UK Atomic Energy Authority

UKAEA

MAST-U

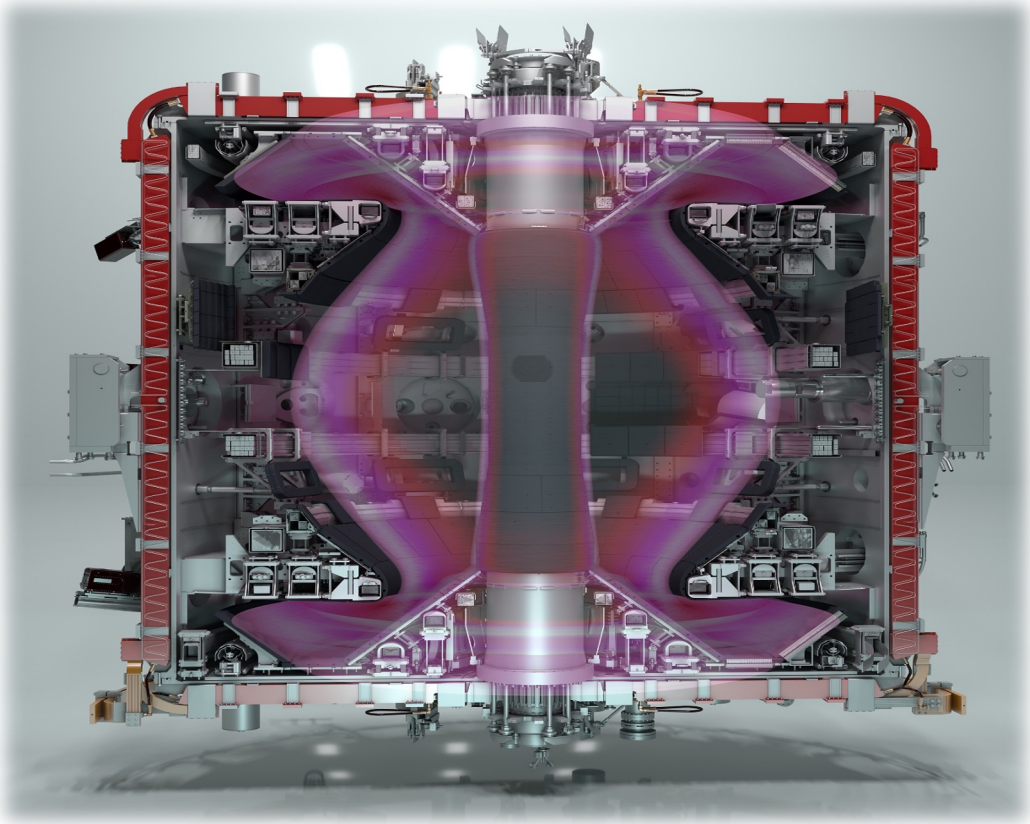
Carl Evans - Procurement Manager

9th Supplier's Event

MAST Upgrade
Mega-amp Spherical Tokamak Upgrade

UK Atomic Energy Authority

- The device is based on the original MAST (Mega Amp Spherical Tokamak) machine, which ran from 2000 to 2013. It has been rebuilt to enable higher performance – longer pulses, increased heating power and a stronger magnetic field – and an innovative new plasma exhaust system.
- Researchers from UKAEA and from our partners at universities and other European fusion laboratories use MAST Upgrade to study many areas of plasma physics.
- Data from MAST Upgrade will feed into international preparations for the ITER project, due to go into operation in the mid 2020s.



MAST-U Enhancements

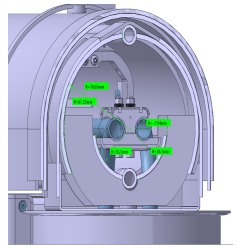
UK Atomic Energy Authority

Delivering:

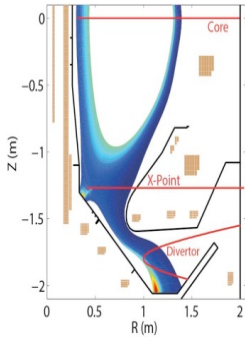
- Double Beam Box (DBB) NBI Heating
- Upgraded Power Supplies (PS)
- Cryoplant
- Electron Bernstein Wave (EBW) Microwave Heating
- Pellet injection (HFPI)

MAST-U Benefits:

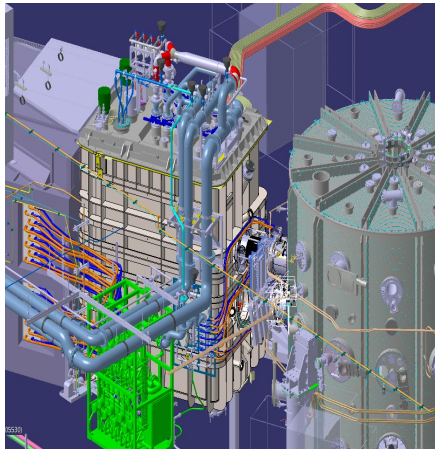
- More power
- Better density control
- Higher performance
- Better measurements



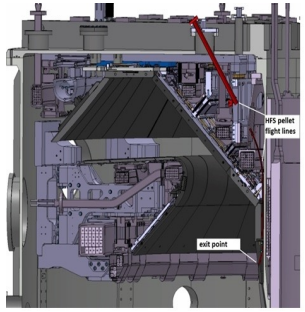
Cryopumping



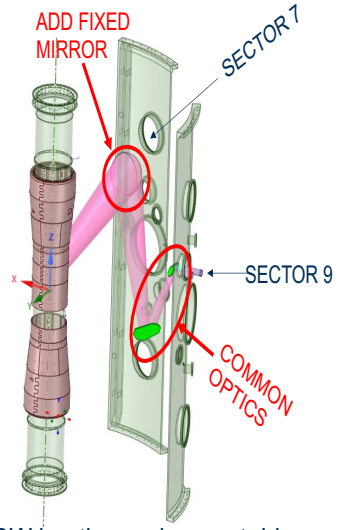
X-point –Thomson scattering



Double Beam Box



High Frequency Pellet Injector



EBW heating and current drive

MAST-U ENHANCEMENTS

UK Atomic Energy Authority

Tender Opportunities

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Delivery Area	Procurement/Contract: Title	Procurement Route	Value Band	RFQ Issue Forecast	Procurement Officer
MAST-U ENH EBW	Provision of False Floor	Contracts Finder competition	<£100k	Q1 2023	Robert Franklin

MAST-U ENHANCEMENTS

UK Atomic Energy Authority

Tender Opportunities

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Delivery Area	Procurement/Contract: Title	Procurement Route	Value Band	RFQ Issue Forecast	Procurement Officer
MAST-U ENH EBW	Interceptor Plates - machining	Contracts Finder competition	<£100k	Q1 2023	Robert Franklin
MAST-U ENH EBW	Interceptor Plates - metalwork / supports / straps	Contracts Finder competition	<£100k	Q1 2023	Robert Franklin

MAST-U ENHANCEMENTS

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Tender Opportunities

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Delivery Area	Procurement/Contract: Title	Procurement Route	Value Band	RFQ Issue Forecast	Procurement Officer
MAST-U ENH EBW	HVPS - Isolation Transformers	Contracts Finder competition	<£100k	Q1 2023	Robert Franklin
MAST-U ENH EBW	HVPS - Output earth switches & disconnects	Contracts Finder competition	<£100k	Q1 2023	Robert Franklin

MAST-U ENHANCEMENTS

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Tender Opportunities

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Delivery Area	Procurement/Contract: Title	Procurement Route	Value Band	RFQ Issue Forecast	Procurement Officer
MAST-U ENH EBW	Mirror Steering System & Brackets (Upper)	OJEU competition	£100k to <£500k	Q1 2023	Robert Franklin

MAST-U ENHANCEMENTS

UK Atomic Energy Authority

Tender Opportunities

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Delivery Area	Procurement/Contract: Title	Procurement Route	Value Band	RFQ Issue Forecast	Procurement Officer
MAST-U ENH EBW	Cooling System - Fabrication and Design	OJEU competition	£100k to <£500k	Q1 2023	Robert Franklin