



CRISP

EC project proposal for the cluster of physics ESFRI projects

Bob Jones

Bob.Jones@cern.ch

ESFRI related programme

The ESFRI roadmap

Identifies 44 new (or major upgrade of) Research Infrastructures of pan-European interest

The EC funds 3 additional projects from the CERN Council strategic roadmap for particle physics*

Social Sc. & Hum. (5)	Life Sciences (10)		Environmental Sciences (10)		Material and Analytical Facilities (6)	Physics and Astronomy (11)		Energy (4)	e-Infra-structures (1)
SHARE	BBMRI	ELIXIR	ICOS	EURO-ARGO	EUROFEL	ELI	TIARA *	ECCSEL	PRACE
European Social Survey	ECRIN	INFRA FRONTIER	LIFEWATCH	IAGOS	EMFL	PRINS	CTA	JHR	
CESSDA	INSTRUCT	EATRIS	EMSO	EPOS	European XFEL	SPIRAL2	SKA	IFMIF	
CLARIN	EU-OPENSREEN	EMBRC	SIAEOS	EISCAT_3D	ESRF Upgrade	E-ELT	FAIR	HIPER	
DARIAH	Euro Biolmaging	ERINHA BSL4 Lab	COPAL	AURORA BOREALIS	NEUTRON ESS	KM3NeT	ILC-HIGRADE *		
					ILL20/20 Upgrade	SLHC-PP *			

 Distributed research infrastructures

 Single sited research infrastructures

The term "distributed RI", as used by ESFRI, refers to a facility with one unique name and legal status, one management structure, one strategy and development plan, and having one annual report and fiscal address although its research facilities are located in different sites and different countries

Status of Implementation



Implementation of ESFRI roadmap

Social Sc. & Hum. (5)	Life Sciences (10)		Environmental Sciences (10)		Material and Analytical Facilities (6)	Physics and Astronomy (11)		Energy (4)	e-Infra-structures (1)
SHARE ☹☹	BBMRI ☹☹	ELIXIR ☹☹	ICOS ☹☹	EURO-ARGO ☹☹	EUROFEL ☹	ELI ☹☹	TIARA ○	ECCSEL ○	PRACE ☹☹☹
European Social Survey ☹☹	ECRIN ☹	INFRA FRONTIERE ☹	LIFEWATCH ☹☹	IAGOS ☹☹	EMFL ○	PRINS ☹	CTA ○	JHEP ☹☹☹	
CESSD ☹☹	INSTRUC ☹	EATRIS ☹	EMSO ☹	EPOS ○	European XFEL ☹☹☹	SPIRAL ☹☹☹	SKA ☹☹	IFMIF ☹☹	
CLARIN ☹☹	EU-OPEN SCREEN ○	EMBRC ○	SIAEOS ○	EISCAT_3D ○	ESRF Upg ☹☹☹	E-ELT ☹☹	FAIR ☹☹	HiPER ☹	
DARIAH ☹	Euro Bioimaging ○	ERINHA BSL4 Lab ○	COPAL ☹	AURORA BOREAL ☹	NEUTRON ESS ☹☹	KM3NeT ☹	ILC-HIGRADE ☹		
					ILL20/20 Upg ☹☹☹	SLHC ☹☹			

☹☹☹	Projects already under construction
☹☹	Projects that have made sufficient progress and with clear commitments from some MS
☹	Projects in progress
○	New projects from the Roadmap 2008


FP7-INFRASTRUCTURES-2011-1

European Commission, DG Research, Capacities, Unit B.3



Implementation Phase

- **Objectives**
 - To ensure a larger harmonisation and interoperability between ESFRI facilities, to exploit synergies, to optimise technological implementation.
- **Topics**
 - INFRA-2011-2.3.1 to INFRA-2011-2.3.4, covering "Social Sciences and Humanities", "Life sciences", "Environmental Sciences" and "Physics and Analytical Facilities".
- **Partnership**
 - Representatives of the ESFRI infrastructures that have sufficiently progressed in their preparatory phase and that have ensured clear commitments for their construction
- **Funding: EC contribution up to 15 M€**



FP7-INFRASTRUCTURES-2011-1



Indicative timetable

- **Publication of call** **30 July 2010**
- **Deadline for submission** **25 November 2010**
17:00 (Brussels time)
- **Evaluation of proposals** **Dec. 2010 – Feb. 2011**
- **Sending of evaluation summary reports (ESR)** **March 2011**
- **Invitation letter to launch negotiation** **May 2011**
- **First grant agreements** **From autumn 2011**



Work Packages

- Project Management

XFEL/DESY and ESRF/ILL have bid to act as coordinators

=<7% of budget

- Dissemination

mandatory for EC projects

=<5% of budget



Accelerators, beams delivery and safety

- Instruments and experiments



Detectors and Data Acquisition



IT and Data Management





Industry related activities (~5%)

Total EC requested contributed: ~10M€

Legend:  CERN involvement in activity



Accelerators, beams delivery and safety

- Ion Sources
- Linac bunch shape monitor realization
-  Access to SRF test infrastructures
-  Fast ramping superconducting magnets
 - Hybrid Gun in X Band
 - Hybrid acceleration schemes
 - RF Solid State Amplifier using Cavity Combiners



Instruments and Experiments

- Time resolved studies
- Tools for radioactive beam environment
- Common interface bio exp
- Enhancement of neutron beams



Detectors and Data Acquisition

- High-throughput detector data streaming



CO₂ cooling

- Advanced electronics & sw for neutron and gamma-ray detectors
- Large area thermal neutron detectors using ¹⁰B films as an alternative to ³He
- Screening facility for Si Photon detectors
- Detector physics simulation



IT and Data Management

- Common user identity system (AAI)
- High-speed data recording



Metadata management and mining



Distributed data infrastructure



Data continuum



Industry Related Activities



Structuring procurement and tech transfer

- Training, conformity, and joint good practices for innovation and engagement with industry



Combined "requests" (10:00 23rd Sept)

Will be heavily reduced to fit budget

Requested funds in FTE=100k€	ESFRI projects driver	ELI	ESRFUP	ESS	FAIR	ILL2020	SKA	SLHC	SPIRAL-2	XFEL/EU	EuroFEL	ILC-Higrad	KM3NET	TIARA	total
WP1 Accelerators															
1.1 Ion sources	SPIRAL-2				1.5				3						4.5
1.2 Non-intercepting bunch shape m	FAIR				1.5				2						3.5
1.3 Access to SRF test infrastructure	XFEL			2.1				4.4		8.7		0.87			16.07
1.4 SC-cable and dipole magnet for	FAIR														0
1.5 Hybrid gun in X-band	EUROFEL		2												2
1.6 Hybrid acceleration schemes	ELI		2									1			3
1.7 RF Solid state amplifiers	ESRFUP			2											2
other costs (manag, network,travel,consu)		0.55	0.13	0.13	10.72			2.75	3.9	11.68					29.86
total		4.55	2.13	2.23	13.72	0	0	7.15	8.9	20.38	1	0.87			60.93
WP2 INSTRUMENTS & EXPERIMENTS															
2.1 Time resolved studies	XFEL		3							3					6
2.2 Tools for radioactive beam env.	FAIR				4				4						8
2.3 Common interface bio exp	ILL		3			3					3				9
2.4 Enhancement of neutron beams	ILL			5		9									14
WP management(networking, travel, consu)															2
total			6	5	4	12			4	3	3				39
WP3 Detectors and Data Acquisition															
3.1 High-throughput det data stream	ESRF		2.5				1.5			2.5	0.5				7
3.2 CO2 cooling	SLHC				2			3			1				6
3.3 Innovative solutions ...	SPIRAL-2		2		2				3						7
3.4 Large area neutron detectors	ILL			2		3									5
3.5 Screening facility Si detectors	FAIR				2										2
3.6 Detector physics simulation	XFEL									1					1
WP management			0.75		0.2	0.3		0.5	0.5		0.5				2.75
total			2	3.25	2	6.2	3.3	1.5	3.5	3.5	3.5	2	0	0	30.75
WP4 IT/DM															
sub-workpackage	ILL/SLHC driver														
common user identity system (AAI)	EUROFEL		0.5	1	1.5	0.5		0		0.5	2				6
high-speed data recording	XFEL		0.5	1	0	0		0		3	1				5.5
Metadata management and	ESRFUP		3	0	0	0.5		0.5		0	0				4
Distributed data infrastructure	SLHC		0	0	1.5	0		3		0.5	1				6
data continuum	ILL2020		0	0	0	3		0.5		0	0				3.5
WP management/ELI															1.5
total			4	2	3	4		4		4	4				26.5
WP5 Industry related activities															
5.1 Procurement and tech transfer	FAIR/FAIR/SPIRAL2/SLHC/XFEL				3			1	1	2					7
5.2 Training, conformity, and good ..	ESRF/ILL		1.5			1.5									3
Networking travel			1.3		0.5	1.3		0.2	0.1	0.2					3.6
total			2.8		3.5	2.8		1.2	1.1	2.2					13.6
GRAND TOTAL		6.55	18.18	11.23	30.42	22.1	1.5	15.85	17.5	33.08	10	0.87	0	0	170.78



Next Steps

- Proposal Committee meeting to be held in Brussels on 24th September
 - One representative per ESFRI project
 - Fit requests into target budget
 - Need to focus on priorities and reduce budget from ~18M€ to ~9M€
 - Assign work-package coordinators
 - Agree on project coordinator
 - XFEL/DESY and ESRF/ILL have bid to act as coordinators

