GSI's Commitment for FAIR: Development and Implementation of the New Project Structure "FAIR@GSI"

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History

In April 2012 the GSI supervisory board requested the GSI management to more consequently focus the company's activities on the realization of the FAIR project. This mainly addresses the requirements concerning the GSI in-Kind contributions to FAIR within the framework of the three subprojects accelerators, experiments, and civil construction. As a result, the GSI management realized this in form of a new project structure within GSI, called "FAIR@GSI". Over the year 2012 and under the overall project leadership of Prof Oliver Kester "FAIR@GSI" successively arose from the former accelerator division, some units from the technical infrastructure as well as from the science division. FAIR@GSI finally comprises 7 divisions, 6 technical ones and 1 newly installed "Project Coordination" [PC] under the leadership of Dr Udo Weinrich. The 6 technical divisions are: Common Systems [CS] with Dr Hartmut Reich-Sprenger, Engineering [EN] with Dr Ralf Fuchs, Primary Beams [PB] with Dr Peter Spiller, Stored Beams [SB] with Dr Markus Steck, Rare Isotope Beams [RB] with Dr Haik Simon and Linac&Operations [LO] with Dr Winfried Barth. Each division supersedes 2 - 7 departments (see Figure 1). The new division and department leaders then created their business plans with interface management and job descriptions, the latter mainly for acquiring new personnel but also for attracting GSI personnel to take over new tasks. Within seven workshops the division and project leads elaborated the following items:

- a list of major milestones for the FAIR accelerator without HESR
- a detailed work breakdown for FAIR@GSI for the full project period
- the matrix including all line and project responsibilities for the FAIR accelerators without HESR

These organizational changes will successively cause a personnel shift of at least 300 persons into new project and hierarchic units under FAIR@GSI. This was and is still a big challenge for the technical staff concerned as well as for GSI's administration.

Performance

As new hierarchical entity the "FAIR@GSI" organisation shall adapt and optimize the overall workflow for an adequate response of all in-Kind activities towards FAIR within the boundary conditions of granted project money, corresponding spending profiles and envisaged timelines.

With an engaging "major milestone list" FAIR@GSI will account for the fulfilment of all in-Kind obligations ("commissioning without beam") by the second quarter of the year 2019.

With "Link existing facilities", the Detector and Target Laboratories and the CBM, SPARC and PANDA Detector departments being part of FAIR@GSI, the new project structure serves all three subprojects (accelerators", experiments and civil construction) of FAIR. The staff is requested to focus their activities on main issues such as

- the construction of FAIR accelerators,
- activities concerning in-Kind contributions,
- activities concerning the FAIR campus development.

Since the allocation of a first badge of project funds for FAIR accelerator construction and experiments end of the year 2011 (50.2 Mio Euro from BMBF and 146 Mio Euro from the State of Hesse) GSI GmbH has been required to realize the corresponding deliveries in compliance with this framework.

Major tasks in this respect comprise e. g.:

- administrative activities such as a so-called "resource-loaded scheduling" (interaction and display at a glance of costs, timelines and human resource [HR] requirements of the FAIR in-Kind activities, see below),
- the generation of comprehensive technical documentation (e.g. specifications, service contracts)
- accelerator construction
- component testing (e. g. magnets)
- a professional execution of purchase processes for GSI in-Kind contributions (i. e. international call-for-tender procedures),
- design and realization of sensible and effective processes,
- creation and/or improvement of communication platforms and controlling issues.

All this has to be done for either own German in-Kind contributions or for contribution by the other partners or direct tendering via the FAIR GmbH.

In-Kind to FAIR Accelerators

The business of allocating accelerator in-Kind contributions to the applying national and international FAIR partners is done by recommendations through the international FAIR committees such as Machine Advisory Committee (MAC) and In-Kind Review Board (IKRB) and finally by decision in the FAIR Council.

So far, GSI GmbH has been assigned to at least contribute to:

- major long-lead items such as the SIS100 dipole modules, the Super-FRS superconducting multipletts, the CR Debuncher system and the SIS100 Bunch Compression system;
- the Accelerator Control system including its interface components within the different technical systems such as the Adaptive Control unit of the Power Converters, the Data Acquisition of the Beam Instrumentation and the low-level parts of the RF systems with cross-functional importance;
- major infrastructure for the accelerator such as the cryogenic plant

Other In-Kind-Related Activities

An important precondition to start in-Kind activities is the completion of specifications. They describe in detail design, technical and functional details of any in-Kind accelerator component. They are the basis for preparing corresponding service contracts with potential contractors.

Specifications and service contracts constitute the main documents to start out with the international procurement processes. In close collaboration with the purchase and legal departments of GSI GmbH “long-lead” items such as the CR Debuncher, the production of superconducting magnets or the diverse magnet testing activities are already subject to comprehensive Europe-wide call-for-tender processes and/or contract negotiations. Last but not least FAIR@GSI has to prepare the overall schedule for the assembly and commissioning without beam phases. All this requires a profound time scheduling for the call-for-tender process itself as well as for the production period, the testing and commissioning processes.

One key issue for steering the FAIR project in these respects is the “integrated project planning” (= resource loaded planning), which is performed in conjunction with the GSI administration. Different project data such as timelines and costs are laid down in different software tools (here MS Project Server 2010 and SAP). With implementing the new software module “SAP-PS” (= Project System) this project data will be linked, additionally together with HR requirements as third factor. This measure shall enable FAIR@GSI to interactively control the project and to amend the planning on one aspect with immediately being aware of related implications on the other two. By end of 2012 every division was involved in creating and or updating their time, cost and resource plans for the realization of dedicated machine components. Bringing these individual plans together into an overall integrated project plan via SAP-PS and taking advantage of the performance of this new software tool constitutes a considerable milestone to further optimize GSI’s in-Kind activities towards FAIR in time.

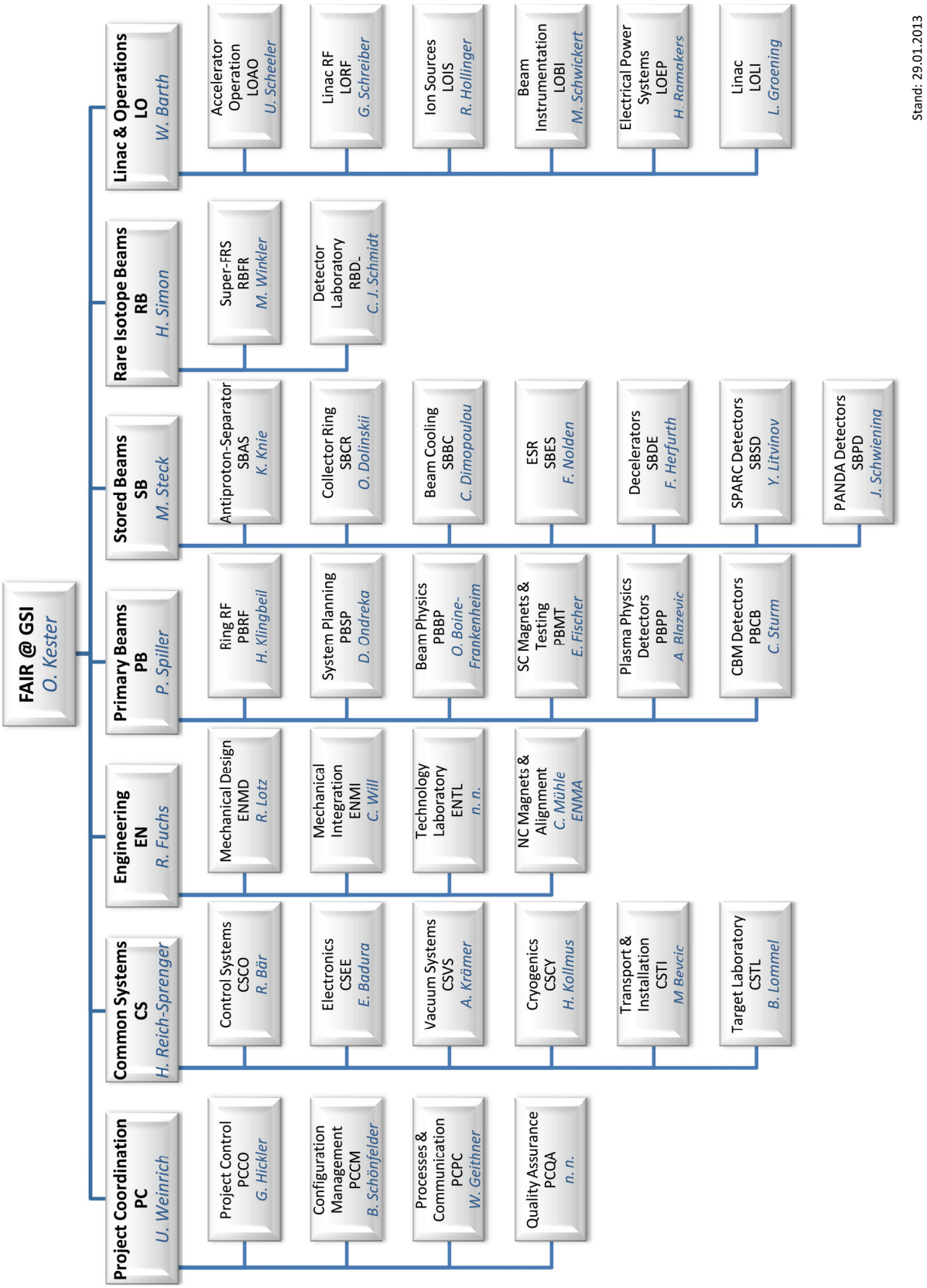

Figure 1: The FAIR@GSI organigram