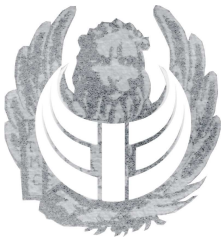

European
Industrial
Engineering

MRO Project Unit Telescope Enclosure & Relocation System

Design and Fabrication Management

UTE – FTT interface control document

Ref.: PO#0007624

Customer: MRO

MRO-ICD-EIE-0032d 2010.03.24

MROI PROJECT
Unit Telescope Enclosure & Relocation System

EUROPEAN INDUSTRIAL ENGINEERING

CHANGE RECORDS						
Issue	**Date**	**Author**	**Approved**	**QA/QC**	**SECTION / PARAGRAPH AFFECTED**	**REASON/INITIATION Documents/Remarks**
1	2009.05.29	AB/CB/ CM	GPM	LG	All	First Issue
2	2009.10.21	AB/CB/ CM	GPM	LG	All	FDR Issue
3	2009.10.23	AB	GPM	LG	All	RFP FTT version
4	2010.03.24	AB	GPM	LG	§4.2	FDR comments included

Document:	MRO-ICD-EIE-0032		(07808POA / MRO-ICD-EIE-0032d)
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Prepared by:	EIE/ Project Team	Signed:	A. Busatta / C. Manfrin / C. Battistel
Checked by:	EIE / Quality Manager	Signed:	L. Giacomel
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Table of Contents

List of Acronyms

NMT	New Mexico Tech
MRO	Magdalena Ridge Observatory
MROI	Magdalena Ridge Observatory Interferometer
EIE	European Industrial Engineering
TIM	Technical Interchange meeting
PR	Program Review
RFP	Request For Proposal
CDR	Conceptual Design Review
PDR	Preliminary Design Review
FDR	Final Design Review
DDR	Document Delivery Review
UTE	Unit Telescope Enclosure
UTM	Unit Telescope Mount
FTT	Fast Tip Tilt System

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1. INTRODUCTION

The present document provide the information to manufacture and explain the interfaces necessary for the UTE to FTT.
So, the arguments treated here are:

- Electrical interfaces.
- Plant interfaces.

2. APPLICABLE DOCUMENTS

	DOCUMENT TITLE	DOCUMENT NUMBER
AD1	Project Plan	MRO-PLA-EIE-0006
AD2	Product Assurance Plan	MRO-PLA-EIE-0007
AD3	Interfaces Plan	MRO-PLA-EIE-0011
AD4	Statement of Work	INT-404-CON-0010
AD5	Technical requirements	INT-404-TSP-0003

3. REFERENCE DOCUMENTS

DOCUMENT TITLE	DOCUMENT NUMBER
None.	

4. UTE TELESCOPE ELECTRICAL INTERFACES

4.1 PHYSICAL CHARACTERISTICS

4.1.1 Electronic cabinets

The total space available for FTT electrical/electronic equipment are in total 5 unit racks. These equipment will be accommodated in the following:

- CABINET +Q5 - Model RITTAL no. 7821.500 (with front and rear door 7821.502)
  - 24 HE (U)
  - Width 600mm
  - Height 1200mm + 100mm of lower mounting frame
  - Depth 600mm

  The remaining space of this cabinet will be composed by 10U rack necessary for the UTM.

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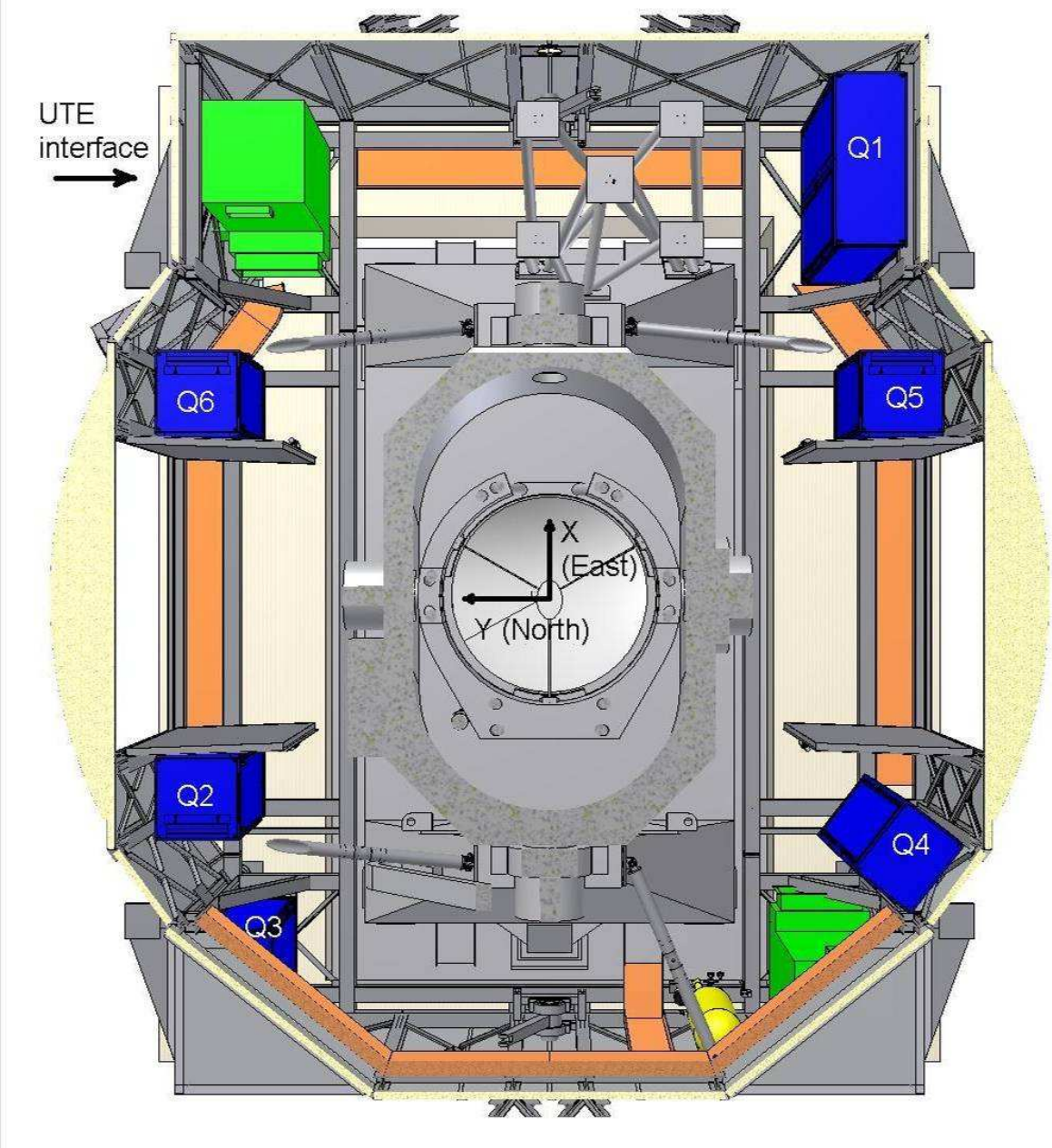

Fig.1 – UTE Cabinet layout

4.1.2 FTT Power cables

The power cables characteristics will be decided by the FTT vendor at his best convenience but in agreement with NMT/MRO. It must be noted that the power will be supplied with 208Vca 3 phases at 60Hz or, 120Vca single phase at 60Hz.

4.1.3 FTT Communication cables

The communication cables of the sub-systems required for FTT system will be decided by the FTT vendor at his best convenience but in agreement with NMT/MRO.

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4.2 INTERFACES & LOCATIONS

The cable entrance on the nasmyth table will be provided from the south edge of the table. Cable routing length for FTT are (please refer to fig.1):

- From UTE interface to bottom of Q5 (Height 1800mm): 6500mm
- From Q5 (24U) to Nasmyth table: 5500mm
- From bottom of Q5 (Height 1800mm) to bottom of Q6(Height 24U): 7000mm

5. UTE TELESCOPE PLANT INTERFACES

5.1 PHYSICAL CHARACTERISTICS

5.1.1 Cooling system

The characteristics of the interface for cooling the FTT sub-systems are:

- Fluid temperature: T_{amb}-5℃ (if above dew point)
- Temperature range: -20℃ and +15℃
- Flow rate: by FTT vendor (shall not exceed 3,6m^3/h)
- Inlet pressure: by FTT vendor (shall not exceed 5.5 bar)
- Pressure drop: 3.5bar in total
- Hoses size: by FTT vendor (preferably equal or less than ½")

It is assumed that this system is cooled during night time only. FTT vendor will choose flow rate, pressure and hoses size and connectors at his best convenience but in agreement with NMT/MRO.

5.2 INTERFACES & LOCATIONS

The hoses entrance on the nasmyth table will be provided from the south edge of the table.

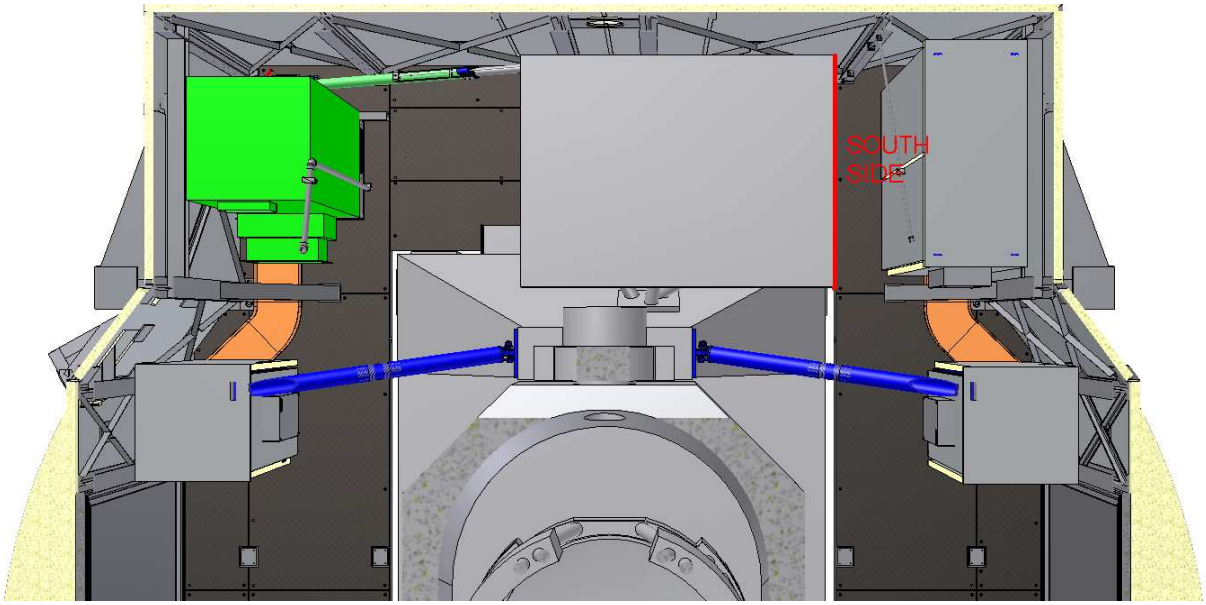

Fig.2 – FTT hoses entrance

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