

Future and Emerging Technologies

FET-Open in WP 2011-2012



“Incubator for radically new research ideas
and future research and innovation potential”



Two questions on funding paradigm-breaking research



Two questions on funding paradigm-breaking research

1. What should we fund?



Two questions on funding paradigm-breaking research

1. **What** are the radically new ideas that will make a real difference for our future?



Two questions on funding paradigm-breaking research

1. **What** are the radically new ideas that will make a real difference for our future?
2. Who should we fund?



Two questions on funding paradigm-breaking research

1. **What** are the radically new ideas that will make a real difference for our future?
2. **Who** are the high-potential future actors that will make this difference come true in the long run?



Two questions, one answer

Two questions on funding
paradigm-breaking research

1. What should we fund?

2. Who should we fund?



ICT3010 - Brussels, September 26, 2020

10



Two questions, one answer

Two questions on funding
paradigm-breaking research

1. What should we fund?
2. Who should we fund?



We don't know...



Two questions, one answer

Two questions on funding
paradigm-breaking research

1. What should we fund?
2. Who should we fund?



We don't know...

... since we aim at the
unexpected



FET-Open vision

Unexpected ideas with long-term visionary impact ...

- ... can come from anywhere, from anybody and at anytime;
- ... are hard to find;
- ... are fragile and easy to shoot down;
- ... are hard to do and take time to incubate;
- ... require an open and trans-disciplinary research atmosphere.

They require a specific approach:
the FET-Open scheme



FET-Open: a unique scheme

Continuously open call

a fast and light scheme fitted to stimulate and capture new opportunities and developments in science and technology as they emerge

The FET-Open 'scheme' is open to:

- any new idea
 - bottom-up, no predefined themes and orientations
- at anytime
 - Continuously open call
- from anyone
 - anonymous evaluation of “short” proposals
- in a light and friendly way
 - two-step submission: Start with a “short” 5 page proposal



FET-Open: a unique scheme (STREPs – except objective 9.4)

Anytime

Short proposal

- 5 pages maximum
- anonymous

Fixed 'cut-off'

Full proposal

- ~30 pages
- Not anonymous

Selection

FET evaluation
Criteria – 'short' STREP

1. S/T quality	2. Implementation	3. Impact
<ul style="list-style-type: none"> • Clarity of targeted breakthrough and its relevance towards a long-term vision • Novelty and foundational character • Plausibility of the S/T approach 	(not applicable to short STREP)	(not applicable to short STREP)
Threshold: 4.0/5		

FET-Open is WP2011-2012

FET evaluation
Selection and award criteria – 'full' STREP

1. S/T quality	2. Implementation	3. Impact
<ul style="list-style-type: none"> • Clarity of targeted breakthrough and its relevance towards a long-term vision • Novelty and foundational character • Specific contribution to progress in science and technology • Quality and effectiveness of the S/T methodology 	<ul style="list-style-type: none"> • Quality of workplan and management • Quality and relevant experience of the individual participants • Quality of the consortium as a whole (including complementarity, balance) • Appropriate allocation and justification of the resources to be committed (person-months, equipment, budget) 	<ul style="list-style-type: none"> • Transformational impact of the results on science, technology and/or society • Impacts towards the targeted objective in the work programme • Appropriateness of measures envisaged for the dissemination and/or use of project results.
Threshold: 4.0/5 Weight: 50%	Threshold: 3/5 Weight: 20%	Threshold: 3.5/5 Weight: 30%

FET-Open is WP2011-2012

Project



FET-Open: a unique scheme

Project characteristics

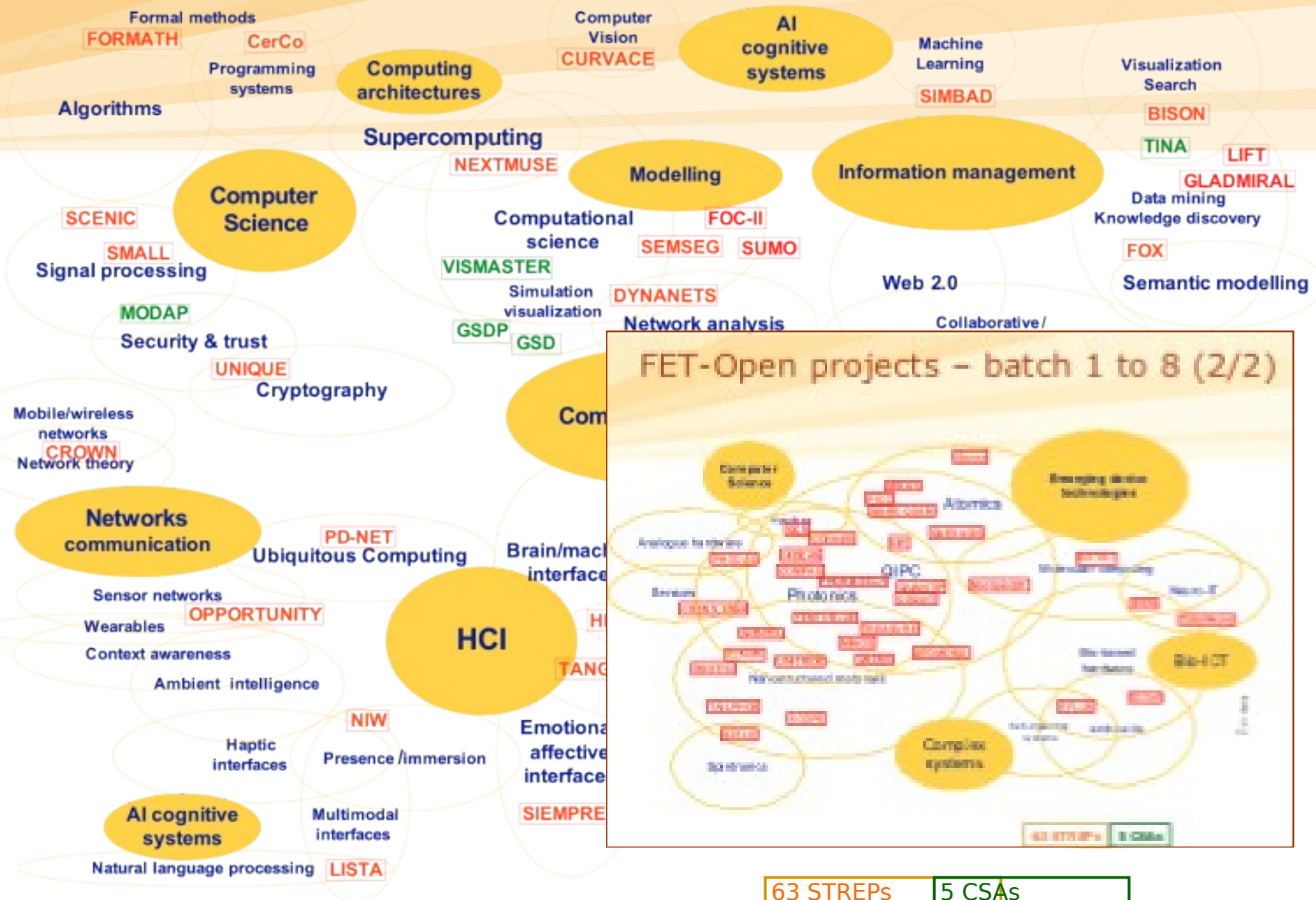
- **Foundational**
New foundations for future ICT by exploring new unconventional ideas and scientific paradigms
- **Transformative**
Driven by ideas that challenge and can radically change our understanding of scientific concepts behind existing ITs
- **High risk, high pay-off**
Balances risks against high potential returns and the chance of revolutionary breakthroughs
- **Purpose-driven**
Impact on future industrial ICT research agendas
- **Multidisciplinary**
Synergies with and cross-fertilization between disciplines
- **Collaborative**
Best teams in Europe and increasingly worldwide



FET-Open projects – batch 1 to 8 (1/2)



FET-Open projects - batch 1 to 8 (1/2)



63 STREPs

5 CSAs

FET Open so far...

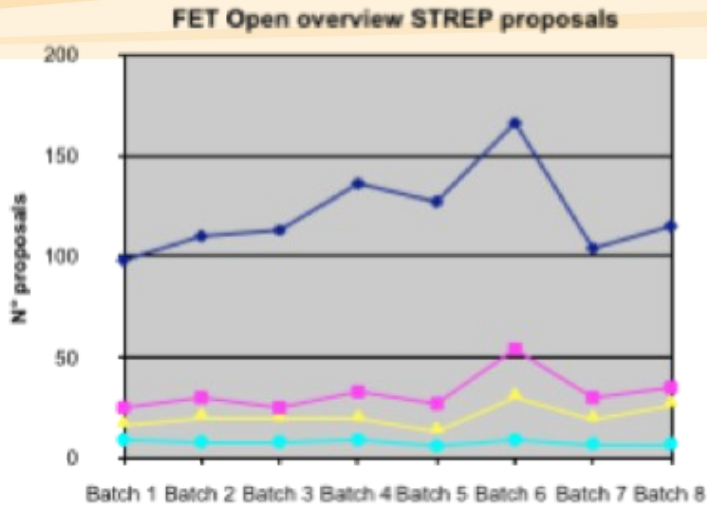
Workprogrammes 07/08 & 09/10

Batch	1	2	3	4	5	6	7	8	Total
Short STREP	98	110	111	136	127	167	104	115	969
Short successful	25	30	25	33	27	54	30	35	259
full STREP /CA	23 /6	29 /9	25 /2	31 /3	26 /6	53 /1	30 /0	35 /3	252 /30
Full successful STREP/CA	16 /2	20 /3	19 /0	19 /0	13 /3	30 /0	19 /0	26 /1	162 /9
Funded STREP/CA	9 /1	8 /1	8 /0	9 /0	6 /2	9 /0	7 /0	7 /1	63 /5



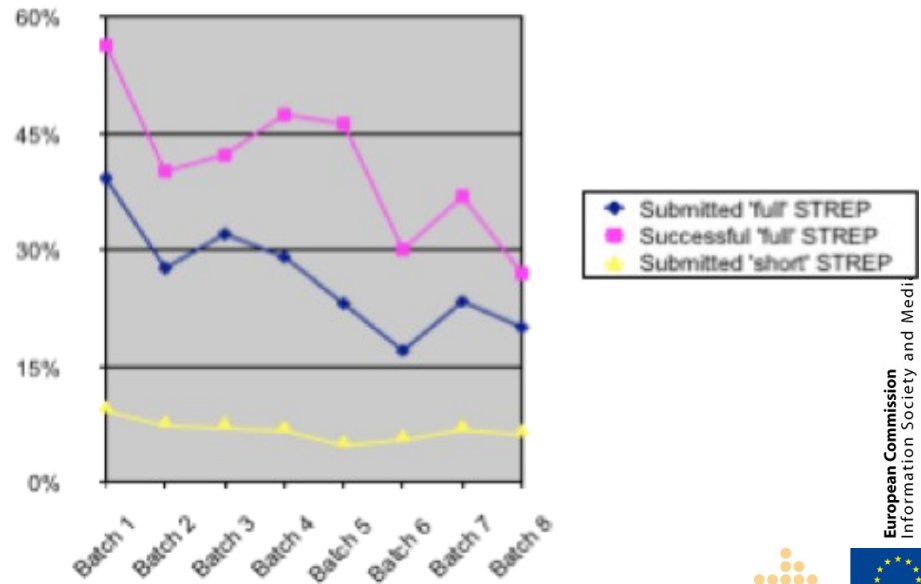
FET Open so far

Workprogrammes 07/08 & 09/10



A “light and fast”, but highly competitive scheme!

Success rate STREP proposals funded



FET-Open – WP2011-2012

Policy background

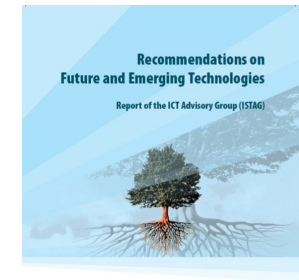
2009 / 04 COM (2009) 184 ‘Moving the ICT frontiers’
Strengthening FET through more resources
and new initiatives

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

*** Future and Emerging Technologies

2009 / 10 ISTAG report
on “Improving the reach,
effectiveness and
impact of FET”

2009 / 12 endorsed at the COMP Council



October 2009

European Commission
Information Society and Media



SEVENTH FRAMEWORK
PROGRAMME

FET-Open – WP2011-2012

Policy background

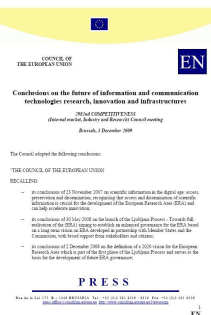
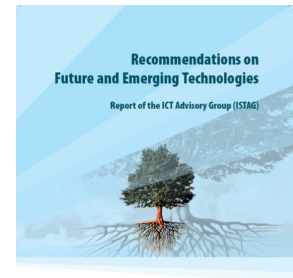
2009 / 04 COM (2009) 184 'Moving the ICT frontiers' Strengthening FET through more resources and new initiatives

- FET Open and FET proactive strengthened
- FET Flagship initiatives
- High-Tech Research Intensive SMEs
- Young Researchers
- International cooperation

2009 / 10 ISTAG report on “Improving the reach, effectiveness and impact of FET”

2009 / 12 endorsed at the COMP Council

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



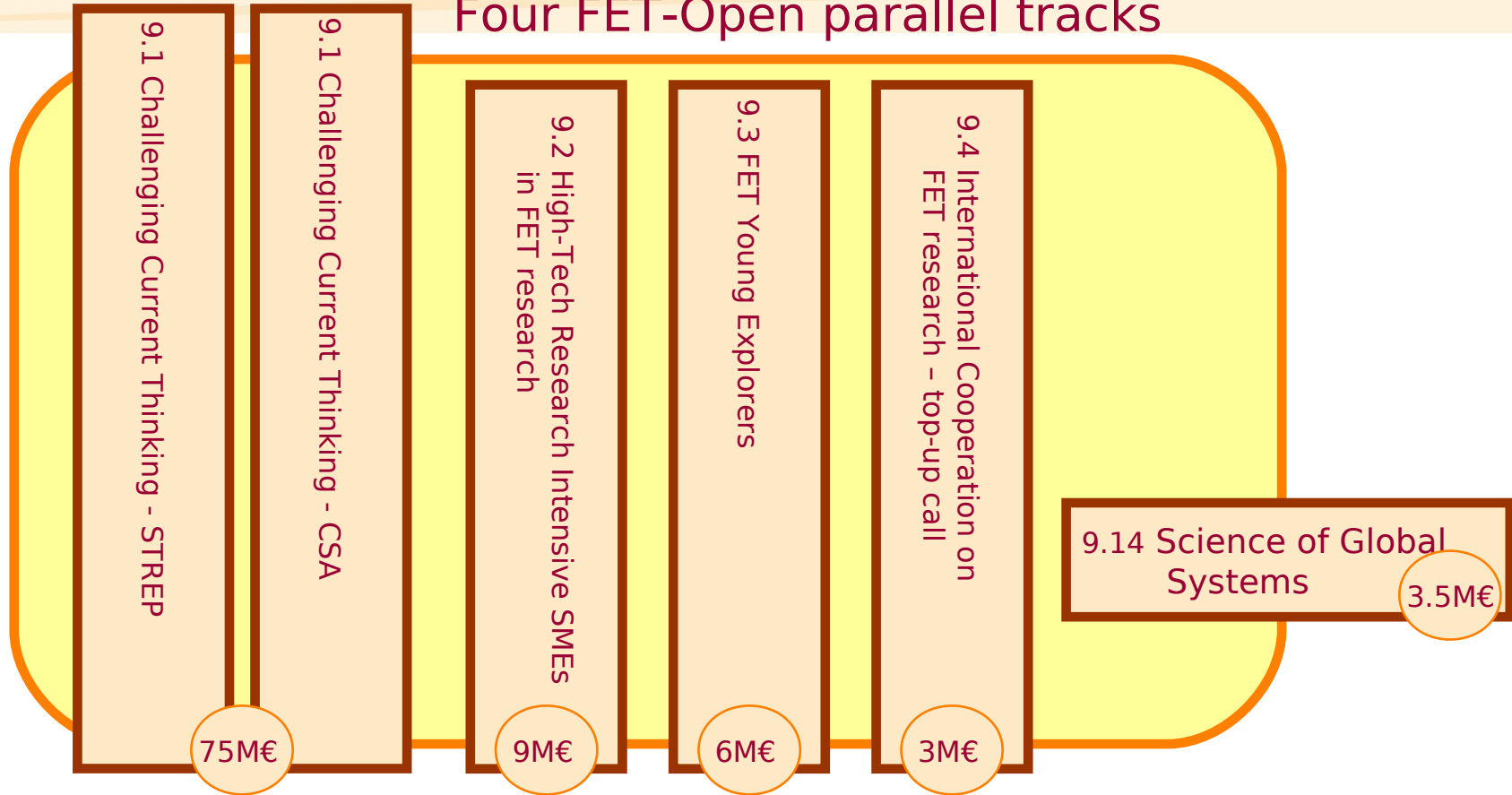
European Commission
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FET Open – WP 2011-2012

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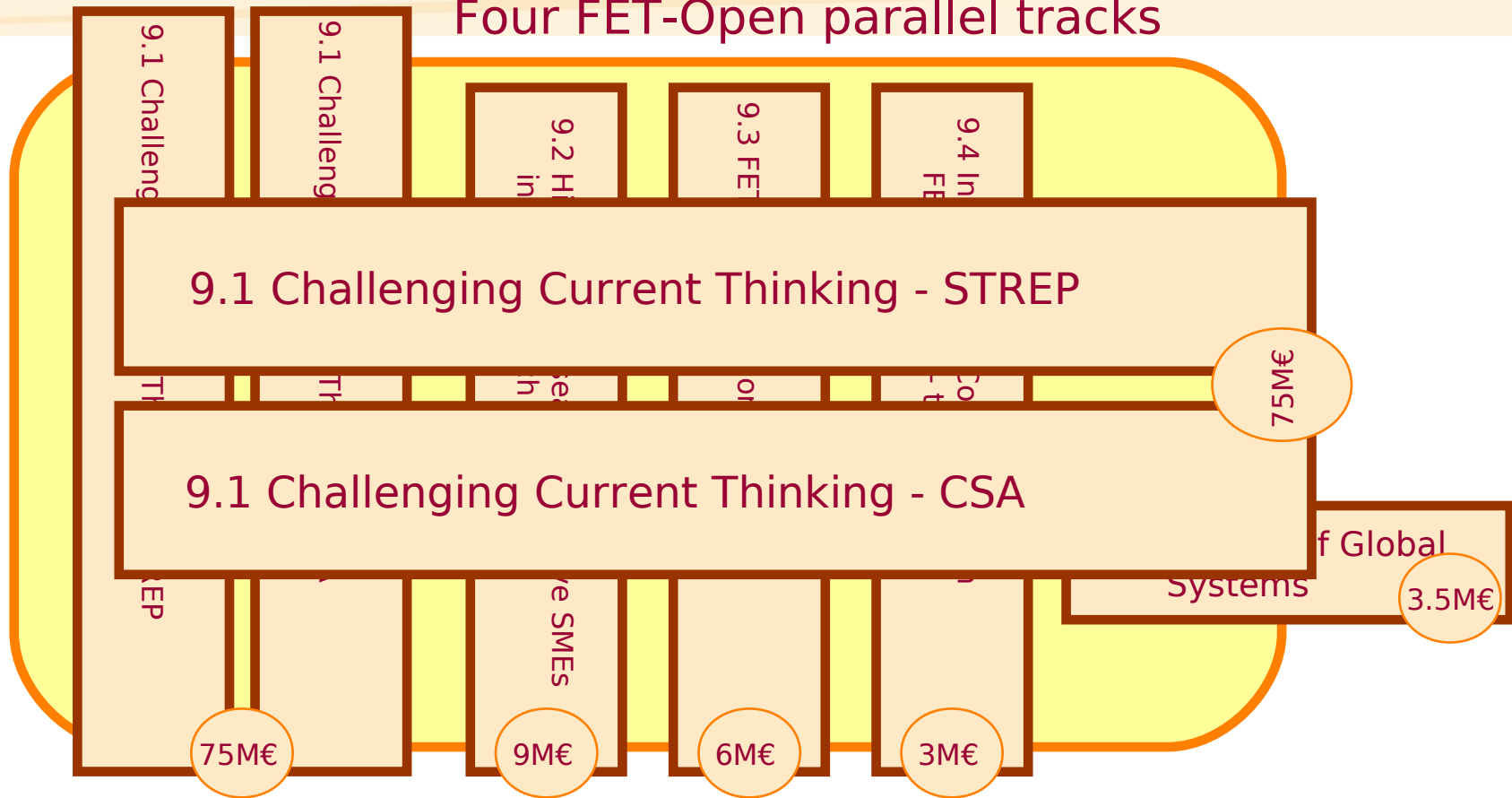
Four FET-Open parallel tracks



FET Open – WP 2011-2012

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Four FET-Open parallel tracks



FET-Open

ICT-2011.9.1: Challenging current thinking - STREPs

What are we looking for ?

- Exploration of **new** and alternative ideas that, because of their **risky** or **non-conventional** nature, would not be supported elsewhere in the ICT WP. It seeks:
 - **foundational breakthroughs**: as crucial steps towards radically new forms and uses of information and information technologies within a clear long-term vision that is far beyond the state of the art
 - **ambitious proof-of-concept**: and its supporting scientific foundation, where novelty comes from new, high-risk ideas rather than from the refinement of current ICT approaches
 - **new inter-disciplinary collaborations**: possibly with prominent and internationally recognised non-EU research teams where these can provide a significant added value
- 75 M€ for STREP (& CSA)
- 2-step submission and evaluation scheme
- proposals continuously receivable (at least) until 11 Sept 2012



FET-Open

ICT-2011.9.1: Challenging current thinking - CSAs

What are we looking for ?

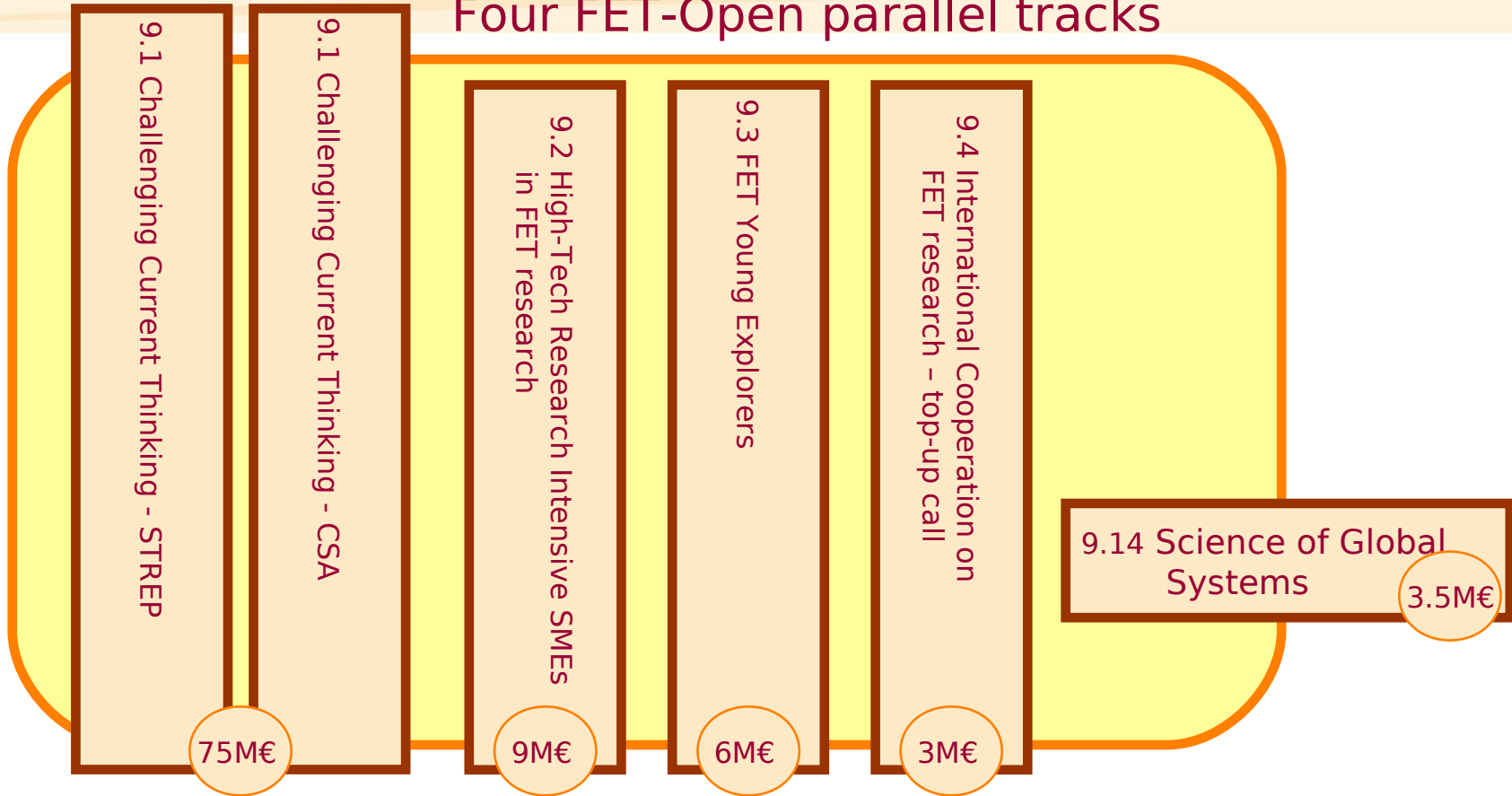
- CSAs for creating the best conditions within which FET research can flourish and achieve transformative impacts that it aspires to. These activities may be, for example:
 - actions, including networking and dissemination activities, aiming at the emergence of new research communities and collaborations involving a broad diversity of disciplines and actors into FET research
 - actions towards the increased involvement high-tech research intensive SMEs
 - actions that stimulate excellence and future leadership of pioneering teams of Young Researchers
 - actions aiming to strengthen the international dimension of FET
- Up to 7.5 M€ for CSA
- 1-step submission and evaluation scheme
- proposals continuously receivable until 12 March 2013



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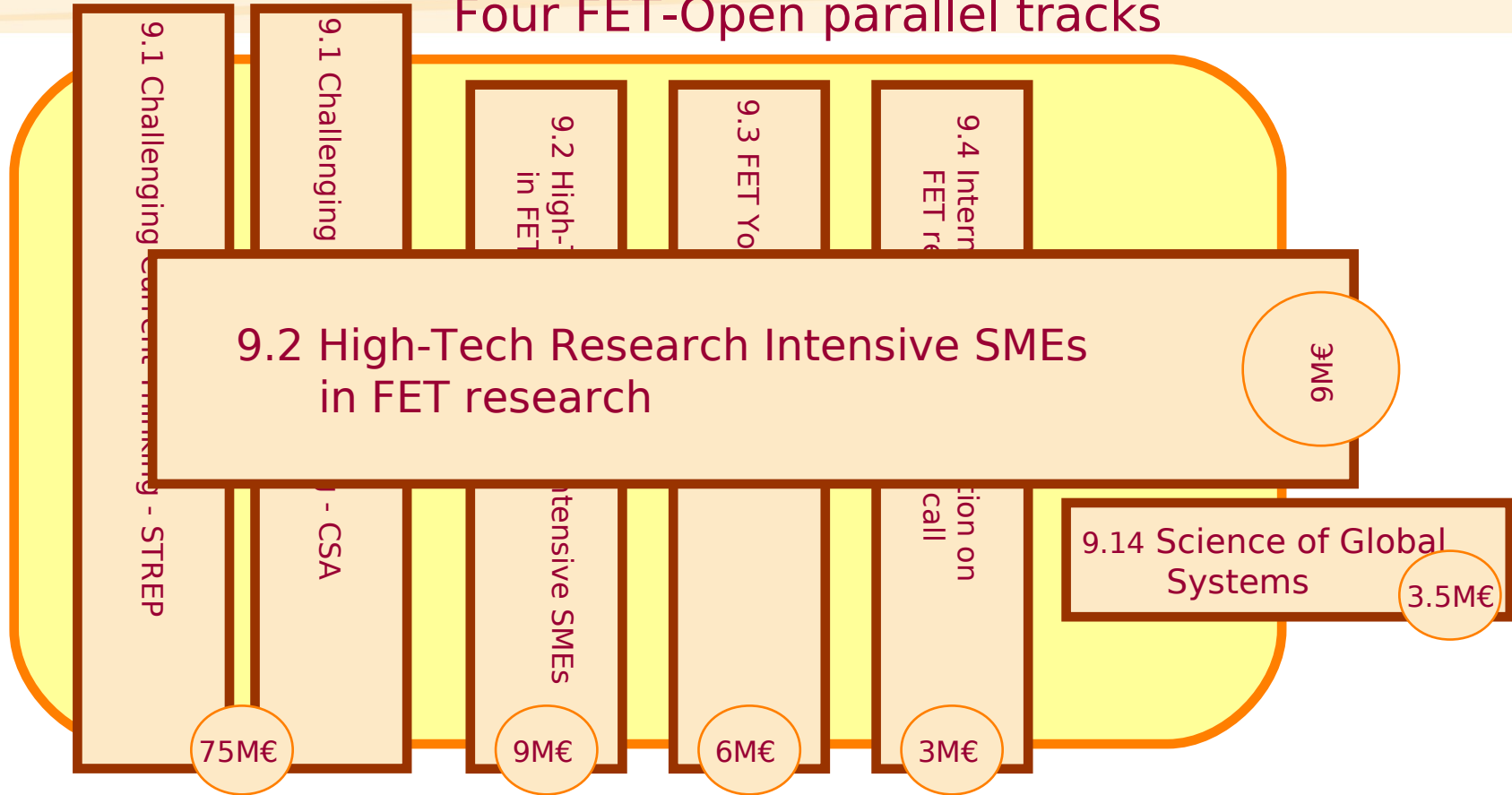
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Four FET-Open parallel tracks



High-Tech Research Intensive SMEs in FET research: Rationale

- Top-level research can take place outside of universities and big corporate laboratories.
- It can take place within SMEs.
- SMEs provide a fast moving future innovation potential and many more recognised advantages for the WP.

And yet:

- evidence shows that they have a hard time getting their proposals funded in FET-Open and that they do not take the lead.



High-Tech Research Intensive SMEs in FET research: Rationale

- Top-level research can take place outside of universities and big corporate laboratories.
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And yet:

- evidence shows that they have a hard time getting their proposals funded in FET-Open and that they do not take the lead.

Short proposal SME participation	486 in 969 proposals
Full proposal SME participation	63 in 252 proposals
Funded projects	10 (and only 1 coordinator) in 63 projects

(rough statistics from 8 batches)



FET-Open

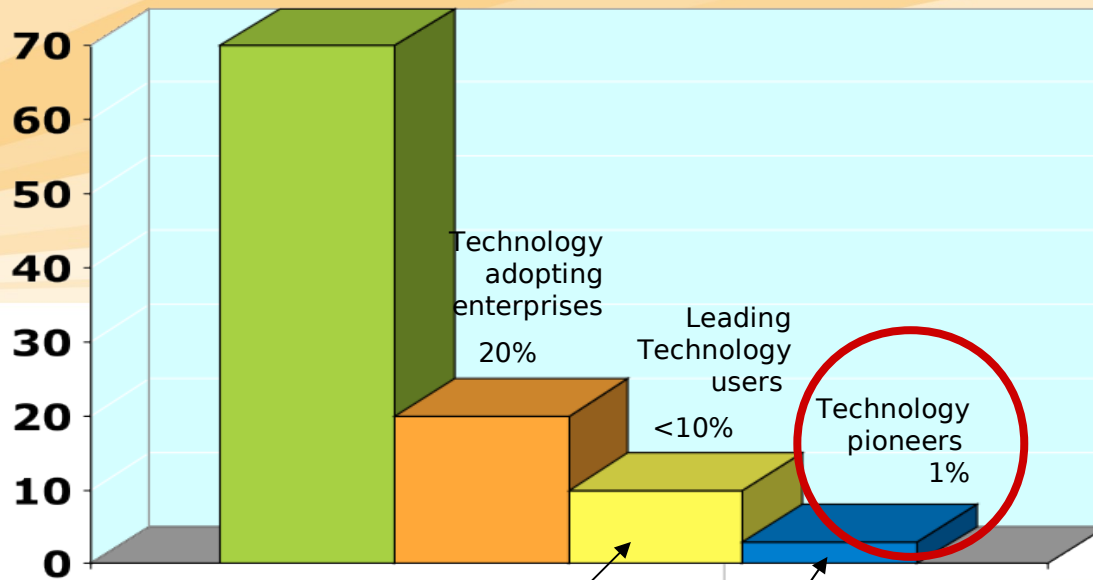
ICT-2011.9.2: High-tech research-intensive SMEs in FET research

What are we looking for ?

- High-tech research intensive SMEs ready to take a driving role in collaborative FET projects, by setting and co-executing the ambitious FET research agenda centred on their needs
- link novel science with marketable ideas that can lead to new visionary business opportunities and create future markets;
- generate a new scientific and technological asset for SMEs to establish themselves firmly as future innovation players
- increased visibility, exposure and impact of FET projects by fostering the rapid maturing of breakthrough technologies
- Funding: 9M€
- Target: “Small” STREP proposals, grant in the order of 1 M€*
- Eligibility: Consortium must contain a High Tech Research Intensive SME
- Submission: 2-step submission/evaluation process; short proposals receivable continuously from 4 August 2010 until 11 September 2012



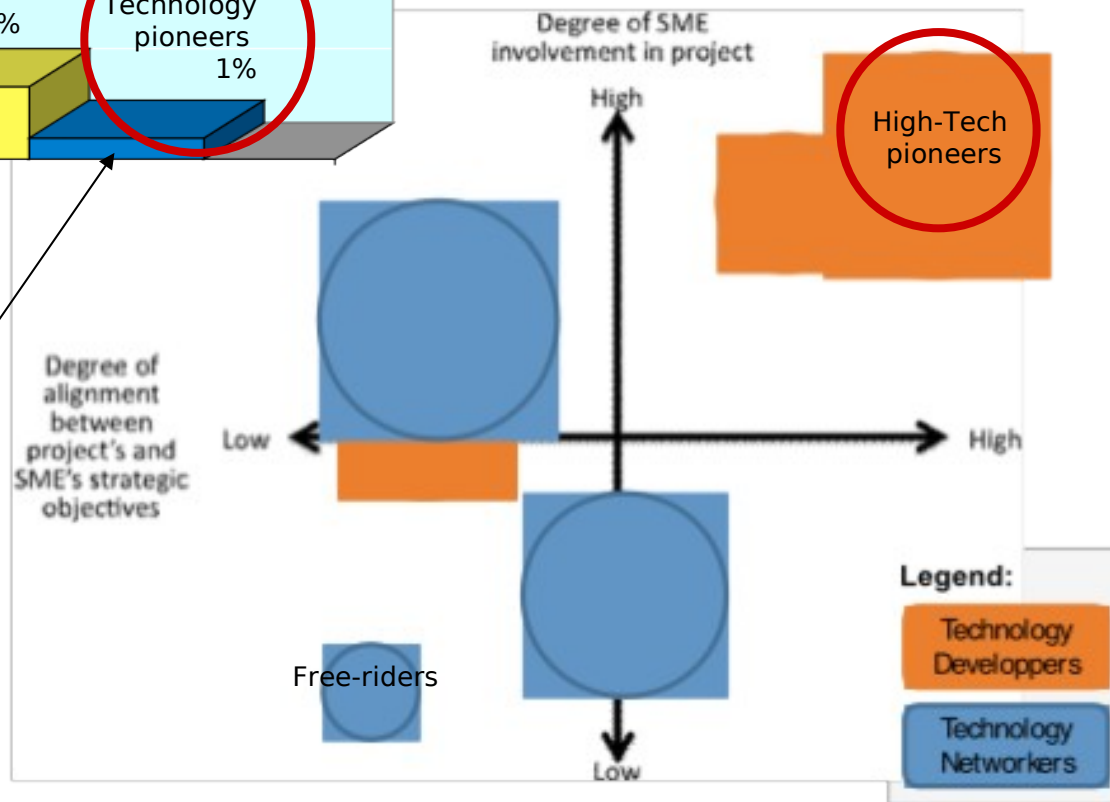
FET-Open Target SMEs



Source: EURAB's report on "SMEs and ERA"

Developing or
combining existing
technologies on an
innovative level

High Level research
activities



FET-Open SME track: what we will not support

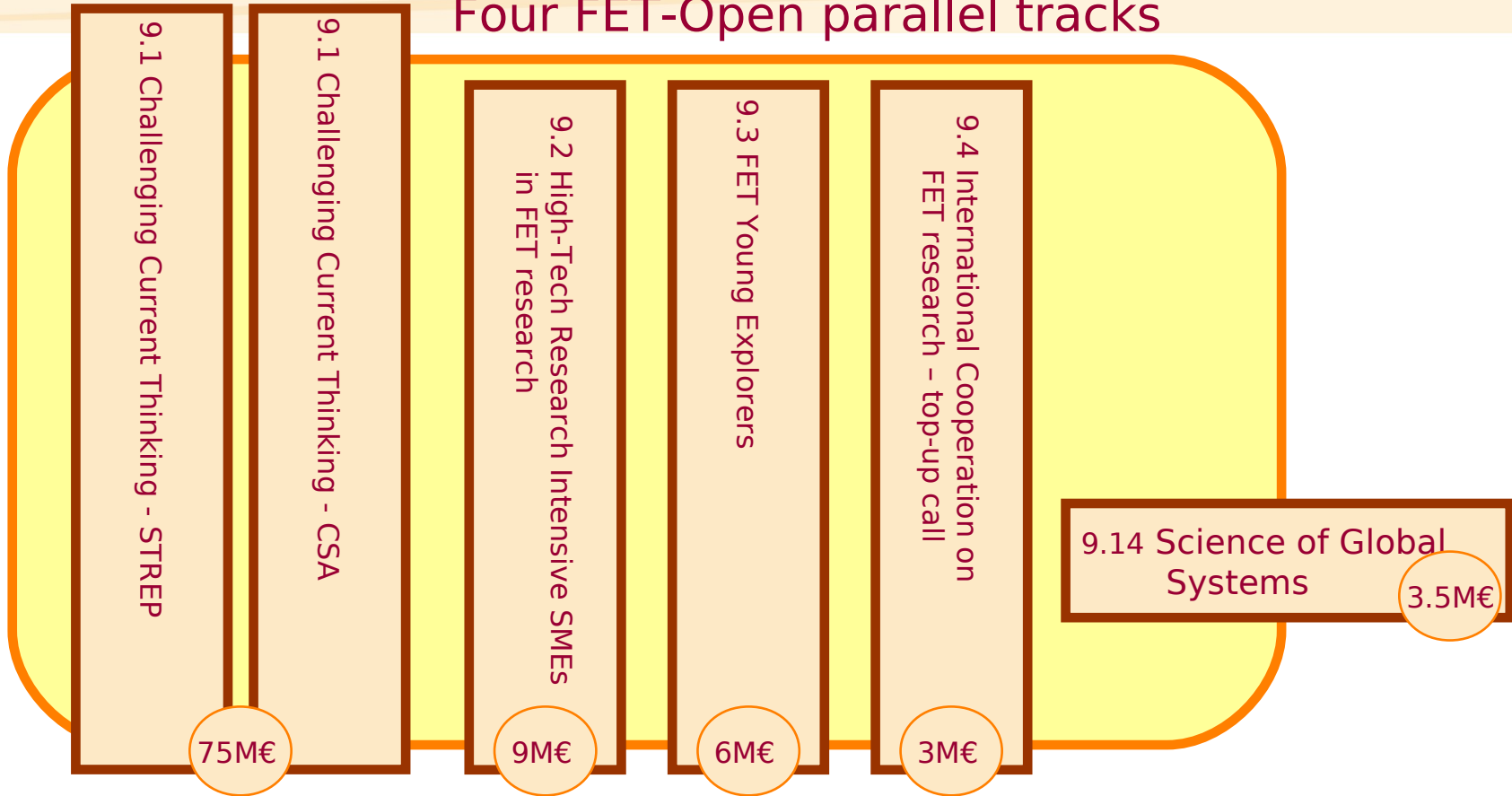
- This objective does not seek short term commercial outcomes. It will therefore not support, for example:
 - the incremental improvement of state-of-the-art technology,
 - mainstream research aimed at short term product or service development,
 - the incremental improvement of existing lines of business activity,
 - research aimed to catch-up with the competition, foraging or market studies, or
 - the mere development of new business models or business plans
 - etc...



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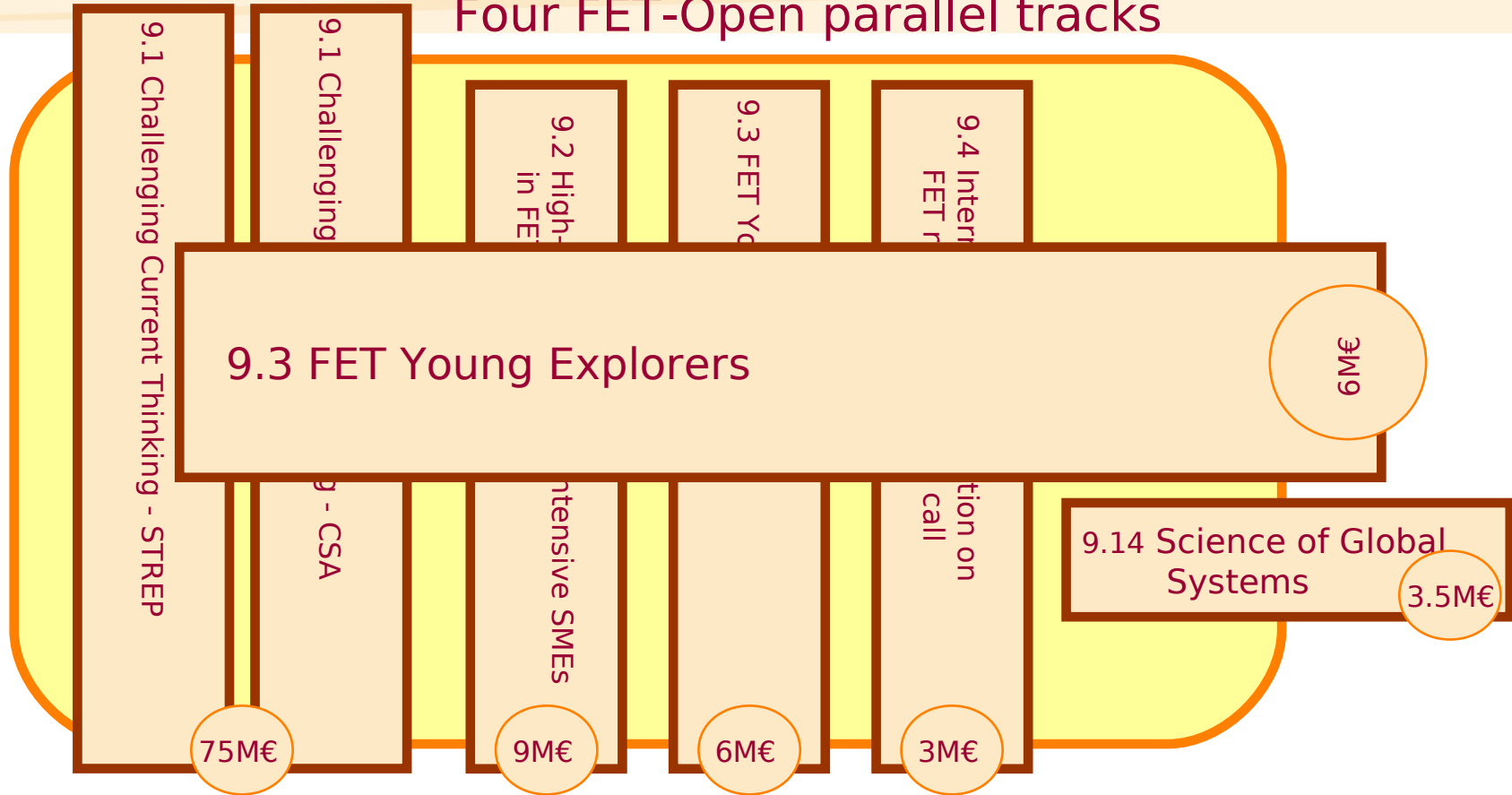
Four FET-Open parallel tracks



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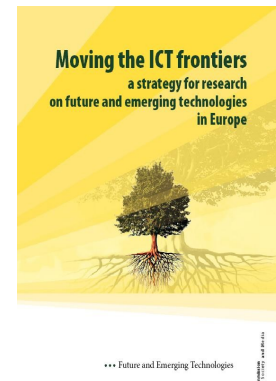
Four FET-Open parallel tracks



FET-Open Young Explorers: rationale

- “Europe must invest more in excellence to attract the world's best researchers and empower talented young researchers to become research leaders. Multidisciplinary research careers and curricula should be given stronger support”

(Commission Communication on FET, ‘Moving the ICT frontiers’, 2009)



- “FET in its current form is geared towards funding established, senior researchers, which is not where the new ideas are.”

(Kasper Stoy, @ the YR workshop in Dec 2010)



FET-Open

ICT-2011.9.3: FET Young Explorers

What are we looking for ?

- Captures the creative potential of young researchers in FET type of research
- Fosters their leadership and participation: put them in the driver seat of FET-like collaborative research projects
- Empowers the next generation of European independent research leaders
- Promotes early independence of high-potential young researchers
- Funding: 6M€
- Target: “Small” STREP proposals; grant in the order of 1 M€
- Eligibility: Project and all Workpackages must be led by Young Researchers*
- Submission: 2-step submission/evaluation process; short proposals receivable continuously from 4 August 2010 until 11 September 2012

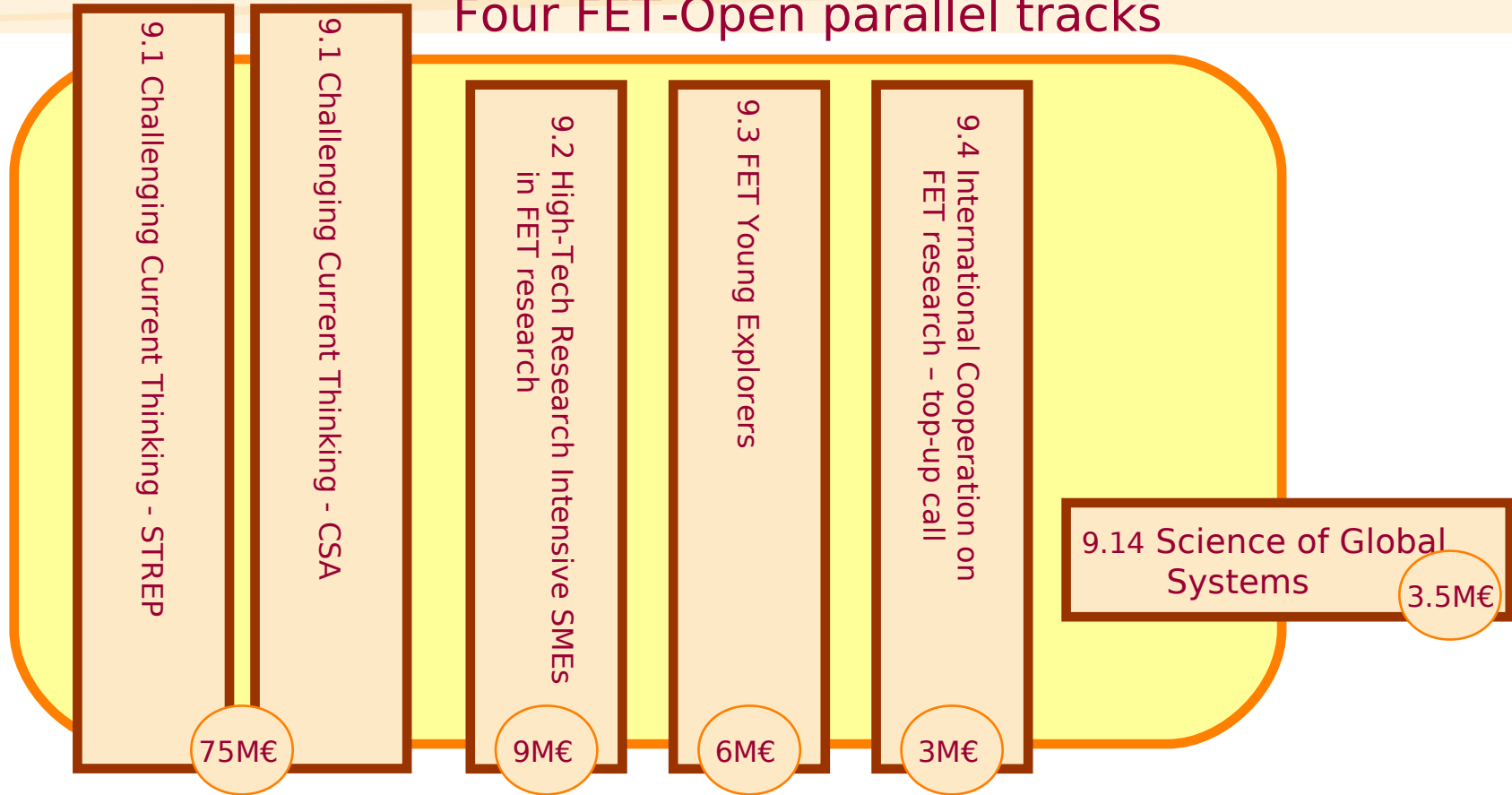
- (*) Young researcher is defined as up to PhD + 6 years (or equivalent)
 - at proposal submission date



FET Open – WP 2011-2012

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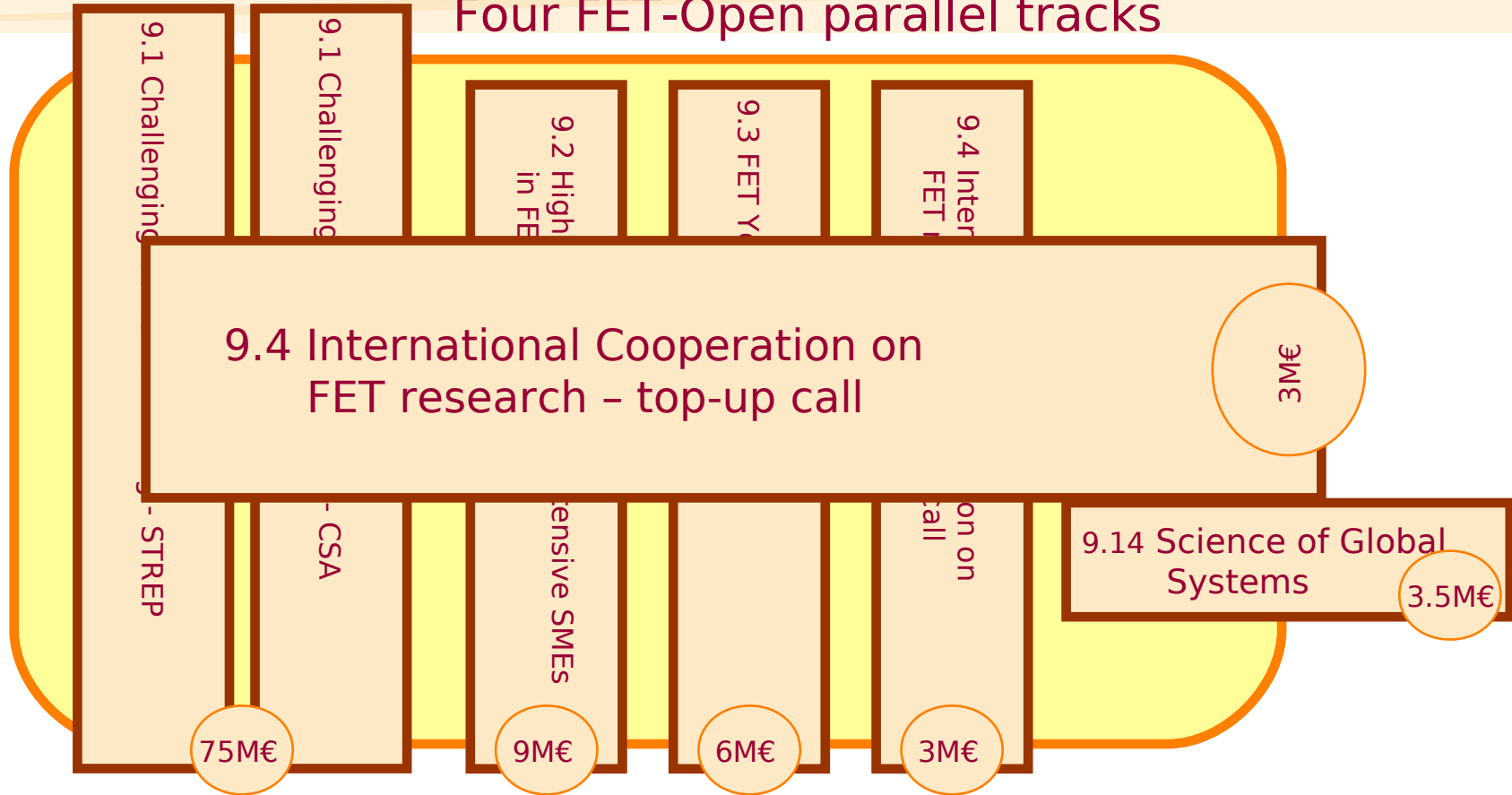
Four FET-Open parallel tracks



FET Open – WP 2011-2012

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International cooperation on FET research

Foundational research can necessitate global collaboration

- You are preparing a new project proposal?
 - Non-EU research partners can participate
 - If financial support requested, it needs proper justification
- You are part of an on-going FET project?
 - Special 'Top-up' call for adding new non-EU research partners
- You want to boost the international dimension of your activities?
 - Coordination and Support Actions in FET-Open
 - Also in the more topical oriented FET-Proactive calls

“Non-EU” = Not located in EU Member States or in Associated Countries

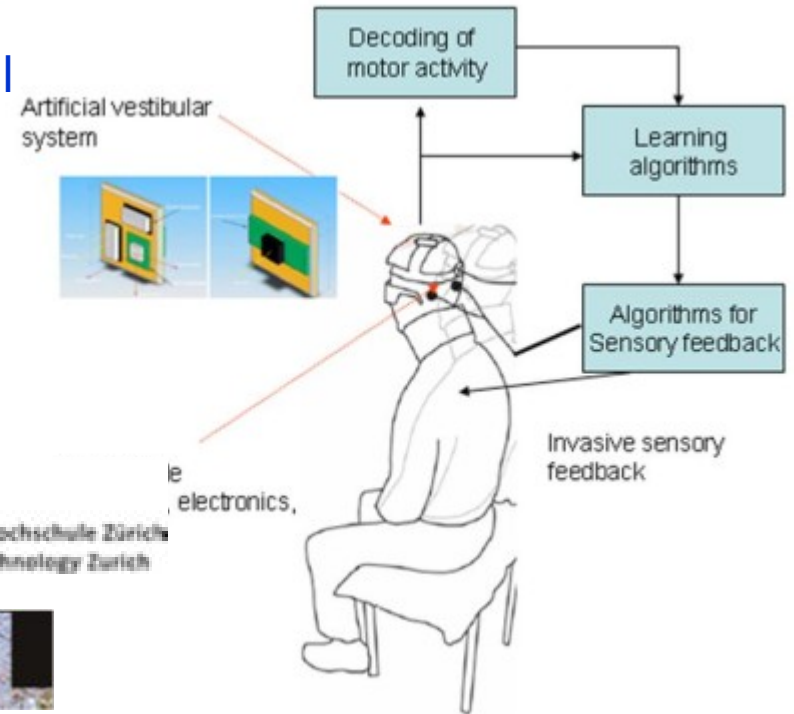




Example: CLONS



- Innovative closed-loop sensory neural prosthesis
- The Massachusetts Eye and Ear Infirmary – Harvard University (US) bring its great experience in the field related to vestibular neural prostheses.





ICT-2011.9.4: : International cooperation on FET research

“Top-up call”

What are we looking for?

- Extension of ongoing FET projects with complementary research activities, in which collaboration with new non-EU research partners of excellent global standing brings significant added value
- New research activities:
 - Expand the research challenge and global reach of FET research
 - Increase the impact of the initial project
 - Foster cooperation among top EU and non-EU research teams





“Top-up call”

ICT-2011.9.4: : International cooperation on FET research

Who ?

- Restricted to on-going FET projects
- Running IP & STREPs from FET-Open and FET Proactive portfolio
- On going = ending at least 18 months after the submission date of the proposal.

Budget ?

Total Indicative budget for WP11-12: 3M€

- Top-up funding for partners from the ongoing FET project and for the new non-EU research participants to cover the coordination and joint research activities





“Top-up call”

ICT-2011.9.4: : International cooperation on FET research

How ?

- 1-step submission of an extension proposal (no short)
- 3 cut-off dates in WP2011-2012 :
 - 17/05/2011 -> Extension to start end 2011
 - 25/10/2011 -> Extension to start early 2012
 - 10/04/2012 -> Extension to start mid/end 2012
- Per batch
- ~1M€ in total
- ~4 to 6 projects
- Continuously open call
- Expected to be extended up to 12 March 2013





ICT-2011.9.4: : International cooperation on FET research

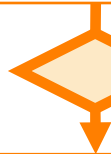
“Top-up call”

How ?

Anytime

‘Top-up’ proposal

- ~30 pages
- Not anonymous



Negotiation

FET evaluation
Selection and award criteria – ‘full’ STREP

1. S/T quality	2. Implementation	3. Impact
<ul style="list-style-type: none">• Clarity of targeted breakthrough and its relevance towards a long-term vision• Novelty and foundational character• Specific contribution to progress in science and technology• Quality and effectiveness of the S/T methodology	<ul style="list-style-type: none">• Quality of workplan and management• Quality and relevant experience of the individual participants• Quality of the consortium as a whole (including complementarity, balance)• Appropriate allocation and justification of the resources to be committed (person-months, equipment, budget)	<ul style="list-style-type: none">• Transformational impact of the results on science, technology and/or society• Impacts towards the targeted objective in the work programme• Appropriateness of measures envisaged for the dissemination and/or use of project results.
Threshold: 4.0/5 Weight: 50%	Threshold: 3/5 Weight: 20%	Threshold: 3.5/5 Weight: 30%

FET-Open 10-WF2011-2012

Project



FET Open so far (cont.)

Batch 11

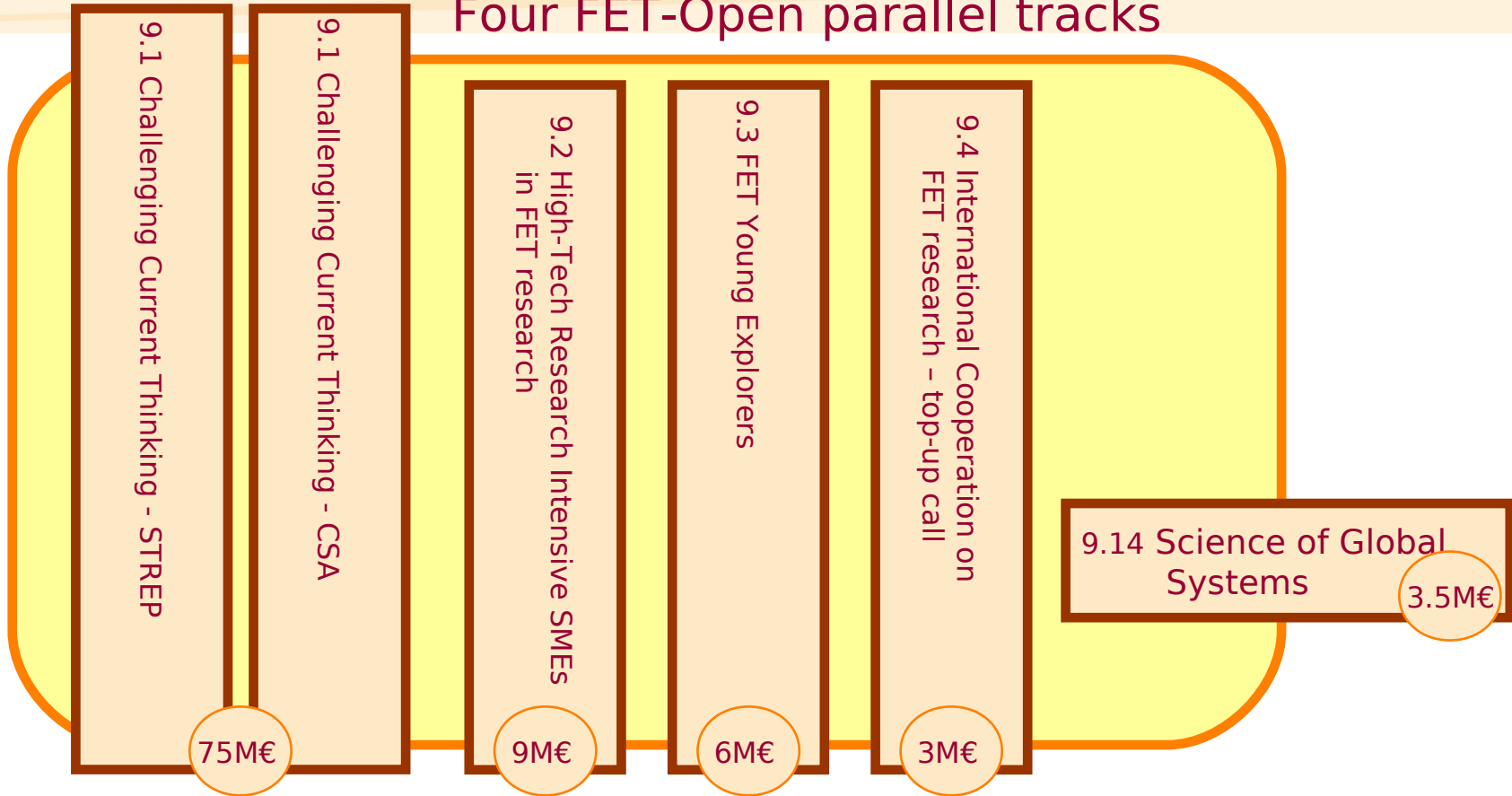
	ICT- 2011.9.1	ICT- 2011.9.2	ICT- 2011.9.3	Total	ICT- 2011.9.4
Short STREP	188	13	21	222	N/A
Short Successful	36	4	2	42	N/A
Full STREP/CA	35/ <u>7</u>	4	2	41/ <u>7</u>	9
Full Successful STREP/CA	20/ <u>1</u>	4	1	25/ <u>1</u>	6
Under Negotiation STREP/CA	7/ <u>1</u>	3	1	11/ <u>1</u>	3



FET Open – WP 2011-2012

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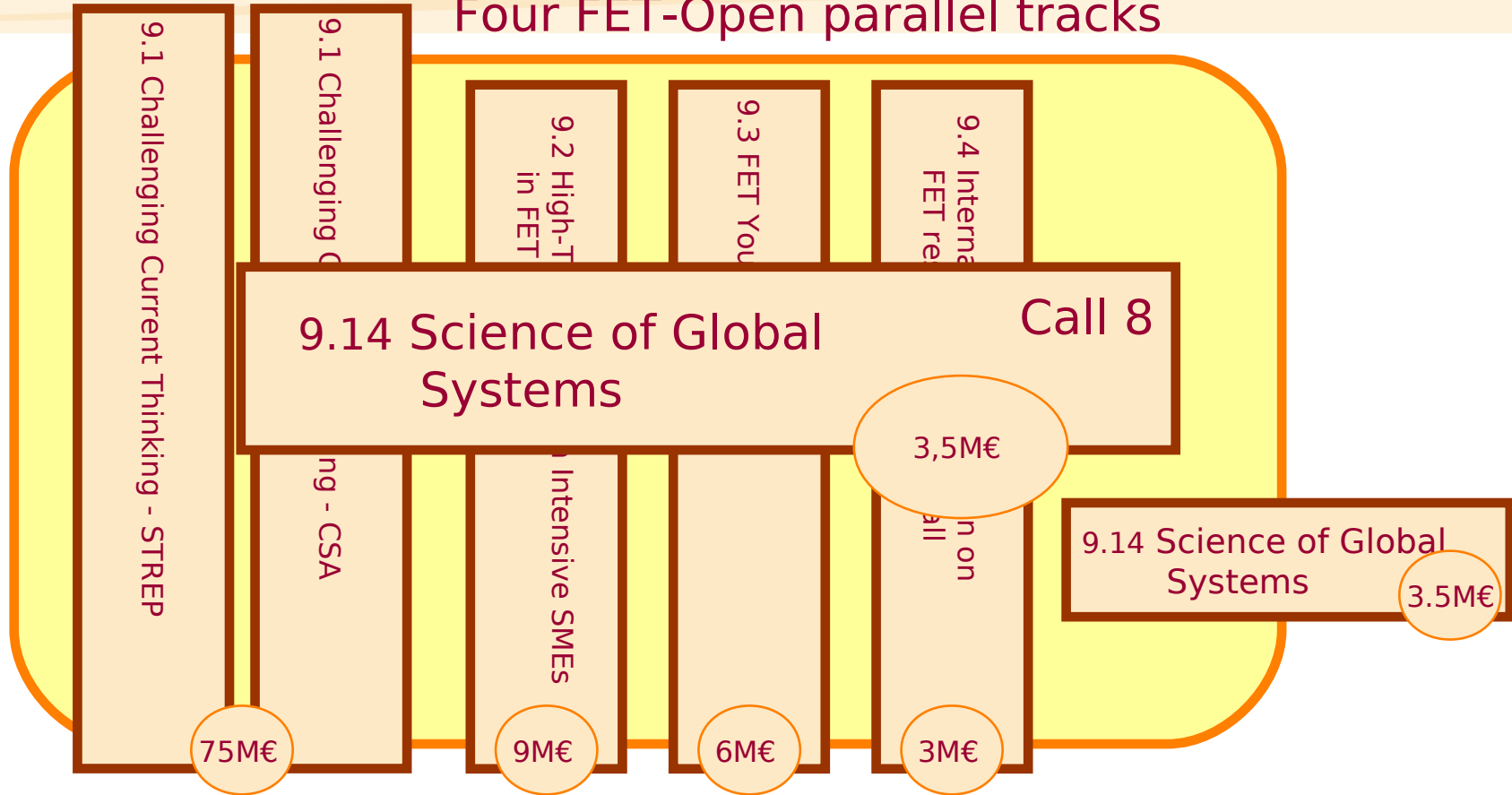
Four FET-Open parallel tracks



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What is this?

- “Global Systems” refers to systems with:
 - Interdependencies on global scales
 - Interdependencies across different decision domains
- Motivation and objective:
 - To better understand **interdependencies** between economic, social and ecological systems in order to allow coherent decisions across different domains **and**
 - To improve the **interface/link between modellers and society**. Actors in society become an integral part of the scientific modelling process
- Role of IT:
 - IT tools allow new forms of interaction between stakeholders and modellers
 - IT tools will help with new modelling/design techniques



Call 8

ICT-2011.9.14 'Science of Global Systems'

Target outcomes

- Develop “Cross-System Modelling” that allows coherent actions across different decision domains
 - e.g. IT tools to recognise/represent global interdependencies (e.g. via concurrent analysis of large scale data sets on socio-economic systems)
- Develop a “Science of foresight” that includes better model results and the abundance of data available with societal decisions
 - e.g. Methods to build narratives from models and data
- Models and data
 - New system models of societal processes and social organisation
 - Next generation of economic models that take into account linkage of economic, social and ecological issues
 - New tools to gather/ analyse data on socio-economic and ecological systems



Call 8

ICT-2011.9.14 'Science of Global Systems'

Expected impact

- Better links between modellers and stakeholders facilitated by new policy-relevant concepts in modelling of global systems;
- Overcome fragmentation in various policy-relevant models – beyond “policy silos”: Models better suited for global coordination/governance;
- Impact will be measured by policy uptake in targeted areas, in particular:
 - New responses to systemic risk (in economy, ecology, climate)
 - Better models of the financial system in the wake of the financial crisis
 - New system models of climate change impact and sustainability



Call 8

ICT-2011.9.14 'Science of Global Systems'

Who ?

- Complex systems modellers interested in socio-economic and ecological system models
- Computer scientists interested in developing the next generation of system models
- Researchers interested in system models of sustainability
- IT researchers interested in developing methods for social and economic sciences to derive interdependencies from large socio-economic data
- Social scientists, economists interested in next generation models that use IT
- Decision makers and societal actors interested in how modelling can be of help in societal processes



Call 8

ICT-2011.9.14 'Science of Global Systems'

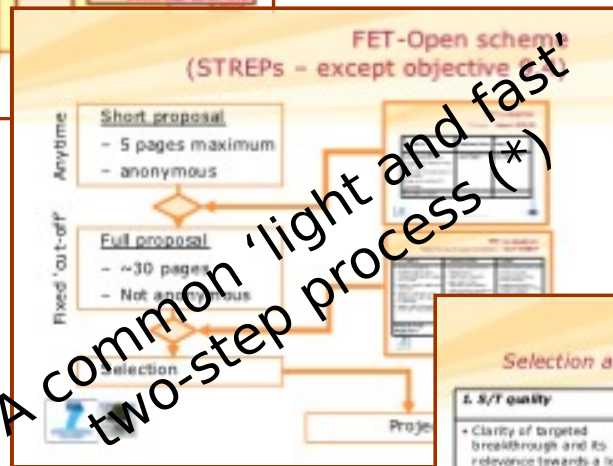
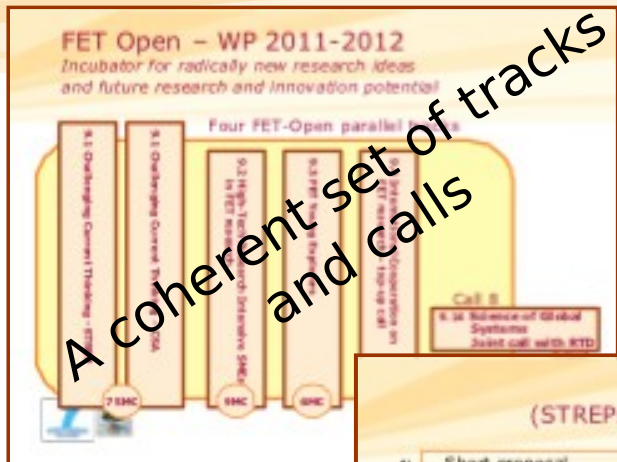
How ?

- Fixed deadline call
- Call: FP7-ICT-2011-8: Deadline 17 January 2012 5PM
- Funding scheme: STREP
- Indicative budget distribution: EUR 3.5 million
- Further information:
 - http://cordis.europa.eu/fp7/ict/fet-open/global-systems_en.html
 - <http://www.gsdp.eu>



FET-Open in WP2011-2012

Conclusion



(*) except objectives 9.4 and 9.14

FET evaluation
Selection and award criteria – 'full' STREP & IP

1. S/T quality	2. Implementation	3. Impact
<ul style="list-style-type: none"> Clarity of targeted breakthrough and its relevance towards a long-term vision Novelty and foundational character Specific contribution to progress in science and technology Quality and effectiveness of the S/T methodology 	<ul style="list-style-type: none"> Quality of workplan and management Quality and relevant experience of the individual participants Quality of the team (as a whole and in balance) Appropriateness of allocation of resources to be committed (person-months, equipment, budget) 	<ul style="list-style-type: none"> Transversal impact of the project, technology or society Impacts towards the targeted objective in the work programme Appropriateness of measures envisaged for the dissemination and/or use of project results
<p>Threshold: 4/5</p> <p>Weight: 50%</p>	<p>Threshold: 3/5</p> <p>Weight: 20%</p>	<p>Threshold: 3.5/5</p> <p>Weight: 30%</p>



FET-Open: a preview of things to come?

“I also want to ensure that we retain an open scheme for bottom-up collaborative research proposals.

This scheme will give all sizes of entities access to finance for high-risk, high-return ideas.

The paperwork must be ‘simple, light and fast’ in order to succeed.

Such a scheme is needed to continue to capitalise on our science and technology knowledge and skills base. It is needed to build a more exploratory and entrepreneurial mindset that boosts the number of alternative ideas, start-ups and high-growth SMEs.”

Neelie Kroes, ICT2010 Opening speech



FET-Open contacts per objective

Objective 9.1: Challenging current thinking, **Call Coordinator**

Pascal Drabik (Pascal.Drabik@ec.europa.eu)

Objective 9.2: High-Tech Research Intensive SMEs in FET research

Walter Van de Velde (Walter.Van-de-Velde@ec.europa.eu)

Objective 9.3: FET Young Explorers

Prabhat Agarwal (Prabhat.Agarwal@ec.europa.eu)

Objective 9.4: International Cooperation on FET research – top-up call

Aymard de Touzalin (Aymard.De-Touzalin@ec.europa.eu)

Objective 9.14: Science of Global Systems

Ralph Dum (Ralph.Dum@ec.europa.eu)

FET-Open Head of Unit:

Ales Fiala (Ales.Fiala@ec.europa.eu)

FET-Open website:

http://cordis.europa.eu/fp7/ict/fet-open/home_en.html





A FET-community

Become part of it!

<http://cafeteria.ning.com/>



FET Spirit



More to come...

European Commission
Information Society and Media

