

Status of UA9 – Technical aspects

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Summary

- Chronology
- Present status - Needed information/materials
- Schedule/ perspectives

Chronology

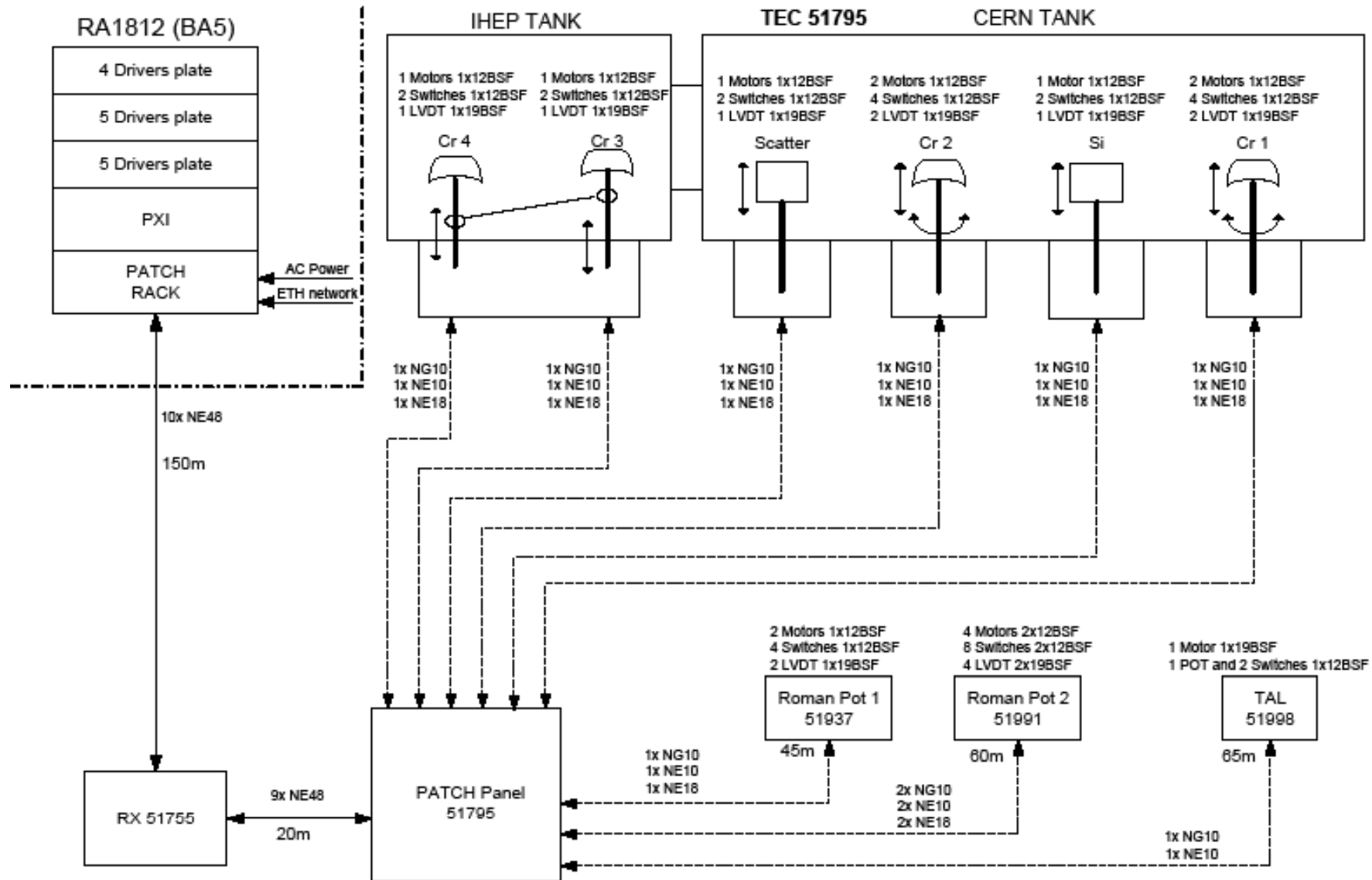
- After approval of the experiment by the Research board in September, the CERN budget line has been opened, and the real work has started (end of september)
- Technical responsibilities at CERN assigned:
 - Mechanical issues: Fred LOPRETE (AB/ATB)
 - Vacuum issues: Kurt WEISS (AT/VAC)
 - Electrical & electronics issues, Cables: Jerome LENDARO (AB/ATB)

Status (1/8)

- Request for installation registered by SPS coordination. Planning available:
 - EDMS **970545**
- Cables:
 - Needs identified and documented in following slide
 - Some cables re-used. New cables will be installed during general campaign.

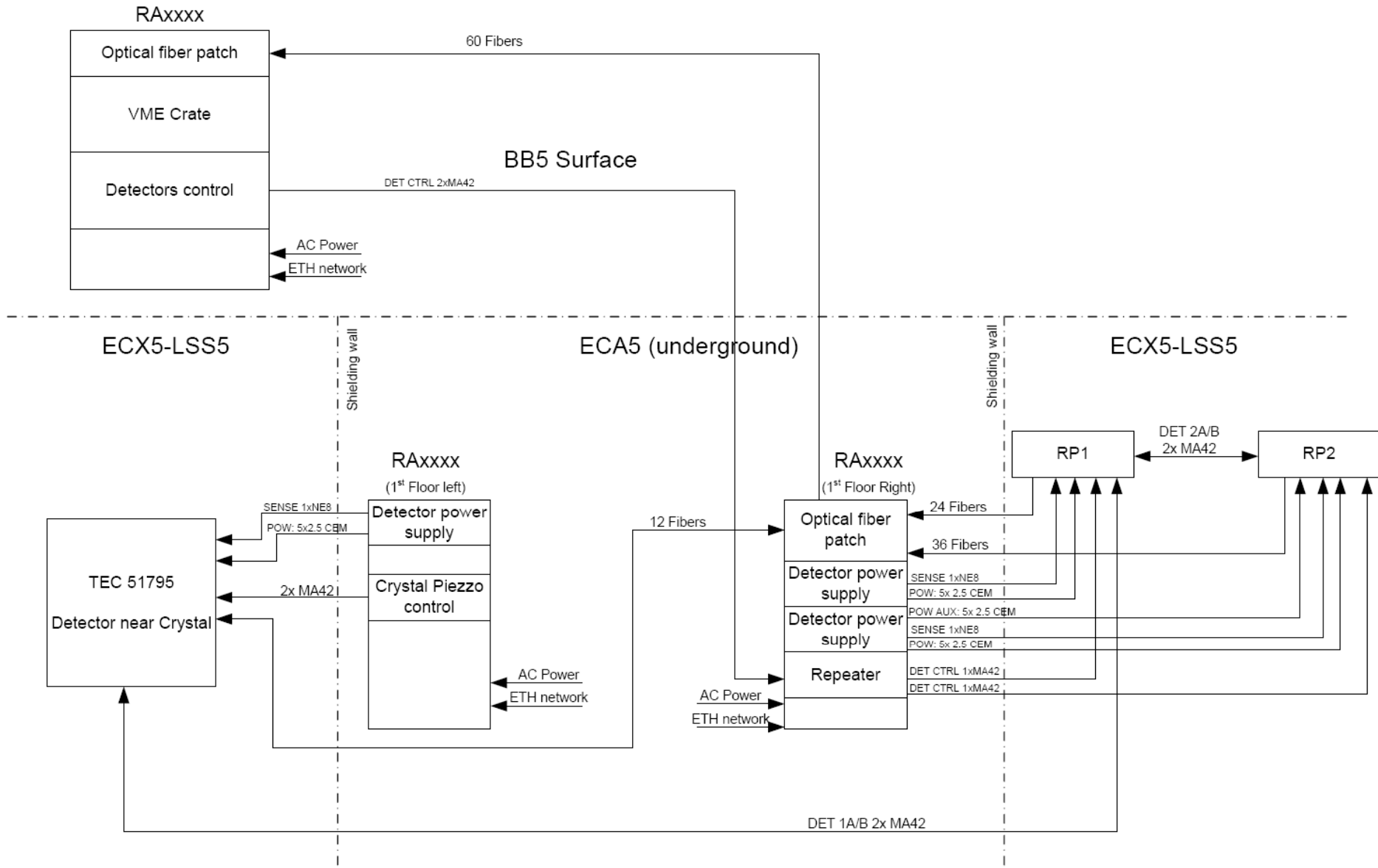
Crystal Collimation Motion Control Architecture

25/09/2006
JL - AB/ATB



Crystal Collimation Detectors Architecture

06/10/2008
JL - AB/ATB



Status (2/8)

- CERN tank (RD22):
 - Under dismantling and cleaning.
 - Goniometers will be ready in two weeks (W48/49) for preliminary laboratory test (motors modified: DC→stepping, LVDT introduced to measure linear position).
 - WE MISS INFORMATION to design a standard crystal holder compatible with all different types of crystals. INFN, IHEP and PNPI agreed to send drawings asap (phone conference of 17/11).
 - Vacuum pumping speed has been greatly increased (4 pumps on directly mounted on the tank).

Status (3/8)

- CERN tank (RD22):
 - Amorphous collimator
 - A W block will be installed in the tank
 - Near detector
 - The linear moveable support is available and will be installed from the beginning.
 - Laser alignment:
 - quartz window purchased and tested by Y. Gavrikov.
 - Drawings for final integration and installation to be provided asap by PNPI.
 - Vacuum layout (pumps & gauges) agreed and under preparation.
 - Strategy to avoid venting collimator nearby established.

Status (4/8)

- IHEP tank:
 - CERN standard support identified and to be installed beginning of december
 - IHEP will provide asap Autocad drawings to allow integration into the SPS layout and design and fabrication of interface between the tank and support.
 - Request made to IHEP to study possibility to have piezos on the two crystals. New flange needed on tank (to be discussed: IHEP/CERN)

Status (5/8)

- IHEP tank:
 - Details of controls to be discussed (IHEP/CERN).
Hard conditions on angle relationships to be established in controls.

Status (6/8)

- Roman pot 1 (INFN):
 - Mechanical study for 90 degree rotation launched.
 - Some plastic components to be replaced with metallic (to avoid radiation damage).
 - Standard CERN support to be adapted to RP.
 - Mechanical support of the detectors to be confirmed.

Status (7/8)

- Roman pot 2 (SLAC):
 - See Marco's talk

Status (8/8)

- Final absorber (TAC).
 - Object found in our storage.
 - Some modification done to absorbing block to adapt to UA9 needs.
 - New support designed to avoid displacing existing components in installation location.

Schedule

- Supports to be installed early December.
 - All the necessary information (interface between support and object) to be frozen in a week from now at latest.
- Campaign of installation W4 – 2009.
- All objects to be tested in laboratory by W3-09.
- Crystals available on support for installation on goniometers by W51-08.

Perspective

- Minimum objective:
 - Installation of CERN tank + TAC
 - Installation of vacuum chambers replacing 2 roman pots + IHEP tank.
- Primary objective:
 - Installation of CERN tank + TAC + RP1
 - Replacement chambers for the rest
- Ideally:
 - all!!!

Perspectives

- SPS closes on March 13, 2009.
 - About 1 technical stop (few hours) every month/6 weeks available to late install equipment.
- Replacement chambers:
 - Vacuum intervention shall have to be prepared carefully. Accesses normally allowed for 8-16 hours at max.
 - Later installation of RP and IHEP tank possible, but to be avoided (significant overhead for CERN groups and operation)!!!
 - Shall have to be discussed with SPS technical coordination. Accesses never guaranteed!!!

Conclusion & information

- Technical integration of different components well advanced, some drawings missing but everybody is informed and committed to provide them asap
- Mechanical works progressing well, more work to be done both by CERN and institutes. Generally on schedule
- Cables defined and ordered, everything should be there.
- Control system: entirely on CERN responsibility, need some margin for testing of components. Moveable devices need to be available in time for laboratory test, or positioning accuracy cannot be ensured in the tunnel.
- Control software: Acquisition will start AFTER validation of the position by the operator.
- Vacuum layout essential for success of installation planning and of the experiment. Reducing any overhead (delay) would be much appreciated.