

FET 2011-2012 and beyond



Wide Hogenhout

FET - Proactive
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Outline

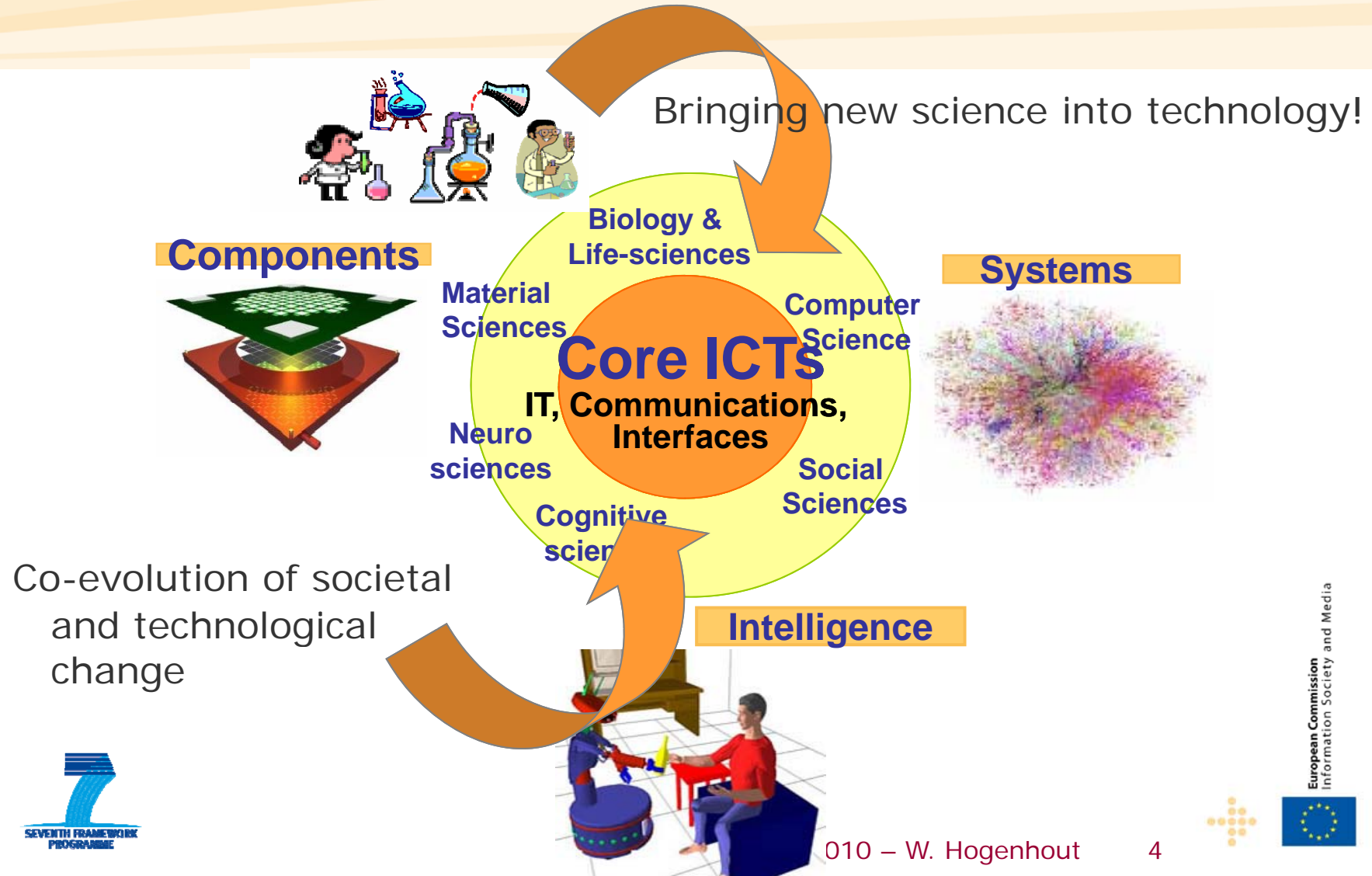
- The FET Strategy
- The WP 2011-2012
 - FET Flagships
 - Proactive initiatives

FET Mission

Supporting the emergence of new visionary ICT research

1. Pathfinder and Incubator for exploring new visionary ideas
2. Focusing on long term foundational research
3. Focusing on high risk/high pay-off multi- and inter-disciplinary research aiming at S&T breakthroughs
4. Maturing & structuring emerging research fields, research communities and research practices

FET: multidisciplinary transformative research



New Perspectives for FET

by the communication from the Commission to Parliament and Council adopted on 20 April 2009

COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS

**Moving the ICT frontiers –
a strategy for research on future and emerging technologies in Europe**

- **20% annual budget increase (2011-13); European target: doubling by 2015**
- **Flagship initiatives**
- **ERA-NETs**
- **International collaboration**
- **Young researchers**
- **SMEs**

Endorsed by the
04/12/2009 conclusions of
the Competitiveness Council
of the European Union



The FET strategy

Proactive calls in different topics (e.g. atomic and molecular scale devices, quantum technologies)

FET Flagships: science-driven initiatives at a much greater scale and longer time span

FET Open

Working together with national funding agencies

Stimulating international collaboration

Young researchers, SMEs, ...

Timetable for Workprogramme 2011-2012

- Sept.-Nov. 2009: Consultation Workshops
 - Jan.-Feb. 2010: Online consultation
 - end Feb. 2010: 1st Draft Detailed WP
 - Mar.-June 2010: Consultation with Member States

 - July 2010: Adoption of WP 2011-2012
- 30 July – 2 Dec 2010: FET Flagship call
 - 28 Sept 2010 - 18 Jan 2011: call 7
 - 26 July 2011 – 17 Jan 2012: call 8
 - 18 Jan 2012 – 17 April 2012: call 9



FET Proactive – WP 2011-2012

transformative and foundational research

Call FET-F FET Flagship Initiative Preparatory Actions (CSA) 10M€

Call 7

9.12 ERA-NET follow-up (CSA)

2,5M€

0,5M€

Call 8

9.6 Unconventional Computing (STREP) 15M€

9.7 Dyn. of Multi-Level Complex systems (IP/Strep) 22M€
INCO dimension (CSA) 1M€

9.8 Minimising Energy Consumption of Computing to the Limit (Strep) 15M€

Call 9

9.9 Quantum ICT (IP/Strep) 15M€
including ERA-NET Plus (ERA-NET-Plus) 7M€

9.10 Fundamentals of Collective Adaptive Systems (IP/Strep) 23M€

9.11 Neuro-Bio-Inspired Systems (IP/Strep) 22M€
INCO dimension (CSA) 1M€

9.12 INCO (CSA)

9.12 Coord. Communities (CSA)

9.12 organising conferences (CSA)

9.12 Identifying new FET topics (CSA)

3M€

3M€

Continuous and special calls

Continuous Call

9.1 Challenging Current Thinking (STREP+CSA) 67,5M€ 7,5M€

9.2 High-Tech Research Intensive SMEs (STREP) 9M€

9.3 FET Young Explorers (STREP) 6M€

9.4 International Cooperation on FET research (additional funding) 3M€

All FET projects

*First batch
May 2011*

Call 8

9.14 Science of Global Systems 3,5M€



FET

FLAGSHIPS



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



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Policy relevance of FET Flagships

- **The EU2020 strategy** “A strategy for smart, sustainable and inclusive growth” includes as one of its 7 flagships the “**Digital Agenda for Europe**” (DAE)
- Key action 9 from the DAE aims to invest more in R&D by **leveraging more private investment** through pre-commercial procurement and public-private partnerships, by the use of structural funds for research and innovation.
- The DAE also calls for increased coordination and elimination of Europe's fragmented efforts.
- FET Flagships are a response to the fragmentation and the leveraging of investment in basic research seeded from ICT leading towards innovation in technology and societal impact.



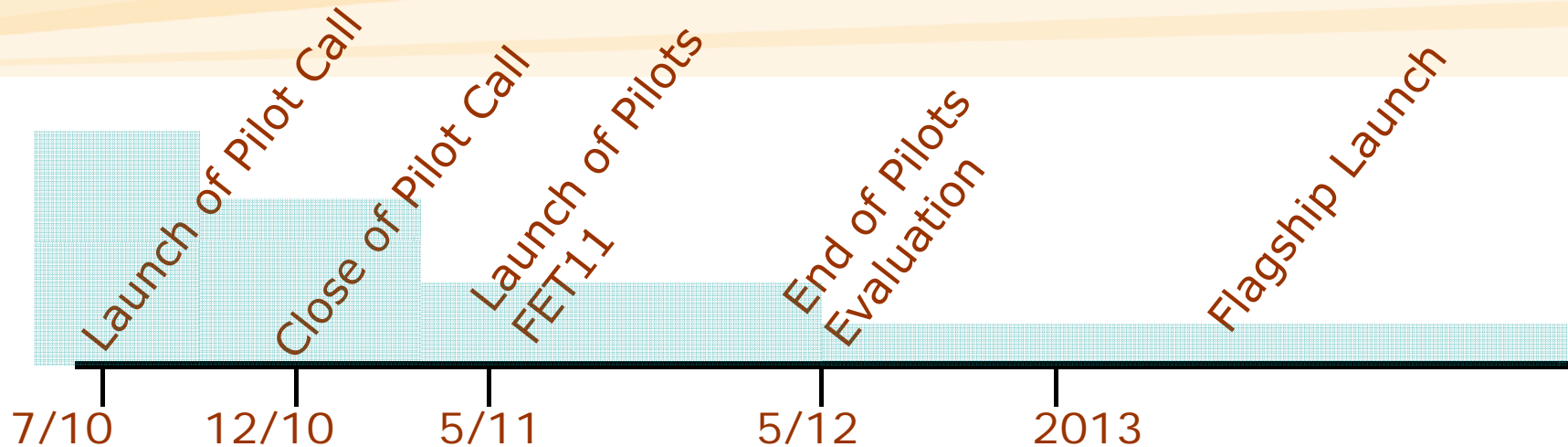


Requisites for FET Flagship initiatives

- are **science-driven**
- require **multidisciplinary** collaboration
- are nucleated from ICT future and emerging technologies and going **beyond** the ICT programme.
- there should have a **unifying goal** (visionary and highly ambitious)
- are envisioned to be **long term** programmes (10 year)
- on a **scale** beyond FET Proactive Initiatives.
- they can only be realised through a **federated effort of key stakeholders**



Key Milestones of FET Flagships preparation



- 2010 / 06** First science forum event (9/10 June)
- 2010 / 07** Launch of a competitive call
- 2010 / 12** Close of call for preparatory actions
- 2011 / 05** FET Flagship Preparatory Actions
- 2012 / 05** Selection of FET Flagships
- 2013** Launch of first FET Flagships



Rome November 2010 – W. Hogenhout



Science Forum

- Discuss and refine Flagship concept
- Discuss and consolidate ideas for Flagship Initiatives
- Build synergies and networks with stakeholders



MS Group

Funding Agencies

- Provide input and feedback on Flagship concept
 - Map the FET Flagship ideas against the national programs
 - Advise on legal / operational frameworks





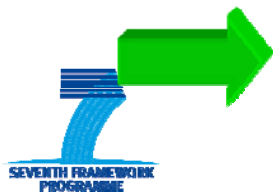
The Call for Preparatory Actions

Target outcome for “pilots”

“Complete design and description of a consolidated candidate FET Flagship Initiative including assessment of feasibility in scientific, technical and financial terms”

- a well-defined goal thoroughly justified in terms of scientific advance and impact
- an implementation plan, with an integrative research agenda to enable the launch of a FET Flagship by 2013.
- the identification of financial resources,
- Capacity and clear evidence of commitment from key stakeholders
- adequate level of integration and identity of the supporting community,
- an operational framework, with an indication of the degree of maturity of the integration of topics and resources with time.

10M€



The objective is to support in the order of **5-6 projects**, with a maximum duration of **12 months**





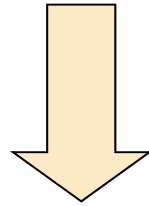
Key characteristics for FET Flagship initiatives

(to be considered by preparatory actions)

- **Mission:**
 - the unifying goal should be a **clearly formulated** and **broadly accepted** long term vision involving major challenges in science and technology
 - requiring a large federated effort
 - **justified** via comparison with existing activities and state of the art
- **Impact:**
 - substantial progress and major innovation in **science and technology**
 - on competitiveness of European industry,
 - **society**, governance and sustainability
 - considering potential ethical and legal implications
- **Integration:**
 - an **operational framework** describing how relevant disciplines, stakeholders and resources will be brought together
 - how they can be **efficiently coordinated** under strong scientific leadership
 - along a **cohesive roadmap with reasonable milestones** that mark valuable interim results



9.12 Coordinating Communities, Identifying new research topics for FET Proactive initiatives and Fostering Networking of National and Regional Research Programmes



Coordination actions

9.12 Coordinating Communities...

- (a) Actions supporting coordination and cooperation
 - Supporting targeted research communities
- (b) Actions supporting and promoting cooperation with non-EU research teams

Call 8+9



Research communities can be linked to existing proactives (based around running projects), or communities that are new to FET.

Rome November 2010 – W. Hogenhout 18



9.12 Coordinating Communities...

(c) Short duration actions to organise consultations of multi-disciplinary communities

- Formulating new FET topics
- Focus on new emerging research areas
- Identify new research avenue and associated fundamental challenge
- Analyse expected impact on science, technology and society

(d) Actions to organise conferences and workshops

- Fostering dialogue between science, policy and society
- Focus on
 - role of interdisciplinary ICT related long term research
 - Increasing Europe's creativity and innovation base
 - Bridging diverse European research communities and disciplines

Call 7+8+9



9.12 Coordinating Communities...

(e) ERANET actions

- Fostering networking of future and emerging research activities conducted and national or regional level
- Facilitating mutual opening of national and regional research programmes
- Should involve national and/or regional programme owners
- Call 7



CHISTERA is an ERANET project started by national funding agencies from 9 member states – call for proposals has just been launched.

Research communities can be linked to existing proactives (based around running projects), or communities that are new to FET.

FET in WP 2011-2012

Proactive Initiatives



Objective ICT-2011.9.6: Unconventional Computing (UCOMP)

"The objective is to develop alternative computing approaches for situations or problems that are challenging or impossible to solve with conventional methods."

- Funding/Instruments: 15 MEuro, STREPs
- Closing of Call 8 (tbc): 17 Jan 2012
- Contact: Dagmar.Floeck@ec.europa.eu
Jean-Marie.Auger@ec.europa.eu



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Objective ICT-2011.9.7: Dynamics of Multi-Level Complex Systems (DyM-CS)

“Steps towards a general theory on complex systems through contributions in the area of dynamics of multi-level systems”

-Funding/Instruments: 22 MEuro, STREPs & IPs
1 MEuro, CSAs

-Closing of Call 8 (tbc): 17 Jan 2012

-Contact: Jose.Fernandez-Villacanas
[@ec.europa.eu](mailto:Jose.Fernandez-Villacanas@ec.europa.eu)



Objective ICT-2011.9.8: Minimising Energy Consumption of Computing to the Limit (MINECC)

**“Energy efficiency of state-of-the-art ICT is orders
of magnitude above the theoretical limits!**

-So-

**Closing this gap will offer a bouquet of new
opportunities!”**

-Funding/Instruments: 15 MEuro STREPs

-Closing of Call 8 (tbc): 17 Jan 2012

-Contact: Ralph.Stuebner@ec.europa.eu



Objective ICT-2011.9.9: Quantum Information and Communication Technologies (QICT)

“How the combination of quantum mechanics and information theory offers new concepts and resources for computing and communications.”

- Funding/Instruments: 15 MEuro, STREPs & IPs
7 MEuro, ERA-NET Plus
- Closing of Call 9 (tbc): 17 April 2012
- Contact: Werner.Steinhoegl@ec.europa.eu**



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Objective ICT-2011 9.10: Fundamentals of Collective Adaptive Systems (FOCAS)

“The socio-technical fabric of our society more and more depends on systems that are constructed as a collective of heterogeneous components and that are tightly entangled with humans and social structures. ”

- Funding/Instruments: 22 MEuro, STREPs & IPs
- Closing of Call 9 (tbc): 17 April 2012
- Contact: **Wide.Hogenhout@ec.europa.eu**



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Objective ICT-2011 9.10: Fundamentals of Collective Adaptive Systems (FOCAS)

Target outcomes:

- **Operating Principles:** taking into account diversity of objectives within the system and the presence of partial, noisy, out-of-date and inaccurate information
- **Design Principles:** exploiting a.o. the inherent concurrency and include methods for system validation.
- **Evolutionary Properties:** e.g. open-ended (unbounded) evolutionary systems, the trade-off and interaction between learning and evolution



Objective ICT-2011 9.11: Neuro-Bio-Inspired Systems (NBIS)

“Brains are remarkable computing systems which clearly outperform conventional architectures in many real-world tasks. ”

- Funding/Instruments: 22 MEuro, STREPs & IPs
1 MEuro, CSAs
- Closing of Call 9 (tbc): 17 April 2012
- Contact: Julian.Ellis@ec.europa.eu**



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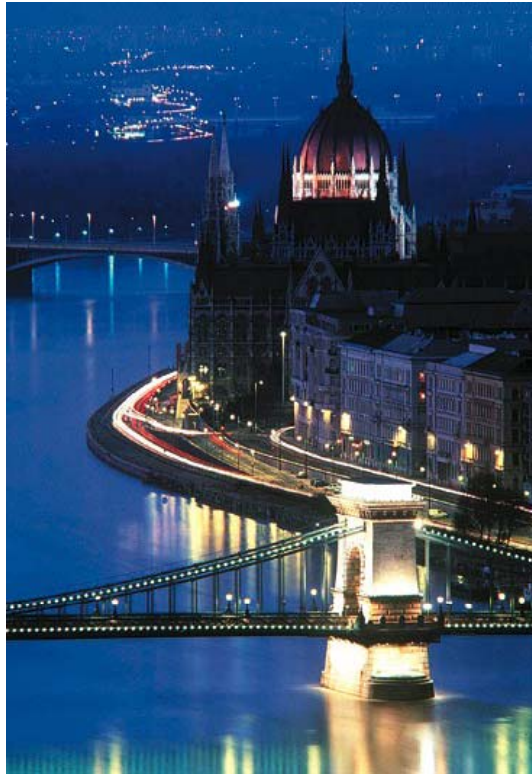




And the next FET event is ..



Conference Announcement



FET'11 Conference

4-6 May 2011
Budapest

Please mark your diaries!

