



STEP Spherical Tokamak for Energy Production

7 July 2023

Whole Plant Partners, Webinar 4

The delivery model discussed is subject to approval.

UKAEA reserves the right to:

- Postpone or cancel the planned procurement activity at any stage and at any time.
- Amend, clarify, add to or withdraw all or any part of this document at any time.

Focused Session on the Engineering Partner

Sarah Palmer – Head of STEP Strategic Supplier Relationships

Chris Waldon - Deputy Director of STEP & Chief Engineer

Chris Tierney - WPP Capability & Evaluation Lead

The Engineering Partner (EP)

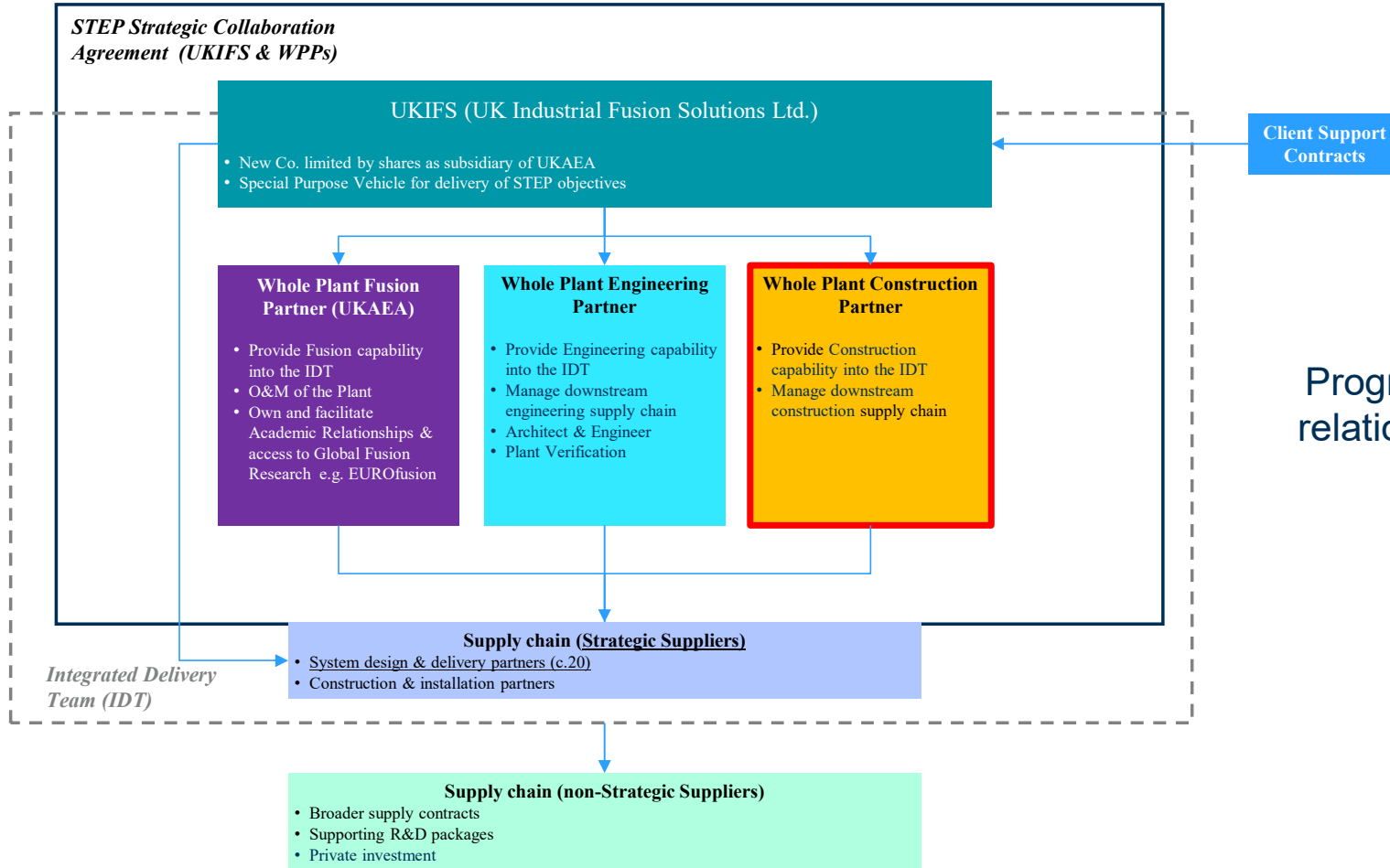
The Engineering Partner (EP) will be a full member of the Integrated Delivery Team (IDT) who will:

- **supply key personnel under secondment into positions in UKIFS**
- **supply services to the whole IDT**
- **lead on delivering work packages developed by and approved by UKIFS (using its seconded staff).**

As the programme develops, subject to performance, we envisage more responsibility passing from UK Industrial Fusion Solutions (UKIFS) to the EP.

On behalf of UKIFS, the EP will be responsible for driving the integrated design of the STEP plant, and leading a supply chain which delivers the manufacture and assembly of plant components and will work with the Construction Partner and Fusion Partner to ensure the integrated design of key facilities to support overall operations.

EP as a member of the IDT



Programme Governance and WPP relationships will be expanded upon as part of RFI3

Self-Delivery

Bidders are not required to "lock-in" full programme lifetime capabilities at Day 1

Whole Plant Partners (WPP) will not be required to self-deliver all work packages / services

In fact, to support the STEP objective of stimulating a fusion supply chain, utilising the WPP procurement and supply chain support will be fundamental

Allocation of work packages / services will be determined on a best for programme basis on a case-by-case basis

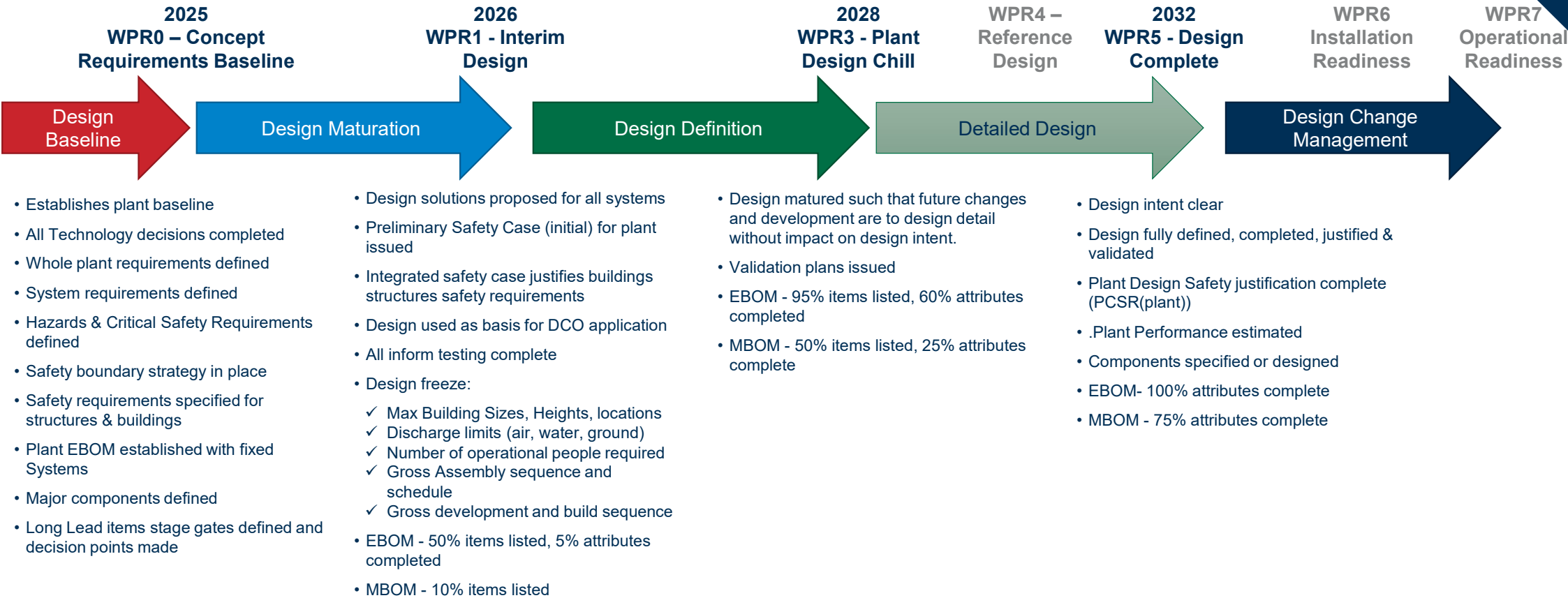
Slide 7

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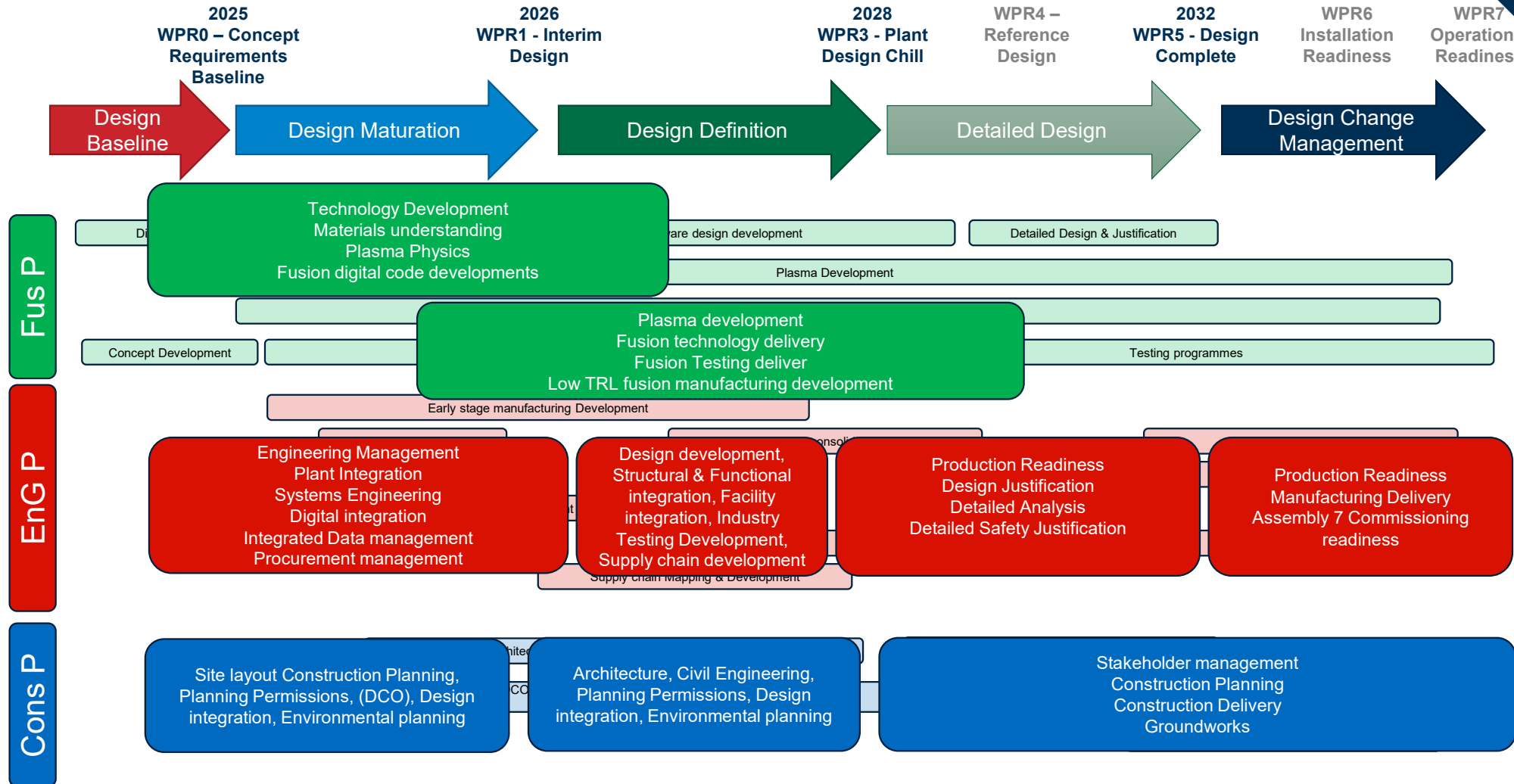
[@Hames, Mark] I've added this slide in to try and be a bit more explicit on the self delivery points

Palmer, Sarah, 2023-06-30T09:20:29.023

Whole Plant Baseline Reviews (WPR)



STEP WPP Scheduled Activities



EP Key Capabilities

From Day 1 – Appointment to the IDT to DCO submission (2025-2028)

Management

- Provision of high-grade Managerial and Engineering personnel for assignment to the IDT
- High-level Project Management of initial IPTs
- Project Control management and governance of Technical Decisions
- Systems Engineering Integration, and governance of Technical Decisions

Design

- Systems Engineering - and Sub-system integration - including interface and requirements development and management
- Design for Safety and Reliability
- Optioneering and Technology Feasibility Studies
- Drafting of Technology Development Roadmaps
- Sub-system design from first principles and system architecture definition

Market & Tier 2 Supplier Engagement

- Vendor pre-qualification and capability studies, including gap assessments of current market vs key requirements : - design and manufacturing capability , ability to deliver at scale and pace
- Engagement of potential strategic vendors to better evaluate key programme and technical risks linked to design and / or delivery challenges
- Engagement of initial vendors for the potential provision of long lead items

EP Key Capabilities

From Year 3+ – DCO submission onwards

Management

- Leadership of larger scope integrated project teams (IPT)
- Responsible for:
 - IPT capability development including but not limited to technical tool development and professional development / people management
 - Integration and interfacing with other IPTs
 - Development and ownership of the IPT plan and integration into the master programme schedule
- Continued development and maturing of technical governance processes

Design & Engineering

- Ownership of safety critical systems
- Design and quantification of plant protection critical systems
- (With UKIFS and Fusion Partner Support) Design from first principles fusion specific sub-system designs to meet novel engineering challenges
- Systems engineering and integration management
- Execution of technology development roadmaps and Validation and Verification strategy
- Development of new manufacturing capabilities to support the manufacture of novel high-tech products

EP Key Capabilities

From Year 3+ – DCO submission onwards

Market & Tier 2 Supplier Engagement

- Programme and Technical Management of sub-contracted design work , eg :
 - oversight of vendor designs
- Execution of manufacturing capability strategies including strategic market engagement
- Proactive development of supply chain capability including germination of strategic supply chains for new and emerging technologies

Tendering Model Parameters

Interested Parties may be part of both an Engineering Partner and Construction Partner bid team

- Each lot will be awarded independently (of each other)
- Demonstration of required capacity and management ability to support both roles will be required

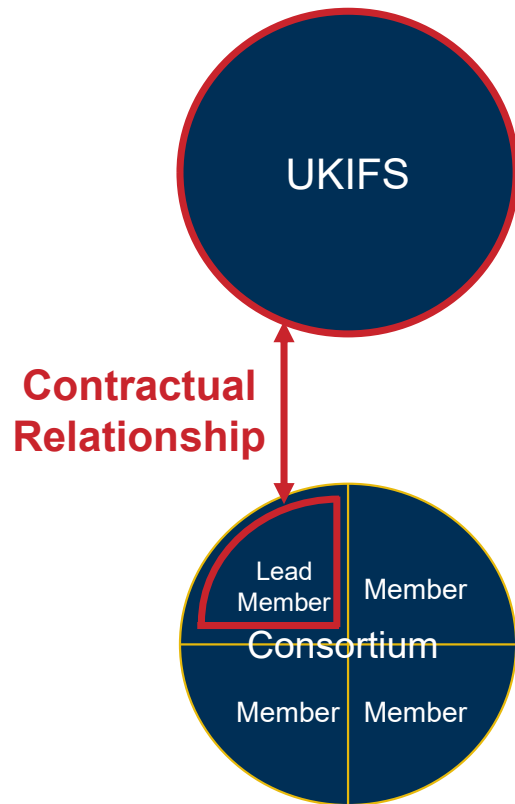
Interested Parties may be a member of more than one bid team, but it may not lead more than one consortium within the same lot - **the same organisation cannot lead two bid teams tendering on the EP lot.**

Interested Parties may lead a consortium tendering on each of the available lots – **the same organisation can lead one consortium on the CP lot and lead one consortium on the EP lot.**

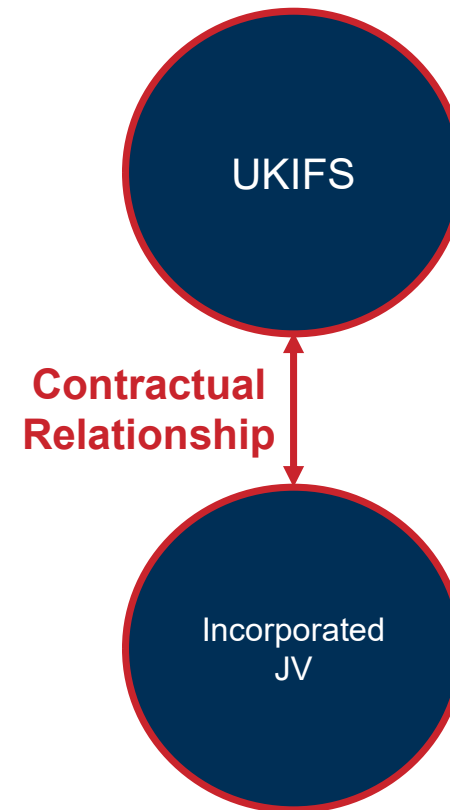
In this instance, organisations will be required to evidence how they will limit the risk of anti-competitive behaviours during the tender process, and evidence their capacity to deliver in the event they were successful in both lots.

Consortia / Joint Ventures (JV)

Consortia Contractual Relationship



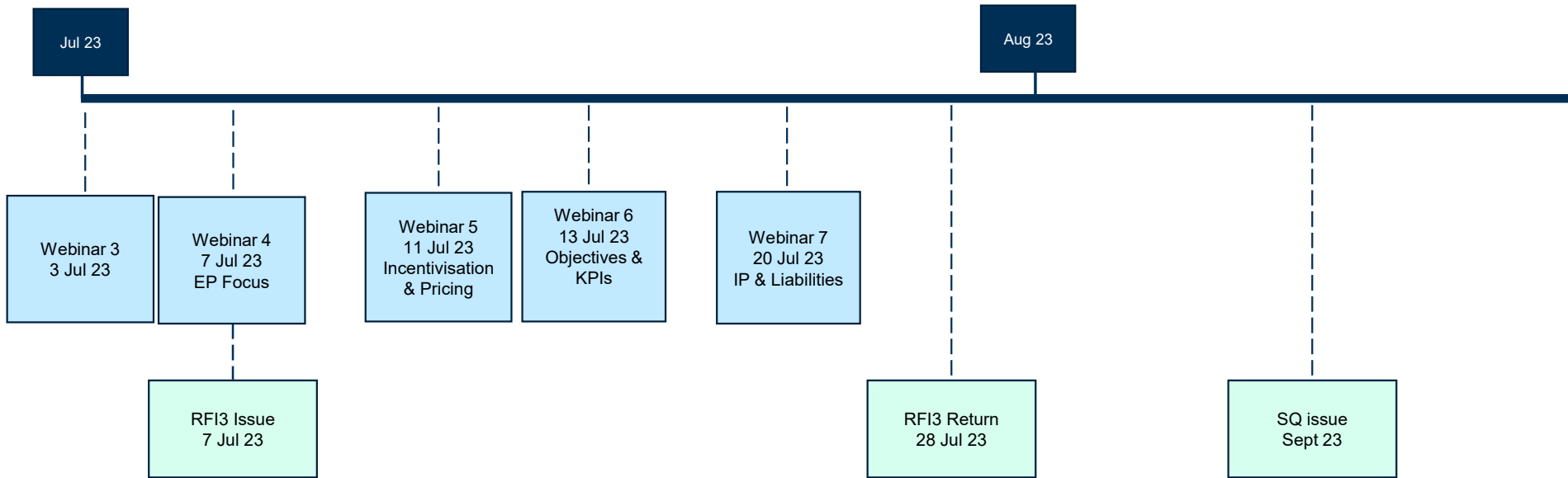
JV Contractual Relationship



We will require any JV's to be Incorporated at point of Contract award

What's planned next? Sarah

STEP Pre-Market Engagement

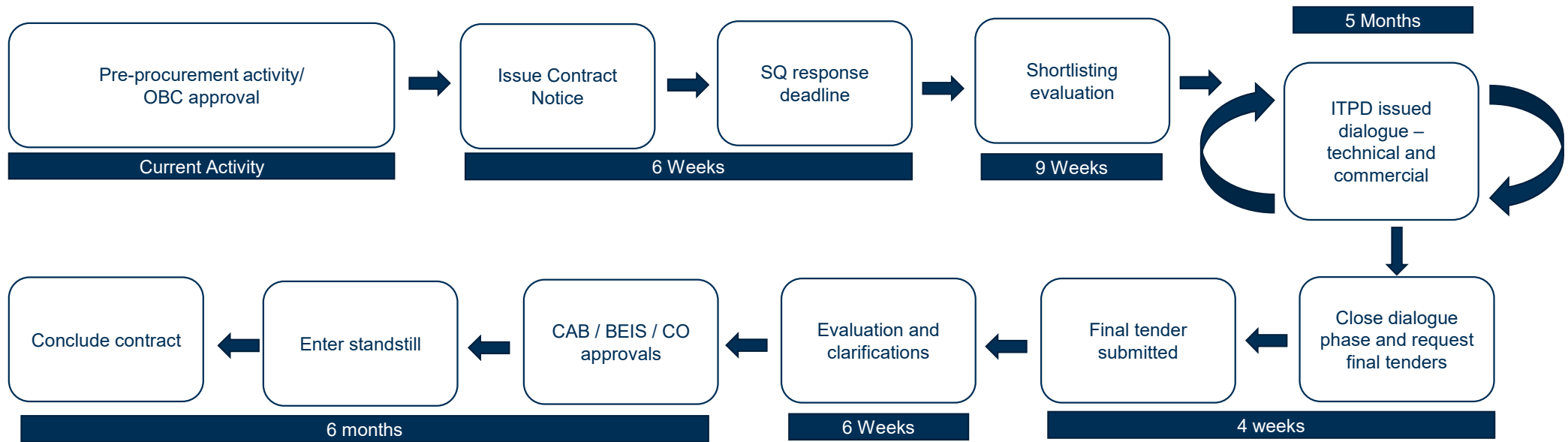


- **RFI2 responses** - Thank you! We are continuing to use the information and suggestions.
- **RFI3 to be issued W/C 3 Jul 23** - This will cover further information on programme governance, PMO capabilities, IP, acceptable tendering models, future investment, commitments to fusion and proposed Selection Questionnaire technical questions

Procurement Process Update

Following your engagement, we have been continuing to refine the procurement process to be as compliant and efficient as possible for all parties.

Based on our current planning, we expect to commence the procurement with the issue of the Contract Notice and Selection Questionnaire (SQ) in September 2023.



Thank you.

Any questions – procurement@step.ukaea.uk

If you'd like to find out more about fusion or UKAEA please take a look at these resources:

<https://www.gov.uk/government/organisations/uk-atomic-energy-authority>

<https://ccfe.ukaea.uk/>

www.step.ukaea.uk

<https://www.youtube.com/channel/UCyb9vG8oLE4XvZZLYpcDcFw>