY



5 MINISTRIES



SECTORAL
REPRESENTATIVES

SECTORAL FORUM FUNCTIONS:

To follow up on the proceedings of the AGE institutions.

Establish general lines of the competent institutions.

Diffusion of smart cities.

Prepare reports.

Promote the internationalization of the Spanish model.

SPANISH INDUSTRY



Consolidated

Providing the capacity to remain
market leaders



Emerging

Providing the capacity to tackle
new challenges

CALLS



Provision of public funding

TENDERING MODEL: RED.ES



Councils submit
their projects



The administration carries out
the tender procedure and
aggregates demand



The outcome is the
creation of projects
with greater scope

MEASURES IN PLACE



1st call for
proposals
for Smart Cities
(June 2014)



2nd call for proposals
for Smart Cities
(July 2015)



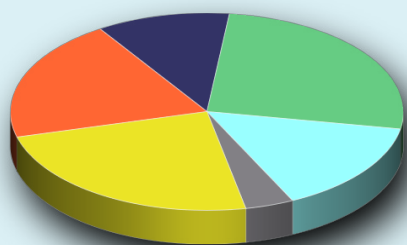
Call for proposals for
Smart Islands
(July 2015)

CALL I: SMART CITIES (JUNE 2014)

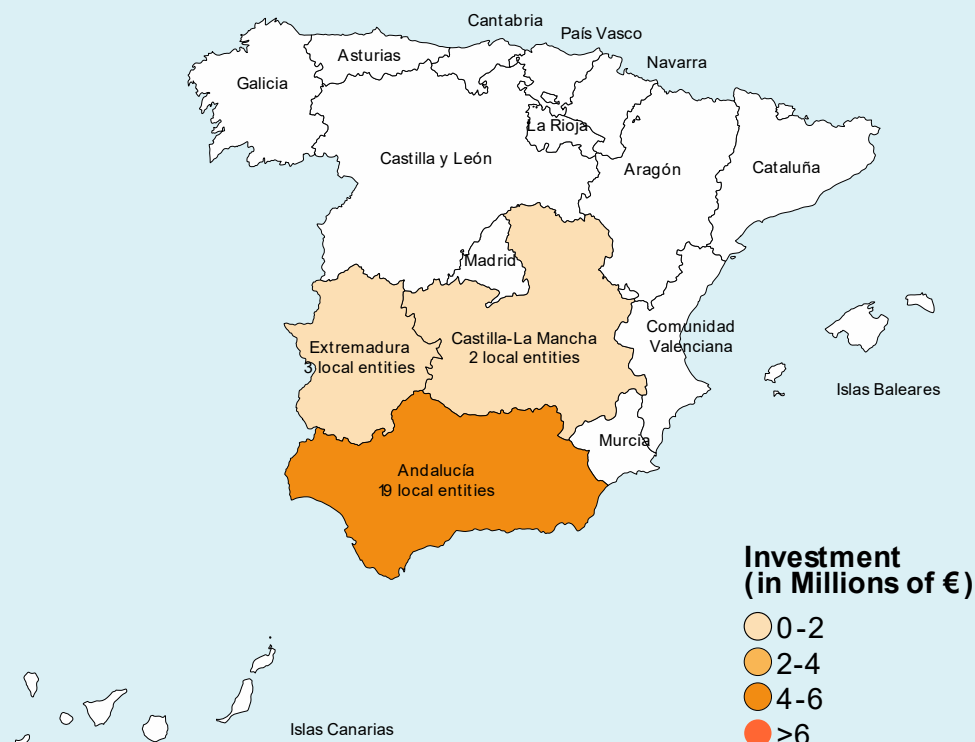
15
MILLIONS OF
EUROS

24 LOCAL BENEFICIARY ENTITIES

AREAS: 11 Projects



- Economy: 20 %
- Governance: 11%
- Life quality: 26%
- Mobility: 24 %
- Social and human capital: 4 %
- Environment: 15%



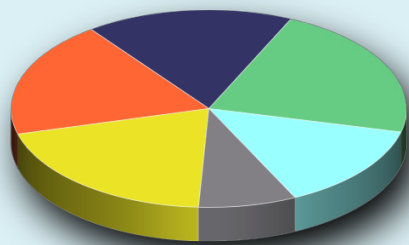
CALL II: SMART CITIES (JULY 2015)

63

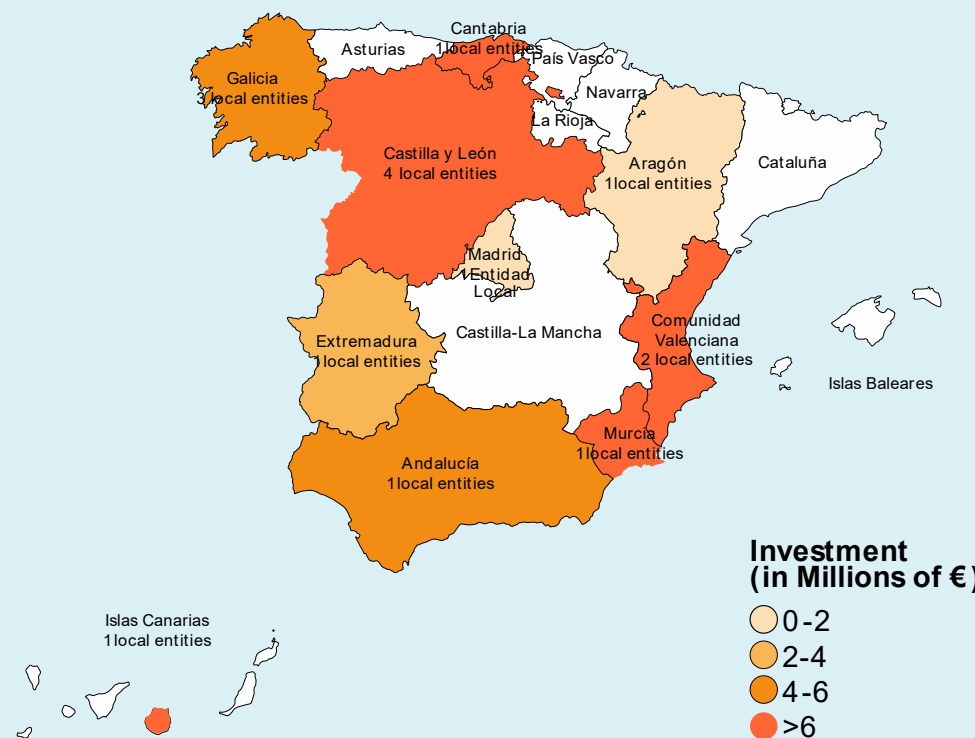
MILLIONS OF
EUROS

17 LOCAL BENEFICIARY ENTITIES

AREAS: 14 projects



- Economy: 19%
- Governance: 17%
- Life quality: 22%
- Mobility: 20%
- Social and human capital: 8%
- Environment: 14%



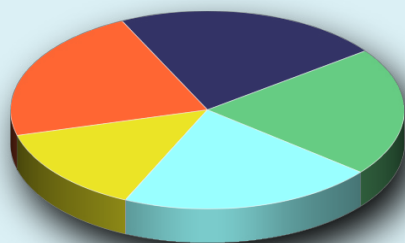
CALL I: SMART ISLANDS (JULY 2015)

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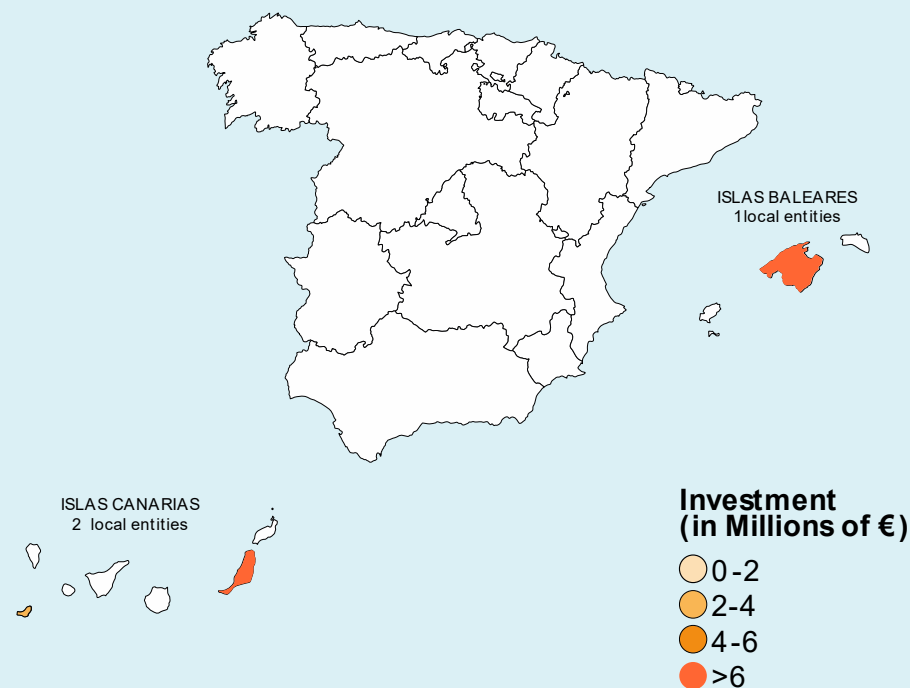
MILLIONS OF
EUROS

17 LOCAL BENEFICIARY ENTITIES

AREAS: 3 Projects



- Economy: 22%
- Governance: 22%
- Life quality: 21%
- Mobility: 14%
- Environment: 21%



THANK YOU

