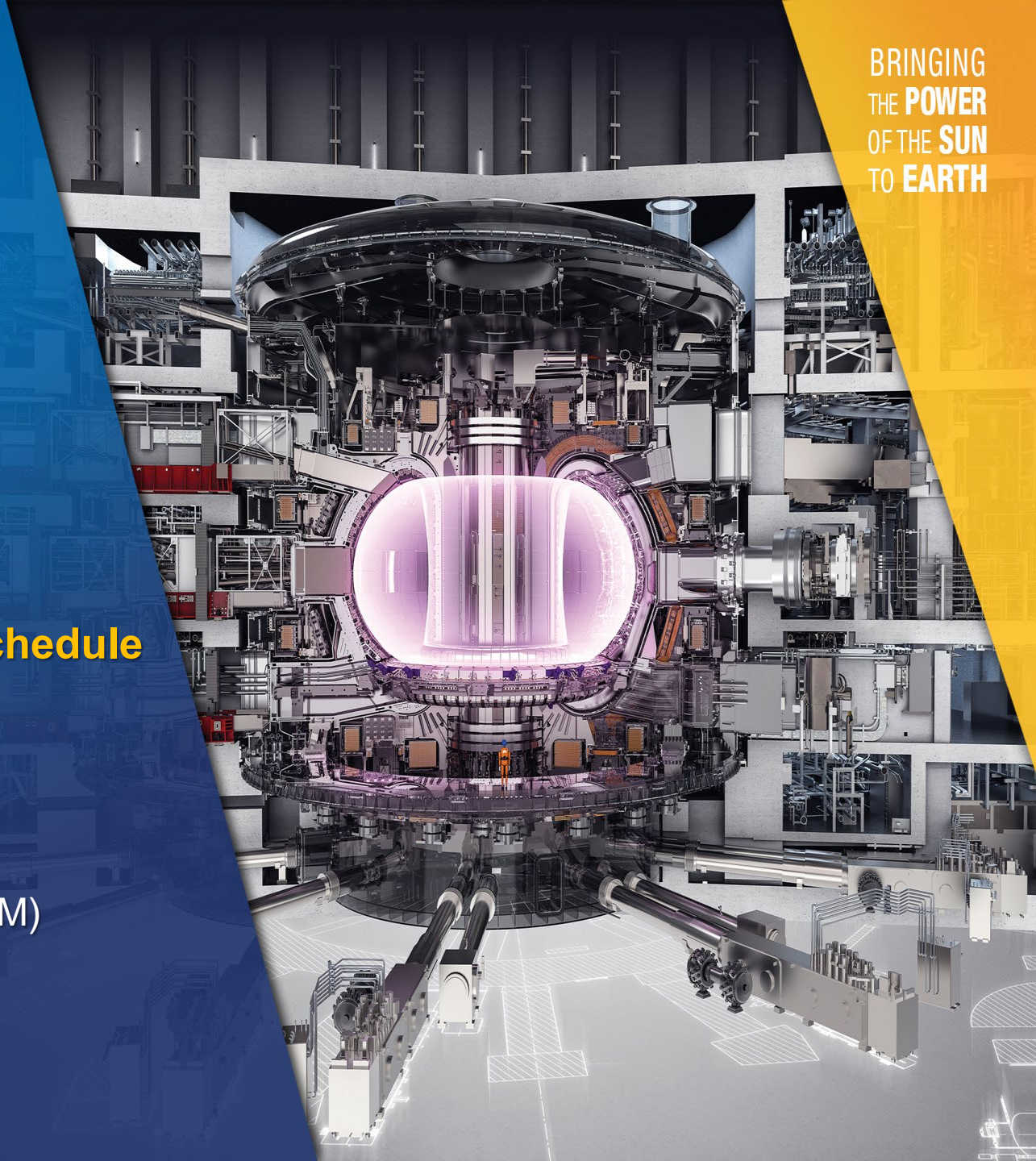
FUSION FOR ENERGY

BRINGING THE POWER OF THE SUN TO EARTH



Scope of Supply and schedule For F4E-OMF-1609

Carine Van Hille (DRHS PjM)

F4E-OMF-1609 Info Day
November 4, 2024

Introduction – F4E RH Program

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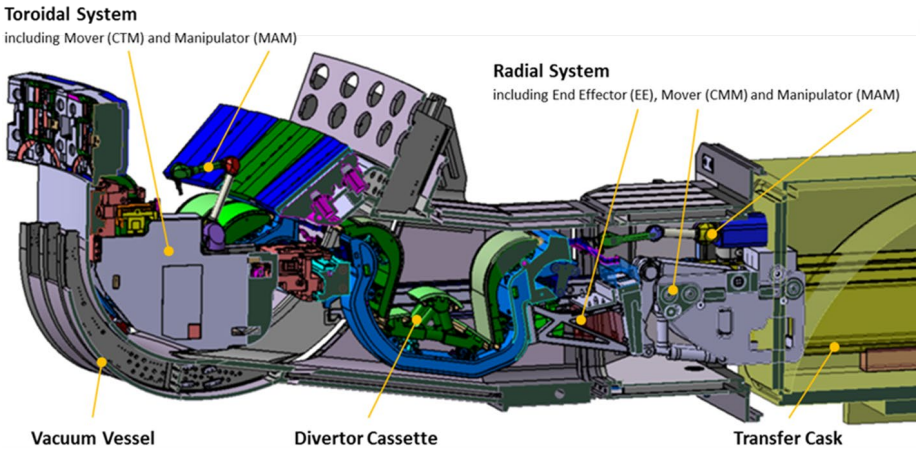
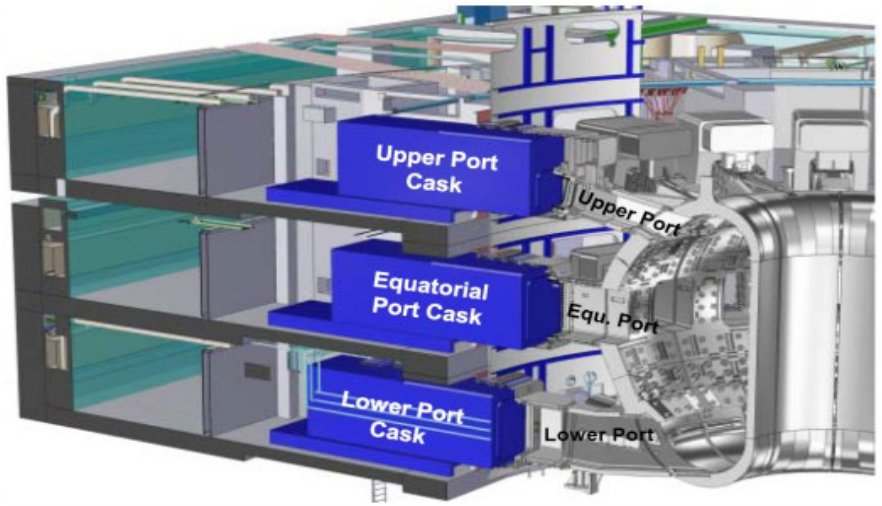
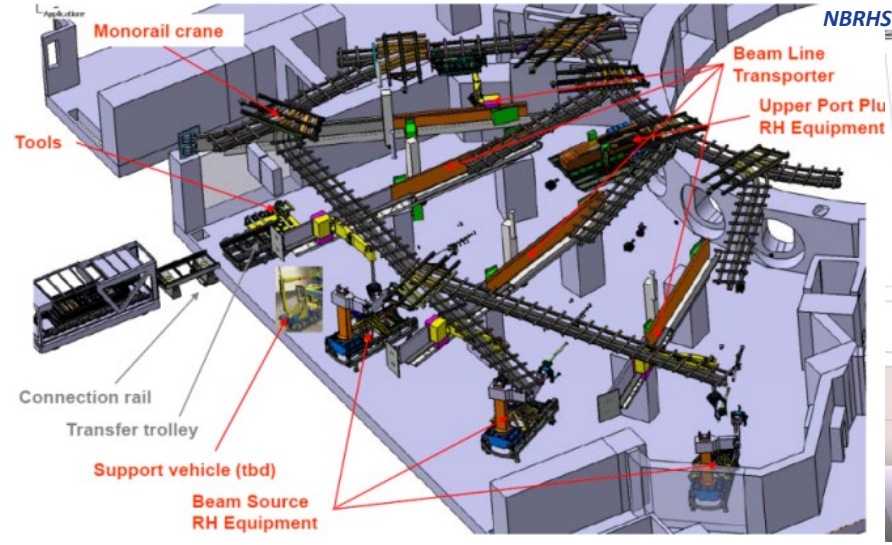
DRHS



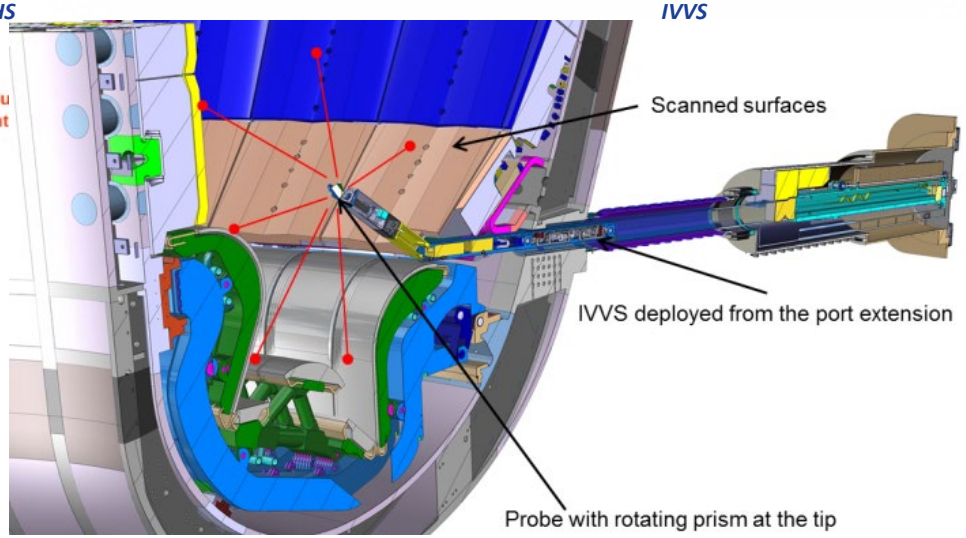
CPRHS



NBRHS



IVVS



Program focus is on items necessary for 1st Assembly phase

Contract highlights

- Title: Design & Manufacturing of RH Assembly Tools and Systems
- Procedure type: Competitive procedure with negotiation
- **Multiple Framework Contract with Reopening of Competition**
- FWC ceiling: 60.0 Million EUR2024

Technical scope

- Machinery

- Focus is on **1st assembly tooling = conventional machinery** = NO requirements related to nuclear field = no Protection Important Components (PIC), no Nuclear safety requirements requiring a specific treatment, no need to resist radiation

- Some activities regarding final systems are nevertheless foreseen but still with no PIC, no Nuclear safety requirements, where (limited) radiation resistance is a topic, F4E will provide guidance to appropriate components (e.g. database of components already selected (e.g. cables, sensors,…), name of Suppliers of radiation hard components, …

Technical scope

Activities may include any of the following: design (key tools CATIA/ SEE Electrical Expert/ANSYS or ABAQUS), manufacturing, assembly and testing, delivery to a test facility, site acceptance tests, training of operators, but also prototyping of electromechanical systems

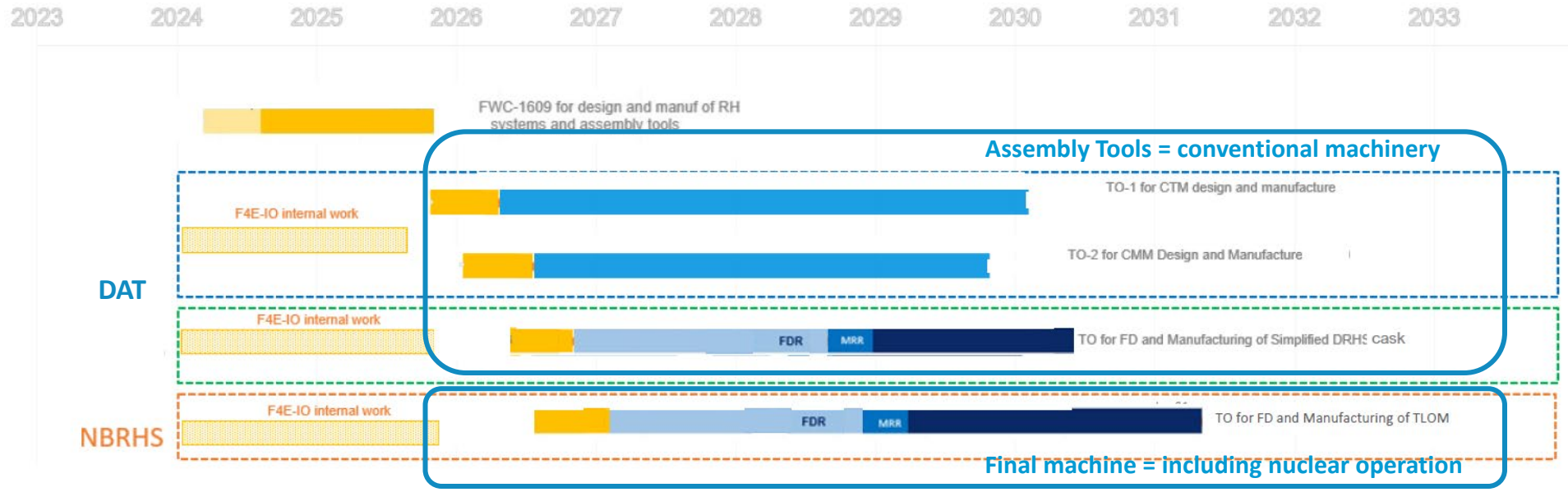
End user at ITER site (Cadarache, France)

- Key words:
  - Complex Electromechanical systems
  - Handling of Heavy loads with accuracy of positioning
  - Hydraulic actuation,
  - Software development projects/ HMI/motion control applications
  - integration of control System on electromechanical machines
  - CE marking/Machinery Directive

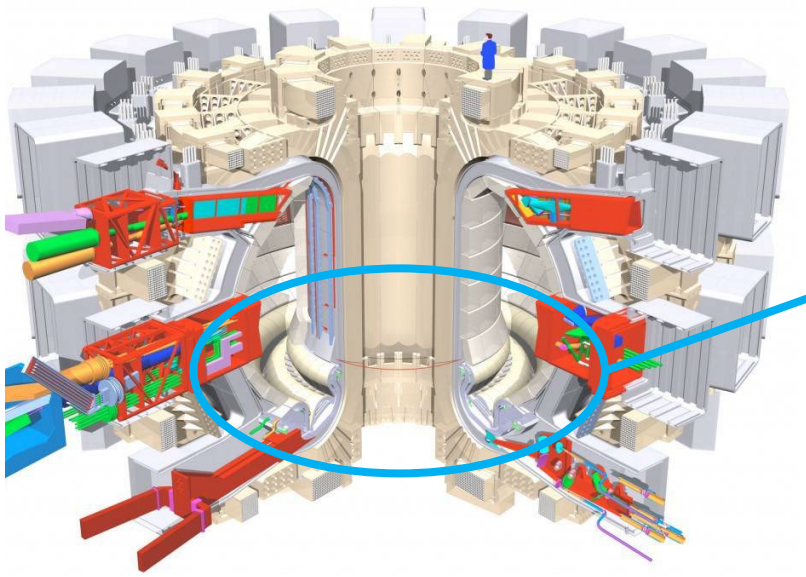
schedule

- 4 Design and Manufacturing Task Orders are planned,
- Starting point from Preliminary Design to Final Design depending on Task Order
- request for task Offers expected to be launched one after the other with ~ 3 months lag from Autumn 2025.

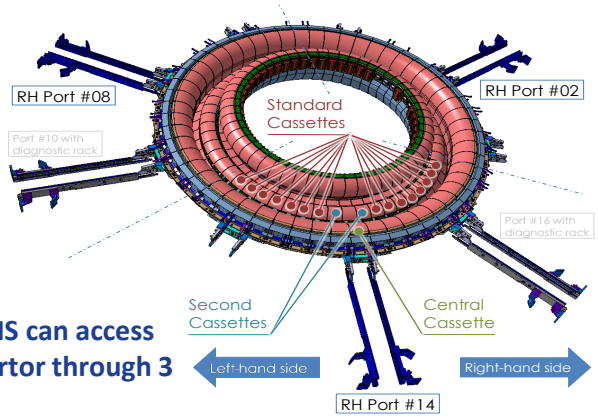
- It is not required that a single Supplier would end up implementing all Task Orders



Introduction to DAT (Divertor Assembly Tool): objective install 54 Divertor cassettes in Vessel



THE DIVERTOR FROM RH POINT OF VIEW

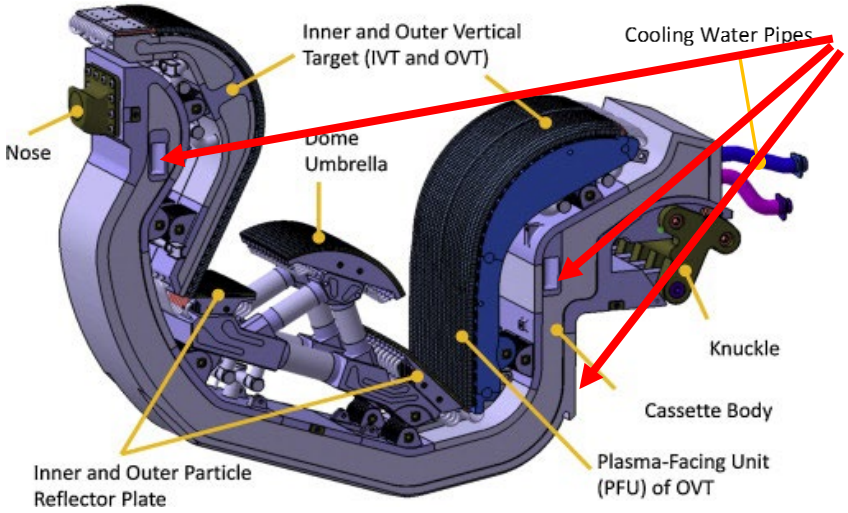


54 cassettes

Mass ~9 t each

3mX2mX0.5m

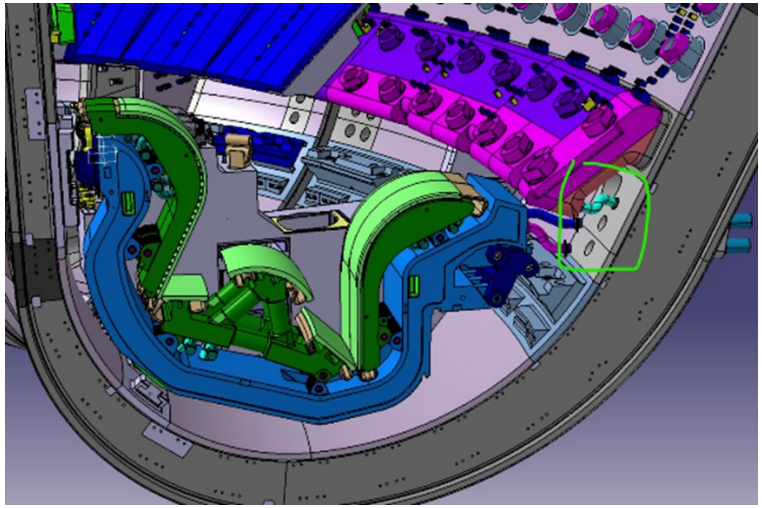
The DRHS can access the divertor through 3 ports



Lifting interfaces:

Lateral pockets

Back plate



Introduction to DAT: Concept of Operation

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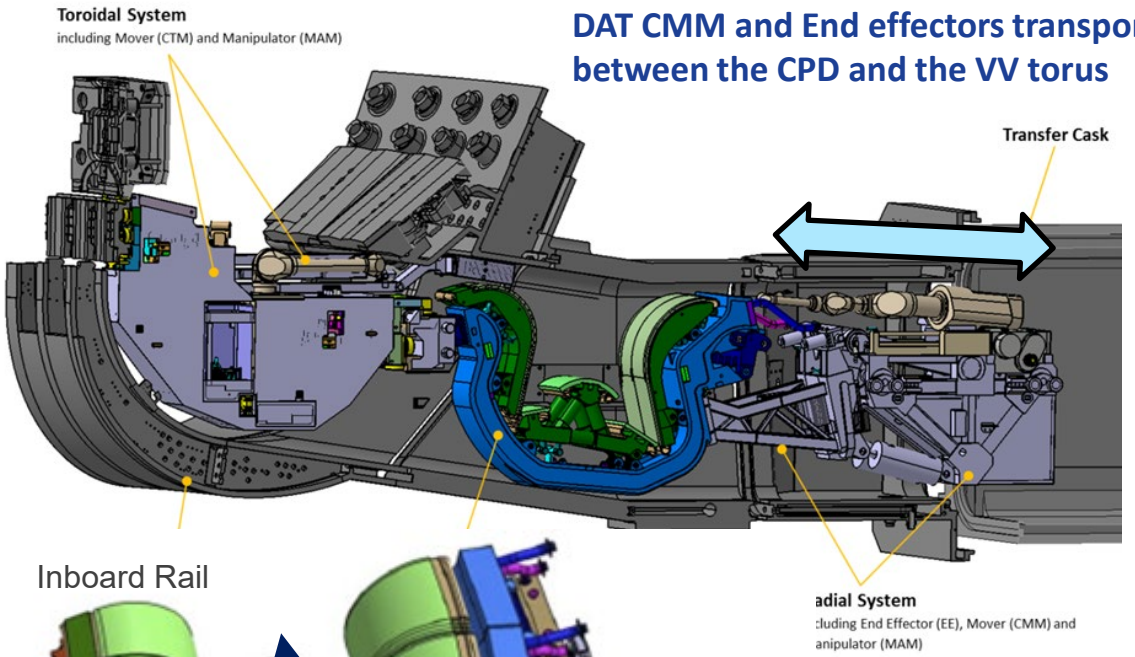
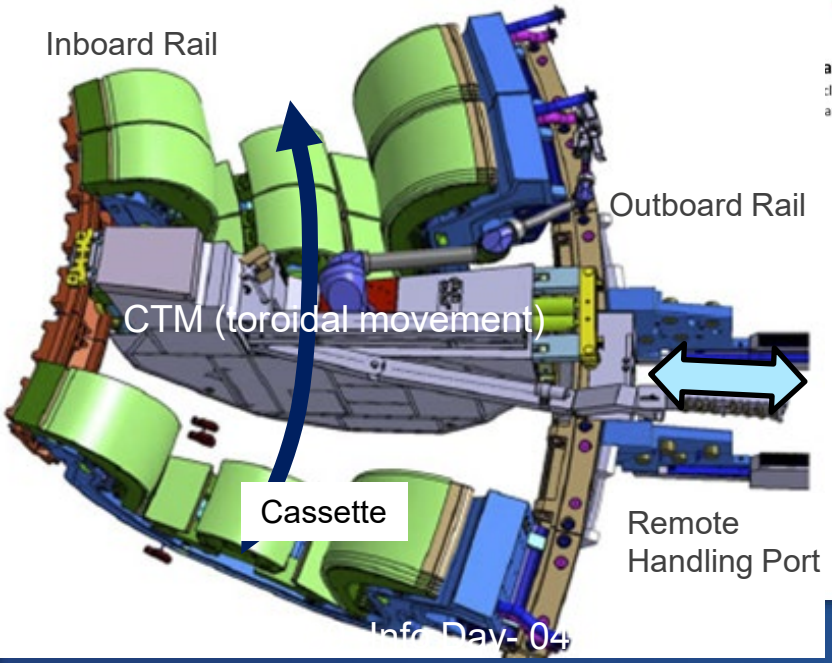
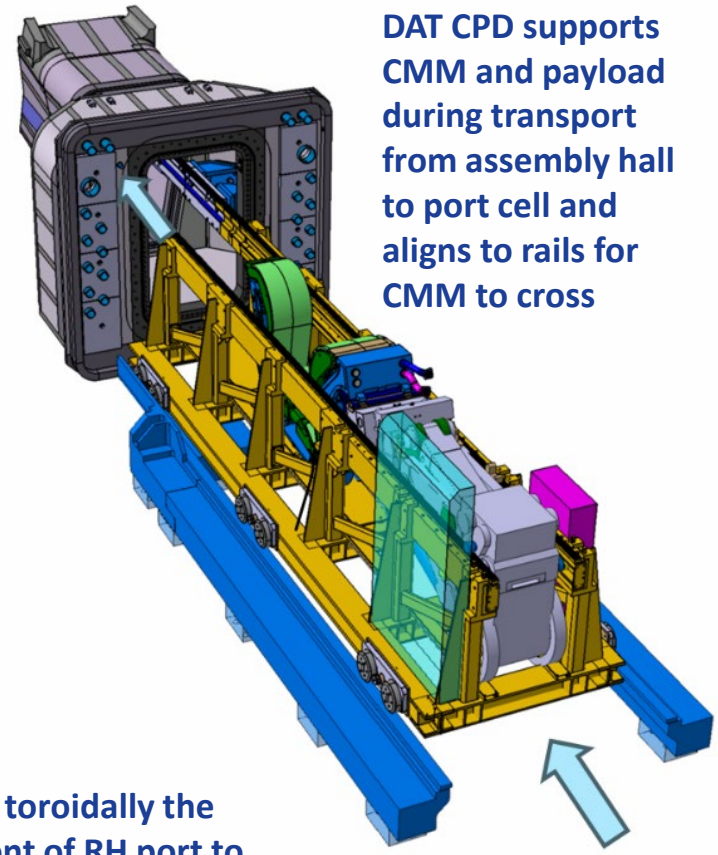
DAT CMM and End effectors transport radially the cassette between the CPD and the VV torus



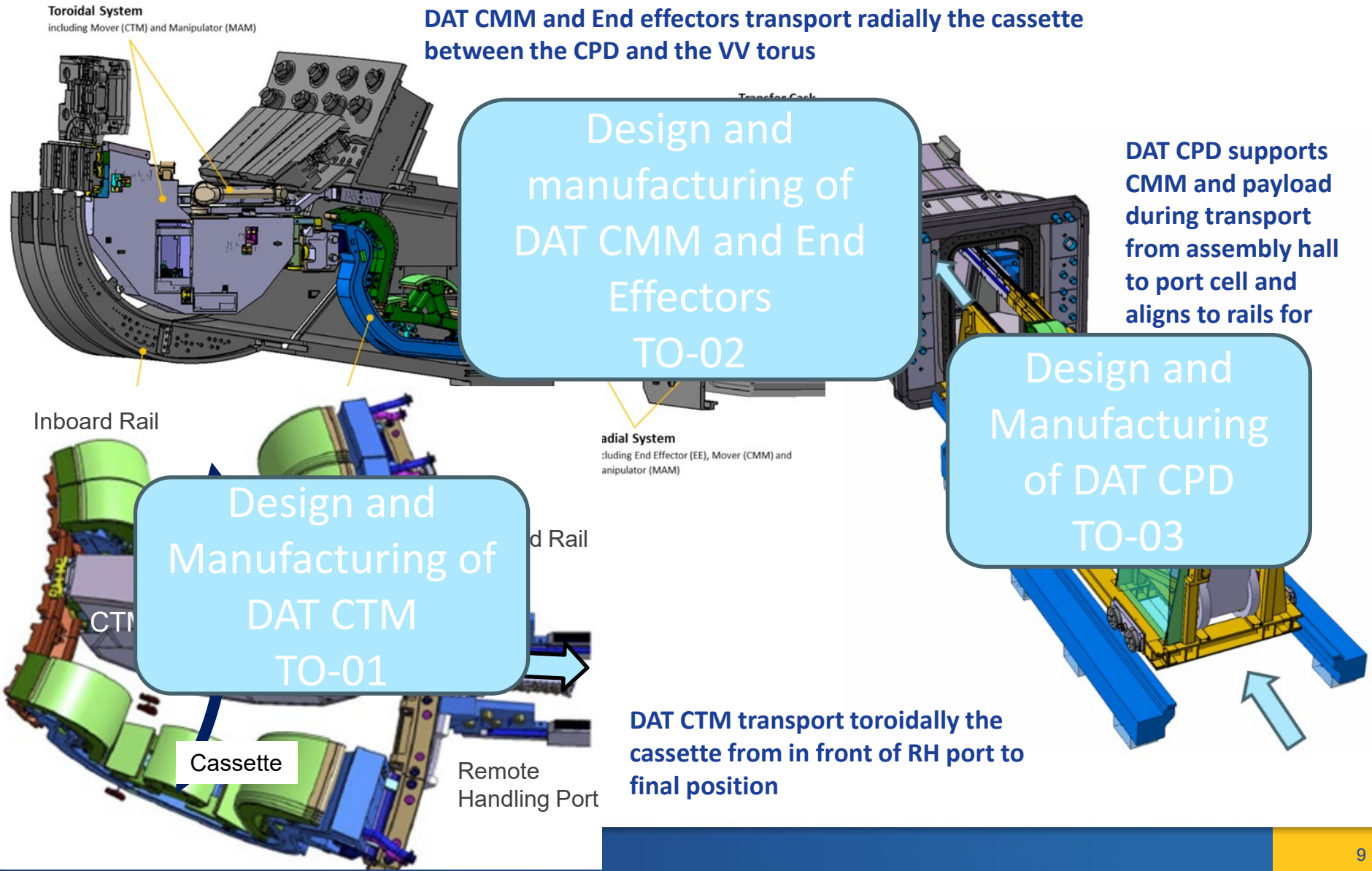




DAT CPD supports CMM and payload during transport from assembly hall to port cell and aligns to rails for CMM to cross

DAT CTM transport toroidally the cassette from in front of RH port to final position

Scope of Supply : planned Task Orders 1/2



DAT CMM and End effectors transport radially the cassette between the CPD and the VV torus

Design and manufacturing of DAT CMM and End Effectors TO-02

DAT CPD supports CMM and payload during transport from assembly hall to port cell and aligns to rails for

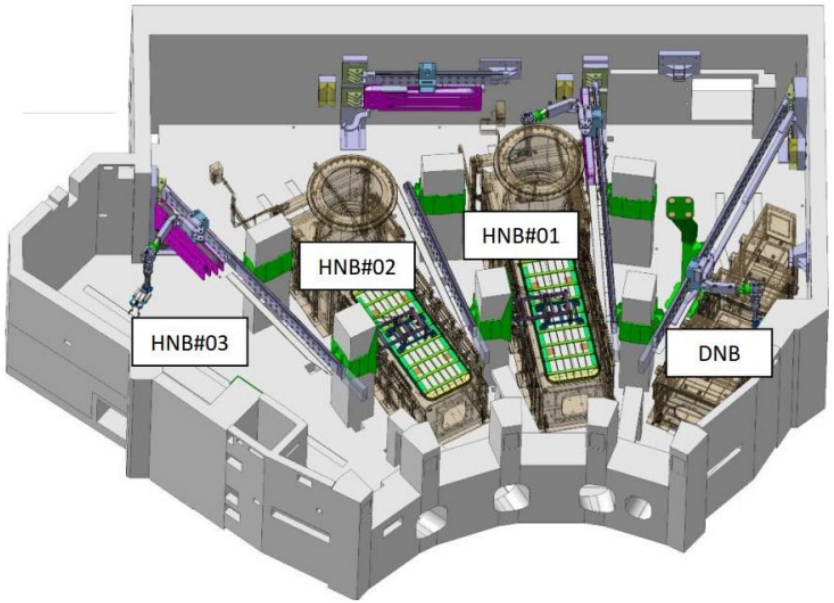
Design and Manufacturing of DAT CPD TO-03

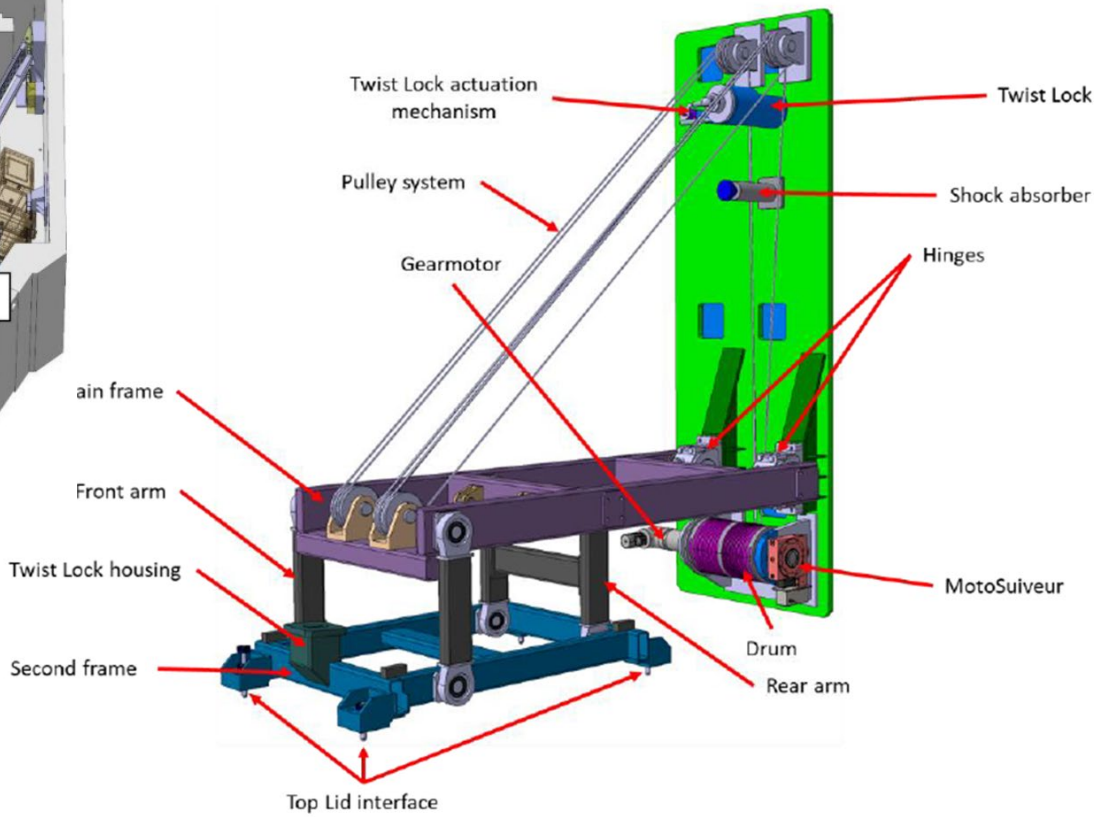
Design and Manufacturing of DAT CTM TO-01

DAT CTM transport toroidally the cassette from in front of RH port to final position

Scope of Supply : planned Task Orders 2/2

TO-04 NBRHS Top Lid Opening Mechanism (TLOM) design and manufacturing:





Snapshot of Nuclear grade TLOM

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