FP7 - a renewed strategy to strengthen European R&D capability

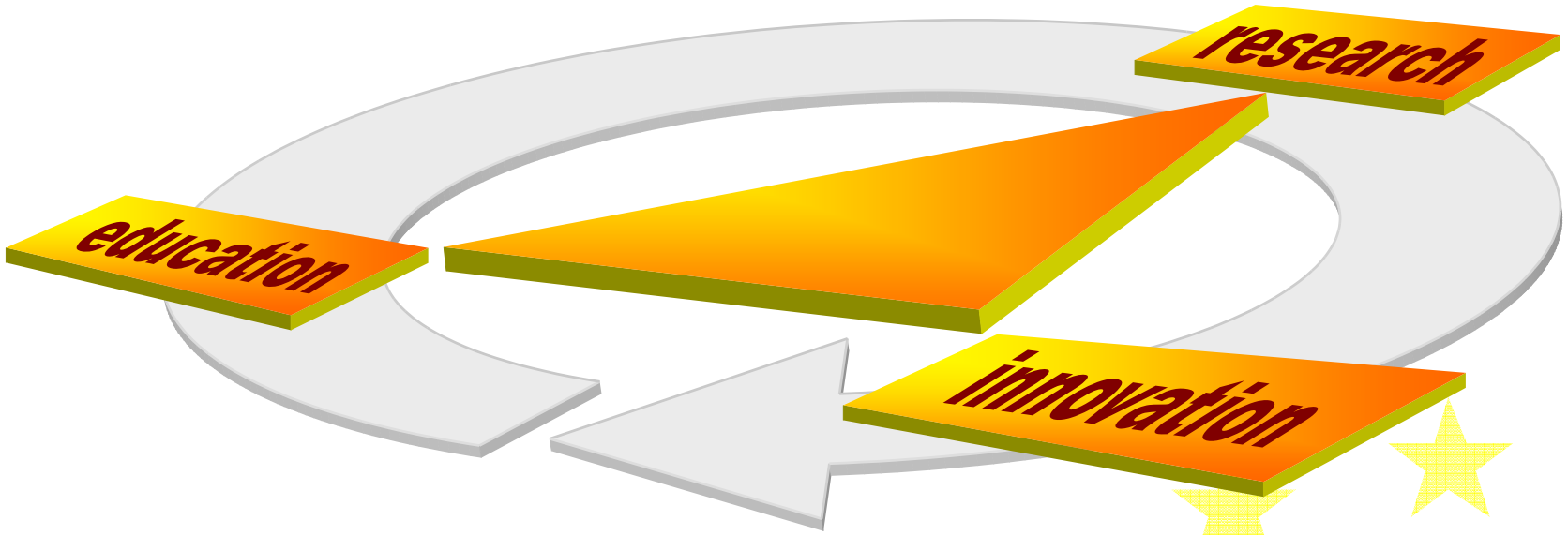
Mário Campolargo

European Commission - DG INFSO
Head of Unit Research Infrastructures

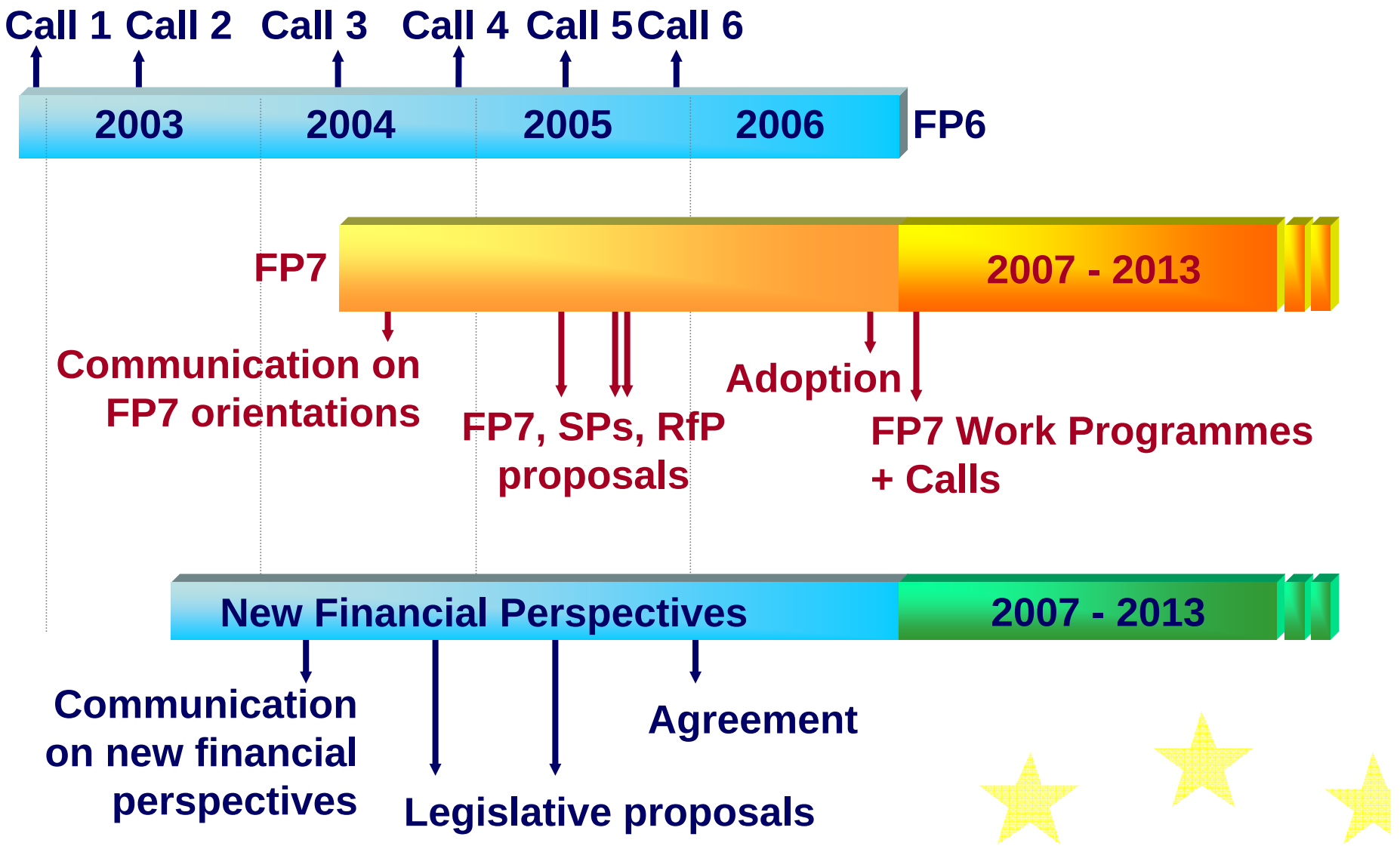
FP7 - Putting the knowledge triangle at work

To be a genuinely competitive knowledge economy, Europe must be better

- **in producing knowledge through research**
- **in diffusing it through education**
- **in applying it through innovation**



FP7 - calendar



FP7 - Specific Programmes

Cooperation – Collaborative research
(predefined themes, refined FP6 instruments)

Ideas – Frontier Research
(competition, individual grants)

People – Human Potential
(mobility)

Capacities – Research Capacity
(infrastructure, SMEs, science and society)

+

JRC (non-nuclear) + JRC (nuclear) + Euratom

FP7 - Cooperation

1. Health
2. Food, Agriculture, Biotechnology
3. Information and Communication Technologies
4. Nano, Materials and new Production Technologies
5. Energy
6. Environment (including Climate Change)
7. Transport (including Aeronautics)
8. Socio-economic Sciences and Humanities
9. Security and space

… competitiveness of European industry… enable Europe to shape future developments of ICT to meet society & economy demands…

FP7 - ICT technology challenges

- The converged communication and service Infrastructure that will gradually replace the current Internet, mobile, fixed and audiovisual networks
- The engineering of more robust, context-aware and easy-to-use ICT systems that self improve and self-adapt within their respective environments
- The increasingly smaller, cheaper and more reliable electronic components and systems that constitute the basis for innovation in all major products and service
- The Future and Emerging Technologies activity will continue to foster trans-disciplinary research excellence in emerging ICT-related research domains

FP7 - ICT socio-economic challenges (i2010 flagships)

- **Digital libraries, knowledge and content development tools and applications that will help us preserve, develop and diffuse our cultural assets, improve our learning and education systems and strengthen the creativity of our society**
- **ICT tools for sustainable Health systems enhancing our ability to monitor our health and well-being and to treat major illnesses and diseases**
- **Intelligent and safe cars and technologies for sustainable growth that are key requirements of our citizens**
- **ICT systems and applications for better inclusion and independent living of all citizens**

FP7 ICT workprogramme (2 years)

- Pervasive and Trusted Network and Service Infrastructures
- Cognitive Systems, Interaction, Robotics
- Components, systems, engineering
- Digital Libraries and Content
- Towards sustainable and personalised healthcare
- ICT for Mobility, Environmental Sustainability & Energy Efficiency
- ICT for Independent Living and Inclusion
- Future and Emerging Technologies
- Horizontal support actions

FP7 - Ideas

- **Enhances the dynamism, creativity and excellence of European research at the frontier of the knowledge**
- **Focuses on investigator driven "frontier" research, within the framework of activities commonly understood as "basic research"**
- **The European Research Council (ERC) as an independent scientific council to support the implementation of this programme**

FP7 - People

- **Strengthens, qualitatively and quantitatively, the human potential in research and technology in Europe.**
- **Builds on the experience of "Marie Curie" actions**
- **Promotes:**
  - **Initial training of researchers**
  - **Life-long training and career development**
  - **Industry-academia pathways and partnerships**
  - **International dimensions**
  - **Specific actions**

FP7 - Capacities

1. Research Infrastructures
2. Research for the benefit of SMEs
3. Regions of knowledge
4. Research potential

Optimises the use and development of the best research infrastructures existing in Europe, helping to create new ones… keep EU in the research forefront… strengthen industry technology know-how

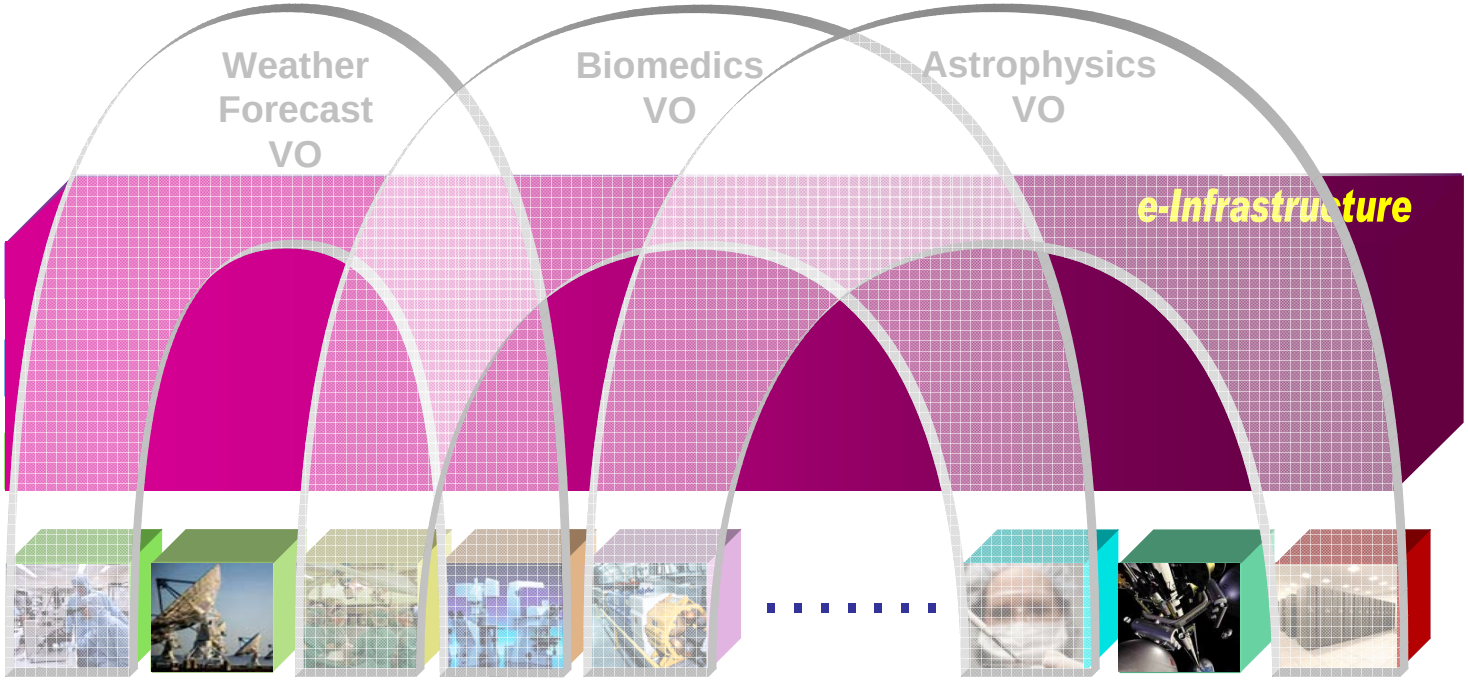
FP7 - Research Infrastructures activities

- **Support to existing research infrastructures by**
  - **Integrating activities to structure better the way research infrastructures operate in a given field**
  - **Fostering the further development and evolution of e-Infrastructures**
- **Support to new research infrastructures by**
  - **Supporting design studies**
  - **Supporting the construction of new infrastructures (building primarily in the work conducted by ESFRI)**

e-Infrastructures in FP7 - strategy

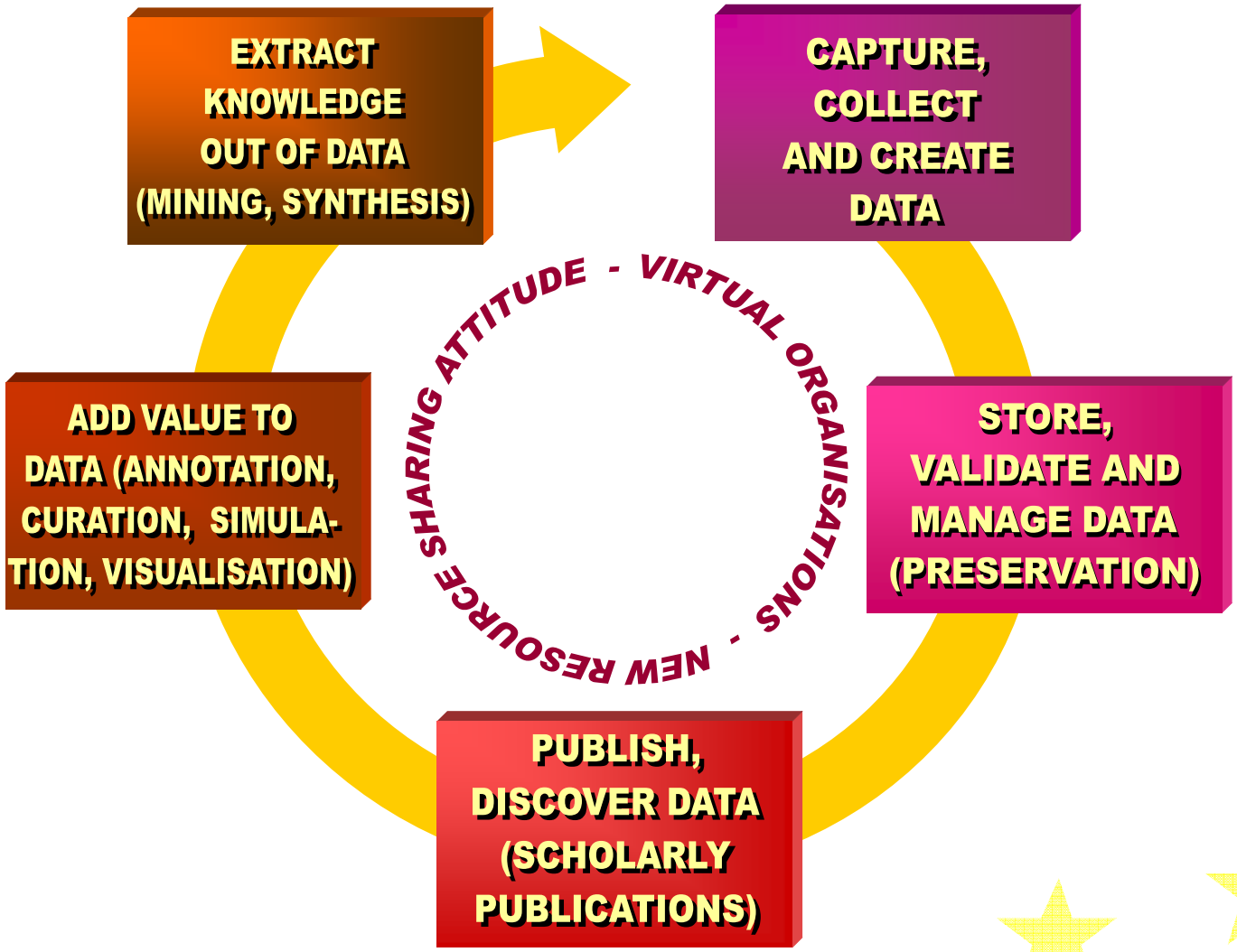
Bringing the best brains together

Sharing the best scientific resources



Producing the best science

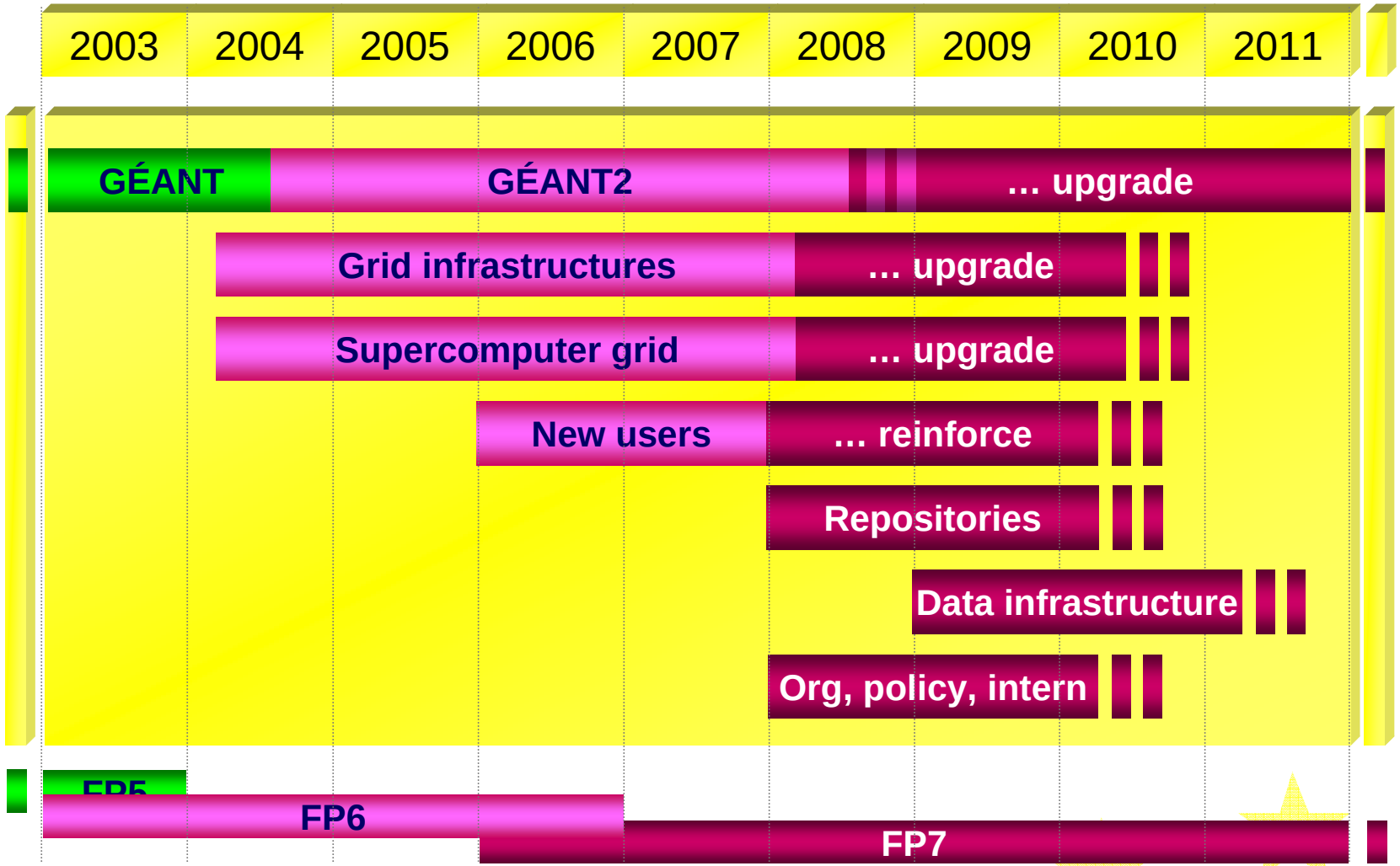
e-Infrastructures in FP7 - data as a new focus



ICT based new infrastructures in FP7 - HPC

- key component of a science and industrial research infrastructure
- sustainable eco-system, pyramid shaped, requiring European expertise and services infrastructure
- reaching petaflop level
- consistent investment / upgrade on top of national infrastructures
- building on a DEISA-like model
- supporting different algorithmic processes rather than different scientific disciplines and benefit from complementary research in ICT (software, embedded, applications)
- Key element in an industrial strategy (use of pre-commercial procurement)

e-Infrastructures in FP7 - a coherent ambitious strategy



FP7 Research Infrastructures work programme (2 years)

- Integrating activities (bottom-up)
- Integrating activities (targeted approach)
- Scientific Digital Repositories - Scientific Data Infrastructure
- Deployment of e-Infrastructures for scientific communities
- e-Science Grid infrastructures
- GÉANT
- Design studies
- Construction of new infrastructures - preparatory phase
- Support measures (policy, international, programme)

e-Infrastructures and ICT - experimental facilities

- **Internet became a backbone of modern societies… but:**
  - **Architectural complexity: complexity to manage infrastructure (heterogeneity, robustness, mobility) and infostructure (code, content, addresses, identities)**
  - **Resilience/security: spam, viruses, denial of service attacks**
  - **Scale: adding new devices, the emerging Internet of Things (cars, mobile phones, sensor networks…)**

… challenge the current implementations…

disruptive research on networking

validation in large scale testing environments

experimental facilities/ interconnected testbeds

Conclusions

- The FP7 Programme (> 50B€) will be soon approved, as well as the Specific Programmes presented
- Work Programmes and Calls expected to be launched in early 2007
- ICT Cooperation theme (~9B€) and Research Infrastructures Capacities activity (~1,8B€) will further empower the research infrastructures in Europe
- European Technology Platforms shape the strategic research agendas in the ICT Programme
- e-Infrastructures and new ICT infrastructures will play a significant role in the EU strategy to support e-Science
- It is now time for you to start identifying concrete projects and preparing the consortia able to implement them

Further information

IST 2006 Conference – Helsinki November 2006
www.cordis.europa.eu

Further info on e-Infrastructures: www.cordis.europa.eu/ist/rn/