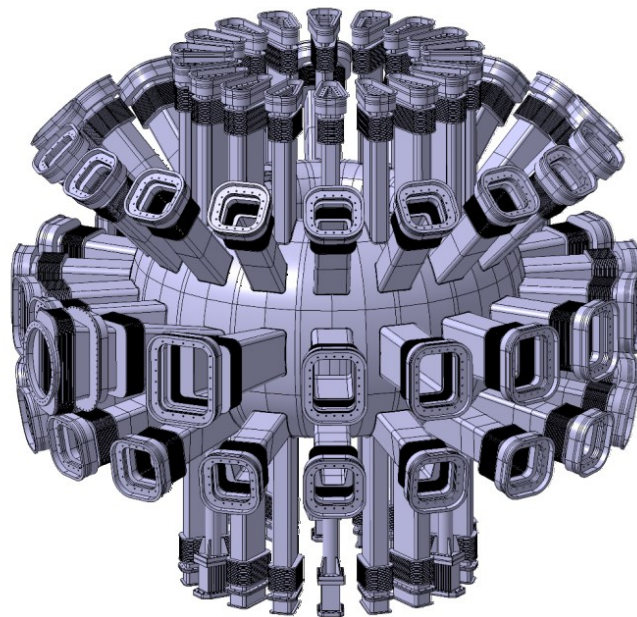




Information Day on Vacuum vessel, ports and related accessories Procurement



Web event: 09/12/2021 14.30 CET (via zoom)

DTT INFO DAY – Vacuum vessel, ports and related accessories Procurement

DTT Consortium (DTT S.C.a r.l. Via E. Fermi 45 I-00044 Frascati (Roma) Italy)





The material and information contained in this presentation are provided for information purposes only, and should not be construed as basis for technical specifications of the call for tenders.

DTT Consortium (DTT S.C.a r.l. Via E. Fermi 45 I-00044 Frascati (Roma) Italy)



Agenda



14:30: Introduction: welcome, scope of the meeting and agenda

14:40: DTT project: state and tender plans

15:00: VVP tender: technical issues, planning and logistics

16:00: VVP tender: administrative and regulatory issues

16:30: break for collection of questions through zoom chat

17:00: preliminary answers to questions

18:10: closing of meeting

Scope of meeting



- To inform about technical and administrative issues and constraints concerning Vacuum Vessel procurement to be launched in Q1/2022
- To collect comments and suggestions from the specialists in the market of vessels for UHV that might be used in the final tender documentation

The VVP tenders in summary



- **What?** Scope of supply:
 - 14 standard 20° sectors
 - 2 30° special sectors
 - 1 20° special sectors
 - Jigs for supports during construction and final assembly
 - Transportation frame
 - Splice plates, sensors, gravity supports, bellows and flanges
 - Support in the preparation of first phase of final assembly

The VVP tenders in summary



- **When?**
 - The tender will be launched in Q1/2022
 - Timing for tender subject to the results of external panel revision
 - First sector expected 18 months after KoM
 - All sectors and ancillaries to be provided within 41 months from KoM

The VVP tenders in summary



- **How?**

- The tender will be an open procedure
- We will adopt a best value for money offer scheme
- Technical and financial requirements will be requested for the participation
- Criteria for the award will be declared in the notice of the call for tender. Some indications will be declared in the next presentation

Rules for questions



- During meeting, please send your enquiry to me (Gian Mario Polli) via zoom chat
- After the meeting questions will be collected and answered (if possible) at the end of the meeting.
- From tomorrow a FAQ section will be available for a few days on the website ([here](#))

Further requests of technical clarifications



- In case you would be interested in specific meeting to discuss specific technical issues refer to Dr. Paolo Acunzo (Italian ILO - Industrial Liaison Officer F4E/ITER & DTT): paolo.acunzo@enea.it
- A limited number of meetings will be organized in January to satisfy the possible requests

Break



The meeting is in stand-by in order to collect questions that will be answered afterwards.

The meeting will restart at **17.00**

Question



Salve, avrei una domanda ? riguardo all'assieme dei settori.. come mai assieme?

Hi, I have a question about assembling the sectors .. why they come together?

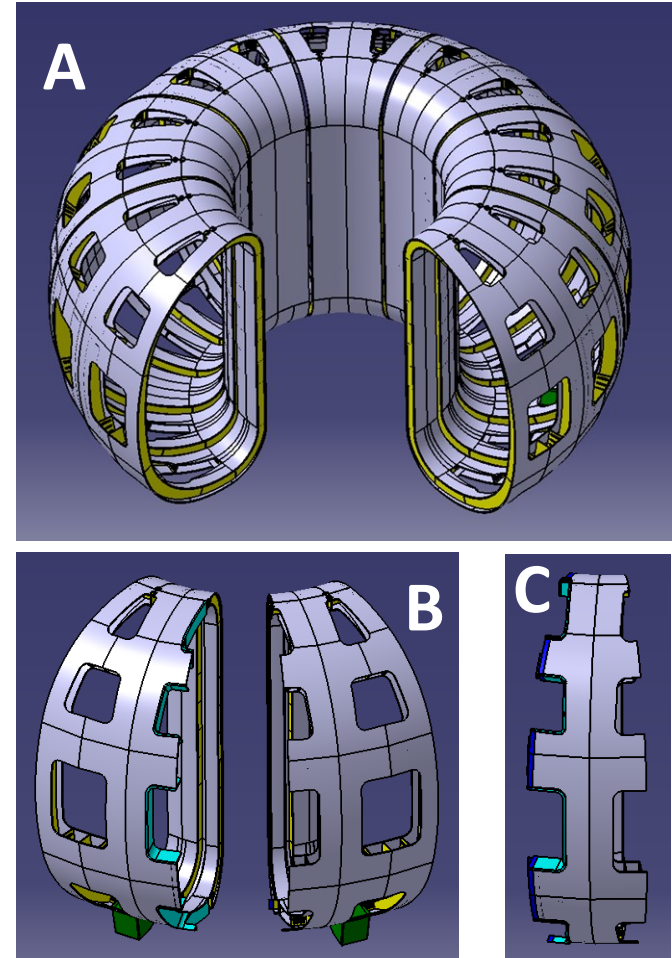
Answer:

The VV is a toroid with an extension of 360° to be composed on site with 17 sectors (14 of 20°, 2 of 30° and 1 of 20°, also refer to the following slide for further clarification). The assembly procedure foresees the installation of the magnetic diagnostics, the mounting of the VV thermal shield and assembly of one TF when two 20° sectors of VV are joined together (ITER-like approach). A different assembly procedure consisting of forming a 340° VV and then mounting of thermal shield and TF coils (JT-60SA or KSTAR like approach) has been excluded for time reasons.

Procurement Deliverables - Hardware

Hardware deliverables:

- 14 sectors with a toroidal extension of 20° (A);
- 2 sectors with an extension of 30° (B);
- 1 special sector of 20° without port ducts and without gravity support (C);
- the vessel ports enumerated from #1 at the top to #5 at the bottom;
- the expansion joints (82 flanged bellows) connecting the ports to the cryostat;
- the gravity supports (6) of the vacuum vessel;
- the splice plates to be welded at the inner and outer shells between contiguous sectors in order to provide structural continuity and to form the vacuum barrier;
- the machine sensors;
- the internal jig to be used for assembling on DTT site the vacuum vessel sectors;
- the transportation & rotation tool for sector transportation and handling on site;
- a prototype sector to be used to qualify manufacturing and testing processes;
- support in the preparation of final assembly.



Question



Do you consider splitting the manufacturing contract with 2 or more suppliers ?

Answer:

No we want to keep the supply under responsibility of one actor, in any case you could participate as a joint venture.

Question



will the slides be made available after the meeting?

Answer:

Yes the slides will be published on the website from tomorrow.

Question



Sarebbe possibile avere più informazioni circa i Gravity supports?

Would it be possible to have more information about Gravity supports?

Answer:

Please ask in writing more details, we would also be available for technical meetings in January on specific topics.

Question



Il procurement per la BOP, in particolare per tutto quello che riguarda la Passive Fire Protection, è previsto per quando? Ci sono già informazioni disponibili?

The procurement for BOP, in particular for everything related to Passive Fire Protection, is foreseen for when? Is there information already available?

Answer:

Procurement of BoP will follow other channels and will be communicated in due time.

Question



Shall the splice plates procured already vended?

Answer:

Splice plates will be part of the procurement scope. Delivery conditions shall be specified in the tender documentation. As minimum, each sector shall have its own splice plate at the moment of the final assembly

Question



Have you thought about the chance of electropolishing to improve the final roughness of the pieces?

Answer:

For DTT it is important to guarantee the final roughness. The method used will be part of the offer of the tenderer.

Question



we understand that the auction base will be in the range of 25 M Euro. Is this auction base considering the present market conditions of raw materials prices, continuously increasing?

Answer:

Yes we have verified the auction base on the recent price of 31 6LN.

Question



For the request made for the contractor signing the responsibility for the VV for meeting PED requirements, it is understood DTT Will keep the responsibility on the design...?

Answer:

DTT will define the design under PED regulations, it is responsibility of the contractor that the requirements are met and to release the EU declaration of conformity .

Question



could you give the name of the companies that have already been awarded, for each part ?

Answer:

The names of the awarded companies are published on “transparent company” section of the DTT website (<https://www.dtt-project.it/index.php/dtt-tenders.html>).

Question



does the procedure foresee a phase for pre-qualification, i.e. for assessing the technical and economical criteria to be qualified or the criteria will be analyzed in the quotation phase itself?

Answer:

The tender is an open procedure, the qualification requested in the call for tender will be analyzed during the phase A of the evaluation. The bidders shall comply with the asked requirements.

Question



Are countries other than Italy, allowed to participate?

Answer:

Yes all the companies worldwide will be allowed to participate except those located in countries who did not sign the GPA.

Question



I saw that the previous tenders are in Italian.

Will they be translated in English too?

Answer:

The administrative tender documentation will be in Italian. The technical tender documentation will be in English.

Question



In case just Italian companies are allowed to participate, we have the chance to create a partnership with an Italian company. Do the requirements seen in the last presentation apply either to both the company or to just one of them? If the second scenario is the case, to which (the Italian one/the foreign one)?

Answer:

The previous answer applies. The rules of partnership will be described in the tender documentation.

Question



I imagine that the thermocouple sensors will be made by semiconductor chips (silicon). Can the present lackness (or very low availability) of them create delays?

Answer:

Sensors foreseen are not based on semiconductor components.

Question



Will English be accepted as a valid language for the bid and procurement process, or Will there be some language restrictions as we saw in the Framework Engineering contract?

Answer:

The technical documentation in the tenderer offer could be in English, administrative one shall be in Italian.

Question



Can you please give some precisions on the meaning "two supply of similar vacuum vessels for UHV application" as this is a very limitative requirement.?

Answer:

In the sentence "similar vacuum vessel" reported, two distinct features were subtended: the modularity of the vessel and presence of many ports. These two shall be read together with the UHV requirement.

To demonstrate these expertise the tenderer shall submit a description, its value, main dimensions, etc.

The exact requirement will be better specified, and possibly corrected, in the tender documentation.

Question



Given the Schedule constraints, can you please explain why you limit yourself to a single contract award (as opposed to two or more as is the case for ITER VV) ?

Answer:

For technical and managerial reasons, the sectors supplied must have the same processing tolerances and the materials used must have the same chemical composition and mechanical properties. Any subdivision into lots with the possibility that the sectors are supplied by different manufacturers, would increase the risk on the final assembly with the remaining components of the system, putting at risk the possibility of carrying out the experimentation for which the machine was designed. Moreover, the subdivision will have an impact on costs (duplication of qualifications, tools, etc.) and on the follow-up activities.

Question



Do you confirm the conflict of interest stated during the Engineering Framework contract bid with this VV manufacturing tender ?

Answer:

Please explain better your question, we do not catch your point. We can anticipate that every potential conflict of interest will be evaluated during phases of the tender.

Question



In view of the scope of supply and the selected materials, it would seem that the estimated value of the tender does not consider the current market condition, both in terms of price and schedule. Can you please advise on how this can be managed?

Answer:

On the base of our latest evaluations the estimated value is in line with present costs of steel. We also expect that the market condition will normalize in the near future. Concerning the schedule we consider it feasible on the base of the experience made by KSTAR: “fabrication activity started in January 2003 after the finalization of fabrication design. The final components and structures were warehoused in June 2004” [Fusion Engineering and Design 83 (2008) 573–579]

Question



I was wondering if there is some kind of database or platform where we can offer our specialized services, or a way to forward our info to the prime contractors. Since I believe this would benefit everyone in the project?

Answer:

Unfortunately, we have not such database, however you may follow DTT tenders and trying to get in contact with the awarded companies:

<https://www.dtt-project.it/index.php/dtt-tenders.html>

Question



What kind of considerations have the team done in terms of use of Liquid Helium. In other words are LN2 being considered where technically possible.

Answer:

If the question is referred to the thermal shield, we invite to formulate it during the infoday on the thermal shield that will be organized in the near future, if it is referred to the vacuum vessel, you should reformulate for our comprehension.

Question



Which is the specified N range for the AISI 316 LN? This could affect the unit price.

Answer:

Instead of fixing the exact composition we will specify the minimum yield and tensile strength at room temperature but within limits well proved in past experiences. On this basis, the N shall be larger than 0.11%

Question



It is not clear that all welds can be full penetration and can be 100% UT/RX inspected. Can the supplier propose alternative manufacturing and assembly schemes of the double walls to improve penetration of the welds and full inspection (like the T-shaped pieces of the ITER vacuum vessel)?

Answer:

Yes the quality of the technical proposal also in terms of alternative manufacturing scheme will be one of the award criteria.

Question



It seems that laser welding can be used to assemble all VV parts. This would also minimize the distortions.

Answer:

Any welding techniques that would satisfy the requirements will be accepted.

Question



It would be good to foresee a prototype VV sector, which could then be used as a spare.

Answer:

Indeed we expect the first 12 months shall be dedicated to the completion of a prototype sector. Only after the successful completion of the prototype, the assembly of the first sector shall commence.



Introductory remarks on Information Day on SUPERCONDUCTING POLOIDAL FIELD COILS PROCUREMENT

**Enjoy the meeting and do not hesitate to
send your requests of clarifications or
questions via chat**

*Thank you for attention and patience
(if the case)*

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