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[Invited] First images of the Iseult Whole Body 11.7 T MRI

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Neurospin is a neuroscience research center located in France at CEA Saclay. The facility is already hosting several MRI magnets and Iseult, an innovative Whole Body 11.7 T MRI system, will be available very soon. The core part of Iseult is an actively shielded NbTi magnet cooled with a superfluid helium bath at 1.8K, that will provide a homogeneous field of 11.7 T within a 90 cm warm bore. After 15 years of work and efforts, the magnet successfully reached its nominal field for the first time in July 2019. Since March 2019, the magnet is being kept continuously at 1.8K. The field homogeneity has been adjusted and the control system tested against internal and external faults that could affect the future MRI operation. The MRI equipment has been integrated and commissioned individually. The interaction between the gradient coils and the magnet, plus its impact on cryogenics and on the magnet safety system has also been studied up to 11.7T. The paper will summarize the status of the Iseult MRI commissioning, the cryoplant status after two years of operation at nominal temperature, and it will present the first images obtained in October 2021 after 20 years of efforts.

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