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The MINERVA facility within MYRRHA Phase 1

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MYRRHA is conceived as an Accelerator Driven System (ADS). It consists of a proton linear accelerator (linac) of 600 MeV, a spallation neutron source and a nuclear core cooled by liquid Lead-Bismuth (LBE). The 600 MeV accelerator of MYRRHA is a high intensity proton machine, delivering a proton beam on a spallation target. The high-energy protons are used in this target to create neutrons by spallation reactions. The produced neutrons in their turn feed the subcritical core of the MYRRHA reactor.

MYRRHA will strongly support the realisation of a European research and innovation framework by maintaining a high level of expertise in several crosscutting fields together with support to societal needs such as medical applications and high-level nuclear waste management.

According to the phased MYRRHA implementation strategy decided in 2015, the first facility that will be constructed at SCK•CEN, Mol (Belgium) will be the first part of the 600 MeV MYRRHA linac that will deliver intense proton beams up to 100 MeV. The 100 MeV accelerator will on the one hand demonstrate the required reliability of the 600 MeV linac for the MYRRHA ADS and on the other hand deliver protons to a target facility for the production of medical radio-isotopes and for fundamental or applied research in physics as well as for material research of interest to the fusion community. The 100 MeV accelerator together with the proton target facility is named MINERVA (MYRRHA Isotopes production coupling the linEar acceleRator to the Versatile proton target fAcility).

In this talk, the MINERVA facility will be described and the status of its implementation presented.

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