GSI - Main Control Room
Upgrade Measures in Preparation for FAIR Phase 0

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The existing GSI Main Control Room (MCR) is used for the accelerator complex operation since 20 years. In this time no major updates to its equipment and layout have been done. As its design, size and functionality cannot meet the requirements for running the upcoming FAIR accelerator facility, the planning for a modern fully digital control room is presently ongoing. The construction of a new building is planned for around 2020. However, the research program for FAIR Phase 0 has to be carried out at GSI next year. The main challenge of Phase 0 is operation of all machines, except UNILAC, with a new control system. The old console design is not suitable for that. In order to be prepared for the digitization and the move to the FAIR-MCR, it was decided to modify the existing control room and make it ready to test the console prototypes for the future FAIR-MCR in operation already next year.


GSI Main Control Room (1998-2017)

The new FAIR Main Control Room

- a larger control room for FAIR is needed (FAIR considerably exceeds GSI in size and complexity)
- 600 m² within the FAIR Control Center + visitors gallery, kitchen, meeting room, ready rooms
- modern light and acoustic concept
- **25 fully digital working places**
- planning has already been started
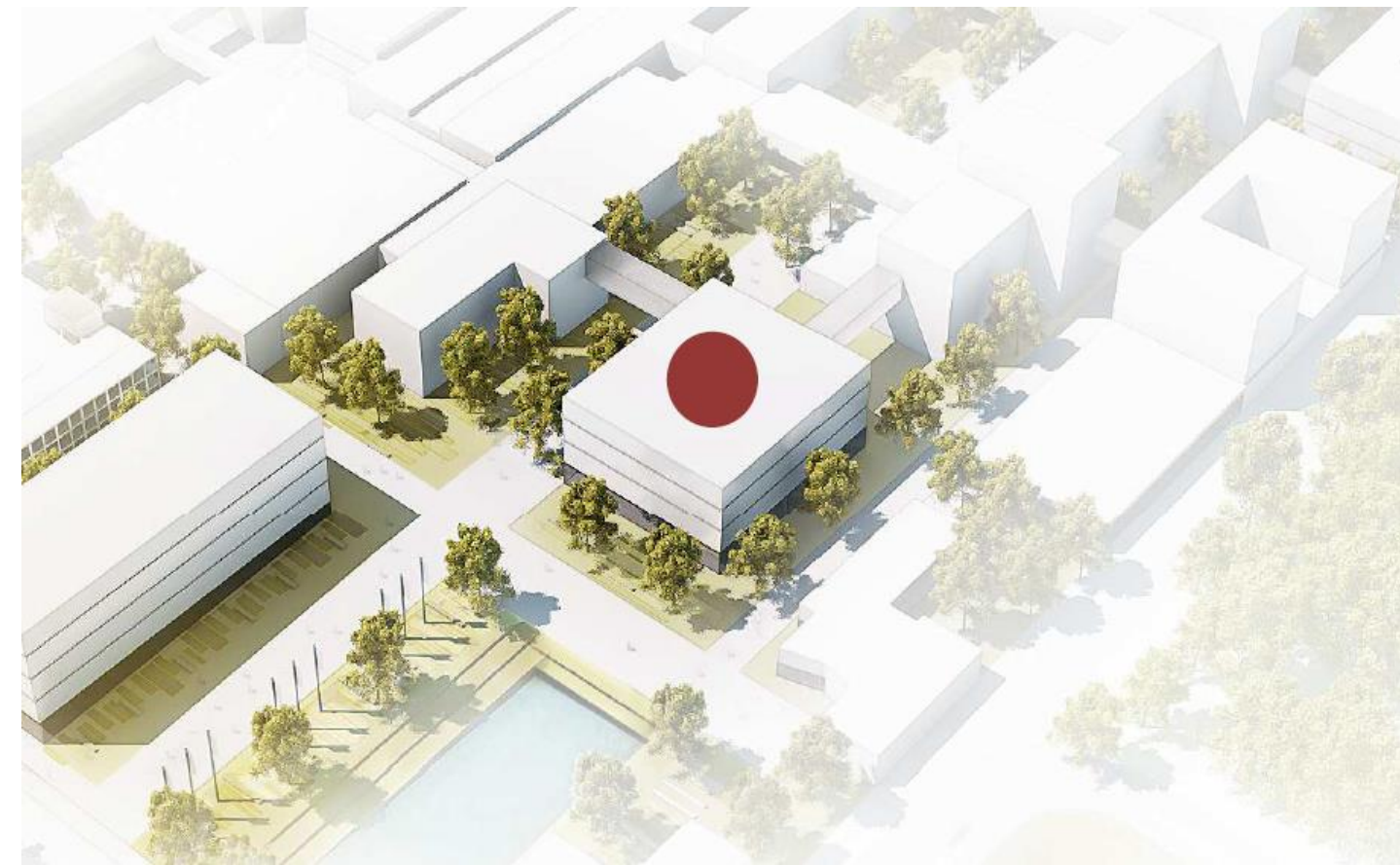
from GSI campus master plan 2016
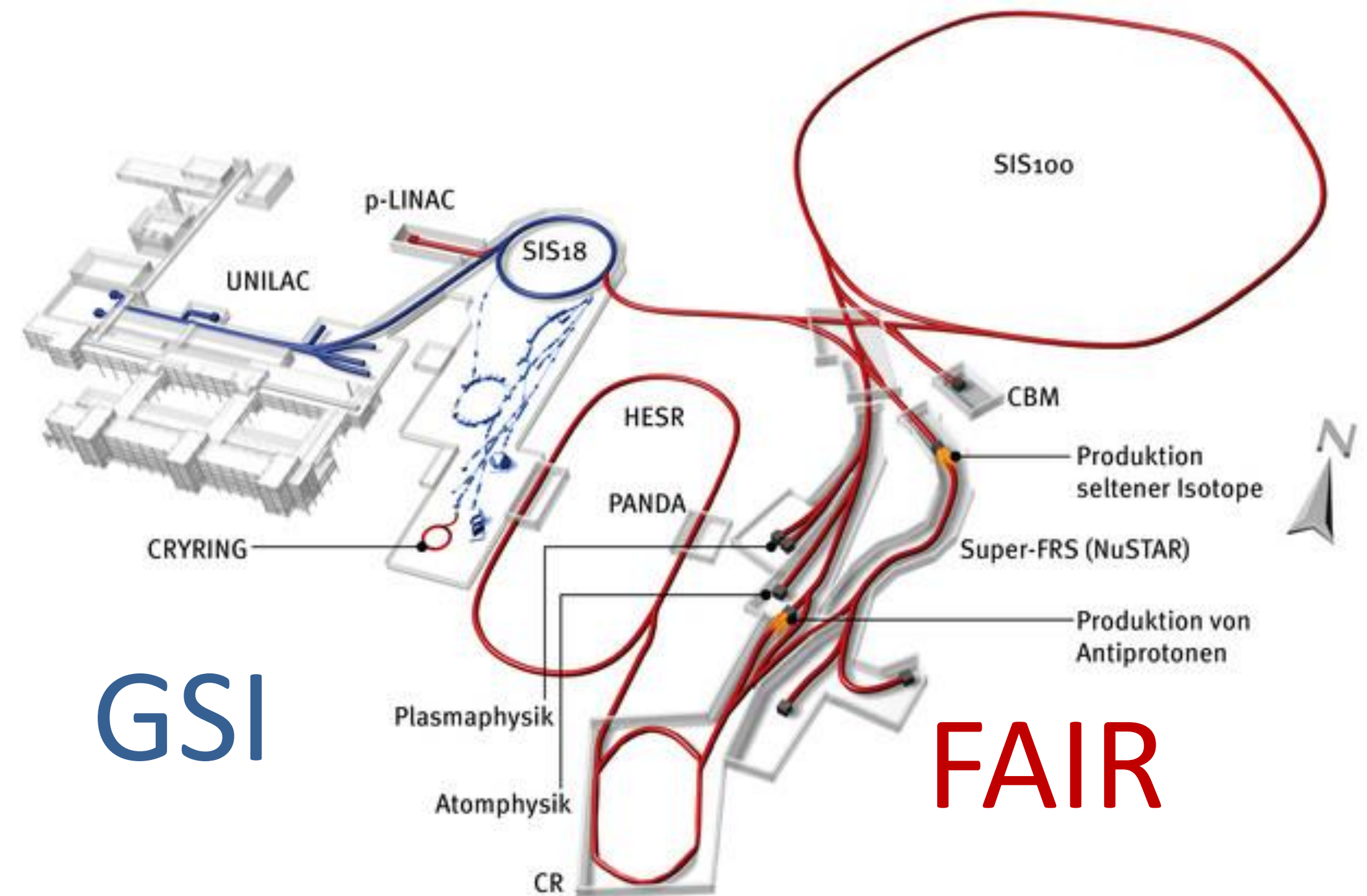
Upgrade of the existing MCR

Motivation

- existing console design not suitable for FAIR control system and applications
- test the first of series console layout for FAIR-MCR
- install overview status monitors for testing first applications
- test and finish digitalization of analog signals (SIS18+ESR) before we move to FAIR control room (but keep oscilloscopes as fallback solution for beam time 2018)
- minor ergonomics improvement (chairs, input devices, light spots)
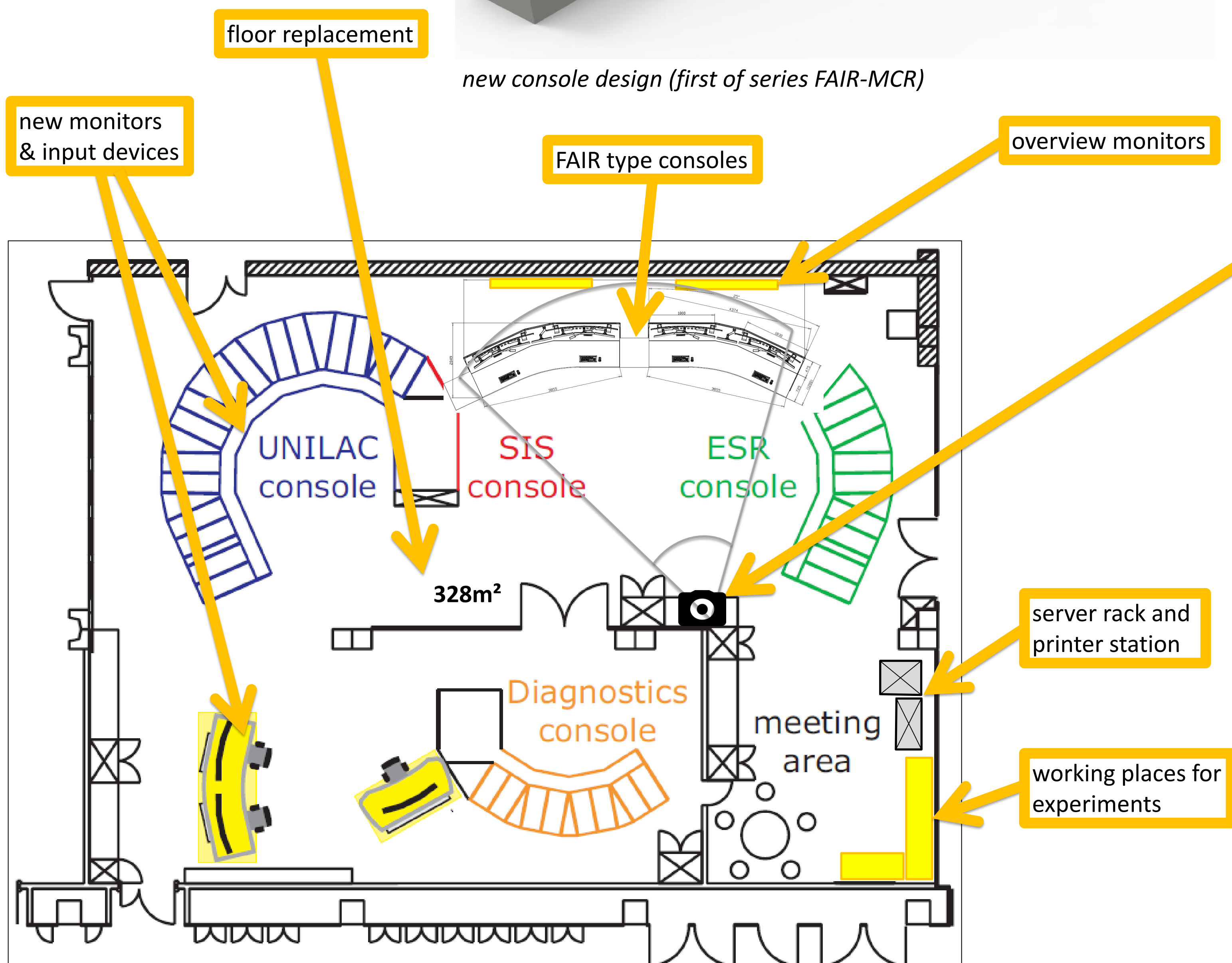- floor renewal had become necessary

Cost
- ca. 70 k€

new console design (first of series FAIR-MCR)

Scope

Control System Upgrade before beam time 2018

- FAIR control system – retrofitting project for SIS18, ESR and HEBT
- use existing accelerators (without UNILAC) as test bench for the complete FAIR control system stack
- LSA settings generation for SIS18, ESR, Crying, HEBT
- Linux clients, complete new applications (JavaFX), 24" screens
- digitalization of signals using Picoscopes
- new timing system and scheduling

April 2017

June 2017

September 2017

October 2017

Status and Outlook

- dismantling old consoles finished ☑
- floor is finished ☑
- tendering procedures started ☑
- analogue signal cables checked ☑

- assembling and commissioning of new consoles till end of October before 1st Dry-Run
- chairs, fixed displays, input devices, finishing till end 2017
- consider replacement and digitalization of UNILAC-console, diagnostics console and remaining ESR-experiment working places for 2019