

F4E starts connecting the ITER systems together

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Approximately 2,000 sensors will feed the ITER magnetics diagnostic system to calculate some of the key plasma parameters, such as its current and shape.

Those who perceive challenges as opportunities will find themselves

drawn to the levels of sophistication and complexity underpinning the ITER project. Connecting the different systems of ITER and ensuring their smooth operation is not an easy task. The glue, otherwise known as the Control Data Access and Communication (CODAC) system, that holds firmly the systems of ITER together, and allows them to 'talk' between them, is a building block for securing the success of the project.

A contract has been signed between F4E and GTD Sistemas de Informacion for a maximum period of four years and a total budget of five million EUR to deliver services in the areas of software and control in order to integrate the ITER plant systems. The services may vary from implementing standard data exchanges between systems to the development of more [complex software](#) required for plasma diagnostics. GTD Sistemas de Informacion will collaborate with JMP Ingenieros and the United Kingdom's Atomic Energy Authority- Culham Centre for [Fusion Energy](#) (CCFE) in three main areas: diagnostics, cryoplant and buildings.

Europe is responsible for 13 systems in the field of diagnostics covering magnetics, reflectometry, spectroscopy, neutron cameras, X-ray detectors. Magnetics stands out as the area of pivotal importance and by far one of the most challenging ones that will be tackled by the contractors. ITER will operate with at least 2,000 [high frequency](#) sensors, which is roughly four times the number of sensors operating in the Joint European Torus (JET), the largest magnetic confinement facility today. The long pulses will require high availability and reliability in order to keep the machine operational for one hour.

Another area that the contractor will have to work is the integration of the ITER buildings to CODAC and the development of a plant system and graphic user interfaces, which in simple terms can be understood as platforms that will translate data between CODAC and the ITER central systems such as heating, ventilation and air conditioning; power

distribution and fire detection.

Similarly, the integration of the European cryoplant systems will also be carried out through this contract. The integration activities in this domain include the design and implementation of plant system integration into ITER CODAC and the development of a human machine interface for this system. In the area of buildings, one of the first deliverables will be the development of a temporary alarm system that will be needed for operation of the buildings during the construction phase.

Provided by Fusion for Energy

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