TITAN: a test bed facility for ICRH antenna and components of ITER

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First CW test bed named TITAN, devoted to Ion Cyclotron Resonance Heating (ICRH), has been built at CEA Cadarache in 2010. It has been designed for testing the ICRH antenna sub assemblies under ITER relevant conditions (vacuum, cooling and RF).
This test stand facility, designed for CW operation, consists in a cooling/baking water loop, a high power 35-80 MHz RF source, an RF matching system and a vacuum tank (17.5 m^3).
The water loop provides high pressurized water (44 Bar max at 250°C max), matching ITER operation conditions, in both baking and cooling modes, with a RF power exhaust capability up to 500 kW in CW.
The matching system is designed to allow current (3kA) or voltage (50 kV) levels in the 30-80 MHz range meeting the ITER requirements.
The vacuum vessel able to provide ITER relevant vacuum conditions ($P< 5.10^{-6}$ Pa at 250°C), with dimensions compatible with each component to be tested. The size of the front flange (2650mm inner diameter) and the length of the vessel (4500mm) will allow testing ¼ ITER antenna.
This paper presents the first tests of an ICRH antenna and a technical overview of this facility. The future operations in the framework of the ITER ICRH European R&D program will also be presented.