RIs in the new European Landscape:

FET Flagships (FET-Fs)

in conjunction with

Research Infrastructures (RIs)

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Suggested topics

- 1. What are the key elements of JPIs and Flagships
- 2. How can we interweave the common agendas for these different initiatives?
- 3. What makes a successful research facility?
- 4. Identify common issues
- 5. Potential linkages that will deliver better outcomes
- 6. Additional layers for added value for ERA, ie. PhD education, innovation etc.

FET Flagships

- Future and Emerging Technologies
  - ICT core
- characteristics
  - ambitious
  - large-scale
  - long-term
  - science-driven
- impact
  - technological
  - economic
  - society
- shape ERA
  - unifying goal and vision
  - public-private partnership
    (science, industry, MS, EC…)

FET Flagships

Large-scale long-term initiatives leveraging excellence around a unifying scientific goal

FET Flagships are…

Ambitious, large-scale, science-driven research initiatives that aim **to achieve a visionary goal**. The scientific advance should **provide** a strong and broad basis for future **technological innovation** and **economic exploitation** in a variety of areas, as well as **novel benefits for society**.

Ambitious goals require extensive cooperation

Certain research goals are so ambitious that they are beyond the reach of any single national or EU funded research initiative. Only by **mobilising the best researchers Europe-wide via a shared vision towards a clearly defined unifying goal**, and by supporting them over a long period, can such objectives be reached.

A recognised need

The **objective of reinforcing research in future and emerging technologies (FET)** was expressed in the EC communication COM (2009) 184 **'Moving the ICT frontiers'**, and was endorsed by the Competitiveness Council in early December 2009. The Communication highlights as one **key action** the **launch** of at least two **FET Flagship initiatives by 2013**.

Facing great scientific challenges together

Research activities of European and national programmes would be aligned and work together to **meet a common scientific challenge, in pursuit of a unifying goal**. As new public-public partnerships, FET Flagships would represent a powerful new instrument in **shaping and building the European Research Area**.

Federated effort for breakthrough magnitude

To provide lasting support at a level which allows a concerted effort towards fulfilling a grand ambition, FET Flagships are envisioned to run for at least 10 years, with a budget of up to 100 M€ per year, per initiative. This scale can only be achieved through cooperation between the European Framework and National research programmes. The overarching nature and magnitude of these initiatives implies that **they can only be realised through the federated effort** of the European research community and institutions, national and regional funding agencies, and where appropriate, with the participation of global partners and industry.

The time for action is now

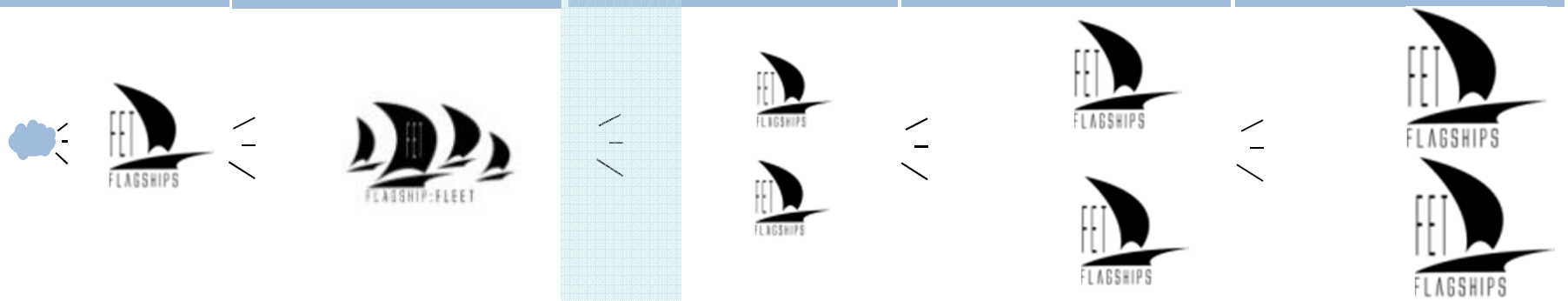
To implement a joint effort of such a grand scale requires a **great amount of preparation** in terms of **developing key ideas** by the scientific community, devising **operational mechanisms**, defining and implementing a **legal framework**, and most of all, establishing the **political and financial support** of stakeholders. The EC is fostering coordinated progress in each of these areas.

FET FLAGSHIPS

http://cordis.europa.eu/fp7/ict/programme/fet/flagship

The FET Flagship story

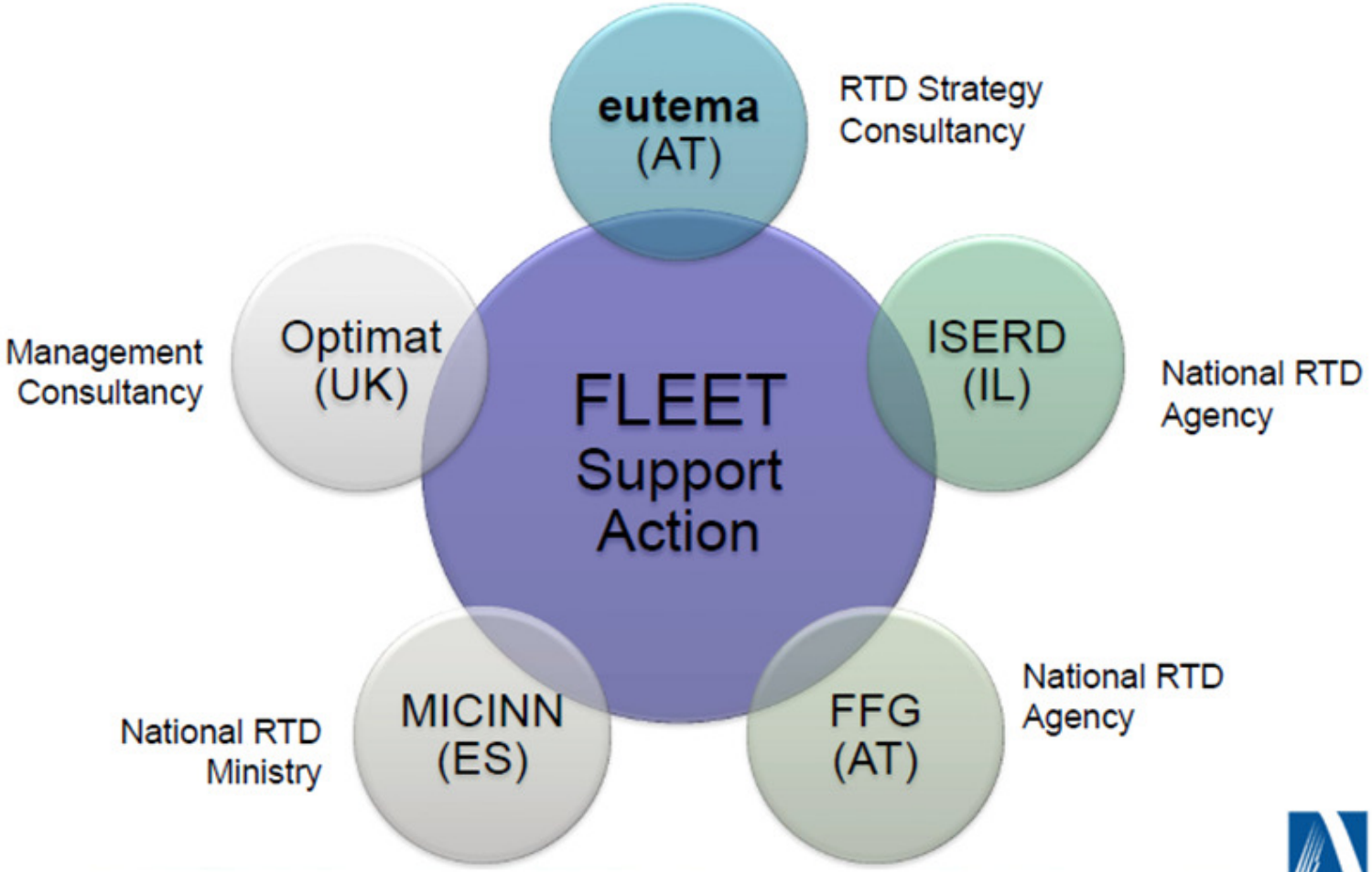
Consultation and Preparation: FET Flagship Study	Preparatory Actions: 21 → 6 Pilots + FLEET	Ramp-up: 2 FET-Fs: FP7 → Horizon2020	Operational: increased commercialisation	Final: sustainable business model



CSA | CP-CSA + ERA NET | Contractual or Institutional Partnership

2009-2010 → 2011-2012 → 2013-2015 → 2016-2020 → 2020+

FLEET – who are we?



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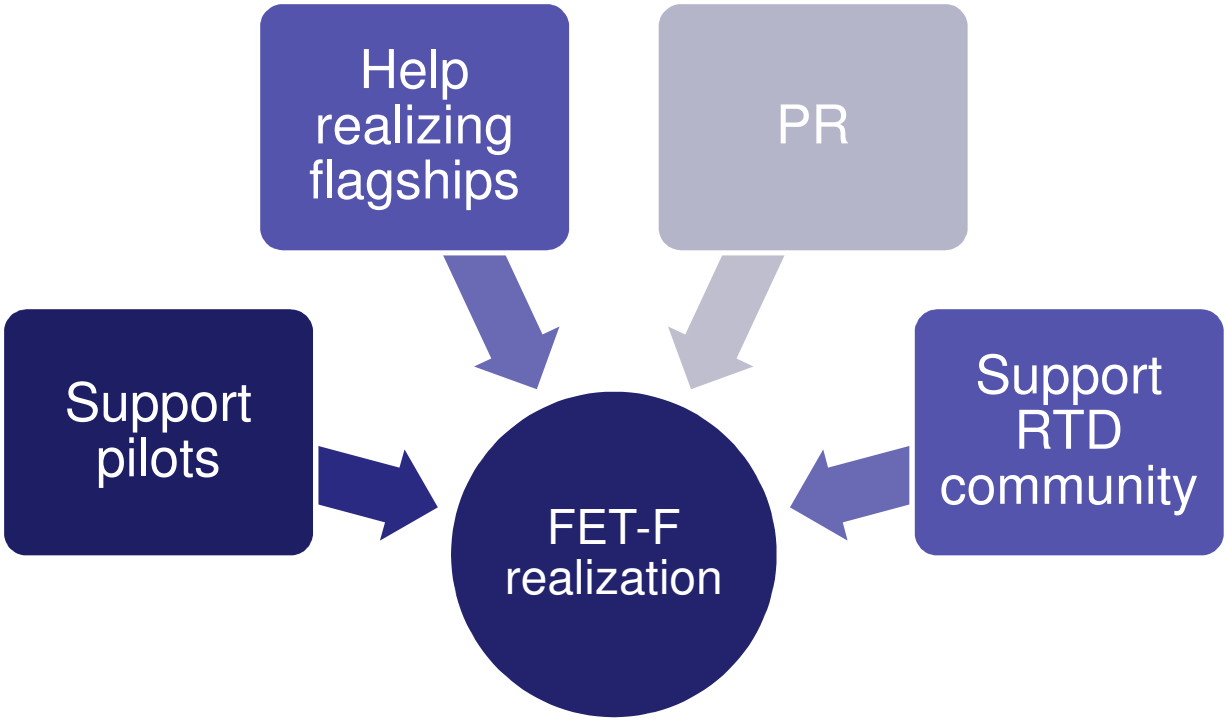
ADVANCING SCIENCE, SERVING SOCIETY

FLEET – what are our goals?



FLEET – what are potential future tasks?

- Support MS and flagships in ERA-NET preparation
- Continue work on international collaboration
- Prepare recommendations for future flagships, lessons learned and the next phase
- Support RTD community in fair access to flagships

FET-F pilot initiatives

- managing **complexity** in the 21st century
- global participatory ICT platform
- planetary nervous system
- living earth **simulator**
- **socio-inspired** technologies

- **carbon-based electronics**
- layered materials
- optoelectronics
- spintronics
- supercapacitors and batteries

- **Autonomous smart systems**
- **Energy efficient** nanolectronics: computing, communication, sensing
- Disruptive energy harvesting
- Nanotechnologies and heterogeneous integration
- Green **e-assistants** for improved quality of life

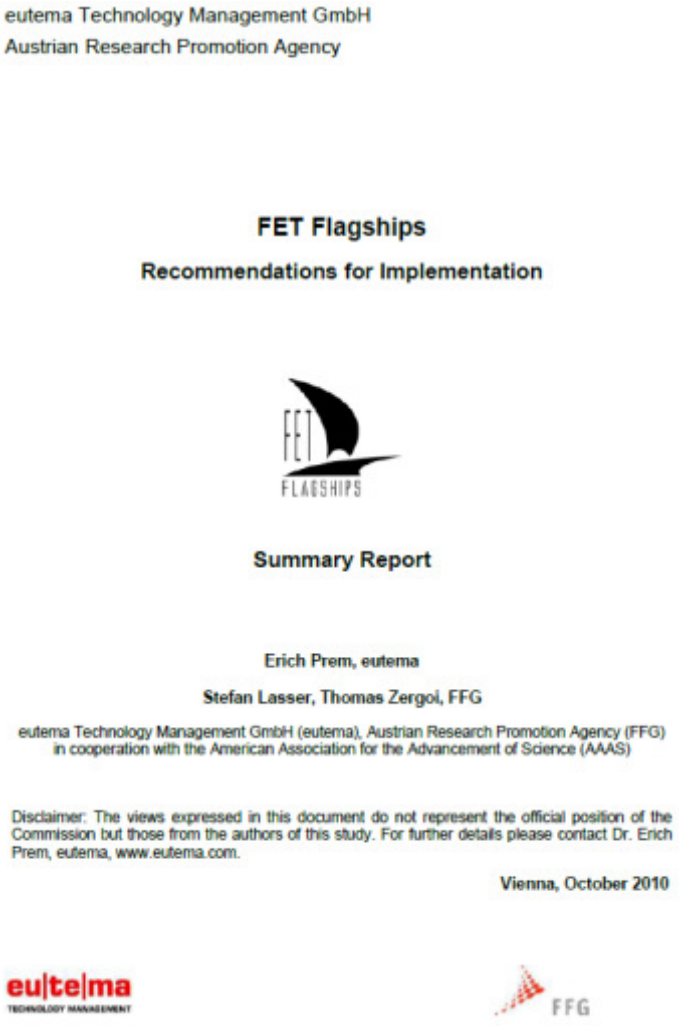
- Human Brain
- **neuroinformatics**
- **medical** informatics
- high performance computing
- **brain inspired ICT**

- virtual patient
- disease modelling
- high performance computing
- **personalized medicine**
- simulation

- **Robot companions for sustainable welfare**
- Science and Technology of embodied sentience
- New architectures for bodyware and mindware
- Understanding and building the brain-body-mind nexus
- Multi-scale science and technology of interaction

FET Flagships and Research Infrastructures

- Funding
  - H2020 excellence in science
  - CPCSA as instrument for FET-F start
- Operation
  - e.g. BBMRI: multi layer integration structure
  - e.g. Prace: project chain, open calls
- FET-F Study
  - CERN as good practice model
  - common infrastructure for integration
- FLEET
  - “We recommend that FET Flagships also collaborate with relevant infrastructure initiatives to leverage synergies”
  - complexity as challenge



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FET Flagships

Recommendations for Implementation

FLAGSHIPS

Summary Report

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eutema Technology Management GmbH (eutema), Austrian Research Promotion Agency (FFG) in cooperation with the American Association for the Advancement of Science (AAAS)

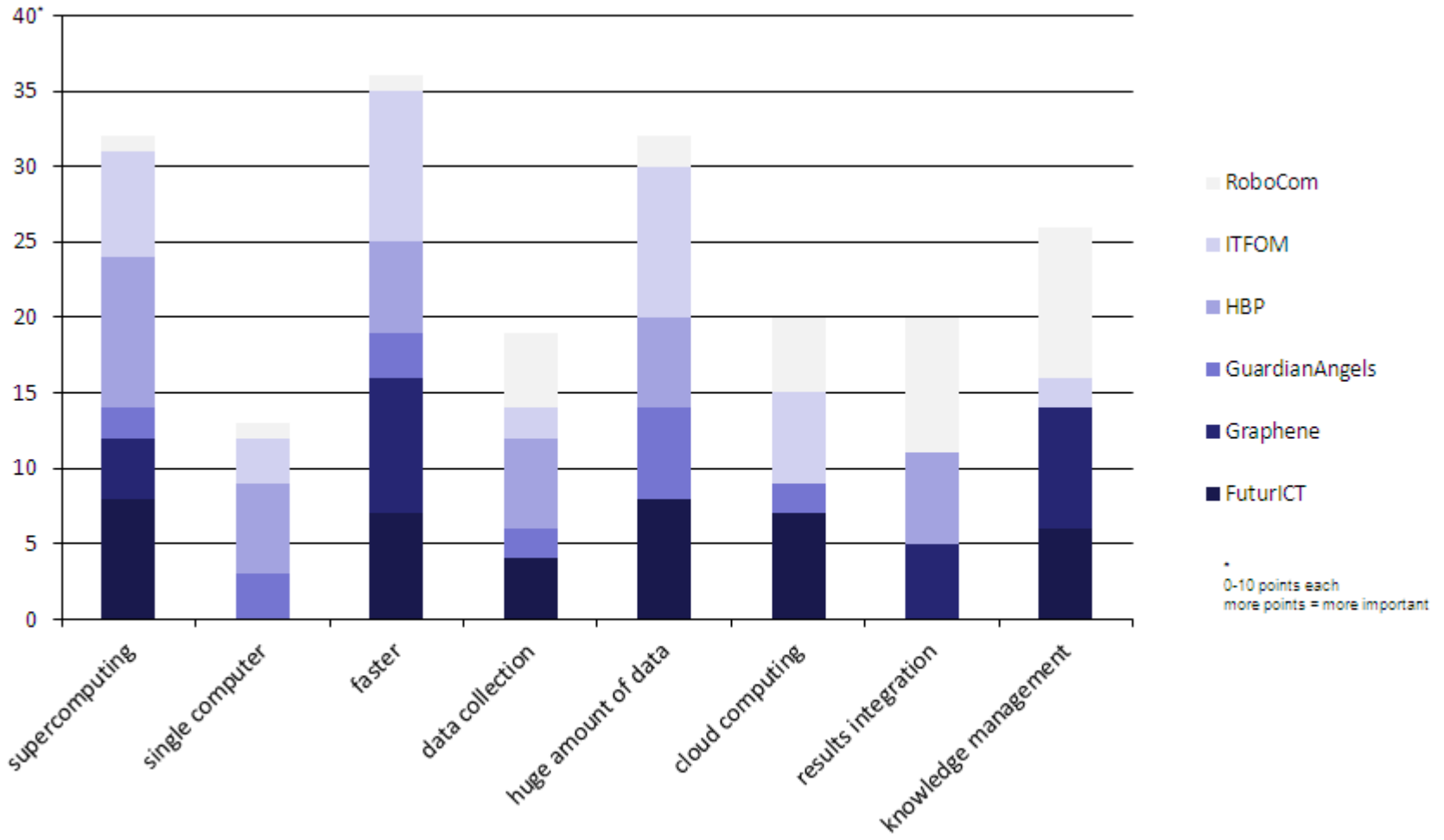
Disclaimer: The views expressed in this document do not represent the official position of the Commission but those from the authors of this study. For further details please contact Dr. Erich Prem, eutema, www.eutema.com.

Vienna, October 2010

eu|te|ma TECHNOLOGY MANAGEMENT

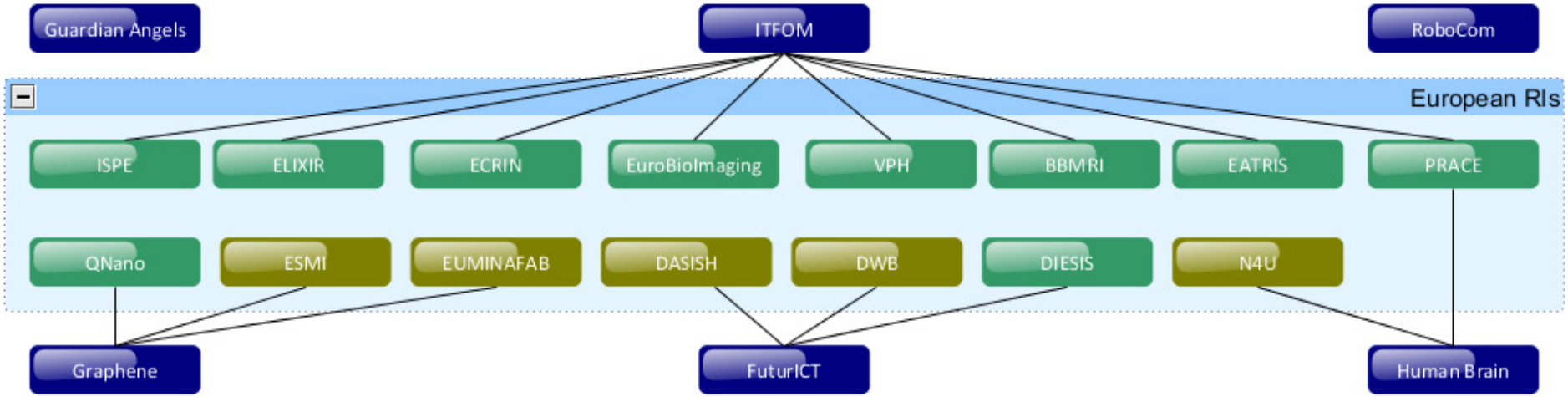
FFG

requirements: big data and fast supercomputing



Examples for FET-F related RIs

- **scale:**
  - large scale (EU)
  - research facilities (national)
  - laboratories (equipment and tools; organisation)
- **focus:**
  - research
  - industry
  - international
- **disciplines:**
  - computing
  - biology
  - chemistry
  - medicine
  - nanoelectronics
  - security
- pilot-specific infrastructure
- distributed infrastructures

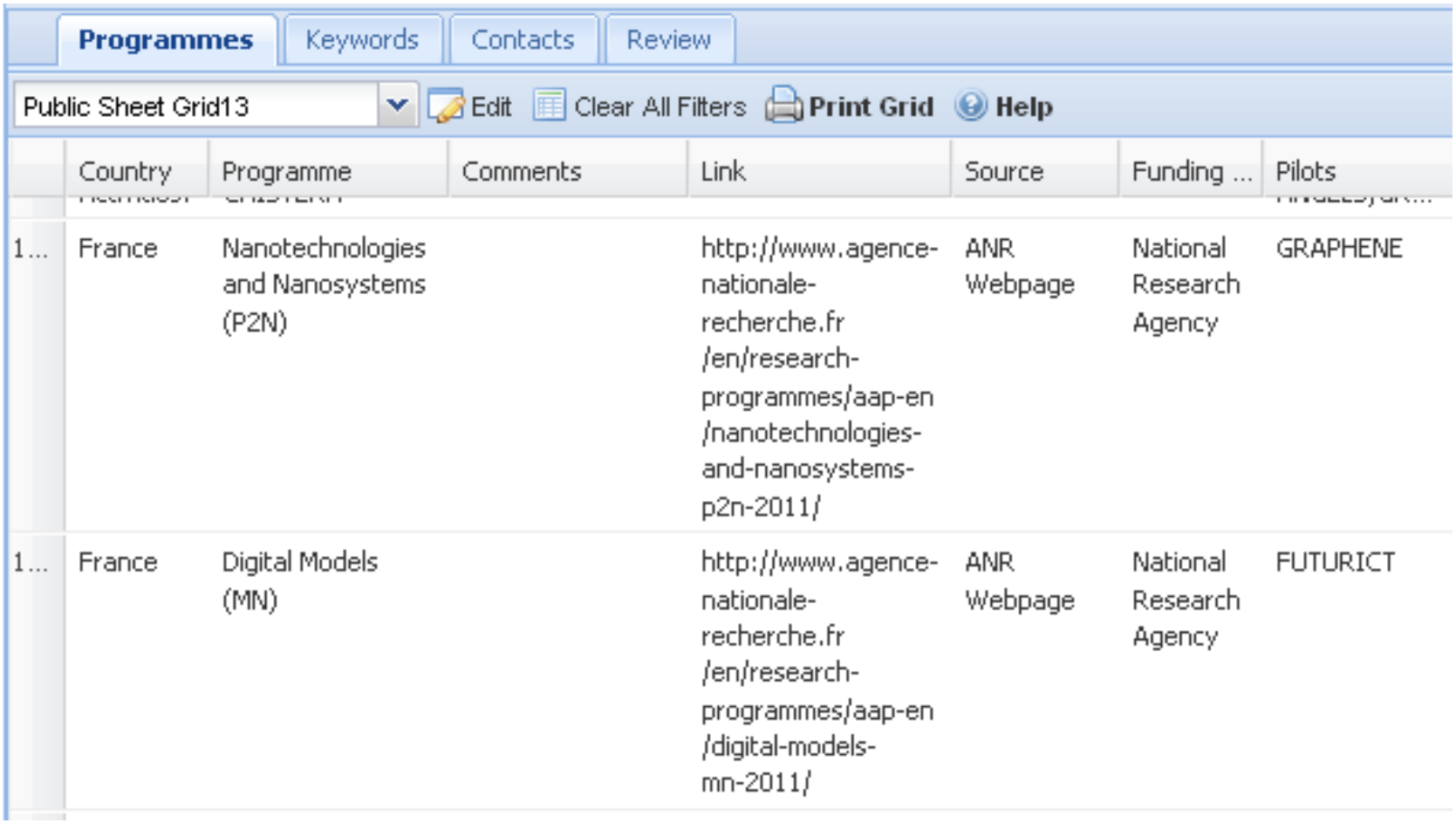


Collaborations are part of the core projects

Core project (CP-CSA)

- Implement **core research tasks** of the **research roadmap**
- Manage the Flagships linking together all the related activities
  - ➔ establish a **collaboration framework** with other projects/initiatives that address priorities within the same roadmap
  - ➔ establish a **governance** that provides
    - clear and effective scientific leadership
    - representation of the funding parties
    - accountability towards the funding parties
    - openness and flexibility in partnership

Funding Map



Programmes | Keywords | Contacts | Review

Public Sheet Grid13 | Edit | Clear All Filters | Print Grid | Help

	Country	Programme	Comments	Link	Source	Funding ...	Pilots
1...	France	Nanotechnologies and Nanosystems (P2N)		http://www.agence-nationale-recherche.fr/en/research-programmes/aap-en/nanotechnologies-and-nanosystems-p2n-2011/	ANR Webpage	National Research Agency	GRAPHENE
1...	France	Digital Models (MN)		http://www.agence-nationale-recherche.fr/en/research-programmes/aap-en/digital-models-mn-2011/	ANR Webpage	National Research Agency	FUTURICT

Add Research Infrastructures to Programme and Contact list!

Links and contact

- FET Flagships
  http://cordis.europa.eu/fp7/ict/programme/fet/flagship/
- YouTube channel
  http://www.youtube.com/channel/UCPWi8cy3yD3_aZup4boE3GQ
- FLEET
  http://www.fet-f.eu

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