Minutes of the EoI-Meeting on the CR, October 8, 2008

Participants:
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The meeting started with a general overview of the concept and the status of the design of the storage ring CR. In the following an overview of the Expressions of Interest (EoIs) for the CR and of the status of the specifications and legal aspects of in kind contributions was given. A draft version of the rules for exchange of information between the FAIR partners was presented. These contributions are available on the EoI webpage as well as a list of the Expressions of Interest. Presently the rules and standards for the exchange of information are being defined and will be the basis for the collaboration of all FAIR partners.
The updated Technical Design Report (TDR) of the CR will be available in November 2008.

The various technical systems of the CR were presented by the partners who have expressed their interest for a system or part of it. The existing expressions of interest were confirmed.

According to the presentations and subsequent discussions GSI representatives confirmed the following German contributions to the FAIR project.

The contributions and the status of the design work were presented as follows:

Power Coverters: GSI provides all common interfaces between power converters and control system. A preliminary design has been made, prototypes have been manufactured and will be tested at the existing GSI accelerators at the end of 2008 with continued testing in 2009. The interfacing components can be provided according to the FAIR time schedule.

Rf Systems: As for all other FAIR accelerator systems, GSI-EoI covers development of the common interfaces and low level electronics of the CR rf system. The EoI includes the complete bunch rotation and debunching systems of the CR. Design work on these systems is going on. The time schedule for the debuncher cavity foresees a tested protoype cavity in the middle of 2011, which will allow the readiness of the complete set of cavities in 2013.

Stochastic cooling: GSI-EoI covers the stochastic cooling system for CR. GSI developed the concept of stochastic cooling in the CR. A prototype pick-up tank has been designed and is presently manufactured by industry. After assembly of the various components first system test are expected end of 2008. Low level as well as high power rf components have been specified and prototypes have been tested.
The corresponding kicker system will be designed and manufactured in 2009 and 2010.
Procurement of the pick-up and kicker hardware and all rf components by the end of 2013 will be in time for the CR commissioning.

Beam diagnostics: GSI expressed the interest to provide the interfaces to the beam diagnostics FAIR-wide, particularly a standardized data acquisition system including equipment and software. Depending on funding, the design work and prototyping will start in 2009 and should result in prototypes in 2010. Thereafter series production can be done in accordance with the overall FAIR time schedule. Production of the systems will be done by industrial partners according to the FAIR time schedule.

Vacuum: GSI proposes to provide the pumps, valves, gauges and the controls for these devices as well as bakeout control, since they are specified according to the standards which are defined for all vacuum systems required for FAIR. These components are purchased from commercial suppliers out of stock and therefore can be ordered and procured in time for installation in the FAIR accelerators. From the EoI it is clear that only a fraction of these standard components of the CR will be covered by the German contribution.

Control system: Due to the central role of the controls, hard- and software for the operation of the FAIR facility in a globally standardized way, GSI proposes to provide all electronics, hardware and software for the accelerator controls. After a decision about the concept, engineering design can be done in 2009 and 2010, followed by pre-series models in 2011.
Installation of the components can be done according to the time schedule of the various accelerator systems.

It should be emphasized that the work on all the proposed technical systems by GSI technical divisions requires the allocation of adequate human and financial resources.

The components of the CR for which EoIs by non-German partners exist are the following:

Injection components: IMP Lanzhou proposes to provide the injection and extraction kicker systems and the septum magnets including the power supplies. IMP has built such systems for the CSR-project. They have started to design the kicker system of the CR based on the specification by the ring designers. IMP has received full funding from the Chinese Ministry of Science and Technology for the design and construction of a prototype kicker which is foreseen in 2009 and 2010. Procurement of the kicker and septum systems in cooperation with Chinese industry can be done in accordance with the CR time schedule.
The fact that the vacuum chamber of the septum magnet is included in the cost cook price needs further discussion.

Magnets and vacuum components: BINP Novosibirsk has expressed its interest to produce all magnets of the CR and the standard vacuum chambers. Unfortunately no representative could join the CR EoI-meeting. A. Krasnov, who came to attend the SuperFRS meeting on October 9, reconfirmed this interest. BINP is ready to produce all CR magnets and the CR vacuum chambers according to the FAIR time schedule. Work on the design of these systems which is needed as a first step is depending on funding. At the moment no funding is available for the urgently needed activities on these components. BINP is ready to start work on the pre-series magnets in 2009. The time before series production can start can be up to 2 years which would still be sufficient to finish series production by 2013. The design work, both conceptual as well as technical, will be delayed by the lack of funding.

Stochastic cooling: The proposal of ITEP Moscow, to provide components for the stochastic cooling system could not be discussed due to the absence of a representative. V. Varentsov as the Russian liaison officer to the FARI-JCT will gather information on the status of the proposal to provide stochastic cooling components. The time schedule for this contribution is unclear.

In summary we conclude:
All EOI partners are preparing themselves to be able to start once funding is provided.
Work on the CR systems is suffering from lack of funding to start.
In case detailed planning on systems starts already in early 2009 the overall time frame seems to be realistic.

Minutes by M. Steck, 10.10.2008