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SIS100 superconducting magnet series production

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As part of the FAIR project, the heavy-ion synchrotron SIS100 is currently under construction at GSI in Darmstadt. As a German in-kind contribution, GSI is delivering all superconducting modules for SIS100. This includes 108 dipole modules as well as 83 highly integrated quadrupole doublet modules. One quadrupole doublet module consists of two quadrupoles, one nested steering magnet, containing a vertical and a horizontal steerer, beam instrumentation, and depending on the position in the ring additional corrector magnets such as chromaticity sextupole or combined corrector magnets.

While the dipole production has been finished at the end of 2020, the quadrupole doublet module series manufacturing has just recently started after the First-of-series quadrupole doublet module has been delivered at the end of 2019 and undergone an extensive testing campaign until summer 2020.

The main features of the different module types will be presented as well as the results of the ongoing site acceptance tests. This includes results of the thermal evaluation, the evaluation of the magnetic field quality as well as mechanical stability of the cold mass during operation.

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