F.H., CERN, 18.7.2005

DRAFT

SUMMARY ON MERIT CRYOGENICS MEETING
RAL / CERN on 14.7.05

(In addition this summary is intended to provide for a preliminary draft on the work sharing between RAL and CERN AT-ECR)

To: Members of the MERIT collaboration
From: F. Haug, CERN, on behalf of the persons present at the meeting.

Present at meeting: Roger Bennett, Yuri Ivanyushenkov, Ilias Efthymiopoulos, Adrian Fabich (part time), Marco Pezzetti (part time), Friedrich Haug

Main points discussed at the meeting on 14.7.05:
-Inform RAL on cryogenics presentation of last collaboration meeting
-New P&I and functionality of the cryogenic system
-Valve box "details" (design, specification, tendering, procurement, delivery, use)
-Responsibility sharing RAL/CERN
-CERN, MIT tests
-Schedule
-Marco presents UNICOS control system.

The points in detail:

-Inform RAL on presention + discussion of last collaboration meeting
Friedrich informs about the discussions held and the presentations made during the last collaboration meeting and gives a brief summary. No particular remarks were made.

-New P&I and functionality of the cryogenic system
An important part of the meeting consisted of the presentation and discussion of the new P&I and the functionality of the cryogenic system. All possible operation modes were examined in detail and the parties agreed that the system should be able to cope with the requirements for CERN use. In addition safety issues were addressed if any "reverse" flow could occur and lead to an uncontrolled loss of activated nitrogen into atmosphere. The discussion we had seem to confirm the system to be intrinsic safe and all fluids follow "one way" both under normal operation conditions and in case of failure and loss of the process control. However, nevertheless, we appreciate further comments on this subject.

-Valve box “details” (design, specification, tendering, procurement, delivery, use)
On the distribution valve box (DVB) we had in-depth discussions on how to proceed and share the responsibilities. It was felt logic that CERN shall provide for the basic engineering comprising dimensioning of the pipes and instrumentation (+ control valves) according to the P&I and mass flows specified. In addition a first technical specification shall be established which provides for information on CERN standards, design pressure, the choice of material, the selection of instrumentation equipment and, drawings for the interfaces (transfer lines connections). Furthermore the specification shall contain a simplified principle drawing of the valve box showing approximate dimensions and the location of the transfer line ports and control valves. Safety related documentation and codes to be applied will be included or cited.

During the process of this preparatory engineering work RAL will be regularly consulted and we shall exchange information where appropriate. This also to provide for a smooth transition of responsibility.
Following above RAL will officially take over the responsibility for the detailed engineering which can include the dimensioning of the phase separator vessel and the vacuum vessel as well as providing for further drawings in case required by the potential contractor. RAL shall do the tendering procedure at UK and place the order. Follow-up and quality assurance is the responsibility of RAL. However, CERN will be at its disposal to assist in case useful or needed.
Acceptance tests of the DVB at the works shall be done jointly.

Particular points:
-CERN shall design and manufacture in-house the fluid part of the Venturi flow meter which will be delivered to RAL for installation at the DVB.
-Safety valves will be dimensioned by CERN and the selected type proposed to RAL.
-Discrete level sensors shall be provided by CERN to RAL for implementation.
-A “continous” capacitance level sensor of the US type shall be implemented by RAL/CERN

In general we agreed on having a tight collaboration between CERN and RAL.

-Responsibility sharing RAL/CERN
Agreement was found between the two parties on all the points as described above and the memorandum established by Harold from July1, 2005…
except for;
-Transfer Line/DVB interface design is proposed to be done by CERN (in contrary to the memorandum).

-CERN, MIT tests, Schedule

Following construction the valve box shall be delivered to CERN for the pre-commissioning phase in combination with the process control system which will be built by ECR-CE. CERN will provide for the necessary manpower, equipment, instrumentation, to carry out this task. RAL is welcome!

We have examined each step of the DVB procurement (design, specification, tendering, procurement, delivery) and believe that pre-commissioning at CERN will take place at around Mai/June 2006 the earliest. It was felt that for MIT use of the DVB additional time requirements for shipping and setting-up of all the cryogenic system may conflict with the general systems test as scheduled by the collaboration.

We, hence, propose to review the necessity of the general systems test comprising the cryogenic part designed for CERN use at n-TOF.

-Marco presents UNICOS control system.
Marco presented the mandate of his section and described the philosophy of the UNICOS process control standard at CERN and its particular features as well as the work and service the section will provide for MERIT cryogenics.

Friedrich Haug, AT-ECR
18.7.2005