

How UK Industry is benefitting from ITER

Stuart Codling, Director, Business Development

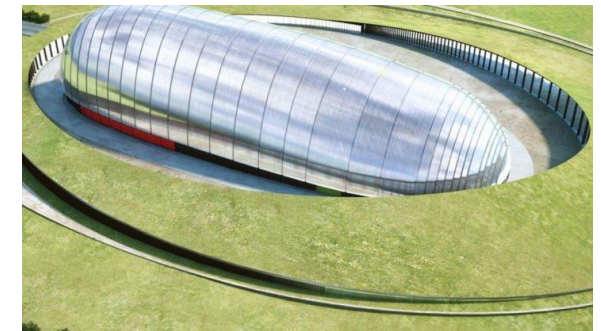
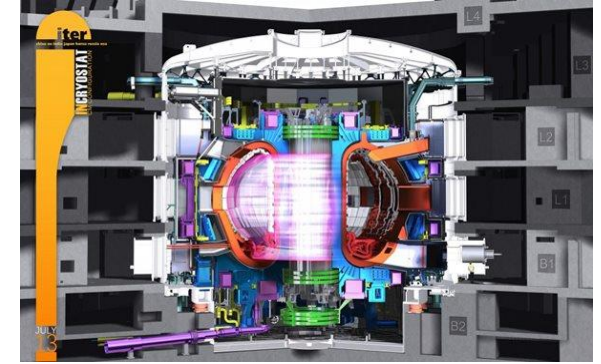
Stuart.codling@Jacobs.com

Tel +44 (0)7581 186 370

Jacobs

Challenging today.
Reinventing tomorrow.

- UK talent force of 10,000 people
- UK's largest independent nuclear labs and test facilities
- Working in fission almost since its inception
- Investing in the UK SMR
- Supporting the UK AMR Phase 2
- And an integral part of Hinkley Point C and Sizewell C
- Working in fusion for almost 40 years



Jacobs Fusion Vision

“Apply our experiences to deliver whole life-cycle global fusion programmes helping put fusion power into homes”

Our aim is to deliver to the triple bottom line:

- **Planet**
 - abundant, clean energy
- **People**
 - exciting mission that attracts staff
 - develop fusion relevant and cross-cutting skills
- **Profits**
 - enable SMEs to win work at ITER
 - create intellectual property



Jacobs Fusion Focus Areas

Tackling the toughest challenges in fusion



Robotics and Remote Handling



Managing Waste and Environmental

H3

Tritium Fuel Engineering



Diagnostics and Controls



Plasma Facing Materials



Digital Technology

Leading and integrating fusion programmes



Integration, systems engineering and programme and construction management

"Making the theory a practical reality"



Jacobs How are we benefitting from working on ITER?

“Without Govt UKAEA R&D investment, industry just wouldn't be successful at ITER”

- Over 350M€ in projects and frameworks
- Employing over 150 people in fusion in the UK
- Employing a similar number from supply chain
- Majority of Jacobs jobs in the North of England
- Developing cross-cutting Industry 4.0 skills
- Provided the basis for set-up of an office in South France



Jacobs Leading and integrating Fusion Programmes

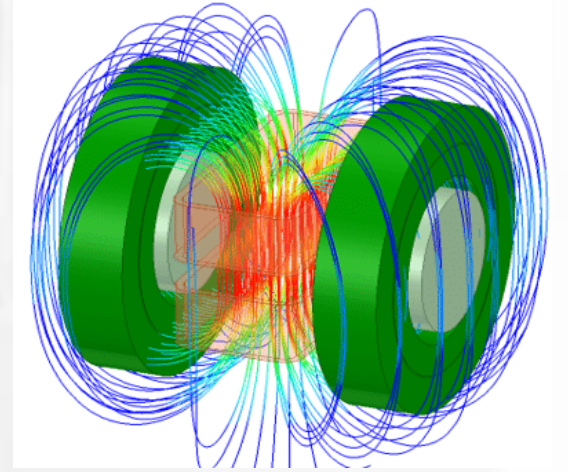
- Construction Management as Agent for ITER site 
- Support to owner for EU contribution (F4E) to the ITER site work 

“We are essentially developing the real life experiences of how to build a fusion power plant”

- UKAEA support essential to winning
- Over 250M€ in framework contracts
- 150 people in South France office near ITER and working on ITER site

Jacobs Developing Fusion Technology

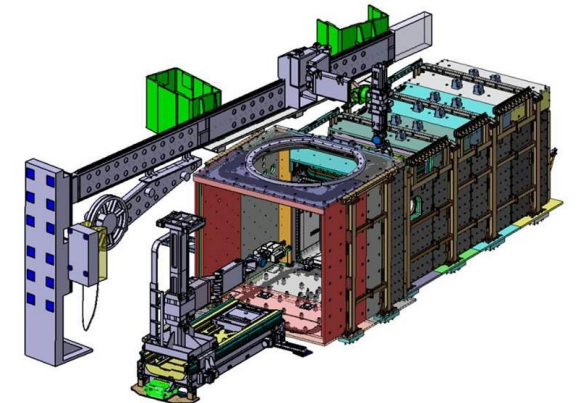
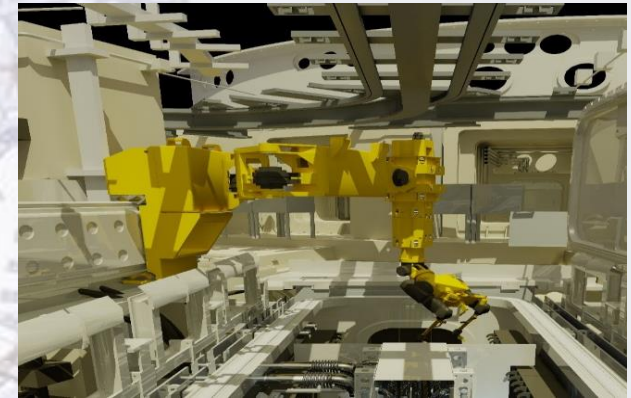
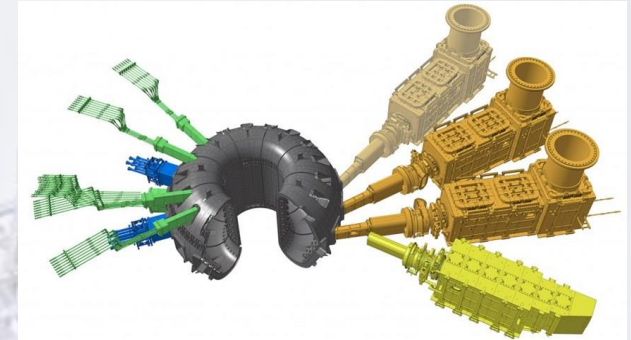
- Working together with **UKAEA**
- Design and Build Chimera in **Rotherham**
- Worlds first fusion component test facility able to replicate the extreme magnetic and heat conditions in a fusion engine
- UK will have a one of a kind facility to **export** for fusion testing
- Developing our **cutting-edge capabilities** to survive fusion conditions



“Stretching UK supply chain capabilities to work beyond their current remit and priming them to win work at ITER and beyond”

Jacobs Developing Fusion Technology

- **Leading** a European Consortium of companies
- Vital support from **RACE / UKAEA**
- ITER Neutral Beam Remote Handling System
- Designing and integrating complex, cutting-edge remotely operated **robotic** subsystems
- **70M€+** framework contract with F4E
- Delivered from **Birchwood, Warrington**



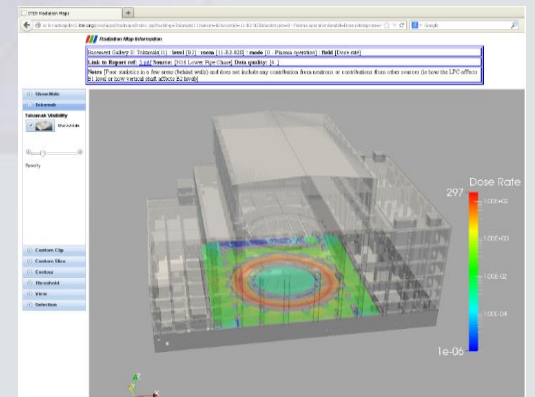
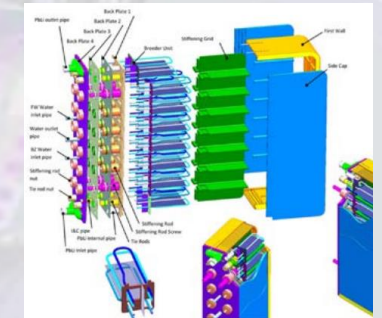
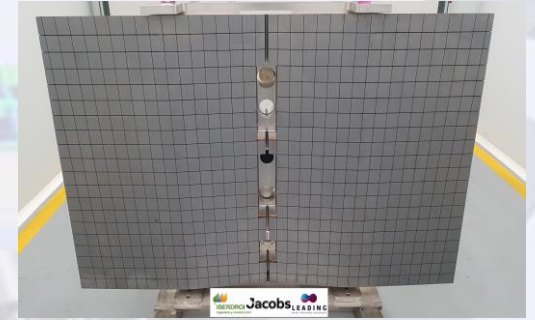
"We are developing cutting edge, transferrable, robotics and remote handling skills in the North of England"

Jacobs Developing Fusion Technology

- Over 50 fusion contracts, including
 - Developing digital simulations for Tritium Breeder Modules
 - Developing the design and materials science for ITER First Wall Blanket
 - Cross plant nuclear integration and radwaste
 - Robotics and Diagnostics

“fusion projects are providing learning to benefit adjacent high-tech sectors”

- Together with our supply chain we have transferred learning to benefit
 - The fission industry, notably the UK SMR and Advanced Modular Reactor programmes
 - The robotics sector, with ‘sixth sense’ for robotics control
 - Other fusion programmes, STEP and Chimera



Jacobs Future benefits from working on ITER?

- We need continued support from UKAEA and UK Govt
- 1Bn€ in projects and frameworks in the next decade
- Enhanced position for UK supply chain at ITER
- Opportunity for 1,000 people on ITER projects
- Leading on Industry 4.0 and cross-sector skills
- Keeping the UK at the forefront of fusion technology and the fourth industrial revolution

Thank You and Questions

For Further info contact:

Stuart.codling@Jacobs.com

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