
EuCARD SRF (WP10) Annual Review

4-5 May 2011,

Institut de Physique Nucléaire d'Orsay

WP10.1: Coordination and Communication

O. Napoly

Objectives of WP10-SRF Annual Review

- **15 European institutes are supporting and advancing the SC-RF technology through EuCARD WP10-SRF.**
- **Your participation (42 participants) shows that SC-RF Accelerator Technology attracts scientists from various backgrounds, and attracts young scientists, including PhD students.**
- **Within one year, new projects have appeared, or matured:**
 - **LHeC, if the Linac-Ring collider is confirmed at CERN**
 - **ESS Scandinavia**
 - **KoRIA, a RIB facility in Korea (2 SC Linacs, ~500 cavities)**
 - **ADS @ IMC Lanzhou, supported by the China Academy of Sciences**

Pushing Accelerator Barriers

- High Gradient barrier (ILC, SPL, ESS, etc...) → Task 10.2, 10.4
- High Q0 barrier (efficiency, duty cycle) → Task 10.4
- High RF Power barrier (HPPAs) → Task 10.2, 10.8
- High Stability barrier → Task 10.5
- High Reliability and Availability barrier (ILC, ADS) → Task 10.6
- Low Beta barrier (“RIA” $\beta=0.04$) → Task 10.4
- Low Cost barrier → Task 10.8
- New Applications barrier:
 - Crab cavities (no simple deflecting cavities) → Task 10.3
 - SC-RF Gun (eventually for polarized electrons) → Task 10.7
 - Energy Recovery Linac → Task 10.5, 10.7

The only task which does push any barrier is Task 10.1 !

Task Organisation

WP 10 Organisation, version 22.06.10

Task	Subtask	task / subtask leader	leading laboratory	participating laboratories	Task description
10,1		O. Napoly, O. Brunner	CEA	CEA, CERN	SRF Coordination and Communication
10,2		S. Chel	CEA	CEA, CERN, CNRS,	SPL Cavities
	10.2.1	G. Orly	IPN-Orsay	CNRS	Design and fabrication of $\beta = 0.65$, 704 MHz elliptical cavity.
	10.2.2	S. Chel	CEA	CEA	Design and fabrication of $\beta = 1$, 704 MHz elliptical cavity.
	10.2.3	V. Parma	CERN	CERN, CEA, CNRS	Study of interfaces between the cavity and the cryomodule.
10,3		P. McIntosh	STFC	STFC/Daresbury, UNIMAN, ULANC, CERN	Crab cavities
	10.3.1	F Zimmerman	CERN	CERN, ULANC	Design, build and test a single LHC crab cavity.
	10.3.2	R.M. Jones	UNIMAN	UNIMAN	Design, build and test a single CLIC crab cavity.
	10.3.3	A Dexter	ULANC	ULANC	Design, build and test a LLRF and synchronization systems.
10,4		S. Calatroni	CERN	CI, CEA, CERN, CNRS/IPNO, DESY, INFN-LNL, IPJ Swierk	Thin Films
	10.4.1	S. Calatroni	CERN	INFN-LNL, CERN	Improve the Nb sputtering technology for low beta cavities.
	10.4.2	J. Sekutowicz	DESY	DESY, IPJ Swierk	Perform arc sputtering of photo cathodes (Pb).
	10.4.3	R. Seviour	CI	CI, CEA, CERN, CNRS/IPNO, INFN-LNL	Research on new technologies for thin film depositing of superconductors for SC cavity applications.
10,5		R.M. Jones	UNIMAN	DESY, UNIMAN, UROS	HOM Distribution
	10.5.1	N. Baboi	DESY	DESY	Development of HOM based beam position monitors (HOMBPM).
	10.5.2	R.M. Jones	UNIMAN	UNIMAN	Development of HOM Cavity Diagnostics and ERLP (HOMCD).
	10.5.3	U. van Rienen	UROS	UROS	Measurement of HOM Distributions and Geometrical Dependences (HOMDG).
10,6		M. Grecki	DESY	DESY, TUL, IPJ, WUT, IFJ-PAN	LLRF at FLASH
	10.6.1	T. Jezynski	DESY	DESY, TUL, WUT	Development of ATCA carrier boards with FPGA and DSP
	10.6.2	D. Makowski	TUL	TUL, DESY, WUT	Development of AMC and RTM modules required IO functionality
	10.6.3	M. Grecki	DESY	DESY, TUL, IFJ-PAN	ATCA implementation of cavity resonance control
	10.6.4	J. Szewinski	IPJ	IPJ, DESY	Development of beam based longitudinal feedbacks for the ATCA based LLRF system
10,7		J. Teichert	FZD	FZD, HZB	SCRf gun at ELBE
	10.7.1	T. Kamps	HZB	HZB, FZD	Slice diagnostics system
	10.7.2	R. Xiang	FZD	FZD	Improvement of preparation chamber for GaAs photo-cathodes
	10.7.3	J. Teichert	FZD	FZD, HZB	SCRf gun experimental tests
10,8		W. Kaabi	LAL-Orsay	LAL	Coupler Development at LAL
	10.8.1	W. Kaabi	LAL-Orsay	LAL	Cleaning studies on samples
	10.8.2	M. Lacroix	LAL-Orsay	LAL	Automation of coupler washing

T10.1: Coordination

- **WP10 Steering Group = WPC+WPDC+7 TL**
No Steering Group Meetings in the past year !
- **Do we need an External Scientific Evaluation Committee ? ~~Yes, at +2 and +4 Years.~~**

I decided not to invite a ESAC for two reasons:

- organisational issues for a non-mandatory purpose;
 - WP10 is a 'patchwork' of 7 technical tasks. There is no coordination in the technical sense.
- **SRF plenary meetings: at least 1 / year at rotating venues, including a SG meeting.**
 - **Short visit to FZD Rossendorf (Task 10.8): a very impressive Accelerator Center**

Collaborative Web Site

For EuCARD:

<https://espace.cern.ch/EuCARD/default.aspx>

For EuCARD/WP10-SRF

<https://espace.cern.ch/SRF/default.aspx>

Contains important documents:

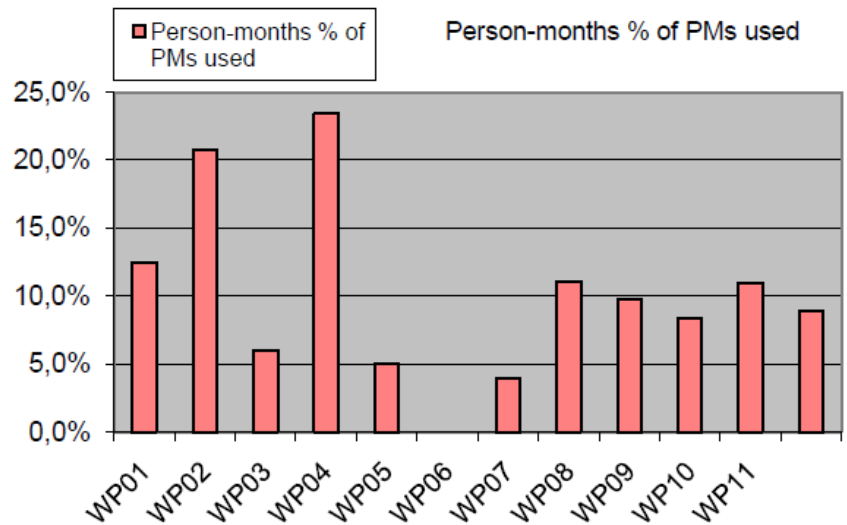
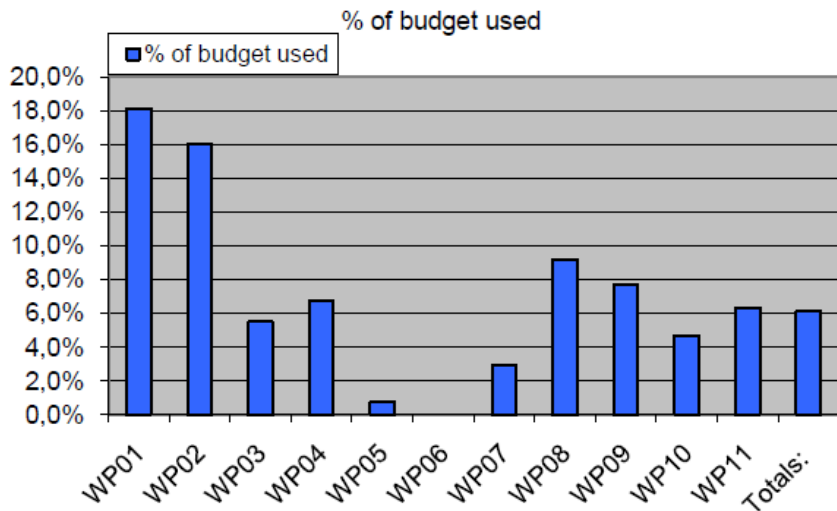
<https://espace.cern.ch/SRF/Shared%20Documents/Forms/AllItems.aspx>

Utilization of Resources

Status from 2010 Annual Review

EuCARD Financial Status at S1, by WPs

Status after 6 months: the target should be ~12.5 %



Reporting: P1 (1 April 2009 – 30 September 2010)

P1 18/48 = 37,5 %	WP10					
	Resources €			Person-months		
	P1	Total budget	%	P1	Total PM	%
CERN	244 827,00 €	684 320,00 €	35,78%	15,60	51,00	30,59%
HZB	68 083,00 €	281 050,00 €	24,22%	8,30	10,00	83,00%
CEA	493 221,00 €	1 521 063,00 €	32,43%	31,80	85,50	37,19%
CNRS	64 248,00 €	767 866,00 €	8,37%	22,80	50,50	45,15%
DESY	394 546,00 €	1 244 480,00 €	31,70%	31,10	75,00	41,47%
FZD	98 019,00 €	281 050,00 €	34,88%	9,00	16,00	56,25%
IFJ PAN	20 681,00 €	60 800,00 €	34,01%	3,60	8,00	45,00%
INFN	53 142,00 €	257 920,00 €	20,60%	10,60	18,00	58,89%
IPJ	132 771,00 €	319 480,00 €	41,56%	23,90	26,00	91,92%
STFC	80 749,00 €	251 275,00 €	32,14%	4,60	18,00	25,56%
TUL	140 928,00 €	374 800,00 €	37,60%	20,30	38,00	53,42%
ULANC	114 290,00 €	564 070,00 €	20,26%	19,00	42,50	44,71%
UNIMAN	247 003,00 €	583 680,00 €	42,32%	32,10	45,00	71,33%
UROS	129 811,00 €	279 680,00 €	46,41%	20,00	24,00	83,33%
WUT	73 425,00 €	258 000,00 €	28,46%	7,80	22,00	35,45%
Grand Total	2 355 744,00 €	7 729 534,00 €	30,48%	260,50	529,50	49,20%

WP10 Milestones (1/4) : due April 2010

Ref.	N°	Milestone Name	Milestone Type	Task	Delivered by Contractor (s)	Planned (in months)	Achieved (in months)
10.1.1	1	Annual review SRF first year	Meeting	Coordination	CEA, CERN	12	12
10.2.2	2	Definition of cryomodule interface	Report	SPL cavities	CERN	12	21 ?
10.3.1	3	LHC crab cavity specifications completed	Report	Crab cavities	CERN	12	15
10.3.4	4	CLIC crab cavity specifications completed	Report	Crab cavities	UNIMAN	12	15
10.4.1	5	Lead deposition on samples for photocathode development	Samples	Thin Films	IPJ	12	12
10.7.1	6	Preparation system for GaAs finished	Prototype	SCRF gun	FZD	12	12

M10.2.2 *Cryomodule Interface* was announced in Dec.2010 in the P1 Report

WP10 Milestones (2/4) : due Oct-Dec 2010

10.4.2	7	Lead deposition on half cells and 1.5 cell cavities	Report, Samples	Thin Films	DESY, IPJ	18	19
10.6.1	8	Design and manufacturing of the carrier board prototypes	Prototype	LLRF at FLASH	DESY, TUL, WUT	18	19
10.6.4	9	Design and manufacturing of AMC radiation dosimeter	Prototype	LLRF at FLASH	TUL, DESY, WUT	18	19
10.6.7	10	Design and manufacturing of high linearity multichannel downconverter	Prototype	LLRF at FLASH	TUL, DESY, WUT	18	19
10.7.2	11	Installation spectrometer dipole	Other	SCRF gun	FZD	18	18
10.3.7	12	Development of LHC LLRF system	Prototype	Crab cavities	ULANC	21	30

M10.3.7 LHC-CC LLRF swapped with **M10.3.8 CLIC-CC LLRF**

10.3.8	25	Development of CLIC LLRF system	Prototype	Crab cavities	ULANC	30	25
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WP10 Milestones (3/4) : due April 2011

10.1.2	13	Annual review SRF second year	Meeting	Coordination	CEA, CERN	24	26
10.3.2	14	LHC model crab cavity completed	Prototype	Crab cavities	CERN, ULANC	24	27
10.3.5	15	CLIC model crab cavity completed	Prototype	Crab cavities	UNIMAN, ULANC	24	26
10.6.2	16	Design and manufacturing of the AMC modules with fast analogue and digital IO (at least 100 Ms/s, 14 b)	Prototype	LLRF at FLASH	TUL, DESY, WUT	24	?
10.6.3	17	Design and manufacturing of the AMC board with ultra fast ADC (at least 2 Gs/s, 10 b)	Prototype	LLRF at FLASH	TUL, DESY, WUT	24	?
10.6.6	18	Designed and manufactured Frequency Synthesizer Board (AMC)	Prototype	LLRF at FLASH	TUL, DESY, WUT	24	?
10.6.8	19	Integration of downconverters and upconverters in RTM (ATCA)	Prototype	LLRF at FLASH	TUL, DESY, WUT	24	?
10.6.9	20	Design and fabrication of AMC modules for controlling step motors, piezo and waveguide tuners	Prototype	LLRF at FLASH	DESY, TUL, IFJ-PAN	24	?
10.7.3	21	GaAs photocathodes produced	Demonstrator	SCRF gun	FZD	24	36
10.8.1	22	Argon discharge cleaning and HPR results and analysis	Report	Coupler development	LAL	24	30
10.8.2	23	Automatic cleaning procedure	Report	Coupler development	LAL	24	24

• **M10.8.2 Automatic cleaning procedure needs a dedicated Report**

WP10 Milestones (4/4) : due April 2012

10.2.1	24	Cavity fabrication (proton linac)	Prototype	SPL cavities	CEA, CNRS-IPNO	30	
10.3.8	25	Development of CLIC LLRF system	Prototype	Crab cavities	ULANC	30	25
10.4.3	26	QWR sputtering with Nb using the magnetron technique	Prototype	Thin Films	CERN	30	
10.4.4	27	Report on new thin film coating techniques for SC cavities	Report	Thin Films	ULANC	30	
10.4.5	28	Improved RF-design of 1.5 cell	Report	Thin Films	DESY	30	
10.3.3	29	LHC input and LOM mode coupler design development finished	Prototype, Report	Crab cavities	ULANC	33	
10.3.6	30	CLIC input and mode coupler design development finished	Prototype, Report	Crab cavities	?	33	
10.1.3	31	Annual review SRF third year	Meeting	Coordination	CEA, CERN	36	
10.5.1	32	HOM alignment for 3.9 GHz cavity electronics verification	Demonstrator	HOM distribution	DESY	36	
10.6.5	33	Report on tests and calibration of the radiation dosimeter	Report	LLRF at FLASH	TUL, DESY, WUT	36	
10.6.10	34	Report on longitudinal beam parameter studies and their controllability by fast feedback systems in conjunction with the	Report	LLRF at FLASH	IPJ, DESY	36	

• **EuCARD Program continues until March 2013 !**

ECA Annex 5, Article 5 : Deliverables

Preparation and submission of Deliverable Reports

- The **Task Coordinators** shall be responsible for assembling and producing the **Deliverable Reports** (DRs), corresponding to the Deliverables indicated in Table 1.3.4 of the Description of Work. Each Deliverable has to be associated with a **written report** which shall be sent to the European Commission.
- A template for DRs will be provided by the Coordinator, subject to approval by the Steering Committee.
- The DRs have to be submitted by the **Task Coordinators** to the **WP Leaders** within 10 days of their due date, indicated in the DoW. Any expected delay exceeding the due date by more than 30 days shall be reported by the **WP Leader(s)** concerned to the Steering Committee via the PC as soon as possible.
- The **WP Leaders** shall review and validate each Deliverable Report, and submit it to the PC within 20 days of its due date.
- The PC will then forward each Deliverable Report to the Steering Committee for comments and approval. If no comments are received within 10 days of the receipt of each DR, the Report shall be deemed approved.

WP10 Deliverables: 15 units

10.4.1	1	QE data for Pb/Nb deposited photo cathode samples	Report	Thin Films	DESY, IPJ	12	14
10.7.1	2	Results of slice measurements	Report	SCRF Gun	FZD, HZB	24	26
10.8.1	3	Test and operation of the coupler preparation procedure	Report	Coupler Development	CNRS-LAL	24	34
10.4.4	4	New thin film techniques for SC cavities and photocathodes	Demonstrator	Thin Films	ULANC	30	
10.2.1	5	Results of SC proton cavity tests ($\beta = 1$ and $\beta = 0.65$)	Report	SPL cavities	CEA, CNRS-IPNO	33	
10.7.2	6	Results for GaAs photocathodes	Report	SCRF Gun	FZD, HZB	33	
10.3.1	7	LHC crab cavity final report	Report	Crab cavities	CERN	36	
10.3.2	8	CLIC crab cavity final report	Report	Crab cavities	UNIMAN	36	
10.3.3	9	LHC and CLIC LLRF final reports	Report	Crab cavities	ULANC	36	
10.4.2	10	RF measurements on thin film deposited QWR prototype	Report	Thin Films	CERN	36	
10.4.3	11	Cold test results for the test cavities w/out the deposited lead photo cathode	Report	Thin Films	DESY	36	
10.5.2	12	Report on HOM experimental methods and code	Report	HOM distribution	UNIMAN	40	
10.6.1	13	Report on system test and performance	Report	LLRF at FLASH	DESY	42	
10.1.1	14	SRF web-site linked to the technical and administrative databases	Web-Site	Coordination	CEA, CERN	48	
10.5.1	15	HOM electronics and code to probe beam centring on 3.9 GHz cavities	Report	HOM distribution	DESY	48	

More Delays?

EuCARD WP10 Outreach and Dissemination

1. EuCARD Publications:

<http://cdsweb.cern.ch/collection/EuCARD>

No sub-category for EuCARD/WP10-SRF Publications

2. EuCARD Newsletter:

<http://eucard.web.cern.ch/EuCARD/news/newsletters/issue08/index.html>

DCO (WP2) Naomi Wyles is awaiting suggestions for
EuCARD Newsletter

EuCARD Publication Submission

To access EuCARD Publications database (CDS), please click the link from the EuCARD homepage or to go directly to the database, click the link <http://cdsweb.cern.ch/collection/EuCARD>

To submit or modify a EuCARD document, you **should first log in**. To do so, please click on the **Login blue button** (on the right of your screen).

Then please click on the **Submit blue button** (or *Modify*, *Delete* or *Resubmit* depending on what you would like to do) on the right of your screen.

A form will appear with fields to be filled in. Please **note the author(s) box**. Text must follow a strict layout: *one author per line, in the format: Last Name, Initial(s) of First Name(s): Affiliation (mandatory)*.

For example,

Dupont, P: CERN

Doe, J S: Atlantis Institute of Fictive Science

CDS will generate an automatic number for each submitted document (with the following format: EuCARD-type-year-number in order of the submission). If you submit a PDF file, an EuCARD cover page including acknowledgement text is automatically added.

You will receive a confirmation email once submission is complete.

An email will also be automatically sent to the Task Coordinator, the Coordinator of WP2 and the Project Coordination Office as established in the EuCARD Consortium Agreement (Article 14).

Catherine Brandt

European Projects Office

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EuCARD/WP10-SRF Publications

P1 Report, October 2010

WP 10.3

1.	R. Calaga (BNL), E. Ciapala (CERN), E. Jensen (CERN), P. McIntosh (STFC), E. Shaposhnikova (CERN), J. Tuckmantel (CERN), F. Zimmermann (CERN), <i>LHC crab cavity specifications</i> , Milestone: M10.3.1, 22 June 2010.
2.	P. Ambattu (ULAN-CI), G. Burt (ULANC-CI), A. Dexter (ULANC-CI), R. Jones (UMAN-CI), P. McIntosh (STFC), I Shinton (UMAN-CI), <i>CLIC crab cavity specifications</i> , Milestone: M10.3.4, 8 July 2010.
3.	P Ambattu, G Burt, A Dexter, C Lingwood, I Tahir (ULAN-CI), P Goudket, P mcintosh (STFC), <i>Development of Crab Cavity Systems at the Cockcroft Institute</i> , 51st ICFA Beam Dynamics Newsletter, April 2010.
4.	B Hall, G Burt, C Lingwood (ULAN-CI), H Wang (Jlab), <i>Novel Geometry for the LHC Crab Cavity</i> , Proc. IPAC'10, Kyoto (2010)
5.	C Lingwood, G Burt (ULAN-CI), <i>Evolutionary Algorithms in the Design of RF Cavities</i> , Proc. IPAC'10, Kyoto (2010).
6.	R Calaga, R de Maria (BNL), R Assmann, J Barranco, F Caspers, E Ciapala, T Linnekar, E Métral, Y Sun, R Tomas, J Tuckmantel, T Weiler, F Zimmermann (CERN), N Solyak, V Yakovlev (FNAL), Y Funakoshi, A Morita, Y Morita, K Nakanishi, Y Ohnishi (KEK), J Qiang (LBNL), G Burt (ULAN-CI), Z Li, A Seryi, L Xiao (SLAC), P McIntosh (STFC), <i>Status of LHC Crab Cavity Simulations and Beam Studies</i> , Proc. PAC09, Vancouver, (2009).
7.	F Zimmermann, J-P Koutchouk (CERN), <i>LHC Upgrade Scenarios</i> , Proc. PAC09, Vancouver, (2009).
8.	P Ambattu, G Burt, R Carter, A Dexter (ULAN-CI), V Dolgashev (SLAC), R Jones, V Khan (UMAN-CI), <i>Wakefield Damping for the CLIC Crab Cavity</i> , Proc. PAC09, Vancouver, (2009).
9.	N Solyak, T Peterson, V Poloubotko, V Yakovlev (FNAL), R Calaga (BNL), O Brunner, E Ciapala, T Linnekar, J Tuckmantel, W Weingarten (CERN), <i>Status of LHC Crab Cavity Cryostat</i> , Proc. PAC09, Vancouver, (2009).

EuCARD/WP10-SRF Publications

P1 Report, October 2010

10.	B Hall, G Burt, J Smith (ULAN-CI), R Calaga (BNL), J Delayen, R Rimmer, H Wang (JLAB), <i>Novel Geometries for the LHC Crab Cavity</i> , Proc. PAC09, Vancouver, (2009).
11.	Y Sun, R Assmann, J Barranco, R Tomas, T Weiler, F Zimmermann (CERN), R Calaga (BNL), A Morita (KEK), <i>Study with One Global Crab Cavity at IR4 for LHC</i> , Proc. PAC09, Vancouver, (2009).
12.	Y Sun, R Tomas, F Zimmermann (CERN), <i>Tune Shift due to Crossing Collision and Crab Collision</i> , Proc. PAC09, Vancouver, (2009).
13.	G Burt (ULAN-CI), <i>New Cavity Shape Developments for Crabbing Applications</i> , SRF Conference 2009, Berlin, (2009).

EuCARD/WP10-SRF Publications

P1 Report, October 2010

WP 10.4

1.	T. Kamps, W.Anders, M.Dirsat, A.Frahm, J.Knobloch, O.Kugeler, A.Neumann, T.Quast, M.Schenk, M.Schuster, T.Rao, J.Smedley, J.Sekutowicz, J.Teichert, P.Kneisel, I.Will, R. Nietubyc, <i>SRF gun development for an energy-recovery linac based future light source</i> , , <i>Proceedings of SRF09, 4-th International Conference on RF Superconductivity, Berlin – Dersden, 20.09 – 25.09.2009</i>
2.	J. Sekutowicz, A.Muhs, P.Kneisel, R. Nietubyc, <i>cryogenic test of the nb-pb srf photoinjector cavities</i> , <i>Proceedings of PAC2009 Particle Accelerator Science and Technology, Vancouver, Canada, 4.05 – 8.05. 2009</i>
3.	R. Nietubyc, M.J. Sadowski, R. Mirowski, J. Witkowski, J. Lorkiewicz, <i>rozwój techniki wytwarzania cienkowarstwowych wnęk rezonansowych dla akceleratorów liniowych</i> , <i>Elektronika Vol. 1 (2009) 79-80</i>
4.	J. Lorkiewicz, R. Nietubyc, M.J. Sadowski, D. Digiovelane, L. Catani, A. Cianchi, S. Tazzari, R. Polini, R. Russo, <i>superconducting niobium layers reached by using vacuum arc technique in infn-roma tor vergata</i> , <i>Elektronika Vol. 1 (2009) 110-112</i>
5.	T. Rao, J. Smedley, R. Nietubyc, P. Kneisel, J. Sekutowicz, <i>Arc Deposition And Qe Tests Of The Pb-Nb Samples</i> , <i>Proc of IPAC10, Kyoto, Japan p.4068 (THPEC020)</i>
6.	J. Sekutowicz, M. Ebert, P. Kneisel, R. Nietubyc, <i>Test Results Of Components For Cw And Near-Cw Operation Of A Semiconducting Linac</i> , to be published in the Proceedings of XXV Linear Accelerator Conference, Tsukuba, Japan.
7.	S. Calatroni, P. Costa Pinto, A. D'Elia, L. Marques Antunes Ferreira, G. Lanza, M. Pasini, M. Scheubel, M. Therasse (CERN, Geneva), R.E. Laxdal, V. Zvyagintsev (TRIUMF, Vancouver), <i>Superconducting Sputtered Nb/Cu Qwr For The Hie-Isolde Project at CERN</i> , to be published in the Proceedings of XXV Linear Accelerator Conference, Tsukuba, Japan
8.	A.E. Gustafsson, S. Calatroni, W. Vollenberg (CERN), R. Seviour (Cockcroft Institute, Lancaster University), <i>New Methods For Thin Film Deposition And First Investigations Of The Use Of High Temperature Superconductors For Thin Film Cavities</i> , <i>Proc of IPAC10, Kyoto, Japan, p.2995</i>
9.	C.Z. Antoine, et al., <i>Characterization of superconducting nanometric multilayer samples for SRF applications: first evidence of magnetic screening effect</i> . Accepted in PRST AB 2010
10.	C.Z. Antoine, et al., <i>Characterization of field penetration in superconducting multilayers samples</i> accepted in "IEEE Transactions on Applied Superconductivity"

EuCARD/WP10-SRF Publications

P1 Report, October 2010

WP 10.5

- | | |
|----|---|
| 1. | I.R.R. Shinton et al, <i>Mode distribution in the third harmonic FLASH/XFEL cavities</i> , CI Int.Note under review. |
| 2. | Shinton, N. Baboi, T. Flisgen, H.W. Glock, R.M. Jones, U van Rienen, P. Zhang, <i>Higher Order Modes In Third Harmonic Cavities at FLASH</i> , I.R.R. Proc. Of Linac 2010 |
| 3. | P. Zhang, N. Baboi, T. Flisgen, H.W. Glock, R.M. Jones, B. Lorbeer, U van Rienen, I.R.R. Shinton, <i>First Beam Spectra of SC Third Harmonic Cavity at FLASH</i> , Proc. Of Linac 2010. |
| 4. | R. M. Jones for the MEW Collaboration, <i>SCRF Third Harmonic Cavity HOM Diagnostics and the Quest for High Gradient Cavities for XFEL and ILC</i> , 2010. 4pp. Published in ICFA Beam Dyn.Newslett.51:182-185,2010 |
| 5. | I.R.R. Shinton, N. Baboi, N. Eddy, T. Flisgen, H.W. Glock, R.M. Jones, N. Juntong, T.N. Khabiboulline, U van Rienen, P. Zhang, <i>Higher Order Modes in Third Harmonic Cavities for XFEL/FLASH</i> , FERMILAB-CONF-10-302-TD. |
| 6. | B. Szczesny, I.R.R. Shinton, R.M. Jones, <i>Third Harmonic Cavity Modal Analysis</i> , Proc. Of SRF 2009. |

EuCARD/WP10-SRF Publications

P1 Report, October 2010

WP 10.6

- | | |
|-----|---|
| 1. | S.Simrock, M.K.Grecki, T.Jezynski, WK.Koprek, D.R.Makowski, W.Jalmuzna, K.Czuba, <i>Demonstration of an ATCA Based LLRF Control System at FLASH</i> , ICALEPCS 2009 |
| 2. | D. Makowski, G. Jablonski, A. Piotrowski, W. Cichalewski, W. Jalmuzna, W. Koprek, S. Simrock, <i>Survey of Communication Links for ATCA in Physics</i> , ICALEPCS 2009 |
| 3. | D. Makowski, W. Koprek, T. Jezynski, G. Jablonski, A. Piotrowski, W. Jalmuzna, K. Czuba, P.Predki, S. Simrock, <i>Prototype Real-time ATCA-Based LLRF control system</i> , Real-Time 2010 Conference, Lisbon 2010 (paper accepted for publication in May 2010) |
| 4. | D. Makowski, W. Koprek, T. Jezynski, G. Jablonski, A. Piotrowski, W. Jalmuzna, P. Predki, S. Simrock, A. Napieralski, <i>Prototype Real-time ATCA-Based LLRF control system</i> , Real-Time 2010 Conference, Lisbon 2010 (paper accepted for publication in May 2010) |
| 5. | P. Predki, D. Makowski, <i>Intelligent Platform Management Controller for Low Level RF Control System ATCA Carrier Board</i> , Real-Time 2010 Conference, Lisbon 2010 (paper accepted for publication in May 2010) |
| 6. | T. Kozak, P. Predki, D.Makowski, <i>IPMI protocol analyser</i> , Real-Time 2010 Conference, Lisbon 2010 (paper accepted for publication in May 2010) |
| 7. | J. Wychowaniak, D. Makowski, P. Predki, A. Napieralski, <i>GUI application for ATCA-based LLRF carrier board management</i> , Real-Time 2010 Conference, Lisbon 2010 (paper accepted for publication in May 2010) |
| 8. | A. Piotrowski, G. Jablonski, D. Makowski, <i>pciexpress Hot-plug mechanism in Linux-based ATCA control systems</i> , Mixdes 2010, Wroclaw, (paper accepted for publication in June 2010) |
| 9. | T. Kozak, D. Makowski, <i>AMC Radiation Monitoring Module for ATCA/utca Based Low Level RF Control System</i> , Mixdes 2010, Wroclaw, (paper accepted for publication in June 2010) |
| 10. | J. Wychowaniak, P. Predki, D. Makowski, A. Napieralski, <i>Application for Management and Monitoring of xtca Hardware</i> , Mixdes 2010, Wroclaw, (paper accepted for publication in June 2010) |
| 11. | P. Perek, D. Makowski, P. Prędkki, A. Napieralski, <i>ATCA Carrier Board with dedicated IPMI Controller</i> , Mixdes 2010, Wroclaw, (paper accepted for publication in June 2010) |

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12.	P. Predki, D. Makowski, <i>Intelligent Platform Management Controller for Low Level RF Control System ATCA Carrier Board</i> , 17th Real-Time Conference, 24-28 May 2010, Lisbon
13.	T. Kozak, P. Predki, D. Makowski, <i>Real-Time IPMI Protocol Analyzer</i> , 17th Real-Time Conference, 24-28 May 2010, Lisbon
14.	J. Wychowaniak, D. Makowski, P. Predki, A. Napieralski, <i>Application for Management and Monitoring of xtca Hardware</i> , Mixed Design of Integrated Circuits and Systems MIXDES'10, the 17th International Conference, 24-26 June 2010, Wroclaw, pp. 133-138, 2010, ISBN 978-1-4244-7011-2
15.	P. Perek, D. Makowski, P. Prędko, A. Napieralski, <i>ATCA carrier board with dedicated IPMI controller</i> , 17th International Conference Mixed Design of Integrated Circuits and Systems (MIXDES), 24-26 June 2010, Wroclaw, pp. 139-143, 2010, ISBN 978-83-928756-3-5
16.	A. Piotrowski, D. Makowski, <i>pciexpress Hot-Plug Mechanism in Linux-based ATCA Control Systems</i> , 17th International Conference Mixed Design of Integrated Circuits and Systems Wroclaw, 24-26 June 2010, ISBN: 978-1-4244-7011-2
17.	A. Piotrowski, <i>Automatic Installation of Software-based Fault Tolerance Algorithms in Programs Generated by GCC Compiler</i> , 17th International Conference Mixed Design of Integrated Circuits and Systems Wroclaw, 24-26 June 2010, ISBN: 978-1-4244-7011-2
18.	J. Wychowaniak, P. Predki, D. Makowski, A. Napieralski, <i>Diagnostic Application for Development of Custom ATCA Carrier Board for LLRF</i> , Mixed Design of Integrated Circuits and Systems MIXDES'09, the 16th International Conference, 25-27 June 2009, Lodz, pp. 97-102, 2009, ISBN 978-1-4244-4798-5
19.	J. Wychowaniak, D. Makowski, P. Predki, A. Napieralski, <i>GUI Application for ATCA-based LLRF Carrier Board Management</i> , 17th Real-Time Conference, 24-28 May 2010, Lisbon, 2010
20.	K. Przygoda, T. Pozniak, A. Napieralski, M. Grecki, <i>Piezo Control for Lorentz Force Detuned SC Cavities of DESY FLASH</i> , 1st International Particle Accelerator Conference (IPAC), Kyoto, Japan, 23-28 May, 2010
21.	K. Przygoda, T. Pozniak, D. Makowski, T. Kozak, M. Wisniewski, A. Napieralski, M. Grecki, <i>Power Supply Unit for ATCA based Piezo Compensation System</i> , 17th International Conference Mixed Design of Integrated Circuits and Systems (MIXDES), Wroclaw, Poland, 24-26 June, 2010
22.	A. Piotrowski, Defended phd thesis with Eucard acknowledge: <i>Automatic Implementation of Software Methods for Radiation Fault Tolerance Algorithms in Microprocessor-based System with Special Emphasis on Optimization of Generated Code</i> , Lodz 2010, phd Dissertation

EuCARD/WP10-SRF Publications

P1 Report, October 2010

WP10.7

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| 1. | R. Xiang, A. Arnold, H. Buettig, D. Janssen, M. Justus, U. Lehnert, P. Michel, P. Murcek, A. Schamlott, Ch. Schneider, R. Schurig, F. Staufenbiel, J. Teichert, <i>The Properties of Normal Conducting Cathodes in FZD Superconducting Gun</i> . Proc. SRF 2009 Conference, Berlin & Dresden, Germany |
| 2. | A. Arnold, J. Teichert, <i>Overview of Superconducting Photoinjectors</i> . Proc. SRF 2009 Conference, Berlin & Dresden, Germany, |
| 3. | P. Murcek, H. Buettig, P. Michel, K. Moeller, A. Arnold, J. Teichert, R. Xiang, M. Freitag, P. Kneisel, <i>Modified 3½-Cell SC Cavity Made of Large Grain Niobium for the FZD SRF Photoinjector</i> , Proc. SRF 2009 Conference, Berlin & Dresden, Germany, |
| 4. | R. Xiang, A. Arnold, H. Buettig, D. Janssen, M. Justus, U. Lehnert, P. Michel, P. Murcek, A. Schamlott, Ch. Schneider, R. Schurig, F. Staufenbiel, J. Teichert, <i>Cs2Te normal conducting photocathodes in the superconducting rf gun</i> . Phys. Rev. Special Topics AB 13, 043501 (2010) |
| 5. | R. Xiang, A. Arnold, H. Buettig, D. Janssen, M. Justus, U. Lehnert, P. Michel, P. Murcek, Ch. Schneider, R. Schurig, F. Staufenbiel, J. Teichert, T. Kamps, J. Rudolph, M. Schenk, G. Klemz, I. Will, <i>The Elbe accelerator facility starts operation with the superconducting rf gun</i> . Proceedings of IPAC'10, Kyoto, Japan 23-28.05.2010 |
| 6. | J. Teichert, A. Arnold, H. Buettig, D. Janssen, M. Justus, U. Lehnert, P. Michel, P. Murcek, Ch. Schneider, R. Schurig, R. Xiang, T. Kamps, J. Rudolph, M. Schenk, G. Klemz, I. Will, F. Staufenbiel, <i>Status of the SRF Gun Operation at ELBE</i> . Proc. FEL 2010 Conference, August 23-27, 2010, Malmö, Sweden |
| 7. | R. Xiang, A. Arnold, P. Michel, P. Murcek, J. Teichert, <i>Thermal Emittance Measurement of the Cs2Te Photocathode in FZD Superconducting RF Gun</i> ,. Proc. FEL 2010 Conference, August 23-27, 2010, Malmö, Sweden |

More Reporting

- **Intermediate Activity Reports: only 3 remaining !**
S4 (April 2011), S6=P2 (April 2012) and S8=P3 (April 2013).

⇒  and  ; ⇒ *Annual Review will take place in late March, early April !*

- **Status of S4 IAR, due 20th of April 2011: I am still missing the report from Task 10.2 (proton cavities) and 10.6 (LLRF)**
This report must be available to the Governing Board next week.
- **EuCARD Annual Review (11-13 May, 2011 in Paris)**
Three talks from WP10 closing the Meeting on Friday 13 May:

report WP 10	O. Napoly/CEA
highlight talk1 WP10: Slice emittance measurements at the ELBE superconducting RF photoinjector	Jeniffa Rudolph (FZD Rossendorf)
highlight talk2 WP10: HOM Diagnostics in Third Harmonic Cavities at FLASH	Roger Jones (Manchester University)

- **EuCARD Mid-term Review: 21st of June, CERN**

Organisation

Group Photo : Wednesday at 10h15, during coffee break

Lab Visit : 'ALTO' : Wednesday at 16h-17h

'SupraTech' : after the meeting ??

Many thanks to the

- IPN-Orsay local Organizing Committee, especially **Hui-Min Gassot**
- Task and sub-task leaders
- All actors and participants

En route for a successful workshop.