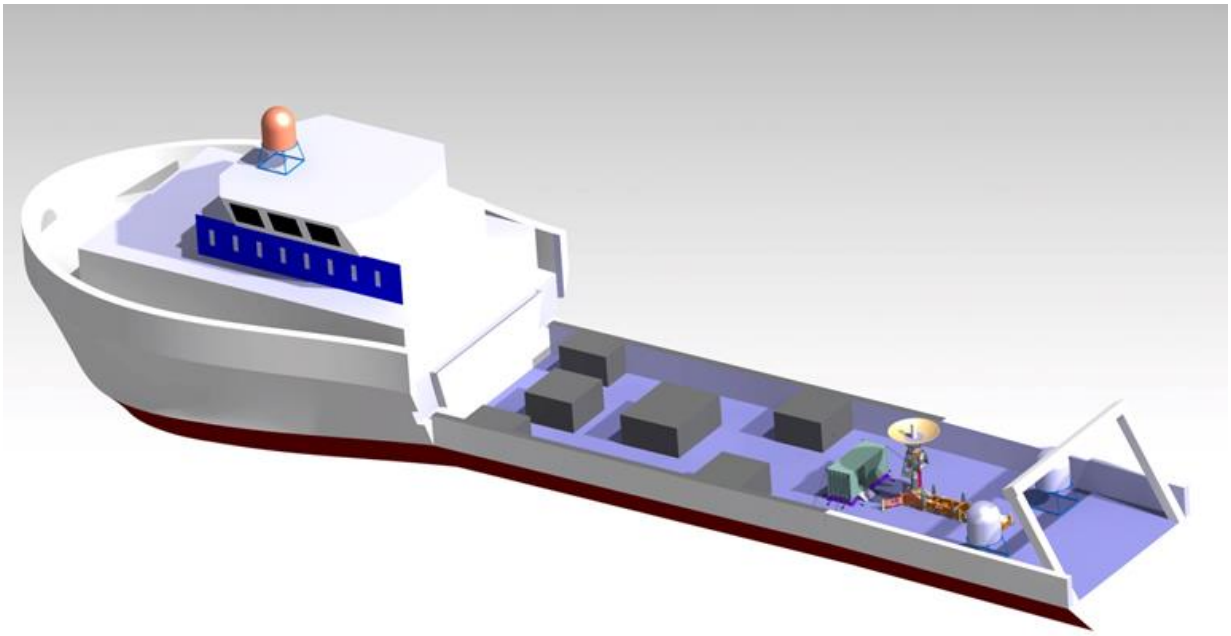
Reference Indent No: URSC/HS/SEPO/2024001253



Transportation and vessel chartering for deployment of Ship borne antenna Terminal at North Atlantic Ocean for Gaganyaan G1 mission support

October 2024

CONTENTS

1. INTRODUCTION

ISRO (Indian Space Research Organization) under Government of India is scheduling a scientific experiment tentatively during the period between **1st March, 2025 to 31st August, 2025** and the exact start of the period will be intimated at the time of Purchase Order release. It is proposed to send the consignment from ISTRAC Bangalore to the nearest Indian port by road transportation, from there to New York Port by cargo shipment.

This scientific experiment, being a new development and considering the system readiness, the date of experiment is scheduled between the above period. The vendor has to take this period into account and shall ensure compliance to the scope of work to meet the scheduled date of experiment.

Consignment shall consist of a Shipborne Terminal (SBT), electronic equipment, MV-SAT Antennas and its associated subsystems shall be referred as Consignment and be deployed on charter vessel at New York Port.

The charter vessel from New York Port shall be sailing towards tentative location **(43 deg N, 43 deg W)** in North Atlantic Ocean which is around 3000 kilometers. This tentative location shall be henceforth referred as Observation Point.

Team of ISRO (team consists of around 8 ISRO officials) shall be joining at the port of origin-New York of charter vessel for mounting and integrating the consignment and shall be sailing on the charter vessel to the observation point. The SBT tracking activities for the mission at observation point shall be for maximum three days. The team shall sail back to the port of origin and handover the consignment to the vendor. The vendor shall ship back the consignment from the New York port to a port in India and shall bring back the consignment to ISTRAC Bangalore by road.

2.0 SCOPE OF WORK

2.1 DEPLOYMENT AT OBSERVATION POINT

2.1.1. **Shipment of Consignment from ISRO-ISTRAC Campus at Bangalore to Port at New York, American port and return on door to door basis to ISTRAC Bangalore** *as per the detailed scope listed under section 3.*

2.1.2. **Chartering of vessel at New York port for ISRO equipment deployment** and sailing to Observation Point approximately 3000kms away from port and return to the same port for a tentative period of around 40 days *as per the detailed scope listed under section 4.*

2.1.3. **Bonded Warehouse requirement for storing consignment at New York, American Port.** In case there is a re-schedule of the date of experiment and delay in chartering the vessel *as per the detailed scope listed under section 11.*

3.0 SHIPMENT OF CONSIGNMENT

Vendor shall be responsible for following activities for shipment of ISRO consignment.

3.1. Transportation of consignment on door to door basis from ISTRAC, Peenya Bangalore campus to Port at New York and return back. *(refer Table 3.1)*

Table 3.1 - Major equipments (Consignment)

No	Item Description	Qty.	Size	Weight	Container Details	Remarks
1	SBT antenna	01 No	11m x 2.5m x 3.1m	18 ton	40ft Flat rack (Vendor supplied)	-
2	Servo & RF Equipments	01 lot	-	5 ton	20ft container (ISRO supplied)	Annexure -1
3	MV-SAT Antenna	02 Nos	2.35m x 2.3m x 2.24m	2 ton	40ft open top container (Vendor supplied)	Annexure-3
4	MV-SAT Antenna Radome	02 Nos	2.52m x 2.3m x 1.5m			
5	Communication, Electrical and Mechanical equipment	01 lot	-	5 ton	20ft container (Vendor supplied)	Annexure -2, Annexure-3

The list shows the equipment list of Consignment to be shipped to New York Port.

3.2. Packing requirement of Consignment at ISTRAC Bangalore and also while returning from the New york port *as per the detailed Instructions under Section : 9.*

3.3. Flat Rack Containers/Closed/ Open top containers & suitable trailers/ trucks for loading equipment *as per the detailed Instructions under Section : 9.*

3.4. Material handling equipments such as long boom crane of 100 Ton capacity & hydra crane for loading from ISTRAC Bangalore to the trailers/trucks and also at the AMERICAN PORT ports.

3.5. Safe lashing and fixing of consignment to the containers and trucks.

3.6. Road transportation from ISTRAC Bangalore to Indian port & unloading at port.

3.7. Cargo loading & Shipment (from Indian port to American port).

3.8. Cargo transportation, unloading & temporary ware house retention at New York Port.

3.9. Cargo transportation and loading into the charter vessel at New York, American Port.

3.10. Cargo unloading from the charter vessel at New York, American Port after the work.

3.11. Cargo loading & Shipment (from New York, American Port to Indian port).

3.12. Unloading at Indian Port & road transportation to ISTRAC Bangalore.

3.13. Delivery & Unloading at ISTRAC, Bangalore.

3.14. All Necessary manpower and materials to carry out the above mentioned activity.

3.15. The activities shall be carried out irrespective of the day of the week including holidays.

4.0 CHARTERING OF VESSEL AT NEWYORK PORT

The vendor shall be responsible for the following activities related to chartering of vessel at New York port:

4.1. Chartering of suitable Offshore Vessel *as per detailed scope listed under section 5.*

4.2. The vendor shall ensure necessary material handling crane, electrical power availability, skilled manpower (1 electrician + 4 skilled workers + 1 welder) and other logistics for the positioning, lashing & deployment of consignments on vessel deck. The equipment deployment may take 4 to 5 days on the vessel deck at Port *as per the detailed scope listed under section 6*.

4.3. All ISRO equipments shall be deployed on the vessel deck under the supervision/ guidance of ISRO team *as per the detailed layout under section 7.*

4.4. Mobilizing the support structures (steel) on ship deck during equipment deployment as *per the detailed scope listed under section 8*.

4.5. Once the SBT is tested and qualified on the ship deck, onward sail shall start after due clearance from the team leader of ISRO crew. The onward sail period to observation point shall be covered within about 13 to 14 days

4.6. The ISRO team will be sailing along with ISRO equipment in the chartered vessel for supporting the mission. During sail, ISRO team may operate their equipment on daily basis.

4.7. The vessel shall reach observation point at least 2 days prior to the date of mission. The vessel shall be positioned at the observation point during the mission for a period of three days. During the mission support, Dynamic Positioning System shall be enabled in multiple sessions for a maximum cumulative duration of around 15 hours.

4.8. The vessel shall sail back from the observation point to the port of origin after the clearance from ISRO team.

5.0 CHARTER VESSEL SPECIFICATIONS

5.1 The vessel shall have a minimum length of 80 meters or more with necessary crew and logistics for sailing towards mid sea.

5.2 The vessel shall have clear free deck space of minimum of 450 (30m x 15m)sq. meters to deploy ISRO equipment(s).

5.3 The total weight of equipment shall be maximum 30 tons. The vessel deck shall have sufficient tonnage per sq. foot of the equipment and anchoring/welding and lashing provisions for deploying equipment as per the detailed layout under section 7.

5.4 The vessel shall be suitably equipped to have a minimum of 50 days bunker endurance on its own and also for supporting the operations of ISRO equipment onboard the ship.

5.5 The vessel shall be capable of speeding at 9 knots or above with sufficient engine redundancy to reach the observation point within 13 -14 days. The vendor shall ensure the vessel is maintained well and shall equip with essential spares to reach observation point within the schedule period and without any delay.

5.6 The vendor shall ensure bunker consumption estimate of the charter vessel which would be taken on board at New York for covering the vessel's voyage from port to the Observation Point and back to Port of Origin allowing for a 10% Safety Margin and also allowing for a minimum of 5 days stay at the observation point.

5.7 The deck space shall have safety railings in place.

5.8 **Electrical Requirements on Charter Vessel:**

5.8.1 The vessel power supply (40KVA - 400V, 3-Phase 3 or 4wire system, 50 Hz) shall be utilized for ISRO's equipment operations on daily basis during the sail. 40KVA, 400-415V, 3-Phase, 3 or 4wire system, 50 Hz power supply shall be arranged by vessel team.

5.8.2 If the voltage rating / Frequency rating of vessel power supply is different, it is the responsibility of vessel team to provide adequate power supply of 40KVA, 400-415V, 3-Phase 3 or 4wire system, 50 Hz through an exclusive DG set with 1:1 redundancy.

5.8.3 The vessel must have 1:1 redundancy of power supply for ISRO's requirement, such that any point of time power interruption shall not be more than 5 minutes.

5.8.4 Sufficient area in a closed room (shelter) shall be provided for installing the isolation transformer (1.2m (L) x0.8m (B) x1m (H)) of weight 1 ton for extending the power supply from the ship to the SBT.

5.8.5 Energy consumption per day is 600 units (KWH) considering an average load of 25KW and 24 hour operation.

5.8.6 A 4 pole 100 Amp changeover switch, fixed in a wall mountable weather proof enclosure (IP67), fed from 2 power supply sources with a provision to select any source shall be provided near the SBT as per the schematic drawing in Annexure 5.

5.8.7 2 runs of 4 core x 50 sq.mm XLPE/PVC Insulated Aluminium /copper conductor cables shall be laid from the two power supply sources provided by the vessel upto the 4 pole 100 Amp changeover switch which shall be located near the SBT. The cables shall be suitably terminated at both the power supply source end and the changeover switch end as per the schematic drawing in Annexure 5.

5.8.8 From the output of the 4 pole 100 Amp changeover switch, one run of 4 core x 50 sq.mm XLPE/ PVC Insulated Aluminium /copper conductor cable shall be provided and laid upto the isolation transformer (provided by ISRO) and suitably terminated as per the schematic drawing in Annexure 5.

5.9 **Communication Requirements on Charter Vessel**:

5.9.1 Internet connectivity with Wi-Fi facility shall be available at the Vessel for the ISRO personnel on-board the Ship to have necessary Voice and e-mail communication.

5.9.2 Vessels shall have the provision to have Internet VPN link of dedicated 1 Mbps as an option.

5.9.3 It is desirable if the vessel can have provision for the extension of vessel's Compass data to ISRO Communication systems through NMEA/ LAN interface. Vendor shall specify the Interface details along with the quote.

5.10 **Logistics Requirement on Charter Vessel:**

5.10.1 The vendor shall be responsible for bunkering expenses, berthing expenses, vessel hiring expenses, port clearance and documentation expenses and logistics expenses on an end to end basis for ISRO team & materials.

5.10.2 The vendor shall also ensure to facilitate through their identified Port agencies for port entry/ exit / immigration clearances for ISRO team and equipment while boarding the vessel and also while de-boarding the vessel.

5.10.3 ISRO team shall consist of 8 engineers, one being the team leader and they shall be accommodated in air-conditioned cabins with maximum 2 personnel in one cabin.

5.10.4 The cabins shall have attached washrooms preferably and if not, wash rooms shall be in the same floor.

5.10.5 ISRO team shall be provided with a cook having sufficient sailing experience and expertise in preparing Indian food during the entire period of chartering from Port, during sail & on return to Port.

5.10.6 ISRO team shall be provided with sufficient drinking water (packaged) during the period of chartering. Each person shall be provided with minimum 3 liters of packaged water per day.

5.10.7 The doctor or paramedic availability shall be ensured during sail. The generic medicines for sea sickness/ common cold/ common allergies/ cough/diarrhea shall be made available on the vessel for ISRO team.

5.10.8 In case of any medical emergencies, logistics facilities shall be extended and the same will be paid on actuals against the submission of documentary proof.

6.0 LIST OF ITEMS / MATERIALS/MANPOWER REQUIRED FOR INTEGRATION WORKS ON SHIP DECK

ISRO shall be deploying SBT/Transportable terminal, MVSAT antennas and an instrumentation container on the vessel deck area. The list of items required to carry out the lashing and welding of each equipments are tabulated in Table 6.1.

Vendor shall ensure vessel's crew / shore based Engineering Assistance can carry out lashing/welding of ISRO's equipment / materials on board during installation before start of sail and removal of same when vessel reach back the port of origin as listed in in Table 6.2.

Table 6.1 List of items /tools required during integration at Vessel deck

Sl. No.	Details	Specs	Quantity	Remarks
1	Lashing chains	½ inch ,200 meter length	1 No.	Quantity is indicative.
2	¾ anchor type, galvanized shackles	4.75 ton SWL	80 Nos.	
3	1" x 12" turnbuckles	5 ton SWL	40 Nos.	
4	L angles (Structural steel)	2" x 2" x ¼ inch	(10 Nos. each 6m)	
5	L angles (Structural steel)	4" x 4" x 3/8 angle	(10 Nos. each 6m)	
6	Heavy duty D-rings	40 ton SWL	40 Nos.	
7	Integration Tools	General Tool kit	2 set	Complete set of Spanners, Wrenches, Allen key set, drill bit & other tools etc.
8	Welding machines	Arc welding and Gas cutting	2 Nos	With Welding rods / Gas cylinders
9	Cutting machines	Portable	2 Nos	With Cutting wheels as required
10	Grinding Machine	Portable	1 No	With Grinding wheels as required
11	Electrical Power cable and suitable lugs & glands for end termination	4Core x 50 sq.mm XLPE/PVC insulated Cu/Al cable	Based on location of power source	Approximately 2 runs of 50 mtr each i.e. total of 100 mtr &20mtr from changeover switch to isolation transformer.
12	Cable crimping tool	From 2.5 sq. mm to 70 sq. mm	1	
13	100Amp, 4 pole Change over switch with enclosure	100Amp 4 pole	1	2 runs of 4Core x 50 sq.mm XLPE/PVC Cables shall be laid from the two power supplies provided by the vessel until the changeover switch to be located near the SBT and shall be suitably terminated at both ends.

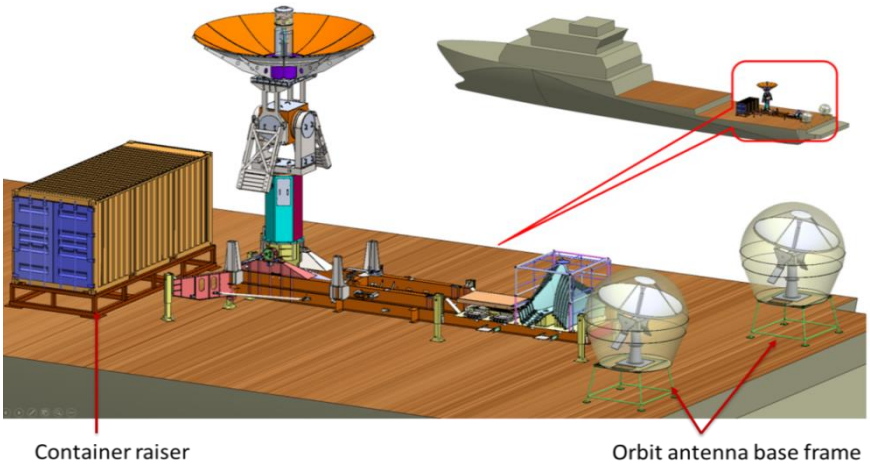
MATERIAL HANDLING EQUIPMENT				
Sl. No.	Details	Specs	Quantity	Remarks
1	Vessel Crane	Min Lifting weight 10 ton with working radius around 30m to 40m	1 No.	For material handling on the vessel deck. Lifting belts (4 nos.), D-shackles, Hooks etc., with load capacity of 5T/10T (each) or more as per the site requirements.

NOTE: Selected lashing chain, turn buckle, shackles and D-ring shall have matching interface dimensions. In case of additional requirement depending on site conditions, Vendor shall mobilise the tools and materials accordingly.

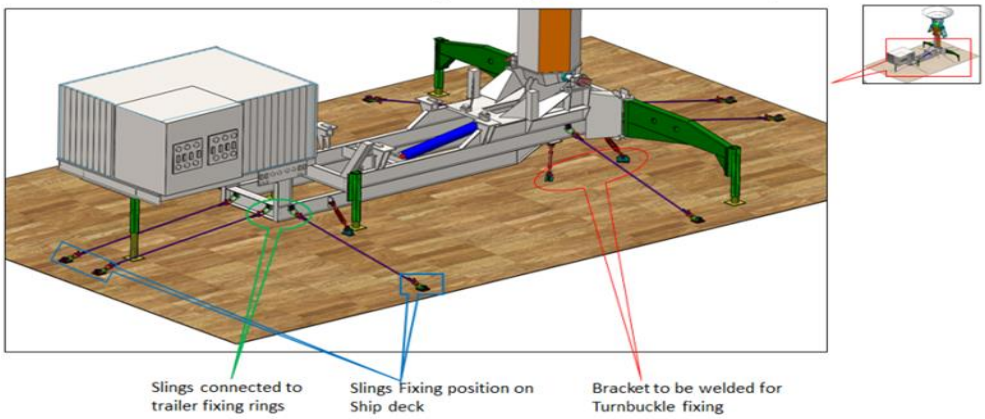
Table 6.2 MAN POWER/ shore based Engineering Assistance at Port of origin			
Sl. No.	Details	Quantity	Remarks
1	Fitter, Welder ,Helper & Electrician	6 people	Man power for carrying out positioning of equipments/lashing/welding on vessel deck, extension of power supply to Charterer's Container.

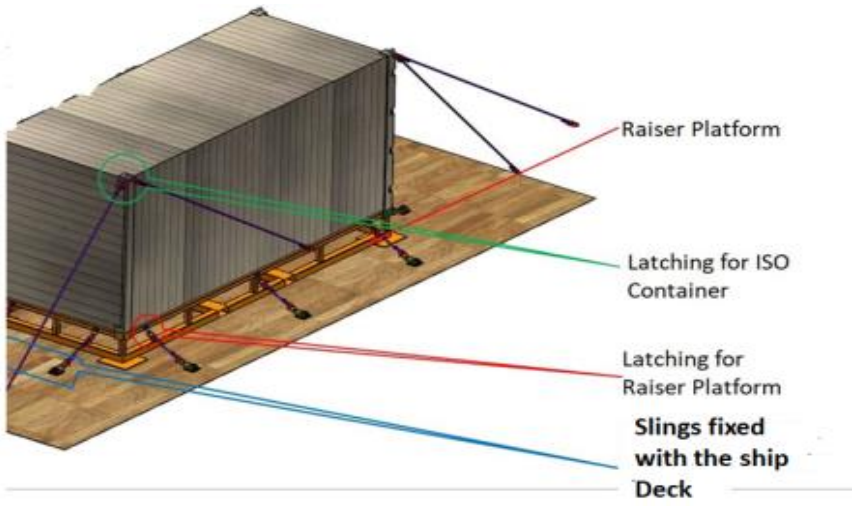
7.0 EQUIPMENT LAY OUT SCHEME ON VESSEL DECK

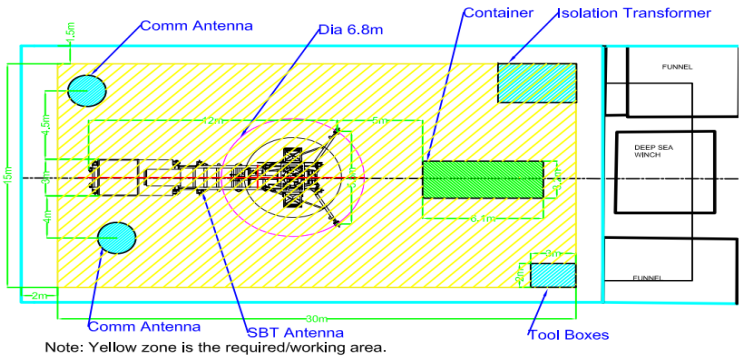
The equipment shall be deployed on vessel deck area as per the enclosed plan. The lashing and welding requirement of equipment on ship deck is shown.



TT Antenna Latching arrangement on the Ship deck







NOTE: Ship deck shall have metallic base plate/ channels for welding anchor shackles, D-rings and turnbuckle lugs in order to lash antenna, container and other equipment.

8.0 MOBILIZATION OF SUPPORT STRUCTURES (STEEL) ON DECK OF CHARTER VESSEL

8.1. The instrumentation container (given by ISRO) is a 20 feet standard container, which houses all the control electronics and data processing system. This container has to position close to the ship borne antenna system on the deck. In order to avoid water retention and water splash around and below the container base during sailing, the container has to keep on a container raiser structure on the deck.

8.2. **The vendor shall be responsible for mobilizing the container raiser structures at New York port consisting of steel frame.**

8.3. **The vendor shall also be responsible for mobilizing stair case at New York port on the charter vessel deck. The stair case is for ease of entry from ship deck to the container. Similarly, the vendor shall be responsible for mobilizing the Base frame for MV-SAT antennas-2 Nos on the charter vessel deck.**

8.4. **The container raiser, stair case and MVSAT antenna base frame drawings are attached in Annexure-4.**

8.5. The vendor can take back the raiser structures, stair cases and base frames once the vessel returns to the port at US after mission completion.

9.0 DETAILED INSTRUCTIONS ON PACKING OF EQUIPMENTS & NUMBER OF CONTAINERS

The vendor shall be responsible for the following:

9.1. **The vendor has to visit the site at ISTRAC, Bangalore for physical verification of the consignment and assess the requirement.**

9.2. Vendor shall ensure that all ISTRAC equipment shall be safely packed as per the sea worthy standards (By using the suitable materials such as wooden packing, wrapping of individual systems with bubble sheets, Marine grade PU tarpaulin & covering/wrapping of all open consignments) at Bangalore Campus , before loading the equipment to the trucks.

9.3. The vendor shall provide the “Survey Report” of the lashing, donning and covering of SBT Antenna and other equipment prior to shipment.

9.4. Vendor shall be solely responsible for packing and marking of CARGO with respect to multiple handling, transport, extended storage time of 6 months, exposure to moisture and the possibility of pilferage. All damage and costs whatsoever resulting from inadequate or insufficient packing shall be fully charged to Vendor.

9.5. The contents of cases shall be protected by waterproof and strong plastic foil which shall be sealed. An adequate quantity of moisture absorbent (silica gel) shall be added to protect the contents for sufficiently long time from corrosion.

9.6. Materials shall be protected against corrosion during transit as necessary. All bright and exposed metal parts shall be coated with a recognized rust preventive suited to the particular application concerned.

9.7. All cases, boxes, bundles and containers are to be securely metal strapped with a minimum of two or more un-annealed steel straps in each of two right angled and opposite directions, or where applicable wood re-enforces.

9.8. Units or parts belonging to main equipment but separately packed shall be clearly marked for easy identification with main equipment to which they related.

9.9. ISRO equipments shall be unpacked and deployed on the ship deck (charter vessel) under the supervision / guidance by of ISRO team.

9.10. ISRO equipments shall be re-packed safely by using the suitable materials such as wooden packing, wrapping of individual systems with bubble sheets, Marine grade PU

tarpaulin & covering/wrapping of all open consignments) while returning from US Ports to India.

9.11. Vendor shall arrange following containers/ flat rack for transporting Consignment

a) 20ft standard container – 1No.
b) 40ft Flatrack – 1 No.
c) 40ft open top container - 1 No.
d) 20 feet ISRO's container(ISRO supply)

10. ROAD TRANSPORTATION

The vendor shall be responsible for the following:

10.1. During Transportation by Road, loading/ unloading into the Ships, utmost care shall be taken, to ensure the safety of all equipments.

10.2. The consignment shall be taken through specified class of trucks by road from Bangalore to the port during onward journey and also during return.

10.3. Vendor shall arrange trailers/trucks having pneumatic suspension; vibration and shock free arrangement and shall be adjustable to all road conditions at both destinations.

10.4. Vendor shall arrange following trucks/trailers for transporting Consignment,

a) Truck for 20ft containers- 2 Nos.
b) Flatbed trailer for 40ft flatrack/container – 2 Nos.

10.5. The consignments may also have to be taken by road from port of destination to bonded ware house and vice versa and also from bonded ware house to port where charter vessel is berthed at New York port. During this transportation, care must be taken as per the clause No.10.2, 10.3, 10.4 & 10.5.

10.6. The speed during transportation on road shall be restricted to maximum 25 KMPH and vendor shall provide a convoy vehicle for controlling the speed limits during road transportation.

10.7 The vehicle (trucks/Trailers) shall be fitted with GPS system and necessary GPS report may be submitted for verification and compliance.

11 BONDED WAREHOUSE FOR EQUIPMENT STORAGE

A requirement for storing consignment at New York port may arise in case there is a re - schedule of the date of mission. In this regard, vendor shall be responsible for following activities.

11.1. The vendor shall ensure safe storage at bonded ware house for the period of at least 1 week without any additional cost.

11.2. If the equipment is stored in the bonded ware house, the vendor shall ensure the charter vessel shall be mobilized within a week time at the New York port after the clearance from ISRO, and accordingly consignment shall be shifted from the warehouse to the port for deployment.

11.3. If there is further delay in ISRO mission, vendor shall extend the storage and shall charge on pro rata basis at actuals.

11.4. If there is delay in mobilizing chartering vessel by the vendor, the vendor shall ensure safe storage at bonded ware house at no additional cost for the entire period of delay.

11.5. The ware house charges due to delay from ISRO side shall be quoted separately as per actuals.

12 RESPONSIBILITIES OF ISRO

12.1 ISRO will identify the team leader of charterer team. The team leader shall be responsible for interacting with the Captain of the chartered vessel during the sail and shall provide the daily requirements, and changes, if any regarding the activities and the schedule. The team leader shall also be responsible for authorizing the extension of stay at the observation point and for initiation of the return journey.

12.2 ISRO will be installing their equipment on board the vessel. The equipment will remain the property of ISRO and will be entitled to remove the same on the vessel's redelivery.

13 GENERAL TERMS & REFERENCE DURING SHIPMENT

13.1 The vendor shall be responsible for the whole activity on end to end basis. The vendor shall ensure the consignment is reaching the US port well in time as per the schedule mentioned in the table No.14.

13.2 The original bill of Lading and other shipping documents shall be handed over to ISTRAC, Stores. Vendor shall provide information regarding the movement of the consignment from time to time till it reaches the final destination. Care / supervision should be taken while lashing / dunning during transshipment at Ports.

13.3 ISRO- ISTRAC shall not be responsible for any damages, loss, claims, financial and other injury for any vehicle(s)/Person(s) in course of vendor's performance of duties or for payment towards any compensation.

13.4 **Vendor shall ensure victualing, insurance coverage for 8 ISRO personnel and their equipment while on board the vessel (with said equipment costing about U.S.$ 500,000) on intended charter for its entire duration.**

13.5 Vendor is responsible for all the documentation work and clearances required at various ports for transportation and chartering of vessels.

13.6 Vendor shall provide the flag of the charter vessel in their offer.

13.7 In case the vendor is subletting vessel chartering to another agency, the vendor must inform the details of chartering agency at the time of submission of bid. However Vendor shall be solely responsible for all scope of work.

14 SCHEDULE OF THE MISSION

14.1 **Tentative schedule of mission is slated as 1st March 2025 (referred as T in Table 14.1).**

14.2 However mission being experimental basis, there may be likely chance of shift of mission date. The vendor may consider a window of 6 months (between 1st March 2025 to 31st August 2025) for the mission date and the exact start of the window will be intimated at the time of Purchase Order release. Accordingly vendor shall ensure the vessel chartering flexibility during this window.

14.3 After placing the purchase order, ISRO shall intimate the mission date 80 to 90 days in advance for the vendor to plan the mobilization activities. ISRO shall further confirm the mission date 75 days ahead of mission to start the consignment movement from Bangalore campus.

14.4 If the consignment is in transit and date change is happened, the vendor may retain the consignment at the destination port in the bonded warehouse as per the scope 11.1 to 11.5.

14.5 Based on mission confirmation date (T), ISRO shall intimate the vendor for mobilizing the charter vessel and Vendor shall mobilize the vessel within 7days time with respect to the activity at Sl.No.4 of table 14.1.

14.6 In case of additional delays beyond the vessel retention period (40 days as indicated in the schedule due to mission delay) the charges shall be paid on actuals per day basis for vessel chartering. In case of any delay from vendor's side no additional charges shall be paid for the vessel retention.

14.7 In case of mission called off/postponed for long duration due to technical reasons when the consignment is at New York port, the consignment has to bring back ISTRAC, Bangalore based on the confirmation from ISRO. Necessary payment will be made accordingly for services availed as per the scope.

Table 14.1 TENTATIVE SCHEDULE

Sl.NO	Activities	Duration (Max)	Schedule
1	Loading of consignments from ISRO ISTRAC Bangalore on to truck/trailers and reaching to nearest Indian port	5 days	T-60 days
2	Cargo shipment From Indian port to New York port	35 days	T-55 days
3	Retention of consignment at bonded warehouse at New York port	-	If any change in T
4	ISRO equipment installation on vessel and testing the systems and validation	5 days	T-20 days
5	Voyage to observation point	13 days	T-15days
6	Reaching observation point	2 days	T-2 days
7	Mission date	1 day	T
8	Commencement of return journey	3 days	T+3
9	Sailing to New York Port	13 days	T+ 16days
10	Dismantling at Port	3 days	T+19 days
11	Consignment shipment to ISTRAC, Bangalore	60 days	T+ 79 days

15 PRICE BID:

The below format is only for vendor's reference. Vendor shall not mention any prices in this format along with technical bid. Vendor may quote the prices separately in the online price bid. If the technical bid contains any price information, bid is liable for rejection.

The scientific experiment is indicatively scheduled between 1st March, 2025 to 31st August, 2025. The rates quoted by vendor shall be firm and fixed during entire period.

Table 16.1 Price bid format

Sl.No	Description	**In INR**
	Deployment At Observation Point	
1	Shipment of consignment from ISRO-ISTRAC Campus at Bangalore to port at New York, American port and return on door to door basis to ISRO-ISTRAC Bangalore as per scope 2.1.1	
2	Chartering of vessel at New York port for ISRO equipment deployment as per the scope 2.1.2	
3	Total cost for deployment at Observation Point	
4	Taxes if any	
5	Total	
In case of delay in mission date, the following point rates may be submitted by the vendor.		
6	Indicate the charges towards Bonded Warehouse for storing consignment at New York port including loading, unloading and handling charges on monthly basis.	
7	Indicate the vessel retention charges per day beyond the scheduled period of 40days.	
8	Taxes if any	

16 PRE-QUALIFICATION CRITERIA:

The essence of the scope of work of this bid is to ensure the availability of chartered vessel at the observation point deep inside Atlantic Ocean to facilitate operation of Ship borne Terminal by ISRO team on the specified mission date. In order to meet this critical & specific type of requirement, the bidder shall have requisite experience and resources. In order to ensure successful execution of the critical activity, it is mandatory that the bidder shall have

16.1 PRIOR EXPERIENCE:

16.1.1 EXPERIENCE IN SPECIAL CARGO SHIPMENT & HANDLING @ INDIAN & AMERICA PORTS: The vendor shall have past experience in handling/execution of large size standard and non-standard special consignments (40 feet open container or large non-standard consignment) both in Indian ports and in American ports involving transshipments at multiple ports. The bidder shall submit atleast 1 copy of work order/purchase order/ MOU

along with end user completion certificate as documentary proof of carrying out cargo shipments of special consignments within Indian port and also to American ports during the previous five years along with bid. If the vendor has not provided any documentary details, offer is liable for rejection.

16.1.2. EXPERIENCE IN CHARTERING OFFSHORE VESSEL (OSV) AT AMERICAN PORTS:

Chartering Vessel of Offshore Vessel (OSV) for this mission at New York port is the critical responsibility of the scope of work. The bidder's prior experience in chartering OSV class vessel at American ports for specific missions to deep sea and familiarity with procedures and regulations at American ports while chartering the vessel is one of the essential requirements. The bidder shall submit at least 1 copy of work order/purchase order/ MOU along with end user completion certificate as documentary proof for carrying out OSV vessel chartering at American ports during the previous five years. If the vendor has not provided any documentary details, offer is liable for rejection.

16.2 AVERAGE ANNUAL FINANCIAL TURNOVER:

Average Annual financial turnover during the last 03 years, ending 31st March of the previous financial year, shall be at least 12 crores INR. Documentary evidence for the same shall be submitted.

16.3 The vendor has to submit the signed copy of technical compliance table as per the format of Sl.No. 18 on their letter head.

17 COMMERCIAL TERMS & CONDITIONS

17.1 Certificate of Undertaking as per the tender documents:

Any bidder from a country which shares a land border with India will be eligible to bid in any procurement whether of goods or services (including consultancy services and non-consultancy services) or works (including turn-key projects) only if the bidder is registered with the Competent authority (i.e. DPIIT – Department for Promotion of Industry and Internal Trade). Hence, it is mandatory to furnish Certificate of Undertaking as indicated in the tender document.

Bidder from a country which shares a land border with India for the purpose means:

a. An entity incorporated, established or registered in such a country; or
b. A subsidiary of an entity incorporated, established or registered in such a country; or
c. An entity substantially controlled through entities incorporated, established or registered in a such a country; or
d. An entity whose beneficial owner is situated in such a country; or
e. An Indian (or other) agent of such an entity; or
f. A natural person who is a citizen of such a country; or
g. A consortium or joint venture where any member of the consortium or joint venture falls under any of the above.

17.2 Taxes: Applicable tax percentage shall be quoted.

17.3 Security Deposit: The vendor shall execute Security Deposit for 3% (THREE PERCENT) of the value of the Purchase Order to ensure satisfactory performance of the Purchase Order. The Security Deposit shall be executed within 20 days after receipt of Purchase Order or any extension thereof. The Security Deposit is to be furnished in the form of Insurance Surety Bond or Account Payee Demand Draft or Fixed Deposit Receipt or Bank Guarantee from Nationalized Bank/Scheduled Bank/internationally reputed Bank approved by RBI. The Security Deposit shall be executed on a Non-Judicial Stamp Paper of Rs. 200/- value and shall be valid for a period of 60 days beyond the date of completion of the P.O. In case the vendor fails to furnish the Security Deposit within 20 days or any extension thereof the Purchase Order shall be cancelled or terminated and appropriate penal action shall be initiated. Any breach of the Terms and Conditions of the PO including Delivery Period, Security Deposit shall be forfeited and PO shall be terminated and cancelled at the vendor's risk, cost and liability. The Security Deposit will not carry any interest and shall be returned after completely executing the order. Bank Guarantee format along with our Bank details are enclosed.

17.4 Payment Terms: 100% within 30 days from the date of completion of entire scope of PO.

17.5 Delivery Period: As mentioned in the scope of work.

17.6 Penalty clause: If the vendor is not able to reach the observation point and support the mission due to lapse from vendor, No Chartering charges will be paid and further SD will be forfeited

17.7 Transit Damage: In case any transit damage of shipment is noticed on arrival, proper joint survey to be conducted along with the underwriters before clearance to ensure future claims are settled by underwriter without any issues.

17.8 Claims: Claims towards damage (complete or partial), misplacement, misrouting need to be lodged through the underwriters authorized by ISTRAC or through underwriters through whom the transit Insurance has been made.

17.9 Compensation for damages caused for persons, goods, Property: The vendor shall indemnify and hold harmless against any loss, damages of expenses resulting from damage to property or personnel injury arising out of willful misconduct or gross negligence of the contract or their personnel in the execution of the work under this contract. The vendor shall, at his expenses defend any suit or proceeding brought against ISTRAC on account thereof, and satisfy all judgments and pay all expenses, which may be incurred by or rendered against them or any of them in connection therewith. ISTRAC shall not be responsible for any damages, loss, claims, financial and other injury for any vehicle(s)/Person(s) in courses of their performance of their duties or for payment towards any compensation.

17.10 Insurance Clause applicability for the consignment:

a. No Separate insurance is required for consignment. However, it is the responsibility of the vendor for safe delivery of the consignment.
b. ISTRAC shall be arranging the transit insurance for CARGO during the shipment from Bangalore Campus to New york port and back.
c. Vendor shall have valid insurance for the empty containers for the container cost for the period from the date of delivery to ISTRAC and till the completion of contract for any damages due to handling, storage etc.
d. The liability of the Vendor is limited under the rules governed under Warsaw Conventions.

17.11 Force Majeure: Neither party shall bear responsibility complete or partial non-performance of any of his obligations [except for failure to pay any sum which has become due on account of execution of service under the provisions of the Purchase Order/Contract:

a. If the non-performance results from such force majeure circumstances such as, but not restricted to, flood, fire, earthquake, civil commotion, sabotage, explosion, epidemic, quarantine restriction, strike, lock out, freight embargo, acts of the Government either in its sovereign or its contractual capacity, hostility, acts of public enemy and other acts of God as well as war or revolution, military operation, blockade, acts or actions of state authorities or any other circumstances beyond the control of the parties that have arisen after the conclusion of Purchase Order/Contract. In such circumstances, the time stipulated for the performance of an obligation under the Purchase Order/Contract may be proportionately extended or for mutually agreed duration.
b. The vendor for whom it has become impossible to meet the obligation under this contract due to force majeure condition shall notify the other party in writing not later than 7 days from the date of the occurrence and cessation of the force majeure condition/s. In the event of delay resulting in not fulfilling the mission requirement, arising from force majeure causes, the ISTRAC, ISRO reserves the right to cancel the contract by compensating the vendor to the extent of work completed by the vendor upon receipt of consignments at ISTRAC Bangalore in good condition. Unless agreed by both the parties, in writing, the vendor shall continue to perform his obligations under the Purchase Order/Contract as far as is practical and shall seek all reasonable alternative means for performance not prevented by the force majeure event.
c. Any Certificate issued by the Chamber of Commerce or any other competent authority or organization of the respective country shall be sufficient proof of commencement and cessation of the above circumstances. Being a Critical and time bound mission, In case of failure to carryout complete or partial performance of an obligation for more than 30 days, either party shall reserve the right to terminate the Contract totally or partially. A prior written notice of 15 days to the other party will be given informing of the intention to terminate without any liability.

d. The Force Majeure condition is applicable only to the prime Vendor and ISTRAC/ISRO, Bangalore.

17.12 Applicable Law and Jurisdiction: Purchase Order shall be interpreted, construed and governed by the Laws of India and the Courts in Bengaluru city alone shall have exclusive jurisdiction in this regard, to the extent permissible under the Arbitration and Conciliation Act, 1996 and subsequent amendment, if any.

17.13 Publicity: No publicity of any kind whatsoever in case of PURCHASE ORDER shall be given by the vendor without prior permission of the ISRO-ISTRAC, Bangalore.

17.14 Secrecy: The technical information, drawings, specifications and other related documents provided by the ISRO-ISTRAC, Bangalore and forming part of the Contract are the property of ISRO-ISTRAC, Bangalore and shall not be used or disclosed for any other purpose, except for execution of the Contract. All rights, including rights in the event of grant of patent and registration of designs are reserved in favour of the ISRO-ISTRAC, Bangalore. The technical information, drawings, specifications, records and other documents provided by the ISRO-ISTRAC, Bangalore shall not be copied, transcribed, traced or reproduced in any other form or otherwise in whole and/ or duplicated, modified, divulged and/or disclosed to a third party nor misused in any other form whatsoever without ISRO-ISTRAC, Bangalore's consent in writing except to the extent required for the execution of this Contract. These technical information, drawings, specifications and other related documents which were originally provided by the ISRO-ISTRAC, Bangalore shall be returned to the ISRO-ISTRAC, Bangalore with all approved copies and duplicates, if any, immediately after they have been used for the agreed purpose, and shall be accompanied with a certificate of the Vendor signed by an authorised signatory that such technical information, drawings, etc. have been returned to the ISRO-ISTRAC, Bangalore and that the vendor has not retained any copy/ies thereof with him.

17.15 Termination: Under the normal circumstances, Termination/Short Closing of the Purchase Order/Contract is not foreseen. However, the ISRO-ISTRAC, Bangalore reserves the right to terminate the Contract in whole or in part by giving 30 days prior notice under any of the following circumstances:

a. For repeated non-performance in the execution of Purchase Order/Contract.
b. If the vendor fails to deliver the scope of PO within the stipulated schedule or any extension thereof, granted by ISTRAC.
c. If the vendor fails to perform any other obligations under P.O/Contract.
d. Owing to deficiency of service, breach of Contract
e. For inefficiency, indiscipline, irregularity, insincerity, indifference in work, indulges in corrupt practices, disobedience, doubtful credentials/integrity, etc., at any point of time during the Contract period.

f. If the vendor becomes bankrupt or otherwise insolvent or any petition seeking its insolvency is admitted by a Court/Tribunal of competent jurisdiction or if the Vendor applies for voluntary insolvency or enters into any arrangement for deferred payment to its creditors.

17.16 Language and Measures of the Contract: All documents pertaining to the Contract including specification schedule notices, correspondence, operating and maintenance instruction drawings or any other writing shall be written in English language only. The metric system of measurement shall be used exclusively in the Contract.

17.17 INSTRUCTIONS TO TENDERERS (EGPS two part tender):

PART-I & PART –II are to be separately submitted. Or else, the tender will be rejected affront.

17.18.1 SUBMISSION OF TECHNO-COMMERCIAL BID (PART I):

a. Vendor shall submit Techno-commercial bid as specified in duly conforming all the parameters mentioned in the scope of work document along with Technical Compliance table as per section.18. Remarks/ observations to any of the clauses in the scope of work may be highlighted in the Technical Compliance table.
b. In order to evaluate the eligibility of the vendor all the conditions mentioned in the scope of work shall be considered.
c. Wherever supporting documents are asked for in the Techno-commercial bid, self-attested photocopies of the same shall be attached. The Techno-commercial bid will be considered only with the relevant supporting documents wherever required.

17.18.2 SUBMISSION OF PRICE BID (PART II):

a. The Price shall be submitted in the online EGPS format.
b. The documents attached with the tender are sacrosanct for considering any offer as a complete offer. It is therefore, important that all documents duly completed and signed, failing which the tender is liable to be treated as incomplete and ignored.
c. ISRO-ISTRAC reserves the right to accept or reject any/ all tenders(s) in part or full without assigning any reason.

18 TECHNICAL COMPLIANCE TABLE

Sl. No	Clause No	Technical compliance	Remarks
1	1		
2	2.0 – 2.1 (2.1.1 to 2.1.3)		
3	3.0 – (3.1 to 3.15)		
4	4.0 - (4.1 to 4.8)		
5	5.0 – (5.1 to 5.7)		
6	5.0 – 5.8 (5.8.1 to 5.8.8)		
7	5.0 – 5.9 (5.9.1 to 5.9.3)		
8	5.0- 5.10 (5.10.1 to 5.10.8)		
9	6.0		
10	7.0		
11	8.0 (8.1 to 8.5)		
12	9.0 (9.1 to 9.11)		
13	10.0(10.1 to 10.7)		
14	11.0 (11.1 to 11.5)		
15	12.0 (12.1 to 12.2)		
16	13.0 (13.1 to 13.7)		
17	14.0 (14.1 to 14.7)		
18	16.0- 16.1(16.1.2 -16.1.3)		
19	16.0 (16.2-16.3)		
20	16.1.1 - Supportive Documents		
21	16.1.2 -Supportive Documents		
22	16.2 - Supportive Documents		
23	17.0(17.1 to 17.17)		
24	17.0-17.18 (17.18.1 to 17.18.2)		

ANNEXURE-1: Servo & RF Equipments and Accessories (consignment)

Sl. No	Item Description	Qty.
1.	MULTICOUPLER ATLANTHYS, AMC1-4-2200-2300-ACI	02
2.	GPS RECEIVER TIME LINK MICROSYSTEM SW1050	01
3.	Allied Telesis Switch	01
4.	BHE DOWN CONVERTER BMCD 35	03
5.	INSNEC RTR/ACU	01
6.	INSNEC RTR/ACU	01
7.	TTCP Cortex-Q with I/O Panel and cables	01
8.	Time Tech Refgen	01
9.	FDU UNIT	01
10.	R&S Signal Generator SMA100A	01
11.	TTCP Cortex-Q with I/O Panel and cables	01
12.	BMCU 21	01
13.	Novotronik selection switch	01
14.	Cisco Router 4431	01
15.	Dell EMC R740 Server	01
16.	Dell R730 Server	01
17.	Dell R430 Server	01
18.	Dell R430 Server	01
19.	Brocade Switch	01
20.	Dell Switch	01
21.	Cisco Router	01
22.	ALS CDT Reader	01
23.	Fijitsu Server	01
24.	Dell EMC R740 Server	01
25.	Dell R730 Server	01
26.	Broacde Switch ICX 7450	01
27.	Dell Switch	01
28.	Cisco Router	02
29.	Dell Wyse Client 1	01
30.	Dell Wyse Client 1	01
31.	Dell Monitor	01
32.	Dell Monitor	01
33.	Dell Monitor	01

34.	Panasonic Laptop	01
35.	HP Laptop	01
36.	HP Compaq 6300 PC	01
37.	Adlink PC	01
38.	Cortex DS TTCP with IO Panel Interface cables	01
39.	USB-SA44B Spectrum Analyzer (Sig Hound)	01
40.	Slings Belts Spanners etc	02 lots
41.	Micro systems SW1050 GPS	01
42.	TT servo spares	01 + Lot
43.	Power extension board LAN Cables &Misc. spares	01 + 1 lot
44.	Misc. loose RF & Electrical &Ethernet Cables	01 lot
45.	Safety Items	01 Lot
46.	ATEN RKVM	01
47.	Adrin Encryption Box	02
48.	IMU unit (GYRO) IxBLue	01
49.	R&S Hand Held Spectrum Analyser	01
50.	Spare UPS Control Module	01

ANNEXURE-2: Electrical & Mechanical Equipments (consignment)

Sl.No	Item Description	Qty.
1.	80KVA UPS Frame	02
2.	20KVA Power modules	06
3	Enclosures	02
4	AC units(indoor units + outdoor units)	02
5	60KVA Isolation Transformer	01
6	4 core 35sqmm copper flexible cable	100mtr
7	2.5sqmm,4sqmm,6sqmm PVC copper cable	20mtr
8	4sqmm PVC copper cable	20mtr
9	Size 8 uninywin cable	10mtr
10	5 core 4 sqmm copper cable(MOX)	50mtr
11	4sqmm PVC copper cable	25mtr
12	Tools box	1 lot
13	Consumables like insulation tubes, lugs, silcon, cable ties, PG glands etc.	1 lot
14	Fluke Make 434 Power quality Analyser with all accessories in a brief case SN: DM8880171	1No
15	Fluke clamp meter 376	1No
16	Phase sequence meter Greenlee	1No
17	Fluke 287 True RMS multimeter	1No

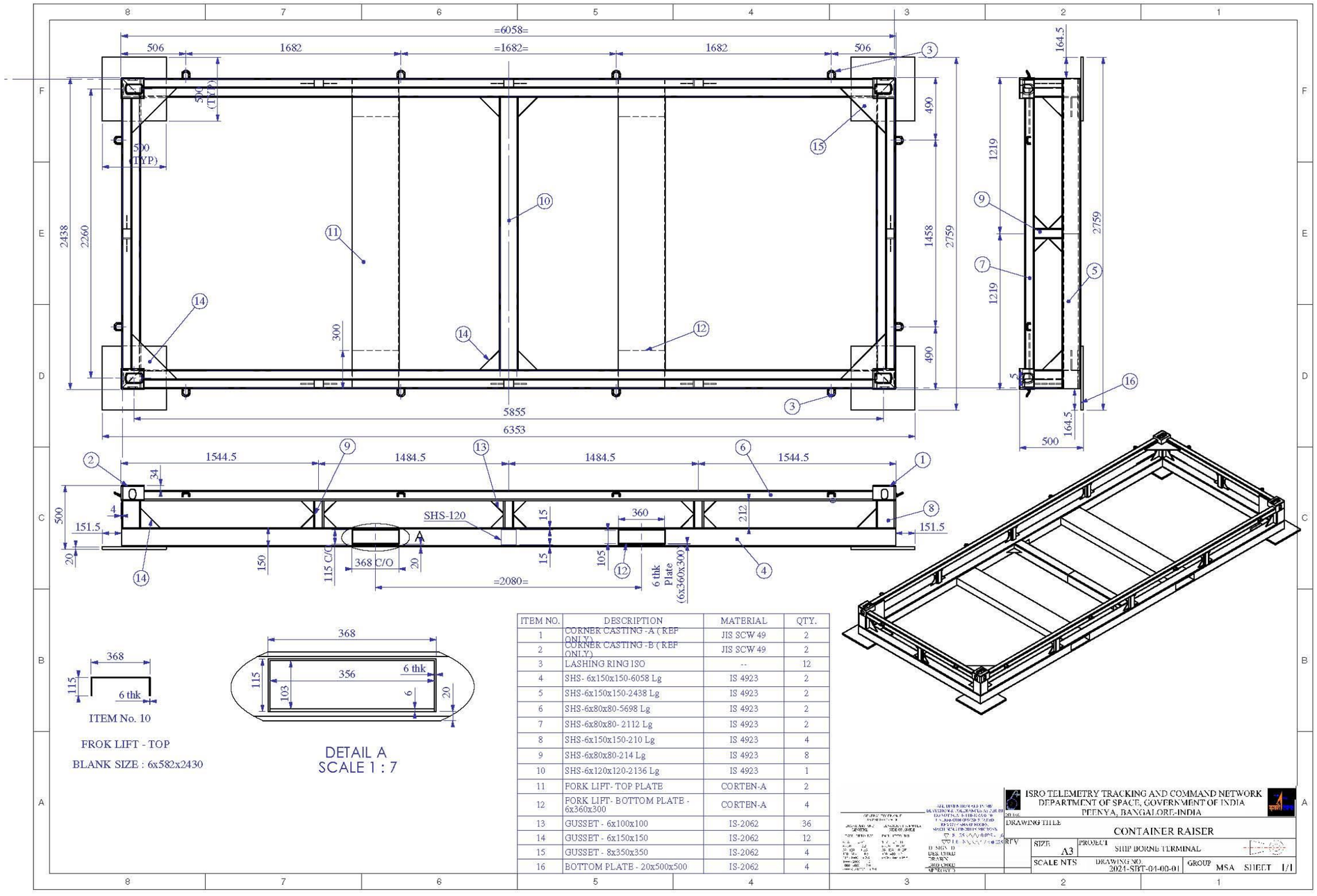
18	Mechanical tool box-1 (200x100x100 cm) It includes mechanical tools, material handling equipments, safety equipments and other accessories	01 lot
19	Mechanical tool box-2 (100 x60x60 cm) It includes f mechanical tools, lashing and other accessories	01 lot

ANNEXURE-3: MV SAT Antennas and its Systems (consignment)

Sl.No	Item Description	Qty.
1.	3-Axes Marine Stabilized 2.2 m MV-SAT Antenna along with Servo and RF Electronics as a single unit.	2 Sets
2.	Compass with Power Adaptors and Cables	3 Nos
3.	Central Control Unit (CCU) (operational)	2 Nos
4.	Central Control Unit (CCU) (Spare)	1 Box
5.	CCU Monitors (Operational)	2 Nos
6.	Digital Satellite Modems (Operational)	2 Nos
7.	Digital Satellite Modems (Spare)	1 Box
8.	40 W C-Band BUC (Spare)	1 No
9.	C-Band PLL LNB (Spare)	1 No
10.	ADMUx (Spare)	1 No
11.	Handheld Spectrum Analyzer	1 No
12.	Laptop	1 No
13.	Ethernet Testers	1 No
14.	Integration Components such as RF and LAN cables and components, Mechanical Tools and Safety Accessories kit (Non-Asset items)	1 No
15.	INMARSAT Fleet Broadband 500 terminal	1 No
16.	Fleet Broad Band Power Supply Unit	1 No
17.	Fleet Broad Band Thrane and Thrane Receiver Unit	1 No
18.	Fleet Broad Band Thrane and Thrane Telephone Set	1 No

ANNEXURE-4: Container Raiser, Stair Case, MVSAT Antenna base Frame

Container raiser: QTY- 1 No.(NewYork Port)



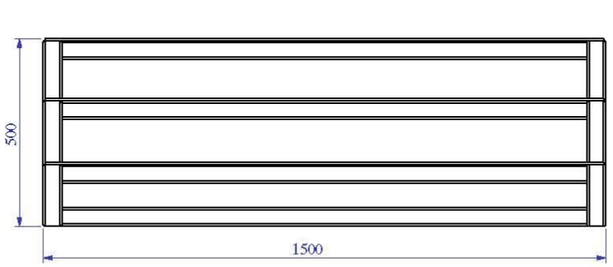
ITEM NO.	DESCRIPTION	MATERIAL	QTY.
1	CORNER CASTING -A (REF ONLY)	JIS SCW 49	2
2	CORNER CASTING -B (REF ONLY)	JIS SCW 49	2
3	LASHING RING ISO	--	12
4	SHS- 6x150x150-6058 Lg	IS 4923	2
5	SHS-6x150x150-2438 Lg	IS 4923	2
6	SHS-6x80x80-5698 Lg	IS 4923	2
7	SHS-6x80x80- 2112 Lg	IS 4923	2
8	SHS-6x150x150-210 Lg	IS 4923	4
9	SHS-6x80x80-214 Lg	IS 4923	8
10	SHS-6x120x120-2136 Lg	IS 4923	1
11	FORK LIFT- TOP PLATE	CORTEN-A	2
12	FORK LIFT- BOTTOM PLATE - 6x360x300	CORTEN-A	4
13	GUSSET - 6x100x100	IS-2062	36
14	GUSSET - 6x150x150	IS-2062	12
15	GUSSET - 8x350x350	IS-2062	4
16	BOTTOM PLATE - 20x500x500	IS-2062	4

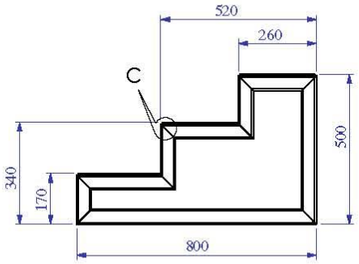
ISRO TELEMETRY TRACKING AND COMMAND NETWORK
DEPARTMENT OF SPACE, GOVERNMENT OF INDIA
PEENYA, BANGALORE-INDIA

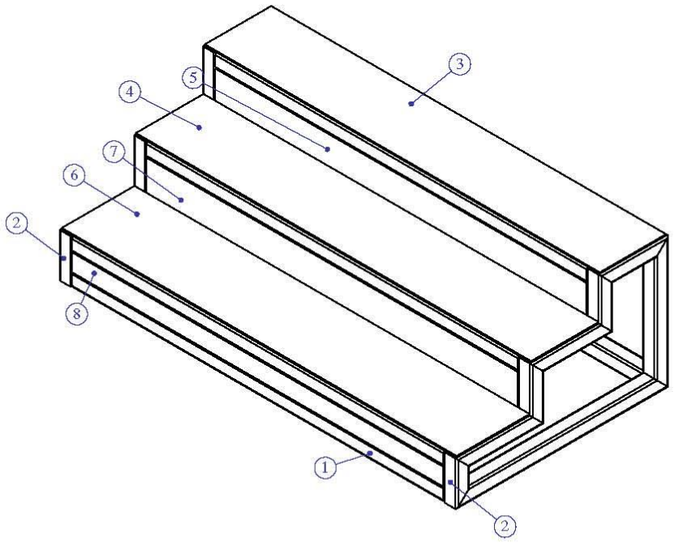
DRAWING TITLE: CONTAINER RAISER

SIZE: A3 | PROJECT: SHIP BORNE TERMINAL | SCALE NTS | DRAWING NO. 2021-SBT-01-00-01 | GROUP MSA | SHEET 1/1

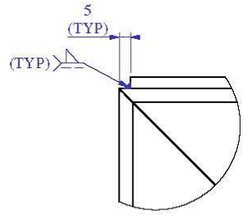
Stair Case: QTY- 1 No.(NewYork Port)







ITEM NO.	QTY.	DESCRIPTION	MATERIAL
1	6	SHS - 3x50x50-1400 Lg	IS-4923
2	2	SHS-3x50x50-2800 Lg	IS-4923
3	1	CHEQUER PLATE - 5x250x1490	IS-3502
4	1	CHEQUER PLATE - 5x255x1490	IS-3502
5	1	PLATE - 6x116x1400	IS-2062
6	1	CHEQUER PLATE - 5x275x1490	IS-3502
7	1	PLATE - 6x126x1400	IS-2062
8	1	PLATE - 6x70x1400	IS-2062



DETAIL C
SCALE 1 : 2

GENERAL TOLERANCE
AS PER ISO 2768 - kl

ALL DIMENSION ARE IN MM
DEVIATION & TOLERANCES AS PER IS
DO NOT SCALE THE DRAWING
UNLESS OTHERWISE STATED
REMOVE SHARP EDGES
MACHINING FINISH IN MICRONS

8 - 25 0.025 - 1.6
1.6 - 8 ≤ 0.025

REV R0

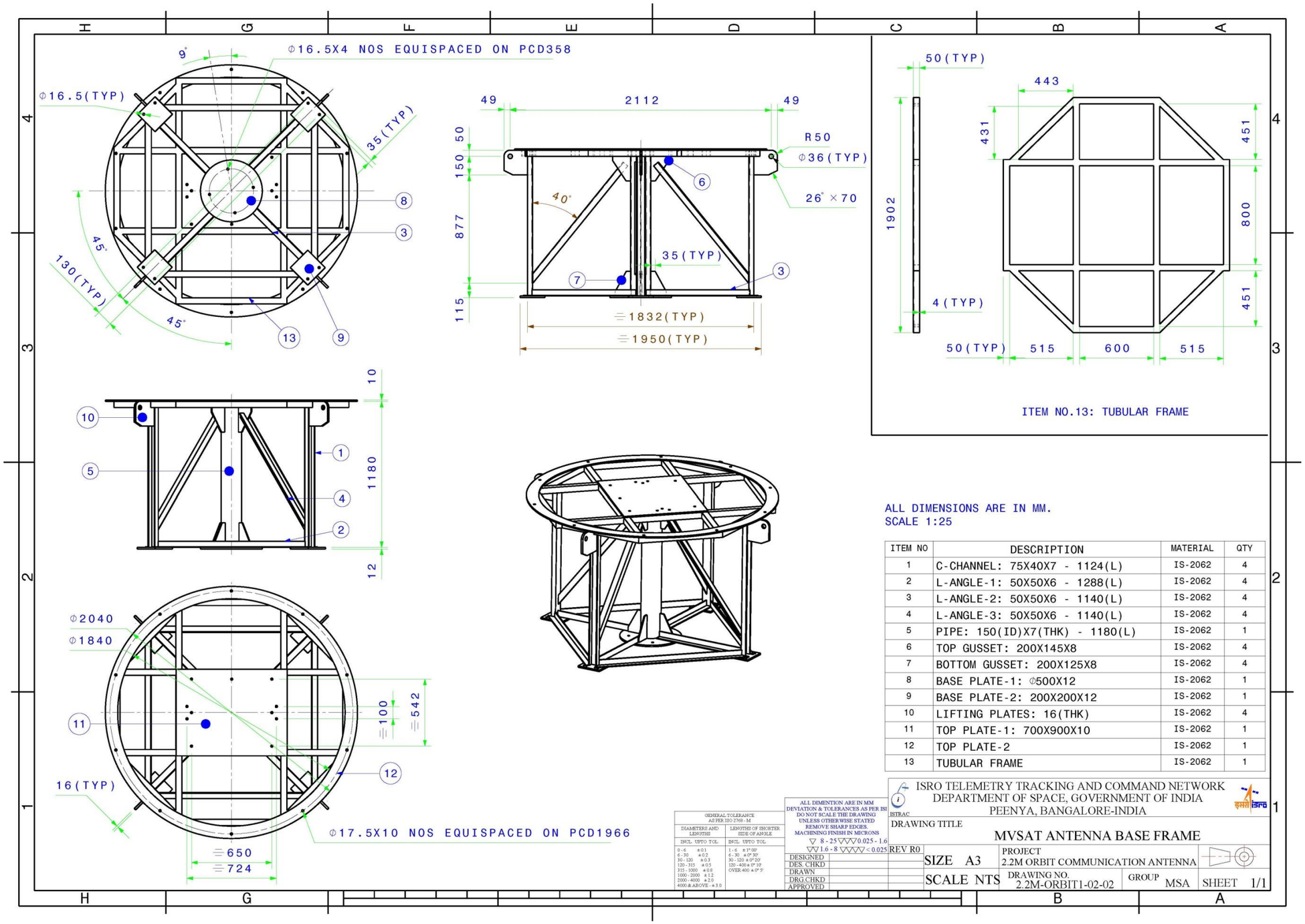
DESIGNED
DES. CHKD
DRAWN
DRG CHKD
APPROVED

ISTRAC
ISRO TELEMETRY TRACKING AND COMMAND NETWORK
DEPARTMENT OF SPACE, GOVERNMENT OF INDIA
PEENYA, BANGALORE-INDIA

DRAWING TITLE
STAIR CASE

SIZE A3 | PROJECT SHIP BORNE TERMINAL
SCALE NTS | DRAWING NO. 2024-SBT-04-00-02 | GROUP MSA | SHEET 1/1

MV-SAT antenna base frame: QTY- 2 Nos.(two at NewYork Port)



ITEM NO	DESCRIPTION	MATERIAL	QTY
1	C-CHANNEL: 75X40X7 - 1124(L)	IS-2062	4
2	L-ANGLE-1: 50X50X6 - 1288(L)	IS-2062	4
3	L-ANGLE-2: 50X50X6 - 1140(L)	IS-2062	4
4	L-ANGLE-3: 50X50X6 - 1140(L)	IS-2062	4
5	PIPE: 150(ID)X7(THK) - 1180(L)	IS-2062	1
6	TOP GUSSET: 200X145X8	IS-2062	4
7	BOTTOM GUSSET: 200X125X8	IS-2062	4
8	BASE PLATE-1: Φ500X12	IS-2062	1
9	BASE PLATE-2: 200X200X12	IS-2062	1
10	LIFTING PLATES: 16(THK)	IS-2062	4
11	TOP PLATE-1: 700X900X10	IS-2062	1
12	TOP PLATE-2	IS-2062	1
13	TUBULAR FRAME	IS-2062	1

GENERAL TOLERANCE AS PER ISO 2768 - M

DIAMETERS AND LENGTHS		LENGTHS OF SHORTER SIDE OF ANGLE	
INCL	UPTO TOL	INCL	UPTO TOL
0 - 6	±0.1	1 - 6	±1° 00'
6 - 30	±0.2	6 - 30	±0° 30'
30 - 120	±0.3	30 - 120	±0° 20'
120 - 315	±0.5	120 - 400	±0° 10'
315 - 1000	±0.8	OVER 400	±0° 5'
1000 - 2000	±1.2		
2000 - 4000	±2.0		
4000 & ABOVE	±3.0		

ALL DIMENTION ARE IN MM
DEVIATION & TOLERANCES AS PER ISI
DO NOT SCALE THE DRAWING
UNLESS OTHERWISE STATED
REMOVE SHARP EDGES.
MACHINING FINISH IN MICRONS
▽ 8 - 25 ▽▽▽ 0.025 - 1.6
▽▽ 1.6 - 8 ▽▽▽▽ < 0.025

DESIGNED	
DES. CHKD	
DRAWN	
DRG.CHKD	
APPROVED	

ISRO TELEMETRY TRACKING AND COMMAND NETWORK
DEPARTMENT OF SPACE, GOVERNMENT OF INDIA
PEENYA, BANGALORE-INDIA
ISTRAC

DRAWING TITLE
MVSAT ANTENNA BASE FRAME

REV R0 | SIZE A3 | SCALE NTS | PROJECT 2.2M ORBIT COMMUNICATION ANTENNA | DRAWING NO. 2.2M-ORBIT1-02-02 | GROUP MSA | SHEET 1/1

ANNEXURE 5 - Schematic diagram of Electrical requirement on the vessel