

Draft minutes of ILIMA collaboration board meeting, March 1, 2016,
at GSI (room C27, 3rd floor).
notes by Thomas Faestermann
corrections by Helmut Weick and Yuri Litvinov

Start 9:35

Present: Phil Walker (PW), Yuri Litvinov (YL), Helmut Weick (HW), Klaus Blaum (KB),
Thomas Faestermann (TF), Hans Geissel (HG), Roman Gernhäuser (RG), Christophor
Kozhuharov (CK), Xinwen Ma (XM), Wolfgang Plaß (WP), Markus Steck (MS),
Zygmunt Patyk (on Video)

Invited: Christoph Scheidenberger (CS), Udo Weinrich (UW, from 11:30)

Apologies: Taka Yamaguchi

Proxies: Taka Yamaguchi -> YL

1. Membership and previous minutes

Zachary Meisel (Univ. of Notre Dame) applied for membership.
KB knows him. Unanimous acceptance as member.

YL remarks to the previous minutes that his discussions with BINP people were on the grounds that he acted as GSI contact for stored beams, but that the project manager was informed about all discussions.

2. Schottky detectors

CK refers to Shahab Sanjari's talk at the ILIMA open meeting, the day before, and to the proceedings of the STORI 2014 conference, which just appeared in print.

HW asks whether all Schottky detectors will be ready when the CR is ready, because empty spaces could not easily be filled due to a design with welded connections and only few flanges to save space.

(TF: Note added later: Oleksiy Dolinsky states in an email of March 3, as answer to Iris Dillmann's complaint, see below: "Since there are no models (preliminary 3D drawings) of experimental devices in the CR arcs, it was decided that the reserved spaces for these devices will be occupied by vacuum chambers (or first turn diagnostic), which will be constructed by BINP. ")

CK says that they will be ready in due time.

PW asks about a TDR.

CK thinks that a TDR for the hardware could be written, but the electronics and software are continuously being improved and a TDR would be premature.

There is a general discussion how urgent TDR's are. YL remarks that older TDR's already get reevaluated. But KB remarks that without TDR there is no possibility to apply for funds and if he is asked to renew the TDR there will only a few sentences be changed. CK thinks that then the TDR would be better called a conceptual design report.

HW tells that the necessary positions for Schottky detectors are foreseen in the BINP design and CS asks how BINP obtained the necessary input from ILIMA. HW and CK reply that there were no official specifications but an iterative process of mutual checking.

PW asks whether a planned date for a TDR can be given; CK says no.

3. TOF detectors

WP reports that a publication is in preparation, that the group is checking the design of the CR, that they evaluated several designs, that they try to obtain the smallest dimension, but

would perhaps later like to go to 100mm carbon foils instead of 80mm. Their discussions are ongoing: need an installation length of at least 100cm but would prefer 135cm.

Since the CR TDR is supposed to be finalized by end of March 2016, TOF-group's input should be defined by that time.

The TOF TDR is then the next thing on the agenda.

4. Other (particle) detectors

TF reports that the publication of the detector system, mainly built by Ali Najafi in Munich and presented in the 2015 NUSTAR meeting, has gone into the second round of refereeing. The TDR will then be written based on this publication by mainly RG and TF. TF remarks that the position of the detector pockets in the CR design shown by HW, the day before, looked odd at the end of the arcs.

HW answers that there must have been an error in the drawing.

(note by TF: a few days after the meeting an email discussion on this topic has been started by Iris Dillmann and is ongoing.)

HW: an official complaint has to be forwarded)

RG asks whether the particle detector should also be used for uncooled beams. YL answers that an important subject in the physics case is the investigation of beta-delayed neutron emitters with short half-lives which do not allow the time for stochastic cooling.

General discussion on cooling times and agreement that the 1st priority is for cooled beams and that one should evaluate the conditions for uncooled beams considering momentum acceptance of the CR with bunch rotation. The TDR should concentrate on cooled beams.

HW states that the chamber design should have flanges with 150mm diameter.

5. Financial issues

HW: Ion optical calculations for the CR show an isochronicity in the order of 10^{-6} , whereas the homogeneity of the magnets is only in the order of 10^{-4} . Both enter the TOF resolution about proportionally. Higher order magnets, sextupoles and octupoles are foreseen, but it turned out (more than two years ago) that even up to decapole elements are needed to improve the spread in revolution frequency. But a decapole is not in the costbook and the ILIMA collaboration would have to finance design, manufacturing and the power supply for a decapole coil superimposed on a quadrupole.

YL remarks that also a stability in time of the magnetic fields better than 10^{-5} has been requested.

MS and HW reply that these are independent factors influencing the TOF quality and have to be specified independently. MS urges to check whether these requests are in the CR-TDR when this gets finalized by the end of March, but that the decapoles are probably not in the costbook.

KB proposes to request the design of the decapole and to postpone the power supply.

CK proposes to use for that finances of other items which are in the costbook.

6. TDR writing

Has already been discussed for the detector groups. But it is important to study in detail the CR-TDR.

The question comes up, which detectors are foreseen in the HESR.

HW: at least 1 Schottky-detector, best in the SPARC section, which will be exchanged against another section for antiproton operation. MS: Therefore, it is foreseen to address nuclides with halflives below 100 s in the CR and the longer-living ones in the HESR. Particle detectors are not foreseen.

YL: space is no problem, but the arcs are NEC coated and not suited for exchange of equipment like detectors.

ESR: there will be 2 months of beam time in 2016, May - July, all is scheduled for detector and machine tests. It is also planned to bring the beam to the entrance of the CRYRING. This will be done with the old control system which afterwards will be dismantled. The new control system is hoped to be operational for the next ESR run in 2018.

One RF-resonator will be exchanged with a barrier bucket system. Space will be gained for an additional Schottky detector.

PW asks for the planning of connections between HESR and ESR.

Apparently the price tag of 10 MEuro for the additional about 60 m of beam line is also the result of a more elaborated estimate, a price list for individual items needed exists.

With the arrival of UW a brief discussion on the current status of the planned storage rings at GSI-FAIR starts. HG asks who takes care for the needs of ILIMA. UW answers that in the present scheme ILIMA has to discuss its needs with Henschel (in the future with Ivan Koop). The other route should go via the NUSTAR representative (Jürgen Gerl). The contact person for the HESR is Dieter Prasuhn (FZJ).

UW admits that, although the full planning and construction of the CR is in the hands of the BINP, the CR specifications will be checked by GSI people.

7. Meetings

There was the ILIMA open meeting the day before with very interesting talks. YL promises that he will store the talks for a limited time in his dropbox and that he will invite all collaboration board members to it.

There will be the INPC in Adelaide in summer and the NUSTAR week in York. But for neither an ILIMA presentation is planned.

8. Any other business and next meeting

UW remarks that in the new organigram his responsibilities will shift to the operational side of the rings and therefore ILIMA should invite for future meetings somebody from the BINP, presumably the suitable person will be Ivan Koop.

Next board meeting: it is agreed that 2 meetings a year are optimum. The next one should be in Oct. 2016 at GSI.

End around 11:45