



# Info Day – Call for Tender for DTT TFC casing components: Management Specification



Web event: 12/02/2023 14.30 CET (via zoom)

DTT INFO DAY – call for tender for DTT TFC casing components

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 Tender specifications of the call for tenders.

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



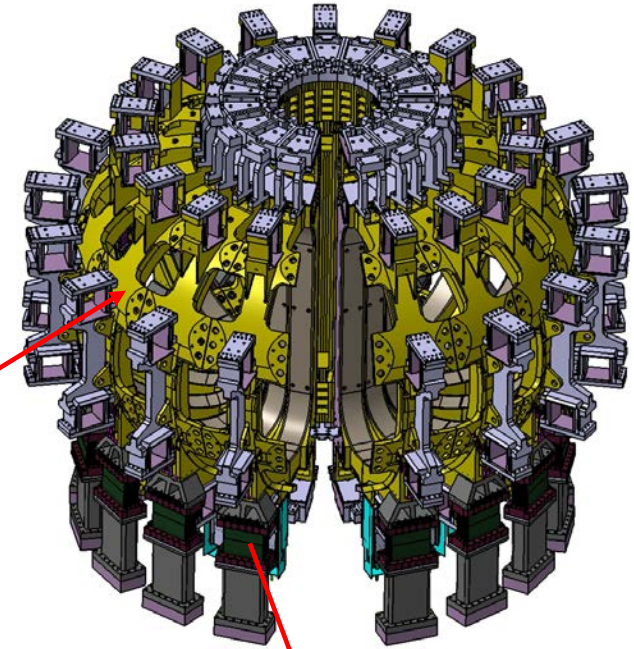
# TFC casing: description



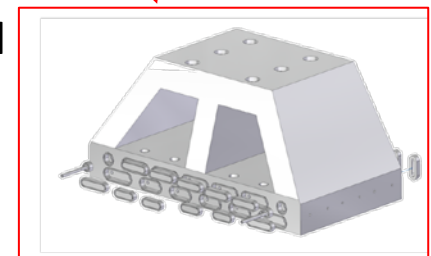
The magnetic system of DTT is composed of 18 toroidal field (TF) coils, 6 central solenoid (CS) stacked modules and 6 poloidal field (PF) coils. All of these coils are superconducting, cooled by supercritical helium at 4.5 K and thermally protected in a cryostat.

**The scope** of the call for tender is the procurement of the 18 TFC casings, Thermal anchors and 2 mock-ups with the following main characteristics:

- DTT is constituted by 18 TFC of 20° in the toroidal direction;
- Each TFC casing will be integrated with the superconductive coils by ASG;
- Each TFC casing will be cooled with cryogenic helium at 4.5K with cooling channel inside the casing;
- The TFC casing will be connected each other with OIS and OIS plates;
- The TFC casing will be supported by Gravity supports (excluded from the scope of the supply) connected by the Thermal anchor.



Thermal anchor



# Tender Specification



Estimated time of launch: within March 2024

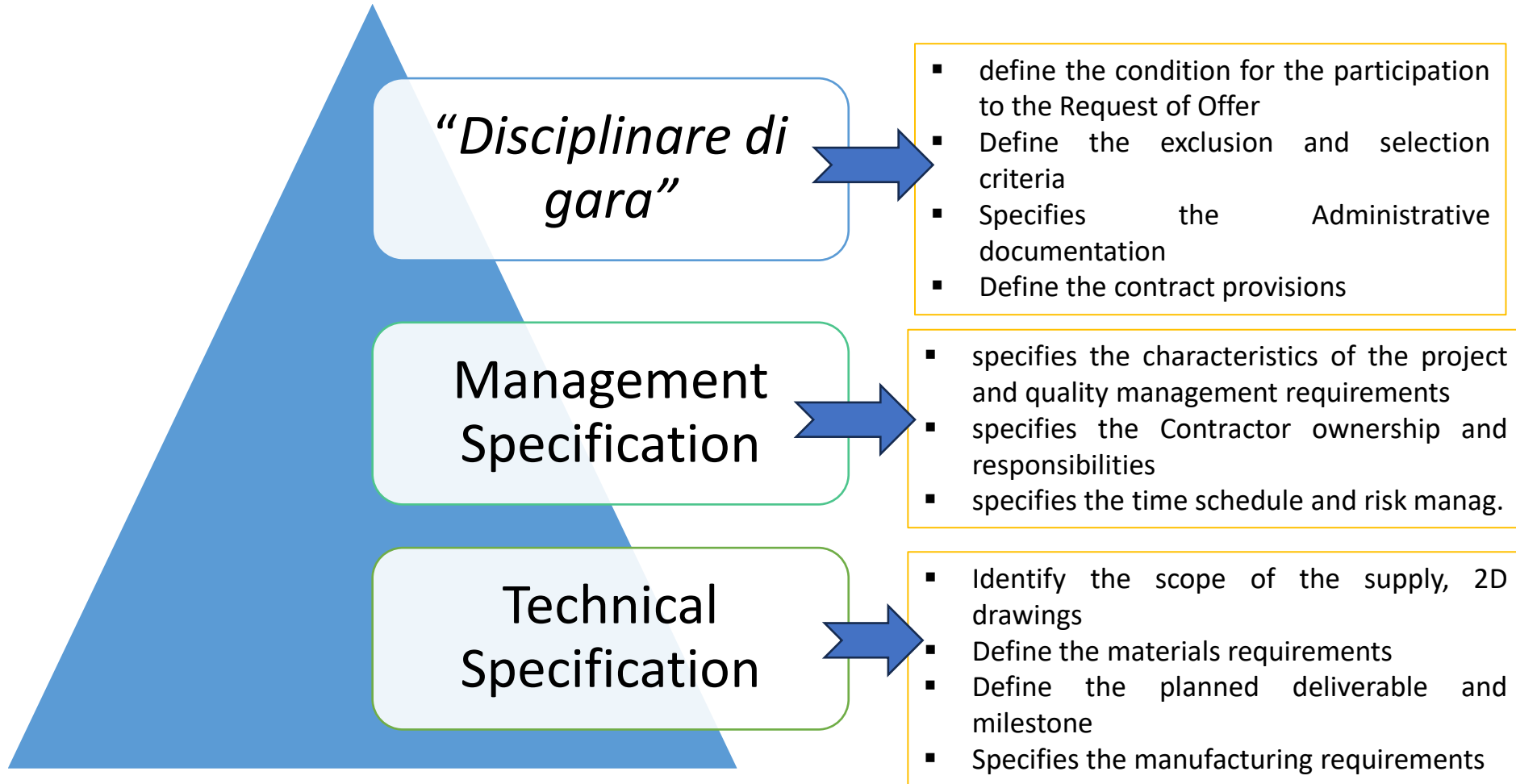
Type of procedure: Open

Estimated value  $\approx$  22 M€ - single lot

Duration of the Contract: 40 months

*DTT reserves the right to change or modify them. Definitive value and duration will be reported in tender notice.*

# Call for Tender structure





# Main Schedule

- **The KoMeeting** will be carried out within 30 days from signature of the contract;
- **Production of manufacturing plan and drawings (MRR):** 4 months duration starting after KoM;
- **Characterization of the raw materials** (including mechanical test): 7 months duration starting after the approval of MRR;
- **Mock-ups manufacturing:** 7 months duration starting after the approval of MRR;
- **Update of manufacturing plan:** 1 month after the mock-up manufacturing;
- **Production of the 1<sup>st</sup> coil casing and Thermal anchor:** 9 months duration after the update of the manufacturing Plan;
- **Production of the 2<sup>nd</sup> coil casing:** 2 months duration after the supply of the 1<sup>st</sup> coil casing;
- **Production of the 3<sup>rd</sup> coil casing:** 2 months duration after the supply of the 2<sup>nd</sup> coil casing;
- **Production of the coil casing 4-18:** supply of 1 coil casing every month;
- **Production of the Thermal Anchor 2-18 and OIS plates:** 13 months duration after the supply of the first Thermal Anchor.



# Delivery plan

Description	Delivery place	Date
Mock-ups	A	$T_0 + 11$ months
Coil casing 1 and 1° Thermal anchor	A	$T_0 + 21$ months
Coils casing 2	A	$T_0 + 23$ months
Coils casing 3	A	$T_0 + 25$ months
Coil casing 4	A	$T_0 + 26$ months
Coils casing 5	A	$T_0 + 27$ months
Coil casing 6	A	$T_0 + 28$ months
Coil casing 7	A	$T_0 + 29$ months
Coil casing 8	A	$T_0 + 30$ months
Coil casing 9	A	$T_0 + 31$ months
Coil casing 10	A	$T_0 + 32$ months
Coil casing 11	A	$T_0 + 33$ months
Coil casing 12	A	$T_0 + 34$ months
Coil casing 13	A	$T_0 + 35$ months
Coil casing 14	A	$T_0 + 36$ months
Coil casing 15	A	$T_0 + 37$ months
Coil casing 16	A	$T_0 + 38$ months
Coil casing 17	A	$T_0 + 39$ months
Coil casing 18	A	$T_0 + 40$ months
Thermal anchor 2-18 and IOS plates (ALL)	B	$T_0 + 34$ months

A. ASG superconductors, LaSpezia Italy.

B. DTT, Via Enrico Fermi, 45, 00044, ENEA-Frascati RM (Italy).

$T_0$  = KoMeeting

# Quality and Management Documentations



The main quality and management documentations requested in the call for tender are:

- **Work Breakdown Structure:** The WBS shall be developed according to the requirements and guidelines defined in the Management Specification.
- **Preliminary Quality Plan:** covers the whole scope of the Contract, including work performed by Subcontractors and describe the roles and responsibilities of key Quality Assurance/control personnel during each phase of the Project.
- **Quality Control Plan:** Control Plan describing sequences of the work (including process validation, quality controls), milestones, key points along the WBS with a corresponding detailed schedule.
- **Time Schedule:** The Time Schedule shall be developed and maintained in a planning tool accepted by DTT (e.g., Primavera, MS Project, etc.). The Time Schedule shall contain all activities performed by the Tender for the execution of the contract.
- **Contract Risk Management:** the Tender shall describe the provisions implemented to reduce the Contract exposure to risks and to seize possible opportunities regarding the expected performance and Time Schedule.



# Documentation Plan



Document Title	Provisional	Preliminary	Detailed	Update
Control Plan	Tender	5 working days before the KoM	15 working days after the KoM	To be detailed as needed
WBS	Tender	5 working days before the KoM	15 working days after the KoM	To be detailed as needed
Time Schedule	Tender	5 working days before the KoM	15 working days after the KoM	<ul style="list-style-type: none"> <li>▪ Together with Progress Report</li> <li>▪ Achievement of each milestone and issuing of each deliverable</li> </ul>
Preliminary Quality Plan	Tender	5 working days before the KoM	15 working days after the KoM	Preliminary quality plan to be updated during the project execution
Contract Risk Management	Tender	5 working days before the meeting	15 working days after the meeting	Together with Progress Report



# Payment plan

Payment Plan			
Phase	Description	Date	% of the contract value
1	<ul style="list-style-type: none"><li>Approval by DTT of the manufacturing Plan, drawings, and raw material procurement plan for the mock-ups, coil casings and thermal anchor manufacturing.</li><li>Approval of the preliminary quality Plan.</li></ul>	T0 + 4 months	5
2	<ul style="list-style-type: none"><li>Supply of TFC mock-ups;</li><li>Approval by DTT of the qualification report for the special processes;</li></ul>	T0+ 11 months	5
3	Procurement of all raw materials		15
4	Supply of the first TFC casing and of the first Thermal Anchor	T0 + 21 months	4
5	Supply of the Coil Casing 2, 3 and 4	T0 + 26 months	12
6	Supply of the Coil Casing 5, 6, 7 and 8	T0 + 30 months	16
7	Supply of the Coil Casing 9, 10, 11 and 12	T0 + 34 months	16
8	Supply of the 17 Thermal Anchor and OIS plates	T0+ 34 months	3
9	Supply of the Coil Casing 13, 14, 15 and 16	T0 + 37 months	16
10	Supply of the Coil Casing 17 e 18	T0 + 40 months	8

$T_0$  = KoMeeting

**Down-payment:** 20% of Contract price (beyond submission of a guarantee of equal amount)

# Acceptance Data Package



- The Contractor is asked to supply a complete documentation related to all the aspect of the production process as well as a proper set of documents accompanying each set of Mock-ups, Thermal Anchor and Casing Components delivered. All the documentation will be part of the **Acceptance Data Package (ADP)**.
- Each ADP will only be complete after completion of all components for each supply.
- The primary objective of this document is to declare the conformance of the item(s) in all respect with the applicable specification(s), drawing(s) and requirement(s).
- The Contractor shall deliver to DTT an ADP **before any payment** milestone. This package shall include evidence of all activities performed for that milestone.

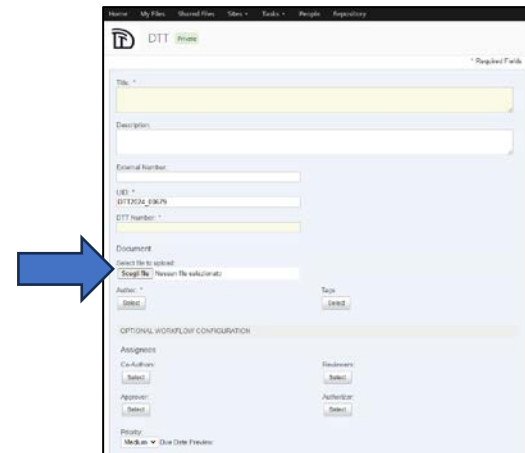
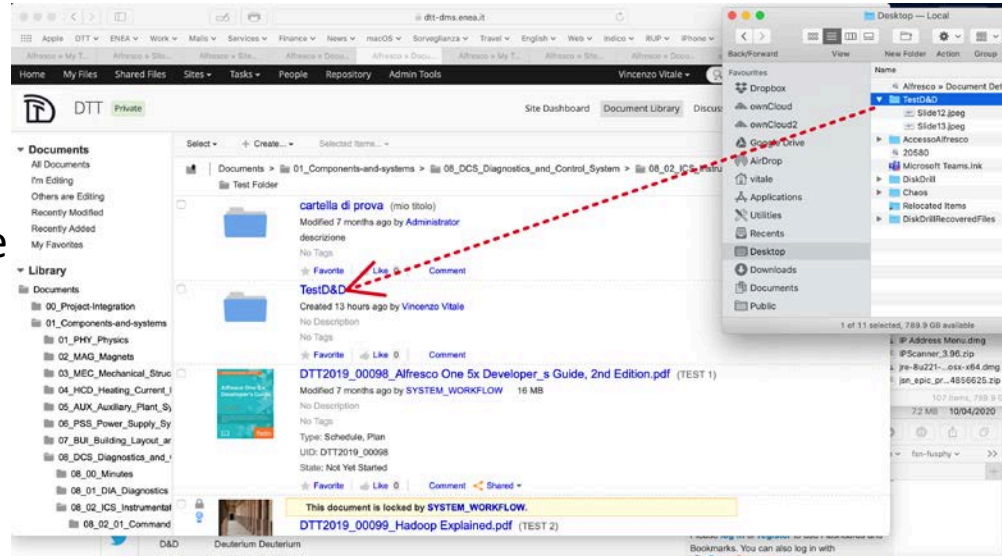
After acceptance by DTT of the provisional Acceptance Data Package the Contractor will be responsible for the transport of the components to the delivery site.

# Documentation Management

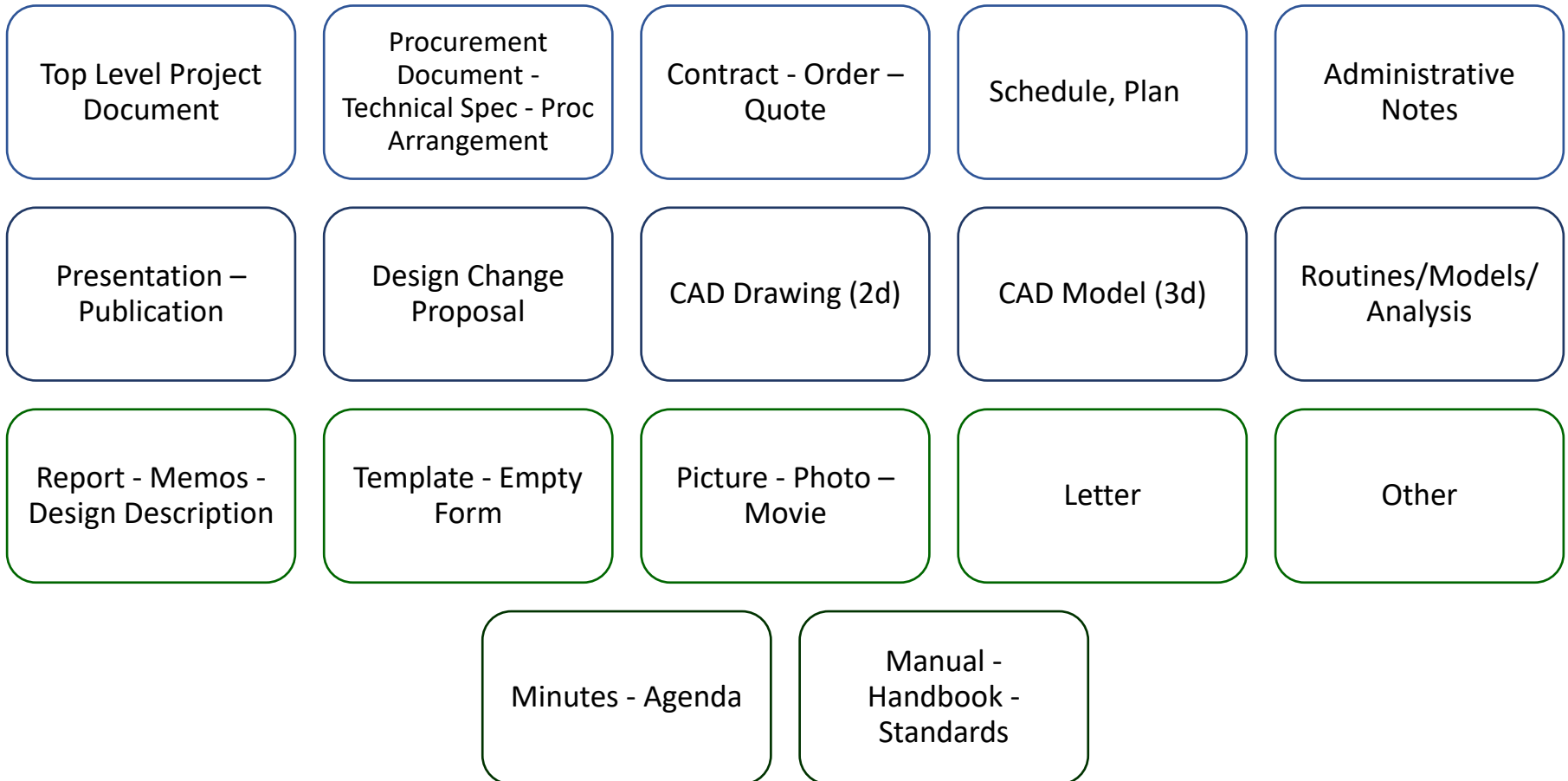


All documentation will be managed by DTT software called «Alfresco».

- ❑ **Documentation Management:** allows the organisation, storage and sharing of the documentations;
- ❑ **Search:** support to the organisation and research of the document;
- ❑ **Collaboration:** support the work team organisation
- ❑ **Workflow:** an approval workflow is generated for each document to take track of the document life: authors, reviewers, approver and authoriser.



# Type of Documentations



# THANK YOU FOR YOUR ATTENTION

