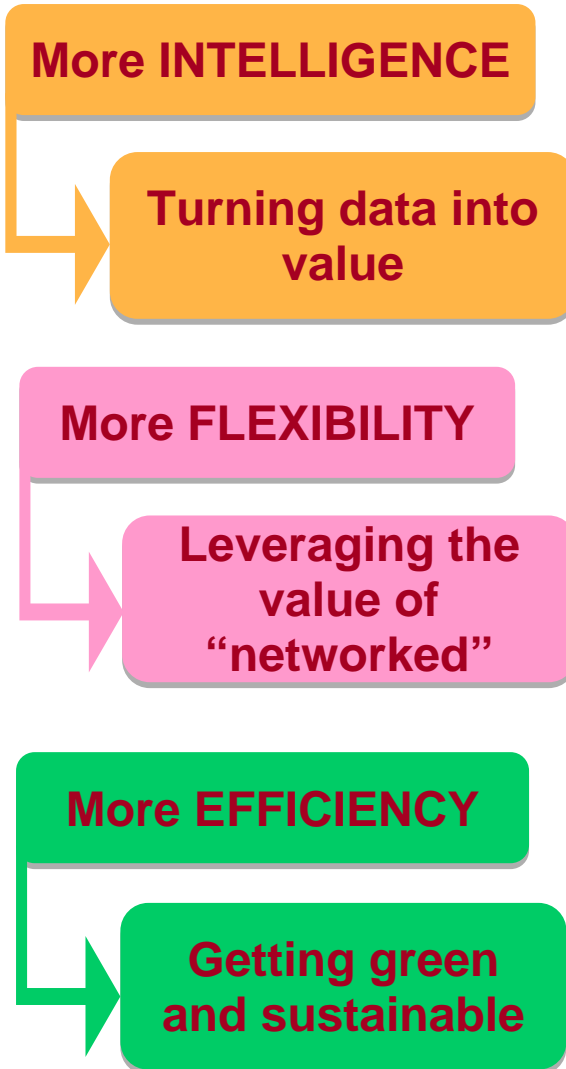


A child in a red toy car is driving on a large globe floor. The globe is painted on a light-colored tiled floor and shows continents in brown and oceans in light blue. The child is wearing a dark green shirt and is driving towards the top of the globe. The globe has a decorative border with a diamond pattern. The text "Future Internet PPP" and "Main principles & architecture" is overlaid on the image in white. In the bottom left corner, there is a small white square with a black and white pattern and the word "PORTUGAL" written vertically next to it.

# Future Internet PPP

## Main principles & architecture

# The FI PPP: “smarter” infrastructures & business processes through tighter integration with the Internet



## Leverage two trends:

1. Move towards an **enhanced Internet**
  2. Move towards **“smarter” business processes**  
Application domains in health, transport, environment, energy, logistics, ...
- ➔ Holistic technology + Application approach
- ➔ Foster **cross-sector industrial partnerships** and “user” driven innovation

## European Digital Agenda Aspects:

- Openness and Interoperability
- Standards
- Fostering public demand side
- Further incentives towards very high rate networks

# Outcome of the FI-PPP



1. The result should be a **generic, open and secure** communication and service platform... **standardised** and providing **cross sector** services through **common enablers**...
2. **Multiple use case scenarios** shall be considered. It is anticipated that **innovative** Internet-enabled smart infrastructures and processes require at least to **capitalise on**: Sensor Networks, Cloud like service infrastructures, Wireless capabilities
3. **Open to “user” driven innovation** through multiplicity of Use Cases – *Innovation platform for SMEs.*

# Objectives

- **Increase effectiveness** of business processes and the operation of infrastructure supporting applications (transport, health, or energy)
- Derive **possible new innovative business models** to strengthen the competitive position of European industry in domains like telecom, mobile devices, SW & services, content providers & media.
- Identify, define and update Internet related requirements from the different use case scenarios, **i.e. specs based on user industry requirements**
- Specify an **open standardised generic framework** (specs, standards, implementation and research/usage validation trials).
- Adapt and complement to the specific needs of the use case scenario, **i.e. fostering user innovation based on standards**



# Conceptual Programme Characteristics

## 1. Large scale projects

→ Integration will not happen in many small projects

## 2. Flexibility

→ The future Internet is a hard target to follow

→ Create a phased approach

## 3. Systematic approach to project selection

→ Projects must contribute to the programme and uniquely address aspects of the programme

## 4. Facilitate open sharing of project foreground

→ IPR issues must not hinder collaboration

## 5. Integrate sector competence with the ICT competence

→ The PPP target is to enhance all sectors with the Future Internet

## 6. Lead by example: large scale trials

→ Proving the scalability and viability of the concepts developed

## 7. Synergy: build on existing results and resources

→ Time & scale dictate using what is already achieved in Europe.

# Building a Partnership that maximises the outcome

The partnerships must bring together various expertise into **efficient, small and pro-active innovation teams**:

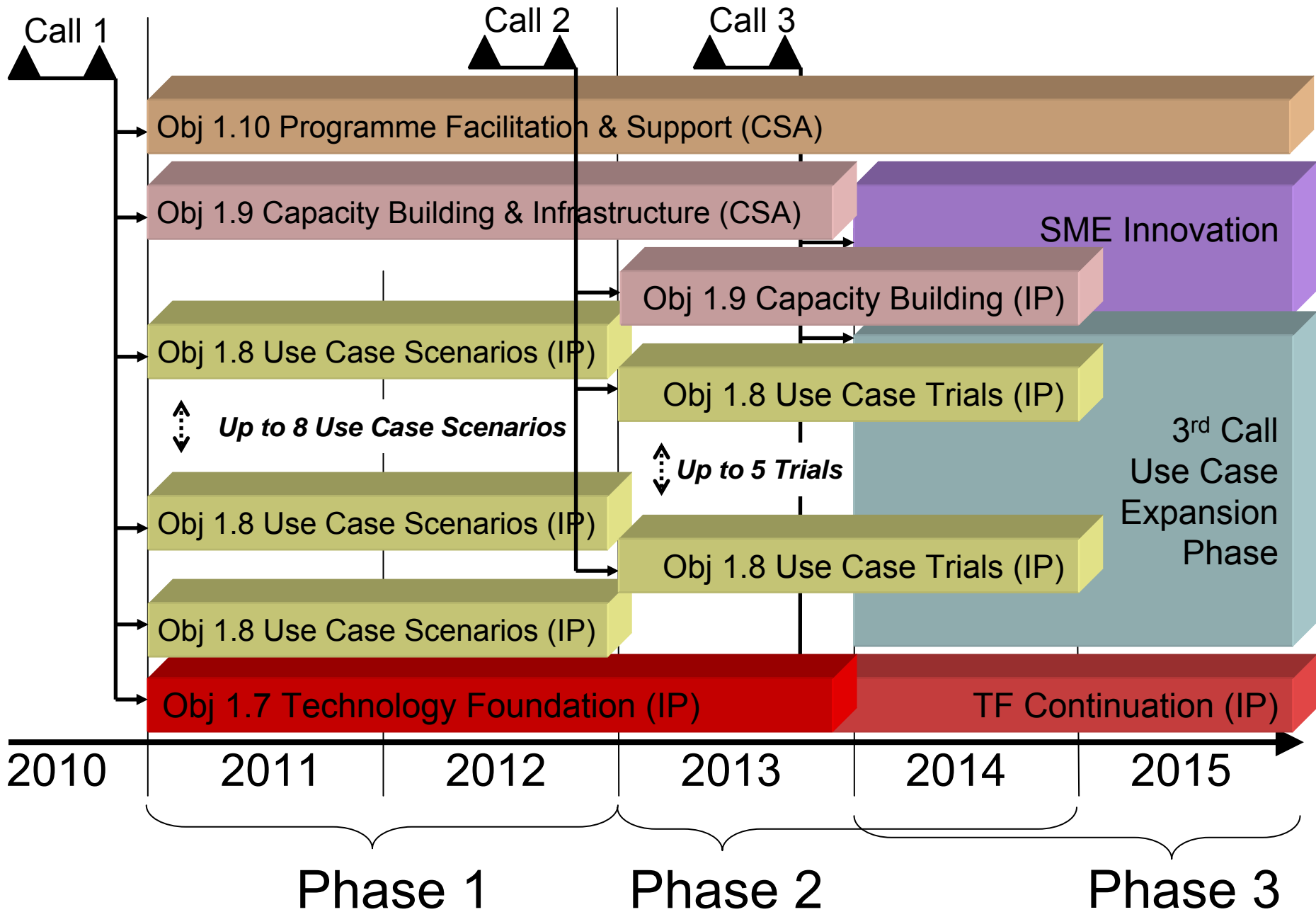
- Operators, service developers and equipment manufacturers (... *ICT industry*)
- Research & innovation stakeholders
- User industries & user communities (e.g. *utilities*)
- Public sector stakeholders (... *when it comes pilots*)
- End-user validation (... *in particular in the platform expansion phase*)

The partnerships will **evolve over time**, in particular:

- Technology foundation for the Core Platform
- Use Case scenarios and pilots

**Convergence beyond  
ICT Players!**

# Programme Architecture



# Technology Foundation: FI Core Platform

- **Generic, trusted, open platform:**

- Typical generic enablers with functionalities for
  - upgraded network
  - information processing
  - sensor networks coupled to the Internet
  - versatile service infrastructure
  - real-time application
  - trust and identity
  - ad-hoc aggregation of resources
- open interfaces, API, SDK

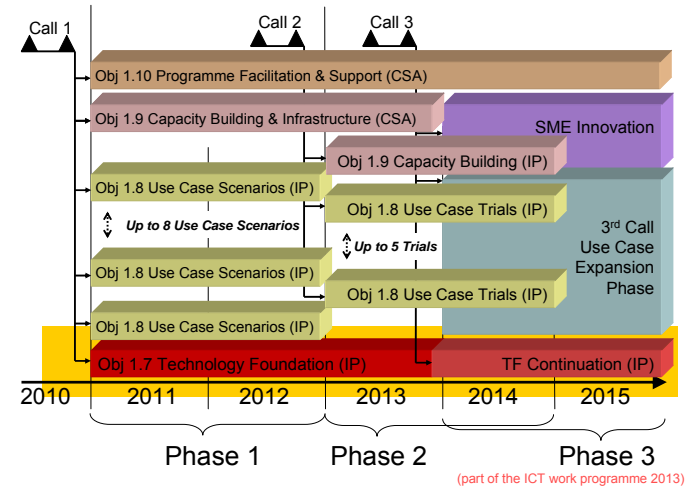
- **Functionalities depend on the requirements of the use case scenarios**

- **Build on existing research results:**

- system view
- integration
- adding missing components

- **Re-usable/composable in multiple usage contexts**

- **3<sup>rd</sup> party access under FRAND**



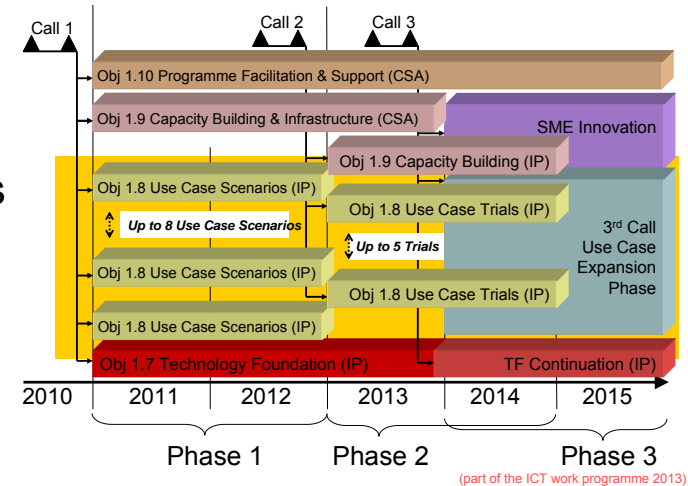
**One IP (41 MEuro, 3 years) covering Phases 1 and 2:**

- 30% flexible budget for meeting use case needs
- system design
- early prototyping
- early implementation and validation



# Use Case Scenarios and Early Trials

- Use cases with high social and economic impact
- Vertical application scenarios:
  - with enhanced efficiency, sustainability, performance by tighter integration with advanced Internet capabilities
  - leapfrogging advanced internet technologies, such as
    - context awareness and sensor networks
    - advanced real time information processing
    - handling huge volume of data
    - ad-hoc service composition and mash ups
    - managed broadband connectivity and services
    - embedded media support
- Identification of generic versus specific enablers (collaboration with TF)



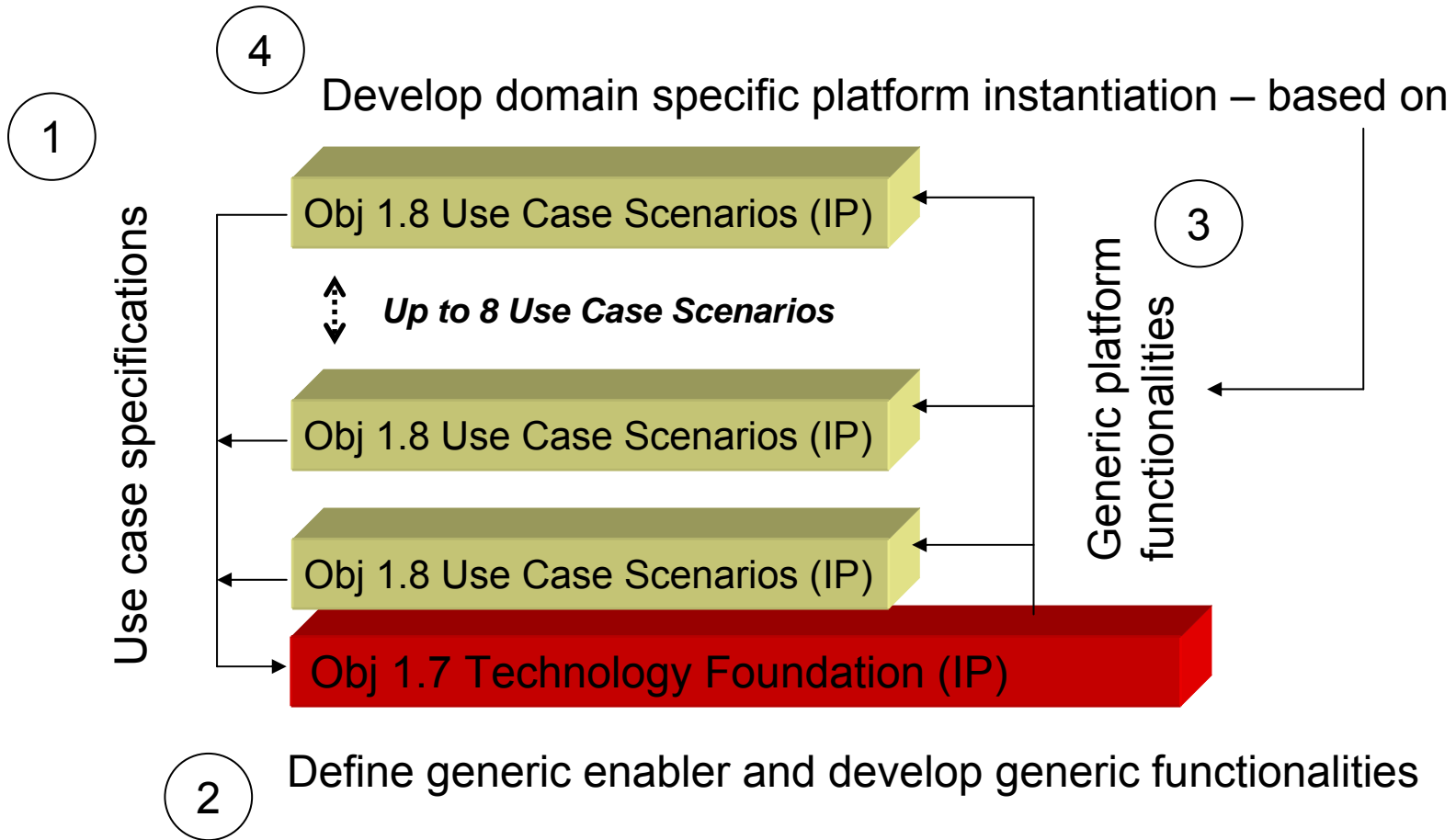
## Phase 1 (competitive)

- Up to 8 IPs (5 MEuro, 2 years) with broad coverage
- specification of use cases & scenarios
- identification of generic and specific enablers
- conceptual prototypes
- Phase 2 implementation plan

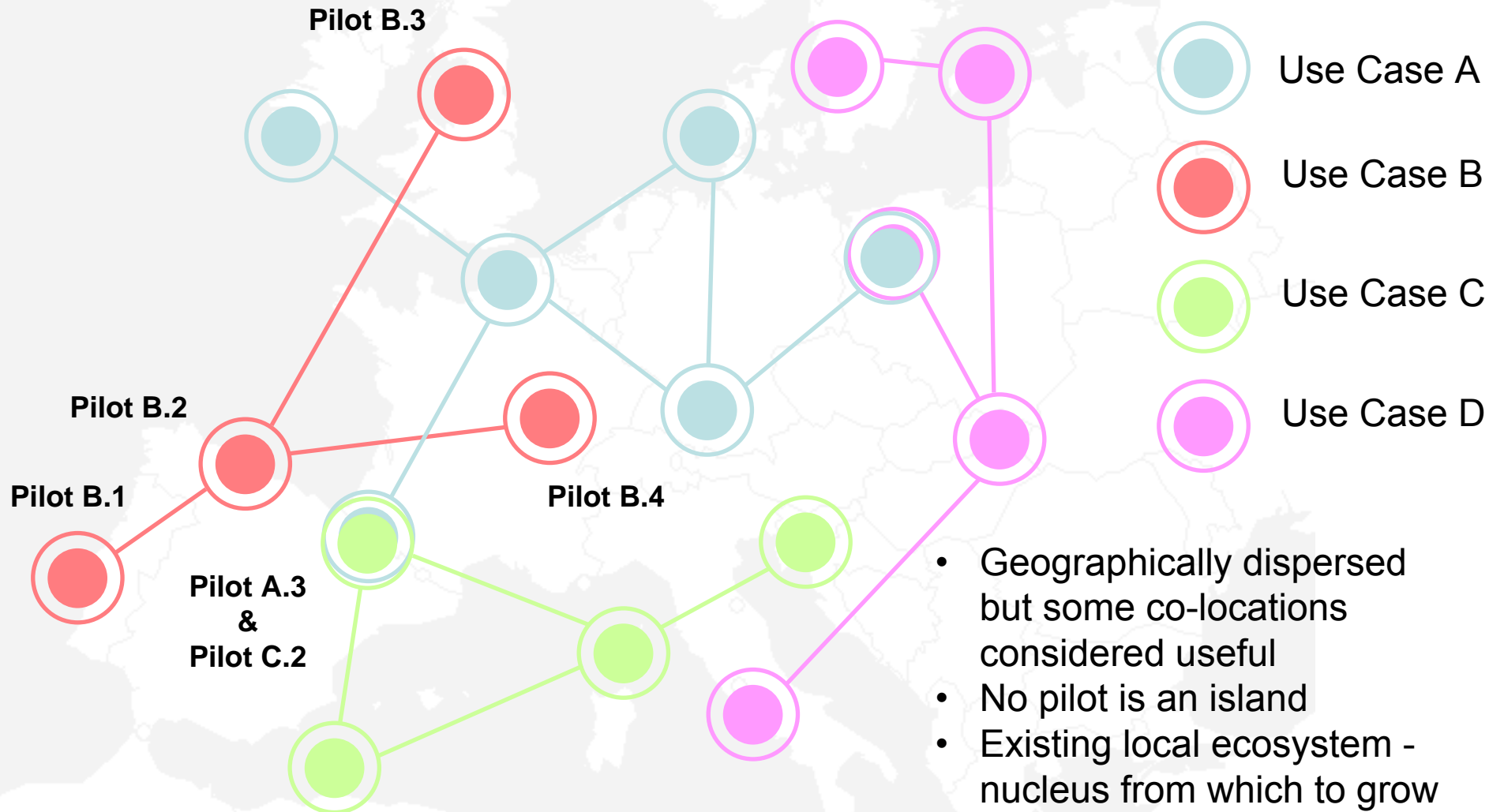
## Phase 2 (competitive)

- Up to 5 IPs (13.5 MEuro, 2 years) with 10% flexible budget (local business ecosystems)
- working experimentation sites with generic and specific enablers available
- selected test applications implemented
- validation of openness and versatility of the core platform
- planning phase 3

# Programme Dependencies

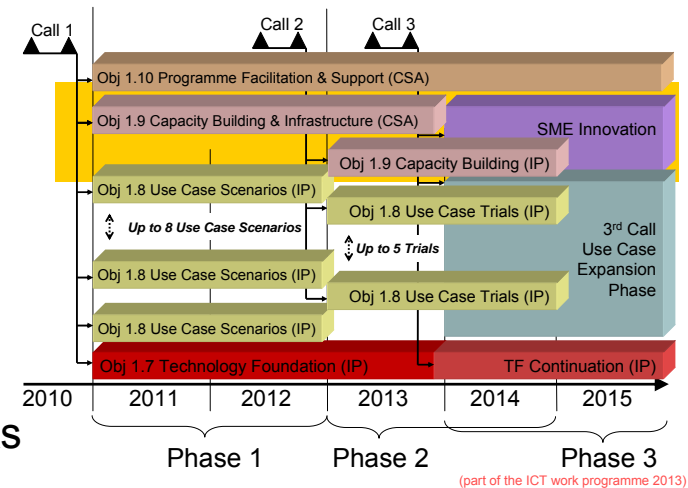


# FI-PPP: Pilot Architecture



# Capacity Building & Infrastructure Support

- **Leverage existing public investments in advanced infrastructures**
  - to support large scale and diverse experiments
  - to demonstrate versatility of the core platform
  - to support testing across a multiplicity of heterogeneous trials and use cases
- **Examples for infrastructures**
  - GEANT and National Research and Education Networks
  - [FIRE](#) - Future Internet Research & Experimentation
  - Advanced city and regional infrastructures
- **Establish partnership agreements**
- **Complementary to Use Case infrastructures**



## Phase 1

- one CSA (3 MEuro, 3 years) overlapping with phase 2
- identify candidates for experimental infrastructures for large scale experimentation
- repository of infrastructures
- identify operational constraints and draft partnership agreement across the programme

## Phase 2

- one IP (12.5 MEuro, 2 years)
- integration of infrastructures for cross-cutting phase 2 and 3 trials as needed
- adaptation, upgrade, validation of infrastructures for phase 3
- assembly of a pan-European federation to support application mash-up

# Programme Facilitation and Support

- **Establish the adequate mechanisms for collaborations between projects**

- boards and advisory structure
- day-to-day management support
- synchronisation & management of dependencies
- mechanisms for conflict resolution
- progress monitoring

- **Co-ordination of standardisation and assurance of openness**

- certification programmes
- strategic contribution to international standardisation
- programme-level IPR regime

- **SME-oriented measures**

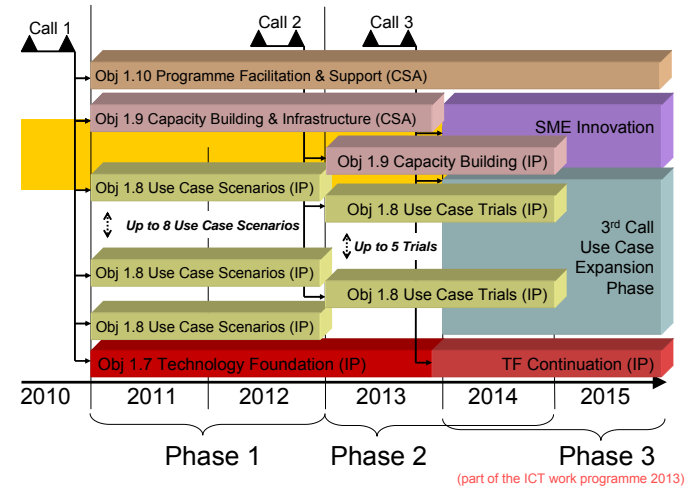
- towards ecosystems for trials in Phases 2 and 3
- awareness, training and incentive schemes

- **Contribution to policy and regulatory discussion**

- operation of the FI framework to be developed
- towards an internal market for e-services

- **Public Relations**

- programme-wide PR strategy
- individually address all relevant target audiences
- coordinate common dissemination actions



## One Support Action covering Phases 1 to 3 (6 MEuro, 3 years)

- facilitator for collaboration
- in support of and complementary to the EC management, monitoring and review processes
- ensuring coherent and non-disruptive management support



# The process

- The work programme is **specific** in calling for the different elements making up the programme (WP2011/12 calls for Phase 1 and 2, WP2013 will call for Phase 3).
- Reflecting the **programme notion** is an absolute requirement for all proposals – observe the system context!
- Phased projects, limited number, critical mass = many specific programme characteristics
- An evaluation process **catering** for the specificities of the PPP.
- Leverage **user driven innovation** and **public sector strengths** through openness and existing infrastructures.
- **Manage dependencies** – in particular between Technology Foundation and Use Cases.
- Significant programme coordination and support measures expended by **each project** and the **Programme Facilitation** action.

# Draft Implementation Roadmap\*

- **Call 1 (30 July – 26 October 2010) – budget 90 MEuro**
  - Technology Foundation (one IP, 41 MEuro, 3 years, 30% flexible)
  - Use Case Scenarios – Phase 1 (7-8 areas, IP, 5 MEuro, 2 years)
  - Capacity Building (one CSA, 3 MEuro, 3 years)
  - Programme support (one CSA, 6 MEuro, 5 years)
  
- **Call 2 (15 May – 18 September 2012) – budget 80 MEuro**
  - Use Case Scenarios Pilots – Phase 2 (5 areas, 13.5 MEuro, 2 years)
  - Capacity Building (one IP, 12.5 MEuro, 2 years)
  
- **Call 3 (mid 2013) – budget 130 MEuro**
  - Devoted to the expansion and enlargement of many testbeds and pilots (several areas, ~100 MEuro, 2 years)

# Further Information

## Next Key Events 2010/11:

- 27-29 September – Brussels, [ICT Event 2010](#)
- 29 Nov – 1 Dec – Tokyo, [IoT2010](#)
- 16-17 December – Ghent, 6<sup>th</sup> [FIA Conference](#)
- 17-19 May – Budapest, 7<sup>th</sup> FIA Conference

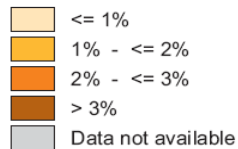
## Sites to drill further:

- [ec.europa.eu/foi](http://ec.europa.eu/foi) – read about the many activities the EC undertakes on Future Internet
- [www.future-internet.eu](http://www.future-internet.eu) – The European Future Internet Portal – the community site
- [cordis.europa.eu/ict/ch1](http://cordis.europa.eu/ict/ch1) – Ongoing European FI research & development activities

# A Creative Union of 497 Million people

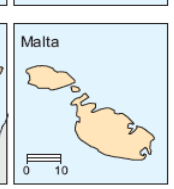
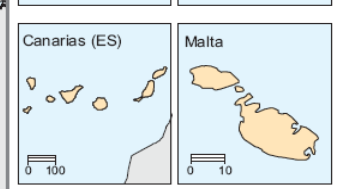
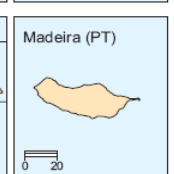
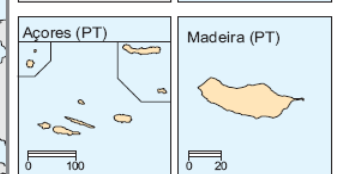
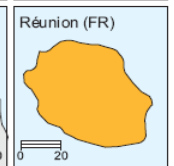
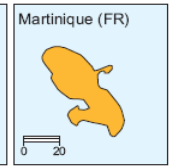
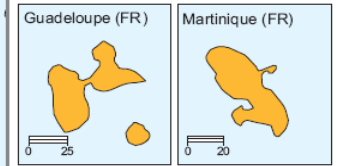
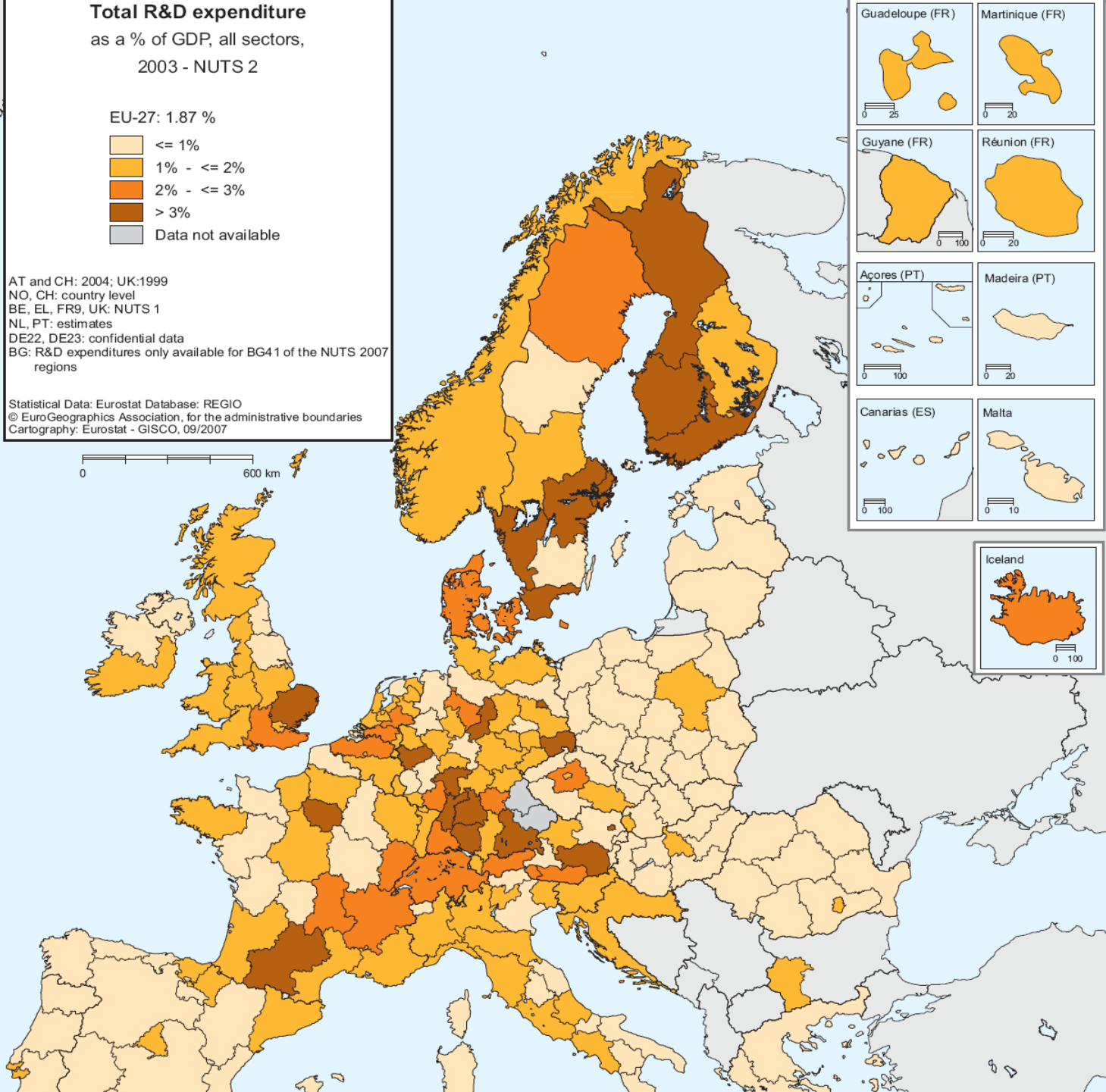
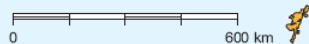
**Total R&D expenditure**  
as a % of GDP, all sectors,  
2003 - NUTS 2

EU-27: 1.87 %



AT and CH: 2004; UK:1999  
NO, CH: country level  
BE, EL, FR9, UK: NUTS 1  
NL, PT: estimates  
DE22, DE23: confidential data  
BG: R&D expenditures only available for BG41 of the NUTS 2007 regions

Statistical Data: Eurostat Database: REGIO  
© EuroGeographics Association, for the administrative boundaries  
Cartography: Eurostat - GISCO, 09/2007



# Epilogue



# ICT Work Programme 2011-12

Total available budget: Euro 2.4 billion

Proposal includes 8 Challenges + FET

Challenge 1 represents a major share ( $\approx 25\%$ )

Future Internet - 2 strands under CH1:

Mainstream research on:  
networks, networked media,  
sensor platform, services & cloud,  
trust & security, FIRE approach  
based on continuity.  
+ A number of new issues under  
CH1 core objectives

FI-PPP

Closing the gap  
between research  
and innovation

# Landscape of Future Internet Activities in Europe

