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Fusion for Energy signs multi-million deal with Airbus Safran Launchers, Nuvia Limited and Cegelec CEM to develop robotics equipment for ITER

The contract for a value of nearly 100 million EUR is considered to be the single biggest robotics deal to date in the field of fusion energy. The state of the art equipment will form part of ITER, the world's largest experimental fusion facility and the first in history to produce 500 MW. The prestigious project brings together seven parties (China, Europe, Japan, India, the Republic of Korea, the Russian Federation and the USA) which represent 50% of the world's population and 80% of the global GDP.

The collaboration between Fusion for Energy (F4E), the EU organisation managing Europe's contribution to ITER, with a consortium of companies consisting of Airbus Safran Launchers (France-Germany), Nuvia Limited (UK) and Cegelec CEM (France), companies of the VINCI Group, will run for a period of seven years. The UK Atomic Energy Authority (UK), Instituto Superior Tecnico (Portugal), AVT Europe NV (Belgium) and Millennium (France) will also be part of this deal which will deliver remotely operated systems for the transportation and confinement of components located in the ITER vacuum vessel.

The contract carries also a symbolic importance marking the signature all procurement packages managed by Europe in the field of remote handling. Carlo Damiani, F4E's Project Manager for ITER Remote Handling Systems, explained that "F4E's stake in ITER offers an unparalleled opportunity to companies and laboratories to develop expertise and an industrial culture in fusion reactors' maintenance."

Why ITER requires Remote Handling?

Remote handling refers to the high-tech systems that will help us maintain and repair the ITER machine. The space where the bulky equipment will operate is limited and the exposure of some of the components to radioactivity, prohibit any manual intervention inside the vacuum vessel.

What will be delivered through this contract?

The transfer of components from the ITER vacuum vessel to the Hot Cell building, where they will be deposited for maintenance, will need to be carried out with the help of massive double-door containers known as casks. According to current estimates, 15 of these casks will need to be manufactured and in their largest configuration they will measure 8.5 m x 3.7 m x 2.6 m approaching 100 tonnes when transporting the heaviest components. These enormous "boxes", resembling to a conventional lorry container, will be remotely operated as they move between the different levels and buildings of the machine. Apart from the transportation and confinement of components, the ITER Cask and Plug Remote Handling System will also ensure the installation of the remote handling equipment entering into the vacuum vessel to pick up the components to be removed. The technologies underpinning this system will encompass a variety of high-tech skills and comply with nuclear safety requirements. A proven manufacturing experience in similar fields and the development of bespoke systems to perform mechanical transfers will be essential.

Background information

MEMO: Fusion for Energy signs multi-million deal with Airbus Safran Launchers, Nuvia Limited and Cegelec CEM to develop robotics equipment for ITER

Multimedia

To see how the ITER Remote Handling System will operate click on clip 1 and clip 2

To see the progress of the ITER construction site click here

To take a virtual tour on the ITER construction site click here

The consortium of companies

The consortium combines the space expertise of Airbus Safran Launchers, adapted to this extreme environment to ensure safe conditions for the ITER teams; with Nuvia comes a wealth of nuclear experience dating back to the beginnings of the UK Nuclear industry. Nuvia has delivered solutions to some of the world's most complex nuclear challenges; and with Cegelec CEM as a specialist in mechanical projects for French nuclear sector, which contributes over 30 years in the nuclear arena, including turnkey projects for large scientific installations, as well as the realisation of complex mechanical systems.

Fusion for Energy

Fusion for Energy (F4E) is the European Union's organisation for Europe's contribution to ITER.
One of the main tasks of F4E is to work together with European industry, SMEs and research organisations to develop and provide a wide range of high technology components together with engineering, maintenance and support services for the ITER project.
F4E supports fusion R&D initiatives through the Broader Approach Agreement signed with Japan and prepares for the construction of demonstration fusion reactors (DEMO).
F4E was created by a decision of the Council of the European Union as an independent legal entity and was established in April 2007 for a period of 35 years.
Its offices are in Barcelona, Spain.

http://www.fusionforenergy.europa.eu

http://www.youtube.com/user/fusionforenergy

http://twitter.com/fusionforenergy

http://www.flickr.com/photos/fusionforenergy

ITER

ITER is a first-of-a-kind global collaboration. It will be the world's largest experimental fusion facility and is designed to demonstrate the scientific and technological feasibility of fusion power. It is expected to produce a significant amount of fusion power (500 MW) for about seven minutes. Fusion is the process which powers the sun and the stars. When light atomic nuclei fuse together form heavier ones, a large amount of energy is released. Fusion research is aimed at developing a safe, limitless and environmentally responsible energy source.
Europe will contribute almost half of the costs of its construction, while the other six parties to this joint international venture (China, Japan, India, the Republic of Korea, the Russian Federation and the USA), will contribute equally to the rest.
The site of the ITER project is in Cadarache, in the South of France.
http://www.iter.org

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