

HORIZON 2020



Horizon 2020 info day
University of Technology, Sydney
17th December 2013

Andy Cherry, Association of Commonwealth Universities



Horizon 2020

**Excellent
Science**

**Industrial
Leadership**

**Societal
Challenges**

Excellent science

European Research Council (ERC)
creative individuals and research teams



Future and Emerging Technologies (FET)



Research Infrastructures

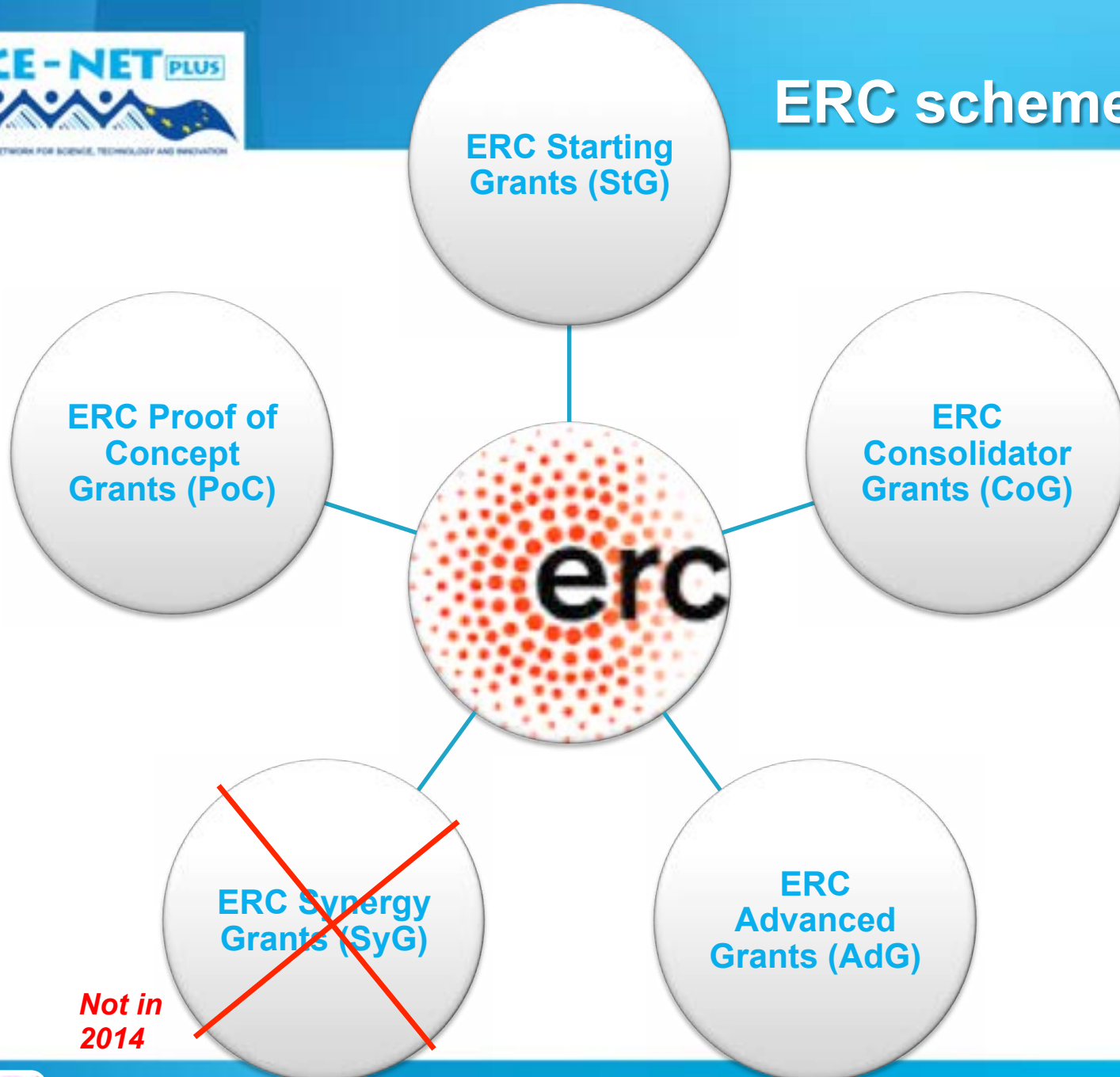


Marie Skłodowska-Curie Actions (MSCA)
skills, training and career development





ERC schemes



ERC basics

- **Anybody** can apply and **any discipline** can be pursued
- Success is based solely on the “excellence” of the Principal Investigator (PI) (i.e. track record, high-profile publications) and the proposal
- Must undertake the project at a European host institution
- Can include international partners (with funding)
- Must spend at least 50% (30% for AdG) of time working on project, and 50% of time in Europe – i.e. joint appointment are possible
- Funding for up to 5 years, 100% of direct costs + 25% for indirect costs
- Starting Grant (StG), 2-7 years after PhD, €1.5 million + €0.5 million
- Consolidator Grant (CoG), 7-12 years after PhD, €2 million + €0.75 million
- Advanced Grant (AdG), open, €2.5 million + €1 million

Want to find out more about ERC?

- H2020 participant portal: <http://ec.europa.eu/research/participants/portal>
- ERC website: <http://erc.europa.eu/>
- Calls for proposals: <http://erc.europa.eu/september-update-erc-calls-proposals-2014>
- 2014 work programme:
[http://ec.europa.eu/research/participants/portal/doc/call/h2020/common/1587810-erc_c\(2013\)_8632_en.pdf](http://ec.europa.eu/research/participants/portal/doc/call/h2020/common/1587810-erc_c(2013)_8632_en.pdf)
- Keep updated: <http://erc.europa.eu/keep-updated-erc>
- ERC national contact points: <http://erc.europa.eu/national-contact-points>

UIC - Understanding Institutional Change: A Gender Perspective

- **Aim:** What are the gender dynamics of institutional change? Changing institutions is a fundamental part of the task of lessening gender inequality and yet the gender dynamics of institutional change are still poorly understood. Huge changes in some women's social and economic status have occurred in many part of the world in the last fifty years. This institutional analysis will provide an important level link between the overarching analyses of macro structures such as patriarchy and the more micro-level analysis of the actions and strategies of individual actors and groups that have often predominated. Such an approach will allow scholars to develop better explanatory frameworks while at the same time maintaining historical and contextual specificity.
- From 2012-06-01 to 2017-05-31 (on-going)
- Total cost: €2,166,090
- EU contribution: €2,166,090
- Led by the University of Manchester, UK, with one other EU partner and the **University of New South Wales, Australia.**

Features



FET mission

FET schemes

Schemes

FET Proactive
nurtures emerging themes and communities

Call now open



Call now open

FET Flagships
ambitious large-scale, grand interdisciplinary S&T challenges

Call now open

FET Open
early-stage S&T research, new ideas for radically new future technologies

- Graphene
- Human Brain Project



AFSID - Atomic functionalities on silicon devices

- Aim: This project takes advantage of a fundamental figure-of-merit of the CMOS transistors, the doping modulation, to propose new functionalities arising from the control of a single charge and spin on individual dopants in silicon.
- ICT-2007.8.1 (FET Open)
- From 2008-01-01 to 2010-12-31
- Total cost: €3,130,780
- EU contribution: €2,200,000
- Led by COMMISSARIAT A L'ENERGIE ATOMIQUE (France) with four other European partners plus the **University of Melbourne, Australia** (over €250,000)
- <http://www.afsid.eu/>



MICREAgents - Microscale Chemically Reactive Electronic Agents

- **Aim:** The central idea of the project is to create a programmable microscale electronic chemistry, that employs circuit elements (including super capacitors and energy harvesting) on autonomous self-assembling microscale particles (target $\leq 100 \mu\text{m}$ maximal dimension) in solution, lablets, to direct reversible association (binding) between them and control access to and chemical reactions in the resulting enclosed reaction compartments.
- ICT-2011.9.6 (FET Proactive)
- **Total cost:** €4,461,304
- **EU contribution:** €3,400,000
- From 2012-09-01 to 2015-08-31
- Led by RUHR-UNIVERSITAET BOCHUM (Germany), with five other European partners, plus Israel, and the **University of Auckland, New Zealand**.
- <http://www.micreagents.eu//index.html>



ITFOM – IT Future of Medicine

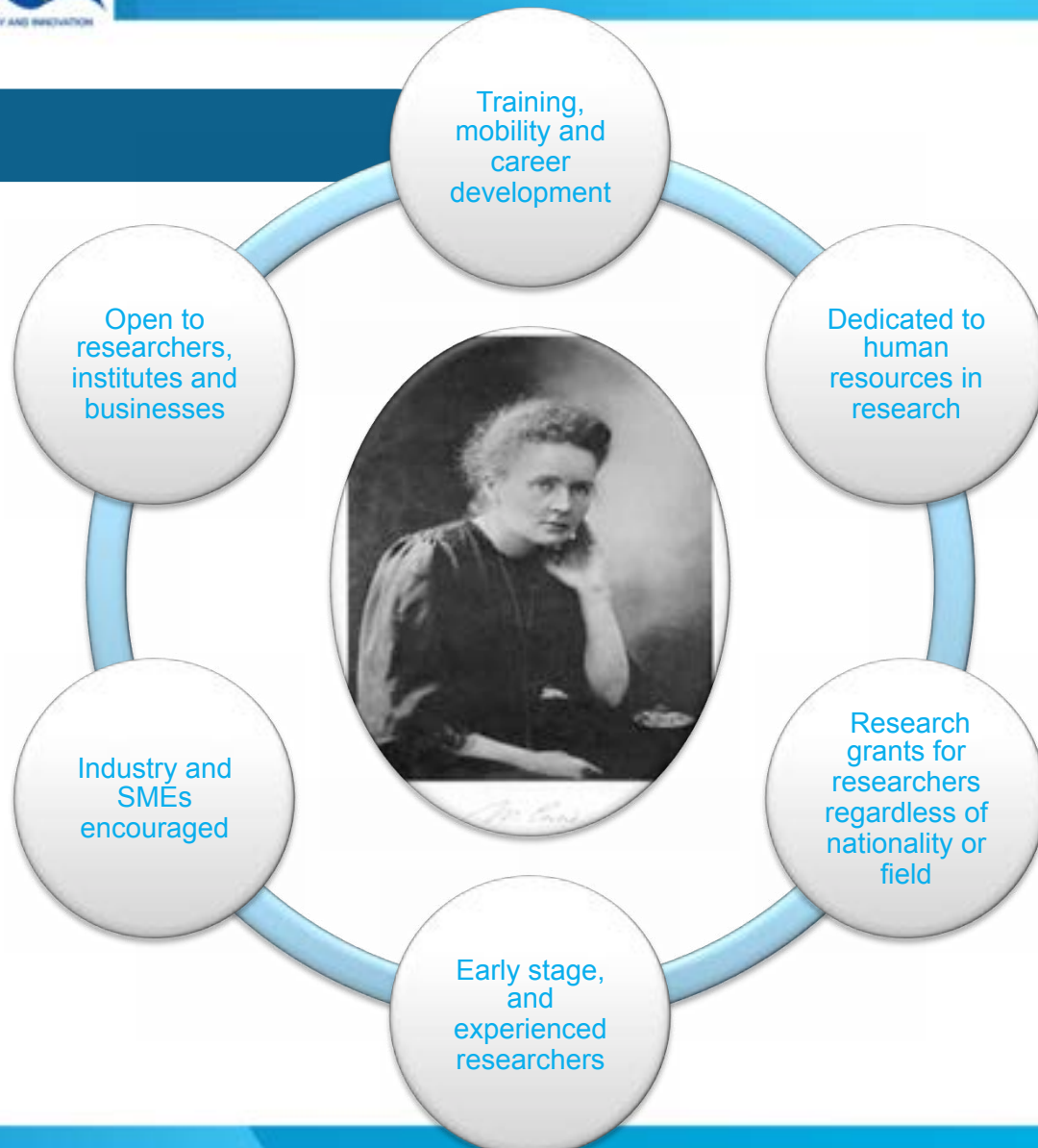
- **Aim:** Data-rich, individualized medicine poses unprecedented challenges for IT, in hardware, storage and communication. The project proposed a data-driven, individualised medicine of the future, based on molecular/physiological/anatomical data from individual patients. We shall make general models of human pathways, tissues, diseases and ultimately of the human as a whole. Individualized versions of the models, produced for each patient, will then be used to identify personalized prevention/therapy schedules and side effects of drugs.
- FP7-ICT-2011-FET-Flagship
- **From** 2011-05-01 **to** 2012-04-30
- **Total cost:** €2,033,780
- **EU contribution:** €1,480,000
- Led by MAX PLANCK GESELLSCHAFT ZUR FOERDERUNG DER WISSENSCHAFTEN E.V. (Germany) with 22 other EU partners plus the **University of Auckland, New Zealand**.
- <http://www.itfom.eu/>



Want to find out more about FET?

- FET work programme 2014-2015:
http://ec.europa.eu/research/participants/portal/doc/call/h2020/common/1587754-02_fet_wp2014-2015_en.pdf
- FP7 FET website on CORDIS: <http://cordis.europa.eu/fp7/ict/programme/fet/flagship/>
- FET compendium of projects 2007-2012:
http://cordis.europa.eu/fp7/ict/programme/fet/flagship/doc/fet-proj-comp-2012_en.pdf
- H2020 participant portal: <http://ec.europa.eu/research/participants/portal>

Features



Marie Skłodowska-Curie actions

Schemes



- Annual calls
- Excellent is only one component, also need impact, dissemination, training, knowledge transfer
- Not restricted to academia
- Individual Fellowships (IF):
 - Two types: European & Global
 - 1-2 years (plus 1 year returning for European)
 - Fully funded (salary, travel, administration)
 - Must have administrative host institution in Europe
 - Any career level (postdoc, career re-entry, repatriation)
 - Must have at least 4 years research experience (which can include PhD time)
 - Note: exchange rates
- Research and Innovation Staff Exchange (RISE)
 - Exchange program between sectors or with third countries
 - Can include non-research staff

AMFISALS - Advanced Models for Fisheries Stock Assessment of Large Pelagics

- Aim: There is growing concern about the sustainability of fisheries targeting highly migratory fish species worldwide. Tuna and tuna-like species are exploited by multiple nations and the regulation of these stocks are, from a political perspective, exceedingly difficult. Management measures need of a sound scientific knowledge of the stocks and fisheries dynamics. Traditional stock assessment techniques cannot be used in this kind of fisheries, and there is an increasing need for the further development of integrated stock assessment techniques. **The aim of the current proposal is the training of the fellow in state-of-the-art stock assessment models and the further development of these models through the inclusion of electronic tagging data, spatial variability of biological parameters, and projections of the models into the future.**
- On-going.
- Total cost: €240,143
- EU contribution: €240,143
- FP7-PEOPLE-2012-IEF (Intra-European Fellowships)
- Coordinator: **SECRETARIAT OF THE PACIFIC COMMUNITY, New Caledonia.**

ADAPT-R Architecture, Design and Art Practice Training research

- Aim: The ADAPT-r ITN aims to significantly increase European research capacity through a unique and ground-breaking research model: at its core is the development of a robust and sustainable ITN in an emergent Supra-Disciplinary field of research across a range of design and arts disciplines creative practice research. ADAPT-r will train new researchers, increase supervisory capacity, partner with private sector SMEs in research projects providing substantial opportunity for real world testing of the research and real world training, and introduce creative practice research methodologies to a new generation.
- FP7-PEOPLE-2012-ITN (Networks for Initial Training)
- Total cost: €4,009,494
- EU contribution: €4,009,494
- Led by the KATHOLIEKE UNIVERSITEIT LEUVEN (Belgium) with five other European partners plus the **RMIT University, Australia.**

Want to find out more about Marie Skłodowska-Curie Actions?

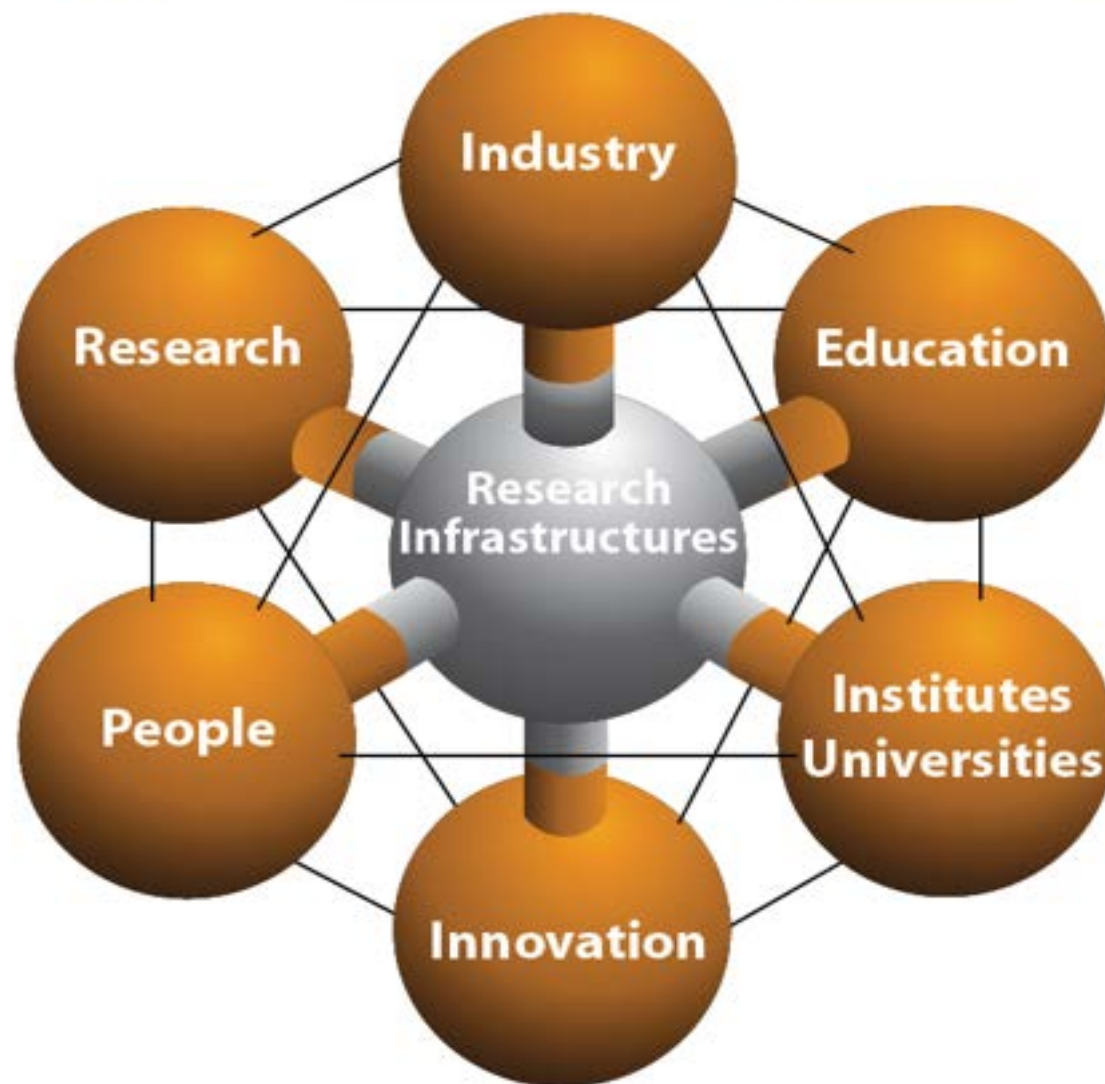
- MSCA Work Programme 2014:
http://ec.europa.eu/research/participants/portal/doc/call/h2020/common/1587755-03_msc_calls_wp2014-2015_en.pdf
- H2020 participant portal: <http://ec.europa.eu/research/participants/portal>
- General info: <http://ec.europa.eu/research/mariecurieactions>



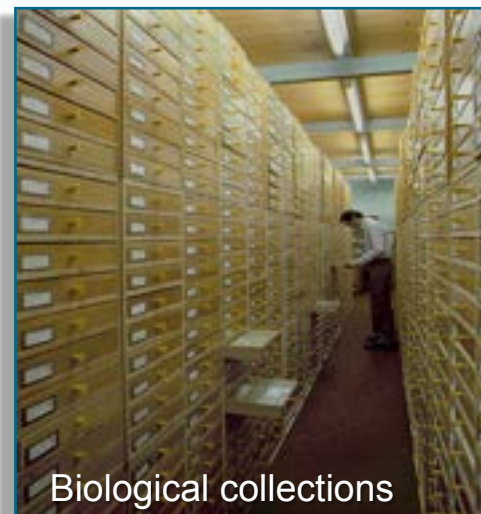
http://en.wikipedia.org/wiki/File:SKA_dishes_big.jpg

SPOQ / Swinburne Astronomy Productions

Centrality of research infrastructure to innovation



Facilities, resources and services



Biological collections

CLARIN ERIC

Common Language Resources and Technology Infrastructure



RIs



European Social Survey

Monitoring attitude change
in over 30 countries



Survey on Health, Ageing and
Retirement in Europe

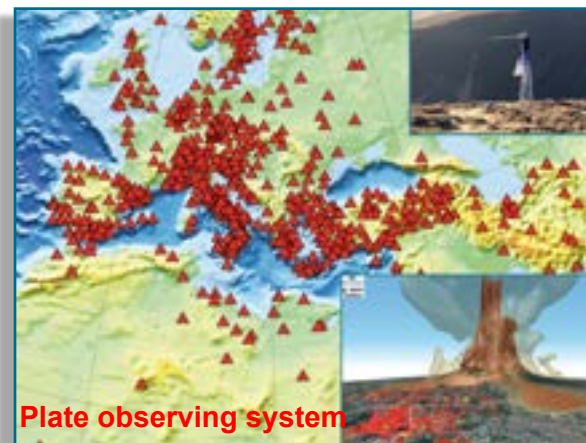


Plate observing system

Australia

1. [PREPSKA](#) - A preparatory phase proposal for the square kilometre array. Start Date: 2008-04-01 End Date: 2012-03-31
(Department of Industry, Innovation, Science, Research and Tertiary Education)
2. [OPTICON](#) - Optical Infrared Co-ordination Network for Astronomy. Start Date: 2013-01-01 End Date: **2016-12-31** **(Department of Industry, Innovation, Science, Research and Tertiary Education)**
3. [RADIONET3](#) - Advanced Radio Astronomy in Europe. Start Date: 2012-01-01 End Date: **2015-12-31** **(CSIRO)**
4. [OPTI](#) - Optical infrared coordination network for astronomy. Start Date: 2009-01-01 End Date: 2012-12-31 **(Department of Industry, Innovation, Science, Research and Tertiary Education)**
5. [EGI-INSPIRE](#) - European Grid Initiative: Integrated Sustainable Pan-European Infrastructure for Researchers in Europe. Start Date: 2010-05-01 End Date: **2014-04-30** **(University of Melbourne)**
6. [NEXPRES](#) - NEXPReS- Novel EXplorations Pushing Robust e-VLBI Services. Start Date: 2010-07-01 End Date: 2013-06-30
(CSIRO)
7. [ODIN](#) - ORCID and DATACITE Interoperability Network. Start Date: 2012-09-01 End Date: **2014-08-31** **(Monash University)**
8. [EPPN](#) - European Plant Phenotyping Network. Start Date: 2012-01-01 End Date: **2015-12-31** **(CSIRO)**
9. [EGEE-III](#) - Enabling grids for e-science III. Start Date: 2008-05-01 End Date: 2010-04-30 **(University of Melbourne)**
10. [EUASIAGRID](#) - Towards a common e-Science infrastructure for the European and Asian grids. Start Date: 2008-04-01 End Date: 2010-03-31 **(The Australian National University)**

Specific topics in current calls

- **Integrating and opening existing national and regional research infrastructures of European interest**
- **Policy measures for research infrastructures**
 - develop of a database for policy-makers on research infrastructures
 - comparative analysis of research infrastructures landscape between Europe and third country partners (inc. Australia)
- **International cooperation for research infrastructures**
 - focus on key third countries, strategic for the development, exploitation and management of world-class research infrastructures
 - G8+O5 countries + Australia (& NZ)
 - multi-lateral cooperation on research infrastructures in Arctic research, marine science, biodiversity, food research and medicine
- **Network of National Contact Points**
 - inc. Australian NCPs

Thank you

