Updates from ECRI 2008

E.Elsen

Program at a glance [Day 1]

TUESDAY 9TH DECEMBER 2008

Schedule	Session	Room	Thema	Title	Speaker	Chair
[09:00 - 10:00] Welcome coffee						
10:00 10:20	Opening session	Richelieu Room	Welcome	Welcome to ECRI 2008	Gilles Bloch, General Director for Research and Innovation at MESR and Robert-Jan Smits, Director at DG RTD-EC	
				Welcome to Versailles City	François de Mazières, Mayor of Versailles City	
				Welcome in the Ile-de-France Region	Marc Lipinski, Vice-chairman of the Ile-de-France Regional Council	
10:20 12:30	Opening session	Richelieu Room	Opening	Towards a European policy on research infrastructures	Valérie Pécresse, French Minister for High Education and Research	Gilles Bloch, General Director for Research and Innovation at MESR
				New Strategies for International Research Infrastructures	Annette Schavan, German Federal Research Minister	
				Role of the EU in developing European RIs	Janez Potočnik, European Commissioner for Research	
				RIs as tools for growth	Vlastimil Růžička, Czech Vice-Minister for Education, Youth and Sports	
				ICT based Infrasructures for a new scientific renaissance (recorded presentation)	Viviane Reding, European Commissioner for Information Society	
				Infrastructures for the Biomedical Sciences	Ferruccio Fazio, Italian State Undersecretary for Health	
			Presentation	Presentation of the ESFRI roadmap update	Carlo Rizzuto, ESFRI Chairman	
[12:30 - 14:00] Lunch-cocktail in the Exhibition Area - [12:30 - 13:15] Press Conference (Condé room)						
14:00 16:00	1st Plenary	Richelieu Room	Impact of RIs on Capacity Building	Introduction of the afternoon plenary session	John Wood, Professor at Imperial College, Member of ERAB	John Wood, Professor at Imperial College, Member of ERAB
				RIs as a generator of cross-cutting technologies	Dominique Vernay, Technical Director at Thalès	
				Role of RIs for education and training of top level students and future researchers	Karin Markides, Rector of the Chalmers University	
				Contribution of the RI's to a policy of sustainable development	Bernard Bigot, High-Commissionner for Atomic Energy	
				Combining virtual and real RIs: what evolution for e-infrastructures?	John Delaney, Professor at Washington University	
			The ESFRI process	The process of ESFRI	Beatrix Vierkorn-Rudolph, Deputy General-Director of BMBF, ESFRI Vice-Chairman	
				National roadmaps versus the ESFRI roadmap	Dany Vandromme, Head of RIs Unit at MESR, Director of RENATER	
[16:00 - 16:30] Coffe break						
16:30 18:00	1st Parallel Sessions	Colbert Room	RIs for Society: competitiveness & societal needs	Which are the technological markets linked with RIs?	Peter Fletcher, Head of Department at STFC	Catherine Bréchignac, CNRS Chairman
				RIs for the nanoworld	Helmut Dosch, Director of MPI Stuttgart	
				RIs and competitive clusters	Maurice Robin, Executive Director of Digiteo	
		Condé Room	Networked & e-RIs: an emerging landscape?	Increasing need in e-infrastructures	Leif Laaksonen, Collaboration Director at CSC, Chairman of e-IRG	Mario Campolargo, Director at DG INFSO-EC
				High Performance Computing in Europe	Achim Bachem, Director of FZ Juelich	
				Networking RIs: a crucial need for global earth observation	Riccardo Valentini, Professor at Tuschia University	
		Richelieu Room	RIs' challenges : governance and organisation	A new legal framework for pan-European RIs	Mila Bas-Sanchez, Legal Officer at DG RTD-EC	Norbert Kroo, Vice-President of the Hugarian Academy of Sciences
				The siting issue for RIs: the ESS Neutron Sources case	Paul Zinsli, Swiss Deputy-State Secretary for Research	
				Global governance: the case of ITER	Carlos Alejaldre, Deputy Director General of ITER Organisation	
[18:00 - 19:00] Break						
[19:00 - 22:30] Social event: Equestrian exhibition at the Equestrian Academy of Versailles + cocktail dinner						

Program at a glance [Day 2]

WEDNESDAY 10TH DECEMBER 2008

Schedule	Session	Room	Thema	Title	Speaker	Chair
[08:00 - 8:30] Welcome coffee						
8:30 10:00	2nd Parallel Sessions	Condé Room	RIs for Society: health and ageing as a deep societal concern	RIs for life sciences: scientific, technological and organisational goals	André Syrota, General Director of INSERM	Elzbieta H. Oleksy, Chair of the Department of Transatlantic and Media Studies, University of Lodz
				RIs for population ageing	Axel Boersch-Supan, Professor at Manheim University	
				Standardised access to facilities in the health domain	Iain Mattaj, Director General of EMBL	
		Colbert Room	Networked & e-RIs: data management and digital repositories	Institutional repositories and CRIS systems	Keith Jeffery, Director of Information Technology & International Strategy at STFC	Nadezda Witzanyova, Czech Ministry of Education, Youth and Sports
				The Worldwide LHC Computing GRID	Jos Engelen, Deputy-Director for Science at CERN	
				On-time and massive data monitoring and processing	Dominique Marbouty, Director of ECMWF	
		Richelieu Room	RIs' challenges: technological developments	Marine technologies for deep oceans exploration	Karin Lochte, Professor and Director of AWI	Denis Maugars Chairman of ONERA
				Optical technologies for RIs	Arnold Migus, General Director of CNRS	
				Technological RIs as an open tool for research and links with industry; examples	A representative from EIRMA	
[10:00 - 10:30] Coffe break						
10:30 12:00	3rd Parallel Sessions	Amphi Richelieu	RIs for Society: the great scientific questions that RI should be able to solve in:	Astronomy and astroparticles	Stavros Katsanevas, Scientific Deputy-Director of CNRS-IN2P3	Marja Makarow, Chairman and Executive Officer of ESF
				What RIs for the environment in 2020?	Adrian Stanica, Romanian Institute of Marine Geology and Geo-ecology	
				Materials science	Francesco Sette, Director of Research at ESRF	
		Salle Colbert	Networked & e-RIs: a vision on tomorrow RI networks	RIs and knowledge management	Juan José Moreno-Navarro, General Director at Ministry of Science & Innovation of Spain	Dany Vandromme, Head of RIs Unit at MESR, Director of RENATER
				Security : worldwide networks for seismicity risk	George Marmureanu, general Director of the Natonal Institute for Earth Physics of Bucharest	
				What worldwide GEANT-like RI for tomorrow? A vision for opening European e-infrastructures to the world	Vassilis Maglaris, Member of GEANT, Professor at the Technical University of Athens	
		Salle Condé	RIs' challenges: lifecycle considerations	What management for RIs during their whole lifetime?	Roberto Gilmozzi, Head of the Telescope Division, ESO	Yves Caristan, CEA Director of Physical Sciences and Director of CEA-Saclay
				Re-orienting research with large infrastructures	Jürgen Mlynek, Chairman of the Helmoltz Association	
				Public consultation for large RIs	Lars Börjesson, General Secretary of RIs at Swedish Research Council	
[12:00 - 14:00] Cocktail in the Exhibition Area						
14:00 15:30	Parallel Session's Synthesis	Richelieu Room	RI for Society	Report on parallel sessions - [14:00 -14:50]	Campbell Warden, General Secretary of Canary Islands Observatory	Laure Reinhart, OSEO General Associate-Director for Innovation
			Networked&e-RIs		Marie-Christine Sawley, Responsible for LHC-CMS Outreach & Computing - ETH Zurich	
			RIs' challenges		Eva Dugstad, Executive Director of IFE	
			Findings from parallel sessions - [14:50 -15:30]		Achileas Mitsos, former EC General Director for Research / Ionel Andrei, Director General of National Authority for Scientific Research / Jean Moulin, Belgian Federal Science Policy, Member of the ESFRI Executive Board / Leif Laaksonen, Collaboration Director at CSC, Chairman of e-IRG / Thomas Barrett, Director European Investment Bank	
[15:30 - 16:00] Coffee break						
16:00 18:00	Last Plenary	Richelieu Room	Global RIs [16:00 -17:00]	Global astronomical projects	Catherine Cesarsky, President of the International Astronomical Union (IUA)	Beatrix Vierkorn -Rudolph, Deputy General-Director at BMBF, ESFRI Vice-Chairman
				Experience from the OECD Global Science Forum	Hermann-Friedrich Wagner, Chairman of Global Science Forum (OECD)	
				RIs and the international dimension	Wenlong Zhan, Vice-President of Chinese Academy of Sciences	
				RIs for a new crucial triangle: health, food and environment	Phil Mjwara, General Director of the South African Department of Science and Technology	
	Closing Round Table		Key messages for the future of Research Infrastructures - [17:00 -17:45]		Michal Kleiber, Member of the ERC Scientific Council / Ivan Wilhelm, Plenipotentiary of the Czech Ministry of Education, Youth and Sports / Mario Campolargo, Director at DG INFSO-EC / Philippe Busquin, Member of the European Parliament and STOA Chairman, member of the ITRE Commission	Robert-Jan Smits, Director at DG RTD-EC
	CLOSURE OF THE CONFERENCE - [17:45-18:00]				Pierre Lasbordes, French Parliament, Vice-Chairman of the Parliamentary Office for the Evaluation of Scientific and Technological Choices OPECST	
[19:30 - 22:30] Social event: Baroque Music Concert at the Theatre Montansier of Versailles + cocktail						

Carlo Rizzuto, ESFRI Chairman

- Presentation of the updated ESFRI list available from http://cordis.europa.eu/esfri/home.html
  - List makes reference to the CERN strategy list (verbatim)
  - However, HEP projects, not even the supported Preparatory Phase Projects appear on the list explicitly

The CERN Council has adopted a strategy for the field and follows up its implementation in regular European Strategy Sessions. An update is foreseen for 2011. The current strategy is:

- The Large Hadron Collider (LHC) at CERN, now starting, will be the energy frontier machine for the foreseeable future and it has the highest priority to fully exploit its physics potential. Depending on the nature of the discoveries made at the LHC, higher-statistics studies of these phenomena would naturally call for an increase in luminosity. This upgrade – referred to as Super-LHC – should increase the luminosity by a factor ten.
- It is vital to strengthen the advanced accelerator R&D programme in Europe, providing a strong technological basis for future projects in particle physics.
- It is fundamental to complement the results of the LHC with measurements at an electron-positron linear collider. Such a linear collider will provide a unique scientific opportunity at the precision and energy frontiers. This programme can be carried out by the International Linear Collider (ILC) or, if multi-TeV energies are needed, by a novel design called the Compact Linear Collider (CLIC) which has the potential to deliver such energies. For essentially every new physics scenario involving particles in the linear collider energy range, detailed and very promising research programmes have been formulated. The linear collider studies are in the R&D and these studies will, together with results from the LHC, guide the way towards realisation.
- Neutrino physics opens another exciting window to study physics beyond the standard model. Recent measurements of neutrino oscillations and masses, and the possibility of observing CP violation in this sector, point forward to the need of constructing more advanced neutrino facilities, and design studies are ongoing. Which route to take, depends on the result of accelerator R&D, and on results from experiments now starting.
- Several important experiments take place and are planned in the overlap region between Particle and Astroparticle Physics, or between Particle and Nuclear Physics. Examples of such experiments can be found in Europe's four world-class deep underground laboratories: Boulby (UK), Canfranc (Spain), Gran Sasso (Italy) and Modane (France). These facilities study neutrinos – including in some cases long baseline experiments with accelerator neutrinos - and search for dark matter and proton decays.
- New initiatives and plans are being developed in the field of flavour physics where the Super-B facility at the INFN National Laboratory of Frascati is a possibility being pursued.

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	PROJECTS	construction costs (M€)	Operations costs (M€/year)	first possible operations or upgrade	Description
Social Sciences and Humanities	CESSDA	30	3	2013	Facility to provide and facilitate access of researchers to high quality data for social sciences
	CLARIN	104	7.6	2014	Research infrastructure to make language resources and technology available and useful to scholars of all disciplines
	DARIAH	12	4	2013	Digital infrastructure to study source materials in cultural heritage institutions
	European Social Survey	54**	9**	2008	Upgrade of the European Social Survey, set up in 2001 to monitor longterm changes in social values
	SHARE	11.6	0.3	2008	Data infrastructure for empiric economic and social science analysis of ongoing changes due to population ageing
Environmental Sciences	AURORA BOREALIS	635	32.5	2014	Europeal polar research icebreaker
	COPAL (ex EUFAR)	50	3 (+6000€/hour)	2012	Long range aircraft for tropospheric research
	EISCAT_3D Upgrade	60-250	4-10	2015	Upgrade of the EISCAT facility for ionospheric and space weather research
	EMSO	160	32	2013	Multidisciplinary Seafloor Observatory
	EPOS	500	80	2018	Infrastructure for the study of tectonics and Earth surface dynamics
	EURO-ARGO (GLOBAL)	80	7.3	2011	Ocean observing buoy system
	IAGOS	15	0.5-1	2012	Climate change observation from commercial aircraft
	ICOS	128	14	2012	Integrated carbon observation system
	LIFEWATCH	370	71	2019	Infrastructure for research on the protection, management and sustainable use of biodiversity
	SIAEOS	50	9.5	2012	Upgrade of the Svalbard Integrated Arctic Earth Observing System
Energy	***ECCSEL***	81	6	2011	European Carbon Dioxide and Storage Laboratory infrastructure
	HiPER	800	under discussion	2020+	High power long pulse laser for fast ignition fusion
	IFMIF (GLOBAL)	1000	150-80	2020	International Fusion Materials Irradiation Facility
	JHR	500	24-33	2014	High flux reactor for fission reactors materials testing
Biological and Medical Sciences	BBMRI	170	15	2013	Bio-banking and biomolecular resources research infrastructure
	EATRIS	255	50	2013	European advanced translational research infrastructure in medicine
	ECRIN	50	5	2014	Pan-European infrastructure for clinical trials and biotherapy
	ELIXIR (GLOBAL)	470	100	2012	Upgrade of the European Life-science infrastructure for biological information
	EMBRC	100	60	2018	European marine biological resource centre
	EU-OPENSCREEN	40	40	2012	European Infrastructure of Open Screening Platforms for chemical biology
	EuroBioImaging	370	160	2012	Research infrastructure for imaging technologies in biological and biomedical sciences
	High Security BLS4 Laboratory	174	24	2018	Upgrade of the High Security Laboratories for the study of level 4 pathogens
	Infrafrontier	270	36	2010	European infrastructure for phenotyping and archiving of model mammalian genomes
	INSTRUCT	300	25	2012	Integrated Structural Biology Infrastructure
Materials and Analytical Facilities	***EMFL***	120	8***	2015	European Magnetic Field Laboratory
	ESRF Upgrade	238	83	2009-2014	Upgrade of the European Synchrotron Radiation Facility
	EuroFel (ex-IRUV-FEL)	1200-1600	120-160	2007-2020	Complementary Free Electron Lasers in the Infrared to soft X-ray range
	European Spallation Source	1300	110	2019-2020	European Spallation Source for neutron spectroscopy
	European XFEL	1043	84	2014	Hard X-ray Free Electron Laser in Hamburg
	ILL20/20 Upgrade	171	5***	2007-2017	Upgrade of the European Neutron Spectroscopy Facility
Physical Sciences and Engineering	***CTA***	150	10	2013	Cherenkov Telescope Array for Gamma-ray astronomy
	E-ELT	950	30	2018	European Extremely Large Telescope for optical astronomy
	ELI	400	50	2015	Extreme Light Intensity short pulse laser
	FAIR	1187	120	2016	Facility for Antiproton and Ion Research
	KM3NeT	200	5	2016	Kilometre Cube Neutrino Telescope
	PRINS	1400	300	2009-2015	Pan-European Research Infrastructure for Nano-structures
	SKA (GLOBAL)	1500	100-150	2016	Square Kilometre Array for radio-astronomy
	SPIRAL2	196	6.6	2014	Facility for the production and study of rare isotope radioactive beams
e-Infrastructures	PRACE (ex EU-HPC)	200-400*	50-100	2009-2010	Partnership for Advanced Computing in Europe

*estimated costs to renew the high-end infrastructure every 2-3 years
**for the integrated construction/operation process over 6 years.
***additional to current operations costs

construction "started", meaning funding and agreements almost in place
advanced preparation for construction but agreements and funding not yet in place
in bold italic new facilities added since the 2006 roadmap

Jürgen Mlynek

- Reorienting research with large infrastructures
  - Emphasizing three examples (of DESY)
    - Improvement
      - DORIS → PETRA III
    - Adaption
      - Physics at the Terascale
    - Innovation
      - XFEL

Governance Session

- M Bas-Sanchez (EC)
  - Iterating the governance efforts of the EC for a framework for RI; approval imminent were it not for the VAT question.
- P Zinsli (PSI)
  - ESS siting approach
    - Currently 3 sites are being evaluated
- C Alejaldre (ITER)
  - Outline the governance structure
    - strong global management
      - moderated by parallel structure of national representatives
    - in-kind contributions fixed at the beginning of the project

Other presentations

- Helmut Dosch
  - Infrastructures for the nano science
- Jos Engelen
  - Worldwide LHC Computing Grid
    - other fields of science get interested in the technology at large scale

Own impressions

- HEP often used as a showcase for successful collaborative efforts
  - LHC startup pictures and slides appeared everywhere
  - Other fields aspire to reach the same level
- HEP does not paint this picture in the ESFRI roadmap
  - totaled at 15 bn €, i.e. w/o sLHC and ILC
- HEP awareness is there
  - CERN strategy acknowledged; however need governance model for ILC