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Industrial production of superconducting magnets for the FAIR SIS100 accelerator

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Bilfinger NOELL GmbH is the contractor of GSI for main SIS100 magnets.

The production of the 111 SIS100 Dipoles is completed and all dipoles are delivered to GSI. We will give a summary on the production of these magnets highlighting some of the major challenges. Production workflow, individual production steps and results from quality measurements at Bilfinger Noell are presented.

In the frame of contract for the 83 Quadrupole Doublet Magnets (QDM) we have delivered the First of Series (FoS) QDM in November 2019 and it was tested at GSI successfully. We will give an overview on test results during production as well the special challenges of this first QDM. Meanwhile we have started with the series production of the QDMs. While the SIS100 Dipole production was a real series production of magnets, the challenge of the QDM productions are linked to the high degree of variations between the individual QDMs and the necessary additional logistics.

Bilfinger Noell also currently manufactures the 12 so called Missing Dipoles (MDP). These systems are similar to the SIS100 Dipoles and we will report on the status of this production here, too.

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