

SPIRIT Integrated Infrastructure Initiative

March 1, 2009 to February 28, 2013

Coordinated by Forschungszentrum Dresden-Rossendorf
Dresden, Germany

Wolfhard Möller
March 2009

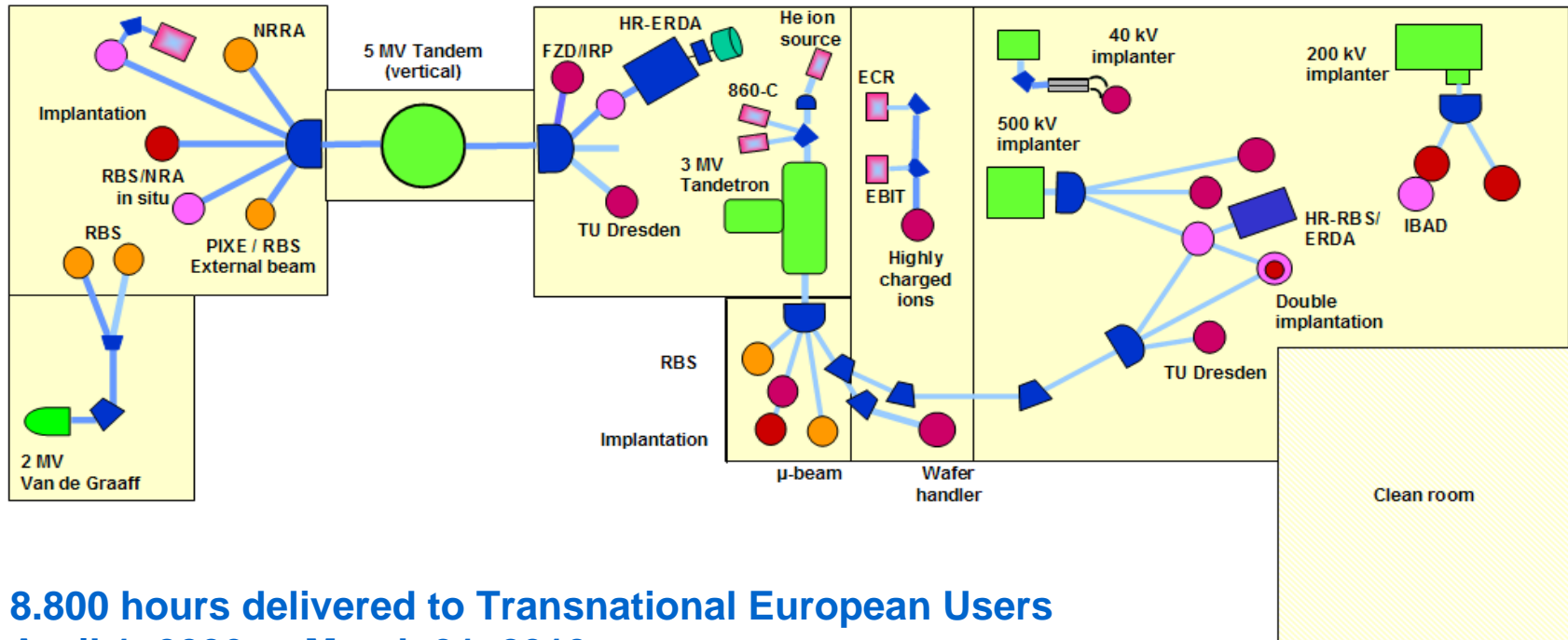


SUPPORT OF PUBLIC AND INDUSTRIAL RESEARCH
USING ION BEAM TECHNOLOGY



The FP6 Starting Point – Single-Lab TARI at Dresden-Rossendorf

AIM – Application of Ion Beams to Materials Research



8.800 hours delivered to Transnational European Users
April 1, 2006 to March 31, 2010
EC contribution 2.5 Million Euro



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SPiRiT Project Summary I

- **Integrated Infrastructure Initiative** integrating **11 leading ion beam facilities** from 6 Member States and 2 Associated States.
- 7 partners providing **TransNational Access** supply ions **in an energy range from ~10 keV to ~100 MeV** for modification and analysis of solid surfaces, interfaces, thin films and nanostructured systems.
- The techniques cover **materials, biomedical and environmental** research and technology, and are **complementary to the existing synchrotron and neutron radiation networks**.
- The partners have highly **complementary equipment** and areas of specialization.
- SPiRiT will **increase user access and the quality of research** by sharing best practice, balancing supply and demand, harmonizing procedures and extending the services into **new emerging fields** and to **new users especially from the NMS and industry**.



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SPiRiT Project Summary II

- An independent **European User Selection Panel** will examine proposals under a common SPiRiT procedure.
- Networking activities include the development of **common standards for quality assessment**; **training and consultancy** for User researchers and **foresight studies**.
- Joint Research Activities will promote **emerging fields** such as targeted single ion implantation for irradiation of living cells; ion-beam based analysis with ultrahigh depth resolution; ion-based 3-D tomography, and chemical and molecular imaging.
- Joint efforts are necessary to improve the systems for **detection of ion-induced secondary radiation** and the associated software, and to develop means to **reduce sample deterioration** by the analyzing ion beam.



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SPiRiT Partners

Forschungszentrum Dresden-Rossendorf (FZD)

CNRS – CENBG Bordeaux (CNRS)

Katholieke Universiteit Leuven + imec (KUL)

Jozef Stefan Institut Ljubljana (JSI)

Universität der Bundeswehr München + TUM (UBW)

CEA – JANNUS Saclay and CIMAP Caen (CEA)

University of Surrey (SUR)

Instituto Tecnológico e Nuclear Lisboa (ITN)

University de Pierre et Marie Curie (UPMC)

Ruder Boskovic Institute Zagreb (RBI)

Swiss Federal Institute of Technology (ETHZ)



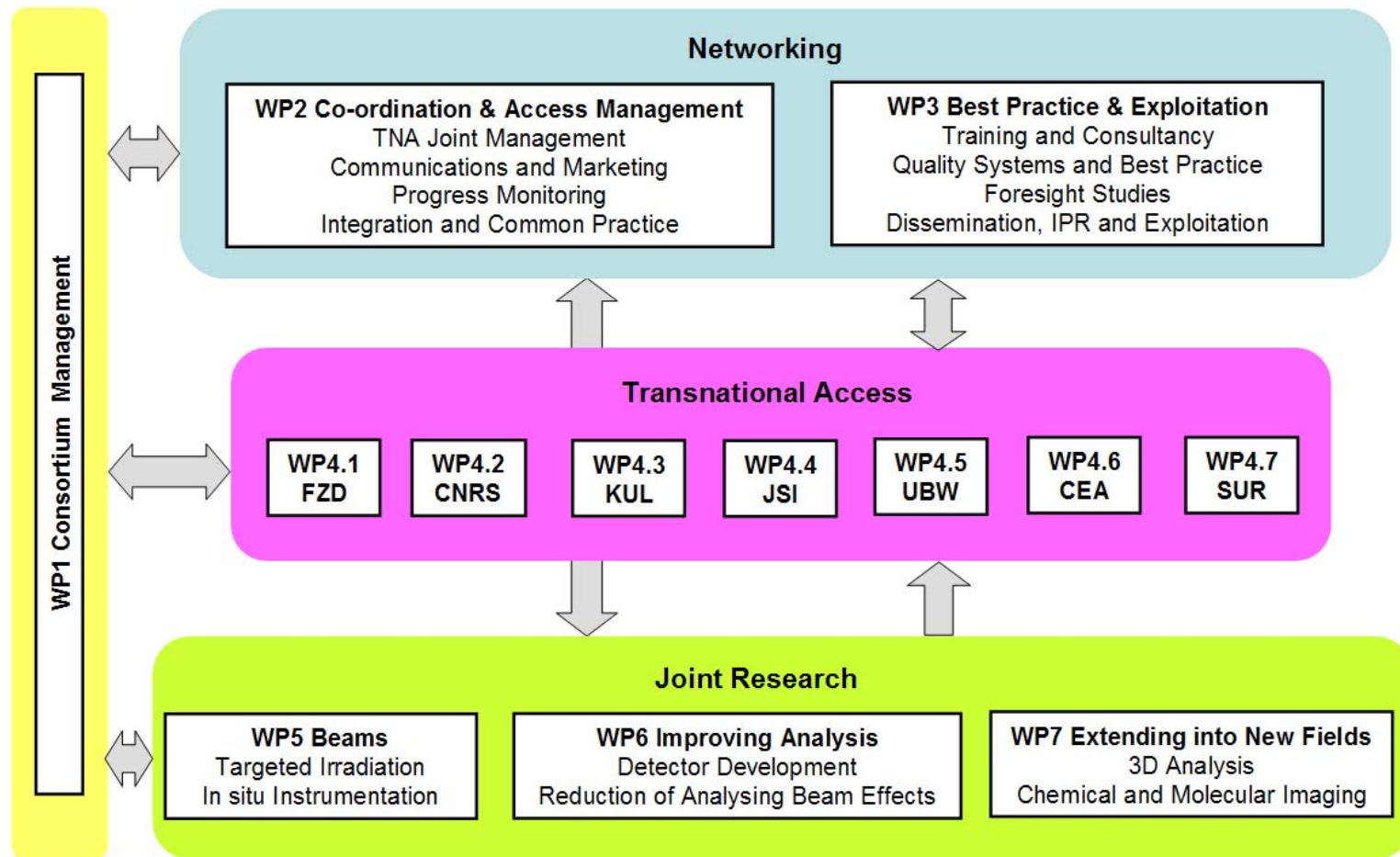
Transnational Access
Laboratories



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SPIRIT Work Plan Structure



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SPIRIT Transnational Access

SPIRIT TNA Areas of Activities		Materials													Biomedical			Environment / Cultural Heritage							
		Ion Beam Analysis						Irradiation							Ion Beam Analysis		Irra- diation	Ion Beam Analysis							
		RBS, ERD, NRA incl.Channeling	High Depth Resolution	Hydrogen Profiling	3D A analysis, Tomography	External beam	Nanobeam	High-Resolution PIXE	Real-time in-situ IBA	Implantation	Plasma Immersion Implantation	Very high energy	Radioactive Implantation	Ion Beam Lithography	Focused Ion Beam Irradiation	Multi-beam Irradiation.	In-situ structural analysis	IBA Tomography	External beam	nBeam Mapping	Radioactive Implantation	Targeted Irradiation	IBA Tomography	External beam	Nanobeam
WP4.1	FZD																								
WP4.2	CNRS																								
WP4.3	KUL																								
WP4.4	JSI																								
WP4.5	UBW																								
WP4.6	CEA																								
WP4.7	SUR																								



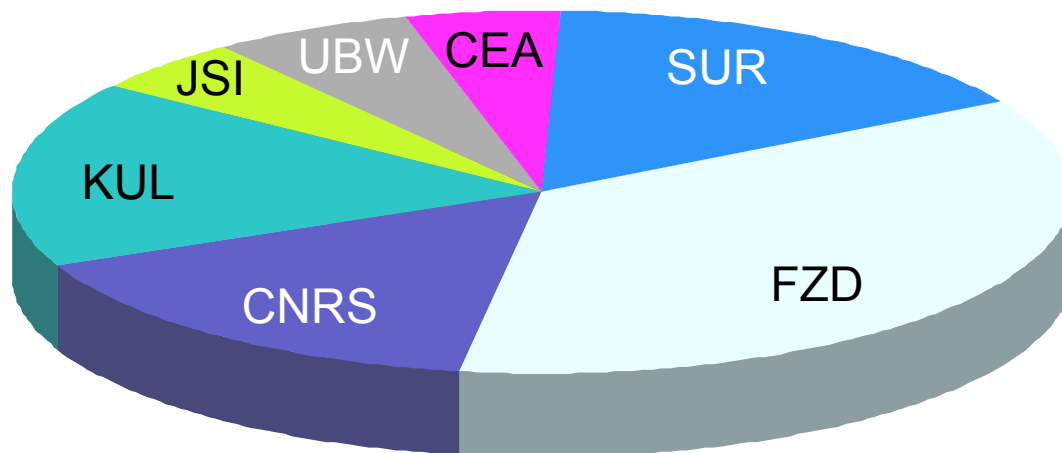
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SPIRIT Transnational Access

**Total user hours
13430**

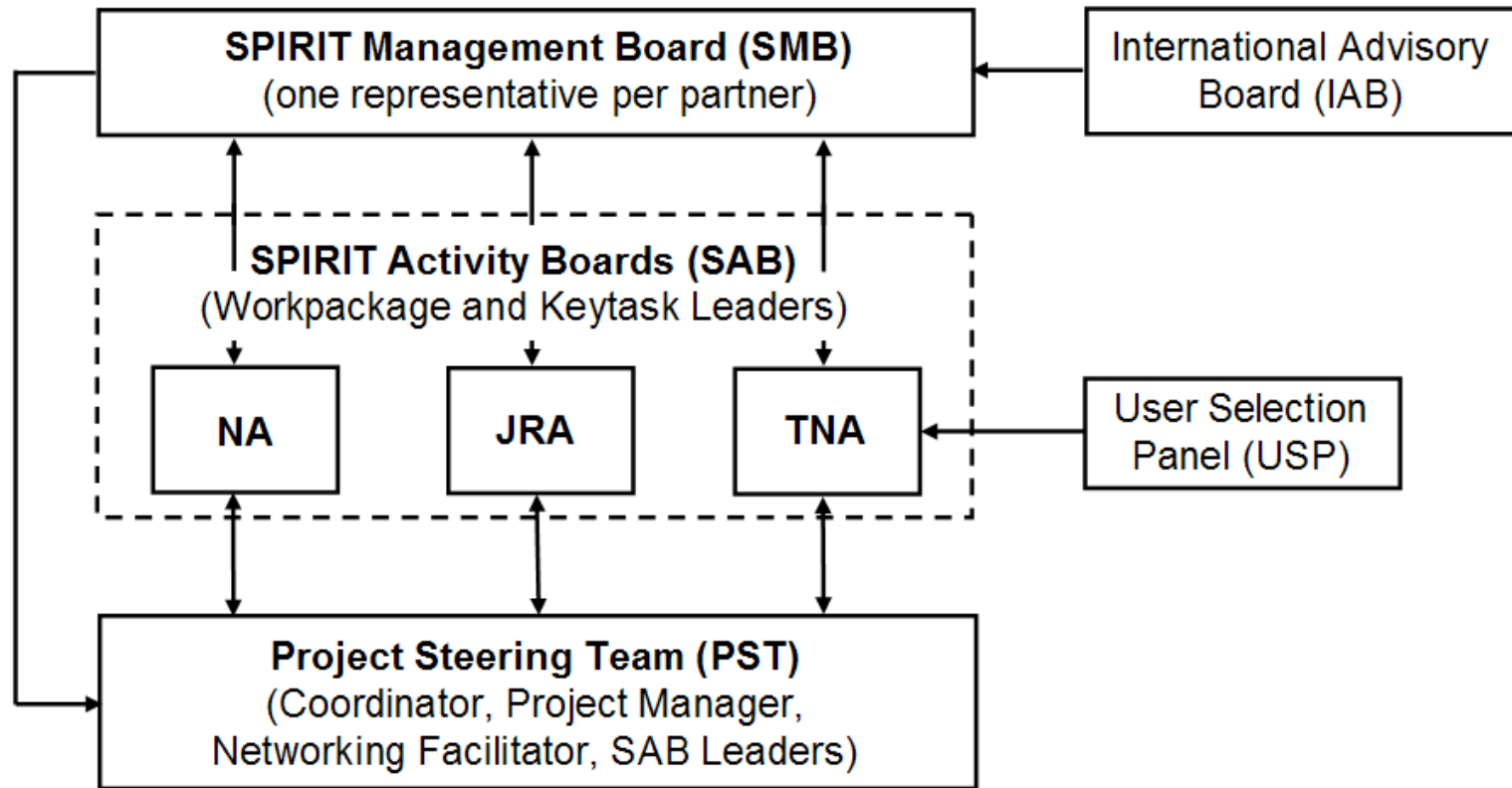
SPIRIT TNA Breakdown		Min. access offered (hours)				Total	Hands-on
		Year 1	Year 2	Year 3	Year 4		
WP4.1	FZD	0	1600	1600	1600	4800	70%
WP4.2	CNRS	350	600	600	600	2150	100%
WP4.3	KUL	560	560	560	560	2240	70%
WP4.4	JSI	80	160	160	240	640	40%
WP4.5	UBW	120	200	240	240	800	60%
WP4.6	CEA	100	160	160	220	640	100%
WP4.7	SUR	400	520	600	640	2160	40%
Total		1610	3800	3920	4100	13430	



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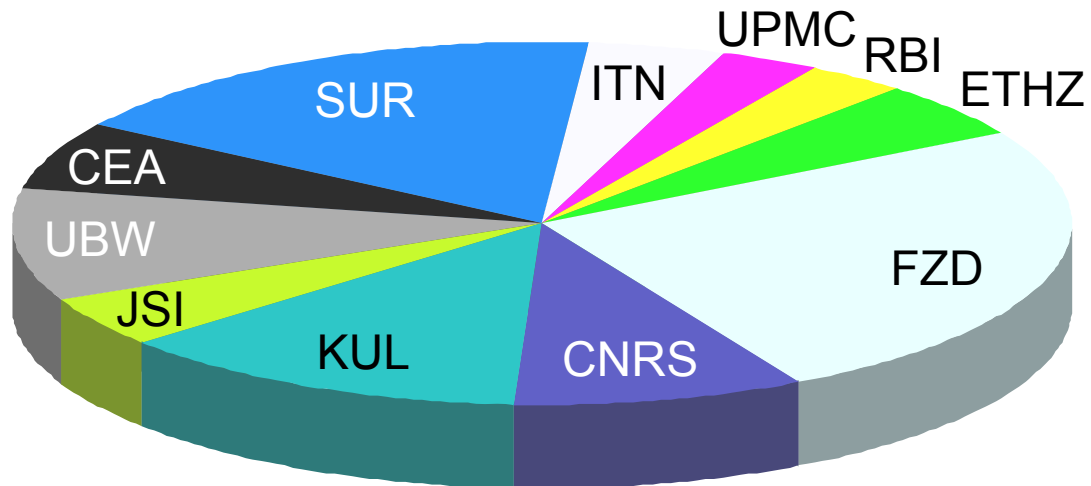
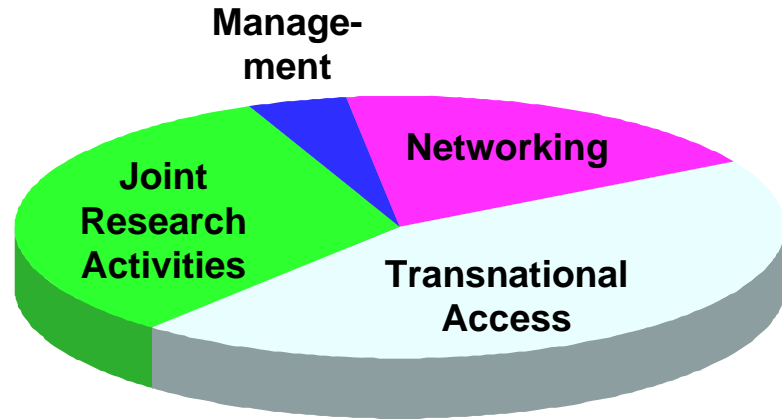


SPiRiT Management Structure



SPIRIT Budget

Total EC contribution
6.991 M€



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