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## Thu-Mo-Po.02-05: PRISMAC: A R&D program and a new dedicated laboratory for very high field superconducting magnets

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For the development at CERN (European Center for Nuclear Research) of the post-LHC accelerator infrastructures, HL-LHC (High Luminosity Large Hadron Collider) and FCC (Future Circular Collider), a new generation of magnets with extreme mechanical constraints, capable of generating high-quality magnetic fields of the order of 14T (operational) and energy efficient will be required. These magnets will be based on technological knowledge currently under development and new superconducting materials. To foster the Spanish efforts to contribute to these strategic goals, CIEMAT (Research Center for Energy, Environment and Technology), CDTI (Center for the Technology Development and Innovation), and CERN signed three collaboration agreements in 2019 within the framework of the PRISMAC program (Very High Field Superconducting Magnets Program).

This paper depicts the progress of the PRISMAC program activities and the tasks foreseen to achieve its goals. PRISMAC is based on three work packages: i) the delivery of a small series of the nested orbit correctors MCBXF, non-conventional superconducting magnets, for the HL-LHC, ii) the construction of a dedicated laboratory at CIEMAT for prototyping and testing of high-field superconducting magnets up to 2m in length (SMART-Lab, Superconducting MAGnet Research and Technology Laboratory), and iii) the development and assembly of Nb<sub>3</sub>Sn demonstrator magnets for the FCC study. An extension of the program is under consideration for the design and development of high-temperature superconducting (HTS) magnets for future needs in accelerator facilities and their applications in other fields, in particular Energy. The PRISMAC program is outlined, focusing on the commissioning of the new laboratory.

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