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Horizon 2020 for ICT: will it change FP7/CIP?

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What is Horizon 2020?

- Commission proposal for an 80 billion euro R&I funding programme (2014-20)
- Part of proposals for next EU budget, complementing Structural Funds, education, etc.
- A core part of Europe 2020, Innovation Union & European Research Area:
  - **Responding to the economic crisis** to invest in future jobs and growth
  - **Addressing peoples' concerns** about their livelihoods, safety and environment
  - **Strengthening the EU's global position** in research, innovation and technology

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What's new?

- **A single programme** *bringing together three separate programmes/initiatives**
- **More innovation**, *from research to retail, all forms of innovation*
- **Focus on societal challenges** *facing EU society, e.g. health, clean energy and transport*
- **Simplified access**, *for all companies, universities, institutes in all EU countries and beyond.*

**The 7th research Framework Programme (FP7), innovation aspects of Competitiveness and Innovation Framework Programme (CIP), EU contribution to the European Institute of Innovation and Technology (EIT)*

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But - The goals have not changed

- Growth, Jobs & Competitiveness
- Better articulation of research and innovation
- Seamless funding from idea to market

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Innovation thinking embedded

- Strengthened support for high-tech SMEs
- More parts open, light & fast
- Structured and strategic dialogue with Venture Capital
- Innovation training for everyone
  - Also for early upstream identification of projects with innovation potential

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Allow for experimentation

"We need to ask innovators what conditions they need to pursue their dreams" (Neelie Kroes)

- Reaching out to non-traditional actors
- More bottom-up, grass-roots experimentation
- More risk taking

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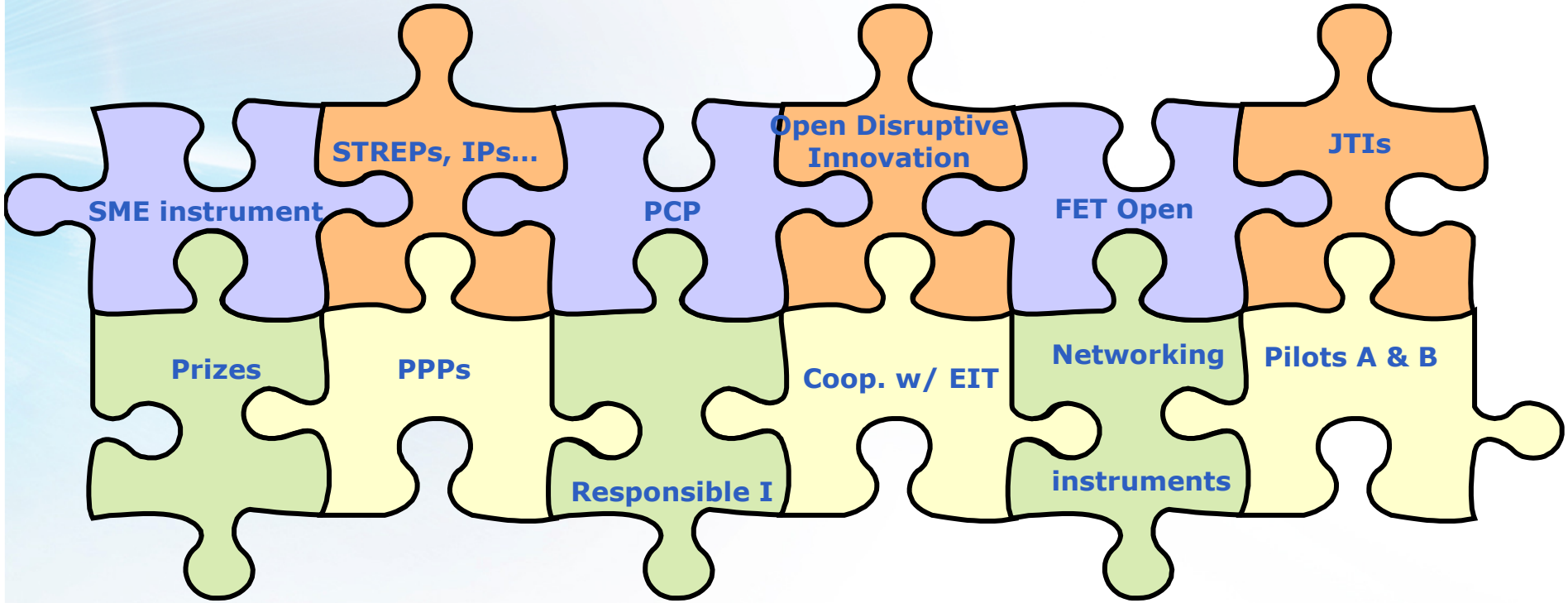
A richer toolbox



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Evidence-based and transparent setting of priorities

- Let all ideas be heard..
- More space for collective intelligence
- Priorities presented through potential growth, competitiveness and social benefit parameters
- Validated through wider, transparent consultation and decision processes
- Not every idea will be supported …

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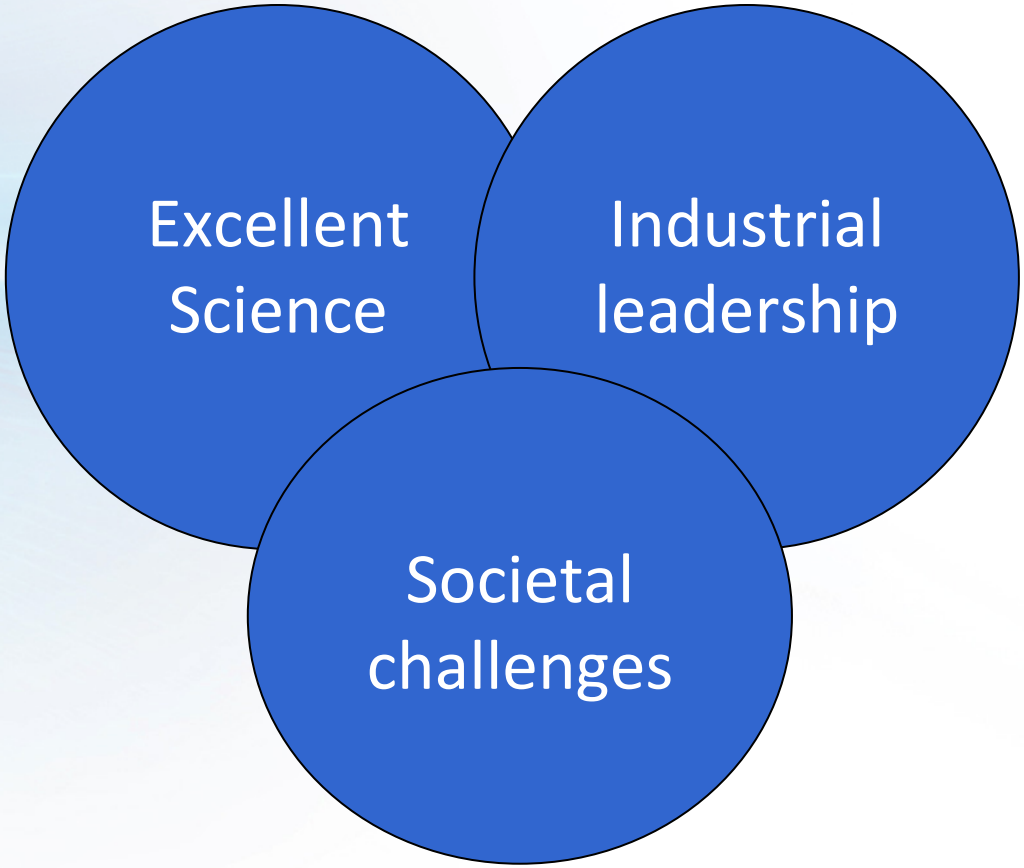
A stronger, clearer focus



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Priority 1 Excellent science

Why:

- World class science is the foundation of tomorrow's technologies, jobs and wellbeing
- Europe needs to develop, attract and retain research talent
- Researchers need access to the best infrastructures

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Proposed funding (million euro, 2014-20)

European Research Council *Frontier research by the best individual teams*	15 008
Future and Emerging Technologies *Collaborative research to open new fields of innovation*	3 505
Marie Curie actions* *Opportunities for training and career development*	6 503
Research infrastructures (including e-infrastructure) *Ensuring access to world-class facilities*	2 802

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ICT in Science - Future and Emerging Technologies; *e*-Infrastructures

ICT 4.5 b€?

FET Open: fostering novel ideas

FET 3.5 b€

Collaborative research for embryonic, high risk visionary science and technology ?

FET Proactive

Nurturing emerging themes and communities

FET Flagships

Tackling grand interdisciplinary science and technology challenges

E-Infrastructures

e-Infr 1 b€?

Integration and access to national research networks/infrastructures; development, deployment and operation of e-Infrastructures ?

Draft

Priority 2 Industrial leadership

Why:

- Europe needs more innovative SMEs to create growth and jobs
- Strategic investments in key technologies (e.g. advanced manufacturing, micro-electronics) underpin innovation across existing and emerging sectors
- Europe needs to attract more private investment in research and innovation

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Proposed funding (million euro, 2014-20)

Leadership in enabling and industrial technologies (*ICT, nanotechnologies, materials, biotechnology, manufacturing, space)*	15 580
Access to risk finance *Leveraging private finance and venture capital for research and innovation*	4 000
Innovation in SMEs *Fostering all forms of innovation in all types of SMEs*	700

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ICT in Industrial Leadership (I)

ICT 9 b€

1. Components and systems

   Smart embedded components and **systems**, micro-nano-bio systems, organic electronics, large area integration, technologies for IoT, smart integrated systems, systems of systems and complex system engineering

2. Next generation computing

   Processor and system architecture, interconnect and data localization technologies, cloud computing, parallel computing and simulation **software**

3. Future Internet

   Networks, software and services, cyber security, privacy and trust, wireless communication and all optical networks, immersive interactive multimedia and connected enterprise

Draft

ICT in Industrial Leadership (II)

ICT 9 b€

4. Content technologies and information management

   Technologies for language, learning, interaction, digital preservation, content access and **analytics**; advanced data mining, machine learning, statistical analysis and visual computing

5. Advanced interfaces and robots

   Service **robotics**, cognitive systems, advanced interfaces, smart spaces and sentient machines

6. Key Enabling Technologies: Micro- nano-electronics and photonics

   Design, advanced processes, pilot lines for fabrication, production technologies and demonstration actions to validate technology developments and innovative business models

Draft

Priority 3 Societal challenges

Why:

- EU policy objectives (climate, environment, energy, transport etc) cannot be achieved without innovation
- Breakthrough solutions come from multi-disciplinary collaborations, including social sciences & humanities
- Promising solutions need to be tested, demonstrated and scaled up

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Proposed funding (million euro, 2014-20)

Health, demographic change and wellbeing	9 077
Food security, sustainable agriculture, marine and maritime research & the bioeconomy	4 694
Secure, clean and efficient energy*	6 537
Smart, green and integrated transport	7 690
Climate action, resource efficiency and raw materials	3 573
Inclusive, innovative and secure societies	4 317

*Additional €1 050m for nuclear safety and security from the Euratom Treaty activities (2014-18). Does not include ITER.

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ICT in Societal Challenges (I)

ICT 4.5 b€?

- Health, demographic change & wellbeing;

  e-health, self management of health, improved diagnostics, improved surveillance, health data collection, active ageing, assisted living;

- Secure, clean and efficient energy;

  Smart cities; Energy efficient buildings; smart electricity grids; smart metering;

- Smart, green and integrated transport;

  Smart transport equipment, infrastructures and services; innovative transport management systems; safety aspects

ICT in Societal Challenges (II)

Draft

ICT 4.5 b€?

- Food security, sustainable agriculture, marine and maritime research & the bioeconomy
- Climate action, resource efficiency and raw materials
  - ICT for increased resource efficiency; earth observation and monitoring
- Inclusive, innovative and reflective societies
  - Digital inclusion; social innovation platforms; e-government services; e-skills and e-learning; e-culture
- Secure societies
  - Cyber security; ensuring privacy and protection of human rights on-line

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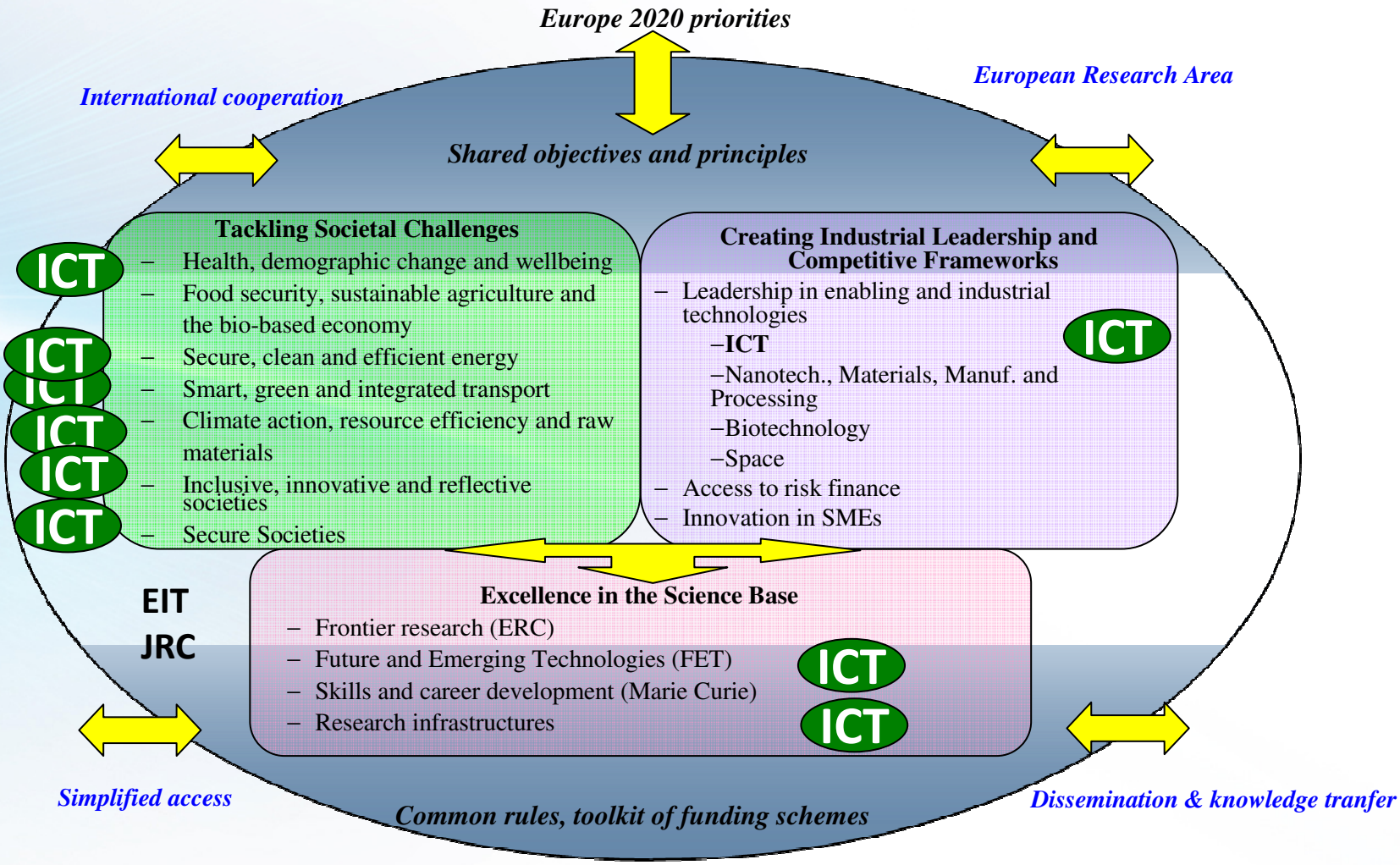
Europe 2020 priorities
International cooperation
European Research Area
Shared objectives and principles
Tackling Societal Challenges
– Health, demographic change and wellbeing
– Food security, sustainable agriculture and the bio-based economy
– Secure, clean and efficient energy
– Smart, green and integrated transport
– Climate action, resource efficiency and raw materials
– Inclusive, innovative and reflective societies
– Secure Societies
ICT
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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
ICT
EIT
JRC
Excellence in the Science Base
– Frontier research (ERC)
– Future and Emerging Technologies (FET)
– Skills and career development (Marie Curie)
– Research infrastructures
ICT
ICT
Simplified access
Common rules, toolkit of funding schemes
Dissemination & knowledge tranfer

Rules for Participation: *what's new? (1)*

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1. A SINGLE SET OF RULES

- Adapted for the whole research and innovation cycle
- Covering all research programmes and funding bodies
- Aligned to the Financial Regulation, coherent with other new EU Programmes.

2. ONE PROJECT - ONE FUNDING RATE.

- Maximum of 100% of direct costs (except for actions close to market, where a 70% maximum will apply)
- Indirect eligible costs: a flat rate of 20% of direct eligible costs

3. SIMPLE EVALUATION CRITERIA

- ***Excellence – Impact - Implementation (Excellence only, for the ERC)***

4. NEW FORMS OF FUNDING aimed at innovation: pre-commercial procurement, inducement prizes, dedicated loan and equity instruments.

5. INTERNATIONAL PARTICIPATION: facilitated but better protecting EU interests.

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Rules for Participation: *what's new? (2)*

6. SIMPLER RULES FOR GRANTS: broader acceptance of participants accounting practices for direct costs, flat rate for indirect costs, no time-sheets for personnel working full time on a project, possibility of output-based grants.

7. FEWER, BETTER TARGETED CONTROLS AND AUDITS

- Lowest possible level of requirements for submission of audit certificates without undermining sound financial management;
- Audit strategy focused on risk and fraud prevention.

8. IMPROVED RULES ON INTELLECTUAL PROPERTY

- Balance between legal security and flexibility;
- Tailor-made IPR provisions for new forms of funding;
- A new emphasis on open access to research publications.

***Beyond the Rules*: further simplified provisions in the Grant Agreement and implementing procedures to facilitate access to Horizon 2020 (eg. common IT platform).**

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Next steps

Ongoing:	Parliament and Council negotiations on the basis of the Commission proposals
Ongoing:	Parliament and Council negotiations on EU budget 2014-2020 (including overall budget for Horizon 2020)
July 2012:	Final calls under 7th Framework Programme for research to bridge gap towards Horizon 2020
Mid 2013:	Adoption of legislative acts by Parliament and Council on Horizon 2020
6-8/11 2013:	ICT in H2020 Launch Conference, Vilnius, Lithuania Launch of first calls
1/1/2014:	**Horizon 2020 starts**