

Preparation of FP7 Integration Activity Bid (2008)

Superconducting RF Acceleration Systems (SRF-AS) 2nd Meeting, LAL-Orsay, 14 May 2007

Preparatory Group:

Olivier Brunner (CERN), Mariusz Grecki (Polish Universities),
Susanna Guidicci (INFN), Peter MacIntosh (SFC), Trevor
Linnecar (CERN), Olivier Napoly (CEA), Carlo Pagani (INFN),
Vittorio Palladino (INFN), Dieter Proch (DESY), François
Richard (IN2P3), Thomas Schilcher (PSI), Alessandro Variola
(IN2P3), Rebecca Seviour (SFC)
+ J. Knobloch (BESSY), P. Michelato (INFN), J. Teichert (FZR)

Advisory Board :

Terry Garvey (ex. IN2P3, PSI)

Tentative Milestones (backward in time) from Roy

EC IA Call

Closing : March 2008

Opening : January 2008

Beginning of Write Up : Fall 2007

Decision on number of I3 : Summer 2007

Selection + Priority of R&D Items : Spring 2007

**SCRF-AS Group : First Meeting, 19 December 2006
Second Meeting, 14 May 2007**

CERN Meeting, 1st February 2007

Participants: Olivier Brunner, Trevor Linnecar, Olivier Napoly, Wolfgang Weingarten

Goal: find an agreement for the insertion of the “**General Purpose Infrastructure at CERN for R&D and Test of Superconducting Radio-Frequency Cavities and Cryomodules**”

Conclusions (excerpts):

- 1) the General Purpose Infrastructure (GPI) at CERN is fully supported and will be **beneficial to the SCRF community in Europe**.
- 2) the existing document describes only investments and operation costs at CERN. **To constitute a Joint Research Activity, it must be completed by the description of EU funded investments and operations at other associated institutes in Europe.**
- 4) the JRA will be organized into “**geographical**” **Work Packages** corresponding to facility sites; for instance: WP1 “GPI at CERN”, WP2 “SUPRATECH at Orsay-Saclay”, WP3 ..., etc...
- 5) the contribution of an associated institute to the JRA can occur in the 2 following models: i. the vertical model where the institute contributes in kind to an equipment destined to the CERN infrastructure ii. the horizontal model where the institute builds or operates an equipment on its site.
- 6) the overall equipment investments should be **coherent and avoid duplication**, with the CERN facility being central.
- 7) at each facility, the **recurrent operation base load (electricity, maintenance, etc...)** shall be **covered by the host institute** (for instance for the CERN facility, about 3.1 M€ over 4 years).
- 8) the **project related operation costs are not included in the JRA**. They shall be covered by the participating institutes, or by other JRAs.
- 9) there could be a parallel **TNA organization** to claim the project specific costs to the EC.
- 10) Wolfgang Weingarten is the nominee-coordinator of this JRA.

CERN Meeting, 1st February 2007

Additional Comments:

- Wolfgang Weingarten is ready to start coordinating the JRA and meet with concerned people.
- “Class 3” Equipment included in the 8.2 MCHF (~6.4 M€) total investment cost, cover :
 - 2K cryogenics installation for cryomodule test (<15m)
 - 1.3 GHz low RF power to run vertical tests
 - EP apparatus for single cell cavities
 - A SINGLE high power (few MW) pulsed klystron for an RF frequency at choice !!!

DESY Meetings, 20th February 2007

1st Meeting on SRF-AS IA organisation

Participants: Nicoleta Baboi, Eckhard Elsen, Lutz Lilje, Rolf Lange, Wolf-Dietrich Mueller, Olivier Napoly, Dieter Proch, Stefan Simrock, Waldemar Singer, ...

Goal: check 1) the overall agreement on the JRA and NA organisation of the SRF-AS proto-“Integrated Activity”, and 2) the adequate integration of DESY proposed contributions.

Conclusions are in preparation (the following is preliminary) :

- global agreement is found on the JRA organisation
- FLASH will be a central facility for SCRF accelerator studies
- DESY will consider joining JRA5 “RF Test Infrastructure” (CMTB, Hall 3)
- distribution of LLRF activities over several WP and Institutes makes sense, with an integrated LLRF Networking Activity
- DESY proposed Work Packages may still evolve.
- plan of the FEL community to bid for FP7-IA is still unknown: it might house several Work Packages

2nd Meeting on CNI-PP coordination

Participants: Eckhard Elsen, Lutz Lilje, Olivier Napoly, Dieter Proch, François Richard, Nick Walker

Goal: coordinate the technical activities of ILC CNI-PP bid with SRF-AS IA

Conclusions are in preparation

- coordination is mandatory and will be beneficial to both activities over the 2008-2012 period
- the JRA5 “RF Test Infrastructure” is a key element in the programme

Daresbury Meeting, 28th February 2007

Participants: Amos Dexter, Philippe Goudket, Peter McIntosh, Roger Jones, Alexander Kalinin, Olivier Napoly, Shrikant Pattalwar, Rebecca Seviour.

Goal: check 1) the overall agreement on the JRA and NA organisation of the SRF-AS proto-“Integrated Activity”, and 2) the adequate integration of UK proposed contributions.

Conclusions (excerpts):

- 1) at the present stage, two UK institutes are concerned by the preparation of the FP7-IA bid, namely the **AsTec Daresbury Laboratory (DL)** and the **Cockcroft Institute (CI)**.
- 2) the proposed **JRA organisation allows to integrate the currently identified UK contributions** on 1) ILC in a Work Package “Crab cavities”, and 2) ERL in the Work Package “1.3 GHz CW Cryomodule” studies, both within the JRA2 “Cavity Prototypes”.
- 4) the participation of DL and CI to the JRA5 “**RF Test Infrastructures**” through a **Daresbury based Work Package will have to be confirmed**.
- 5) CI will define its participation to the Work Package “EP and surface analysis” in JRA1 “High Gradient Cavities” to include **fundamental surface investigation activities**.
- 6) CI will define its participation in the DESY WP8 “HOM beam monitors” included on the Work Package “FLASH at DESY” of JRA4 “Accelerator, Beam and Cryogenic Studies”.
- 7) neither DL nor CI is considering proposing a **Trans National Access** activity.
- 8) the **distribution of the LLRF technical activities over several Work Packages is practical** and based on reason. The necessary multi-laboratory scientific exchange on the field of LLRF will be included as a Networking Activity, with UK participation.
- 9) a multi-laboratory **Networking Activity upon “RF Cavity Design”** should be supported, with UK participation.

France Meeting, 21st March 2007

Participants: Sébastien Bousson, Stéphane Chel, Mohammed Fouaidy, Alain Girard, Olivier Le Dortz, Olivier Napoly, François Richard, Alessandro Variola, Bernard Visentin,

Goal: check 1) the overall agreement on the JRA and NA organisation of the SRF-AS proto-“Integrated Activity”, and 2) the adequate integration of France proposed contributions.

Conclusions:

- 1) global agreement is found on the JRA organisation
 - 2) Alain Girard for CEA-Grenoble will re-examine their Lol concerning di-phasic He distribution in slope.
 - 3) Mohammed Fouaidy for IPN-Orsay and Alessandro Variola for LAL-Orsay will examine their participation to JRA3 “Thin Films” .
 - 4) **SupraTech trans-laboratory (IPNO, LAL, DAPNIA) organisation** representatives confirm their interest in joining JRA5 “RF Test Infrastructures”. The SupraTech Steering committee, chaired by Daniel Gardes (IPNO) will meet and decide on the participation. An editorial board will be formed to write down a short proposal including the list of equipments and costs.
 - 5) Wolfgang Weingarten will visit the 3 Ile-de France laboratories on 19-20 April.
- 5) The LPNHE Paris-Jussieu wish to join the Networking Activity on LLRF

Poland Meeting, 28-29 March 2007

Participants: 22 participants (TU Lodz, Warwaw UT, Soltan Institute Swierk , Niewodniczański Institute Krakow)

and 8 presentations (see <http://perg.ise.pw.edu.pl/fp7/>)

Goal: check 1) the overall agreement on the JRA and NA organisation of the SRF-AS proto-“Integrated Activity”, and 2) the adequate integration of Poland proposed contributions.

Conclusions are in preparation (excerpts) :

- global agreement is found on the JRA organisation
- a version of the LRF Lol is in preparation by the WUT-TUL and the DESY team describing activities and developments at FLASH (JRA4).
The participation of Niewodniczanski Inst. Krakow is considered.
- Soltan Institute wishes to participate strongly in JRA3 “Thin Films”
- For complete minutes, see <http://perg.ise.pw.edu.pl/fp7/>

Industrial Participation

- F. Richard and W. Weingarten pushed for an industrial participation.
- W. Weingarten and O. Napoly will contact various companies (ACCEL, THALES, ZANON, SDMS ...) to organize a meeting (?). Other volunteers are welcomed
- Proposal from Rebecca Seviour : contact through XFEL Industrial Forum EIFast <http://www.eifast.eu/>
- ESGARD Comment:
The difficulty to have industries as full partners was recalled, because of the critical issues of intellectual property and the impossibility for an industrial participant to bid for an internal tender made by the project collaboration.
⇒ proposal : distribute the CARE Consortium Agreement to check these points with Co's.

**Proposal for a JRA Structure
(3nd Iteration, almost agreed)**

Superconducting RF Acceleration Systems (SRFAS)

JRA1 : High Gradient Cavities

JRA2 : Cavity Prototypes

JRA3 : Thin Films

JRA4 : Accelerator and Beam Studies

JRA5 : RF Test Infrastructures

Cost Table available (see zip file)

Proposal for a NA Structure
(3rd Iteration, not agreed yet)

Superconducting RF Acceleration Systems (SRFAS)

One or Two Networking Activities, including:

- **Scientific Orientation and Planning**
- **Dissemination, publications**
- **Organisation of meetings**
- **LLRF Activities**
- **RF Cavity Design**
- **RF Test Programmes**

Next Steps

- **Local Meetings :**
 - June : Meeting with Italy Representatives
 - June: Meeting with Germany Representatives
- **Plenary Meeting: 14 May, 2nd meeting of the SRF-AS Working Group**
 - To finalize JRA and NA organisation,
 - To review TNA status,
 - To identify Activity leaders.
- **Mid-May 07 :** formulate Letters of Intent for the JRA and NA
 - Description of the work
 - Participating institutes
 - Rough costs (total < 45 M€, including 15 M€ from EC)
 - Work Package leaders
 - Priorities agreed among the SRF-AS Group
- **Then :** Coalesce in the ESGARD Agenda
 - Spring 07 : Selection of R&D items and definition of the priorities
 - Summer 07 : Decision upon the number of IA
 - Fall 07 : Beginning of the proposal write up.