Report Working Group "Cavity design and construction"

- Status of collaborations
  - Tasks and deliverables were identified
    https://edms.cern.ch/document/993472/1.1
  - Work-packages, work package owners and planning being established
    - Several work-packages are not yet distributed (next slide)
  - Collaboration partners identified – several approvals pending

Report Working Group "Cavity design and construction"

- Work-package owners still to be identified for
  - Manufacture of cavities (except for a few prototypes)
  - Design and manufacture of frequency tuner
  - Manufacture and test of HOM coupler
  - Inspection equipment for on-line and post mortem analysis: temperature mapping / detection of quench location by second sound delay / optical inspection equipment (Questar® type)

Report Working Group "Cavity design and construction"

Collaboration partners (some approvals pending)

Partner	Status	Item
Triumf/Canada	Draft agreement in circulation	Construction and test of a β=0.65 cavity
Triumf/Canada	Preliminary proposal in discussion	Construction and test of all β=0.65 cavities for the SPL
Stony Brook, BNL/USA	Submitted to DOE, decision pending	Construction and test of a β=1 cavity
Stony Brook, BNL/USA	Preliminary proposal in discussion. Pending rating from CERN.	50% of the SPL: 12 cryomodules of 8 β = 1 cavities each
FP7-EuCARD/European Union	Approved	EU contribution to WP 10 task 10.2
FP7-EuCARD/France-CEA-CNRS	Approved	Cavity production and test at low and high power
Rostock University/Germany	Pending German grant	HOM damper computation
Darmstadt University/Germany	Pending German grant	Effect on beam of RF couplers

Report Working Group "Cavity design and construction"

Progress on observations from 1st SPL collaboration meeting

#	Topic	Status 12 Dec. 2008	Status as of today
1	Cavity	Cavity design: choice between $\beta = 0.92$ or 1.0	Decision taken in favour of $\beta = 1.0$
2		Demonstrate gradient of 25 MV/m: Standard recipe to be applied; EP equipment to be built up at CERN and possibly elsewhere	EP equipment for monocell cavity is being built at CERN
3		Number of cavities to be built: At least eight	ditto
4		Cold test of individual cavities at CERN: Vertical cryostat #3 in SM18 to be refurbished	Prototype monocell cavity test under preparation
5		Manufacturing capacities identified: BNL, TRIUMF, CEA-Saclay, ESS, Soltan	To be confirmed
6	HOMs	Required loaded Q of HOMs to be provided	c.f. paper submitted to PAC09
7		Cold tests of HOMs to be performed at CERN on regular cavity	ditto
8		HOM absorber vs. HOM antenna coupler: Prepare cavity design with ports for antenna coupler	ditto

Report Working Group "Cavity design and construction"

Progress on observations from 1st SPL collaboration meeting (cont'd)

#	Topic	Status 12 Dec. 2008	Status as of today
9	Diagnostics	On line equipment: T-mapping or 2nd sound quench location required: Task owner to be identified	ditto
10		Off line equipment: Optical inspection device required	ditto
11	Cryomodule	Power test : Refurbishment of SM18 bunker testplace (cryogenics, RF power)	Financing requested in MTP
12		Magnetic shielding: Design value: $B_{ext} < 1$ mT	Computer simulations have started
13	Power coupler	A modified version of the HIPPI power coupler at CEA Saclay shall be used; test results imminent	Coupler was tested at 1 MW travelling wave condition, 50 Hz repetition rate and 2 ms pulse duration
14		Test of BNL dual power coupler imminent	
15	Frequency tuner	A modified version of the HIPPI slow/fast tuner designed at CEA-Saclay shall be used; repetitive testing required	ditto