

**Corrigendum to Tender Number: SAC/HPUR/2020E10170 01: Development and Production of Two-way MSS Terminal and user NMS for tracking of sub-24m boats
Subsequent to Online Pre-Bid discussions held on 06th October 2020**

S/ N	In Place of		To be read as	
1.	<i>Section-A, page-9, Table-1, sr.no.11, 5 minutes reception every 15 mins.</i>		3 minutes reception every 15 mins	
2.	<i>Section-c, page -33, Table 5: Scope of work of terminal, sr.no. 7. 25 number of terminals by prime bidder</i>		20 number of terminals by prime bidder as well as secondary bidders	
3.	<i>Section-c, page -39, Development Schedule (Terminal)</i>			
	Manufacture and supply of 25 /15 Proto-units for Field Testing	T ₀ +18	Manufacture and supply of 20 Proto-units for Field Testing by all vendors	T ₀ +16
	Field trial and review of trial results for production clearance	T ₀ +20	Field trial and review of trial results for production clearance	T ₀ +18
	Commencement of production & installation of remaining units	T ₀ +24 onwards	Commencement of supply of terminals to depot & installation of terminals	T ₀ +30
	Delivery of all terminal hardware to user depot	T ₀ +30	Project completion (delivery & installation of all terminals)	T ₀ +42
4.	<i>Section-A, page-10, Table-1, sr.no.19,</i> Phase noise (SSB)			
	100 Hz Offset	< -65 dBc/Hz	< -55 dBc/Hz	
	1 KHz Offset	< -80 dBc/Hz	< -70 dBc/Hz	
	10 KHz Offset	< -100 dBc/Hz	< -85 dBc/Hz	
5.	<i>Section-A, page-10, Table-1, sr.no.21,</i> Spurious < -55dBc		Spurious < -45dBc	
6.	<i>Annexure-1</i> <i>page-45, Rack mount Server, sr.no. 16</i> <i>page-46, External Storage, sr.no. 13</i> <i>page-46, 10G Switch, sr. no. 5</i> <i>page-47, Desktop Computer for operator Console, sr.no. 15</i>			

	Warranty: 5 years comprehensive onsite....	Warranty: 3 years comprehensive onsite warranty for all major NMS hardware subsystem from OEM to be provisioned.
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CONTD. FOR PRE-BID QUERY CLARIFICATIONS...

Response for Pre-Bid Queries for Tender Number: SAC/HPUR/2020E1017001: Development and Production of Two-way MSS Terminal and user NMS for tracking of sub-24m boats

1.Pre-bid Queries from M/s Avantel Ltd.

Sr. No.	Features / Specifications Reference	Query	Response
1.1	<p>The S-band terminal will support burst mode of transmission. However, it will support two modes of data reception:</p> <ul style="list-style-type: none"> • Continuous reception mode where receiver is always in ON condition. This will be the default mode for terminal. • Discrete reception mode also called power saving mode, where the terminal receiver will be reconfigured to receive / keep Rx ON periodically for a predefined duration and remain in power off condition for remaining period 	Is discrete reception mode controlled by NMS?	No. It will be based on logic built into terminal firmware.
1.2	Supports emergency siren, SoS manual switch & low battery indicator buzzer.	Siren & Buzzer will be provided in APP, is it acceptable?	No. Siren/buzzer is to be provided preferably with manual switch

1.3	The S-band transceiver consists of a RF front end, RF transceiver ASIC (AD9364), Digital Modem (SDM ASIC/SDR/FPGA), Base band controller and other peripherals like Bluetooth, UART etc. An android application running on a smart phone is used for data exchange with MSS terminal	RF Transceiver ASIC(AD9364): Instead of this can we use any other transceiver chip solution? Does SDM ASIC from ISRO will have modem code which is compatible for TWT requirements? Or vendor has to develop modem code?	Vendors are free to choose their own hardware architecture (transceiver, Modem ASIC, FPGA/SDR based modem). In case of FPGA/SDR based modem, the responsibility of IP development is with vendor. The waveform has to be IESS-308 compatible. SDM ASIC is a modem ASIC itself and its datasheet will be made available.
1.4	Terminal will support programmable/reconfigurable reporting rate based on terminal location/administrative preference of network administrator	Reporting rate can be configured through NMS, is it ok?	Reporting rate can be configured by terminal firmware as well as NMS.
1.5	Packaging: IP-67 compliance	IP67 compliance may be difficult with buzzer provision in the unit. Instead audio buzzer shall be provided in the application loaded in the mobile. Is it acceptable?	Refer to reply of the point 1.2 above.
1.6	User device Interface Wi-Fi/Bluetooth	Wi-Fi or Blue tooth is good enough or both interfaces are necessary?	Wi-Fi or Blue tooth is good enough

1.7	DC Power Consumption: Idle:3.8watts, Peak:15watts	Is boat power supply connected to MSS terminal for battery charging. If yes what is the voltage ?	Yes, the boat battery will be connected to terminal for charging. Terminal input DC voltage will be 9V to 24V.
1.8	Built-in battery should support 24 hours of uninterrupted operations of position reporting every 15 minutes and in discrete reception mode (5 minutes reception every 15 mins)	As per the power consumption calculations for 24hours operation, unit requires 7.4V, 15AH (with 15% margin) battery is required, with this, size and weight of the terminal will be increased. Is specified duration mandatory?	Please revisit your calculation. Also refer to corrigendum section for updated requirement.
1.9	Base band processor communicates with several other user interfaces via UART/SPI. It should also have support for connecting external LCD/ Keypad	Is LCD/Keypad feature required at PCB level in the TWT or external connector required ?	It is required at PCB level for future expansion.
1.10	Baseband Controller Features RTC synchronization of the order of 10ms using NavIC enabled GPS receiver.	How does GPS navigation update rate of 1-5Hz, will compatible to RTC synchronization with an order of 10ms ?	RTC with input clock source together with NavIC should ensure time synchronization of order of 10ms.
1.11	Built-in audio alarm for message reception from Hub	will be provided in APP, is it acceptable?	Built in audio alarm can be additional to the siren/buzzer.
1.12	External switch for manual alarm	Is this additional to SOS manual switch?	NO. SOS and manual alarm switch is same.

1.13	Carrier Suppression Better than 30 dB	Is carrier suppression of better than 20dB ok?	NO, Typical carrier suppression of 30dB is required.
1.14	Spurious < -55dBc	Is spurious better than -50dBc ok?	Please refer corrigendum for update value
1.15	External AC Charger?	Is external AC charger in the scope of supply?	Not required as the terminal will be connected to Boat battery
1.16	Hardware storage?	How much storage required in the TWT to store the positional information and events?	Storage requirement to be calculated based on past minimum one month data and 30 days trip.
1.17	Antenna system:	Are specified antenna parameters with Radome or only Antenna?	With Radome.
1.18	LO step size 10 Hz min	Frequency tuning is mentioned 1KHz step size, where as in LO step size is mentioned as 10Hz min. Pl clarify?	Frequency tuning of 1KHz is to be ensured with selected LO.
1.19		Is the scope of supply mobiles by vendors?	Scope of supply does not include Mobile phone.
1.20		Installation requirements needs fitment feasibility study?	This will be facilitated by End-user.
1.21		How to declare return voyage automatically?	Return voyage declaration can be done manually or based on location during trip.
1.22		Does separate sensors required for monitoring Vibration and temperature?	No.

1.23		Is ISRO provides GIS maps?	NO. However there should be a provision to upgrade the system with high resolution maps if made available by user.
1.24		<p>NC-NC Demonstration:</p> <ul style="list-style-type: none"> • What are the parameters of NavIC enabled GPS data to be transmitted over SATCOM link? • Message Frame format (Transmitter and Receiver), Data length details are for NC-NC trails • For NC-NC trails, Is Data transmission in TDMA with data rate of 1.2kbps/2.4kbps is ok? 	Basic frame format, transmission parameters details will be provided after reception of hardware details along with NCNC trial request by respective vendors.
1.25	Delivery: All the Terminals with in 30weeks (Qty: 2750 in case of prime bidder otherwise 5500 numbers).	20 weeks is the delivery, field trial and production clearance time for the proto units. Only 10 weeks has given for production of Qty 5500 which is very short time for bulk procurement, manufacturing, assembly, testing, Integration, inspection and delivery.	Please refer to corrigendum for updated delivery schedule
1.26	Consignee details: 6 locations across Tamil Nadu	Request you to provide the installation details boat wise for the qty 5500nos.	The list will be provided by user after purchase order. The locations are already provided in RFP

1.27		On –line Price bid format there is no provision for itemized pricing. Request you to facilitate the same.	The e-tender provides for attaching a pdf file containing details of itemized prices in accordance with ‘Table 7 – Commercial bid Format’ in the RFP under the link ‘Documents (Price Related)’. The same <u>with MASKED Prices</u> shall also be attached in the techno-commercial offer.
1.28		Are you considering the AMC and leased line charges for arriving L1?	Yes, as per RFP
1.29		Who is the user agency?	Department of Fisheries, Government of Tamilnadu.
1.30		What is the mechanism for Terminals if they are lost due to theft, accidents and natural calamities during warranty and AMC period?	Only Terminal maintenance is part of AMC.

2. Pre-bid Queries from Saankhya Labs Pvt. Ltd.

S. No.	Features / Specifications Reference	Query	Response
2.1	Page 9: Table1 : Specifications of MSS Terminal Sl.No.3: EIRP of the Terminal	Field trials were successfully completed with +3dBW EIRP of the terminal. Can this be continued for this deployment phase as well?	No. The specified EIRP number as per RFP is to be met.
2.2	Page 10: Table1 : Specifications of MSS Terminal Sl.No.19, 20, 21 : Phase Noise Spurious Harmonics	Field trials were successfully completed with specification of phase noise of the terminal. 100Hz < -45 dBc / Hz 1KHz < -55 dBc / Hz 10KHz < -70 dBc/ Hz Spurious and Harmonics<-40dBc Can this be continued for this deployment phase as well?	Please refer to corrigendum for updated values
User-NMS Related			
2.3	Page 21, Section 3.3	1. What will be the number of users for the GIS Map Server Module? 2. What will be the number of users for the Web Application?	Total Number of user: 10000 (estimated) Number of concurrent user: 2000 (estimated)
2.4	Page 22, Section 3.4	1. What does offline mode mean here? 2. Who is going to provide the GIS Basemap?	Offline mode refers to historical data rendering. GIS basemap is responsibility of vendor during development & operationalization. However it should be upgradable, if user provides higher resolution map

2.5	Page 26, Section 3.4	Is there any limit on the data transmission between MSS and hub NMS? Are the messages to be queued up if the link between the user-NMS and hub-NMS is severed? If so, what should be the extent of this buffering required	User NMS to ISRO NMS link is dedicated fibre link and no delay in message delivery is envisaged. However, in case of link failure, the user NMS should hold the critical data for minimum 24Hours.
2.6	Page 20, Figure 6	For SMS Integration, bulk SMS service providers can be used, instead of GSM Modem?	From security perspective dedicated GSM modem is required.
2.7	Page 37, Sl.No. 1	Can an architecture of supporting both Geo-Information Server and host Application server running on same system be proposed?	Proposed architecture as per RFP to be followed.
2.8	Page 37, Sl.No.6	Wall mounted display systems, which processor system will this be connected to? Secondary display of Desktop Computers (Sl. No.5)?	As mentioned in RFP, it will be connected to operator computer. Please refer RFP.
2.9	Page 45, Sl. No. 14	Is RHEL Release mandatory or any other licensed version of linux with support from authorized representatives OK to be used?	Because of security & support RHEL is preferred option.
2.10	Page 45, Sl. No. 15	If RHEL or other linux based OS is going to be used, is Windows Certifications necessary for Servers?	It is preferable option not mandatory.
Section –C: Scope of Development and Project Execution			
	Proto Units	Please confirm the quantity of Proto Units to be supplied.	Please refer to corrigendum for updated values

2.11	Page 32, Table 5, Scope of work of terminal Point No. 7, Page 35, Section 5 List of Deliverables(Terminal Hardware): Point No. 1 Page 39, Development Schedule (Terminal) Point No. 7	(There are inconsistencies in the quantity nos mentioned under various sections)	Please refer to corrigendum for updated values
2.12	Page 36 Installation	In addition, the User must guarantee minimum 20 number of boats at each site are available for installation and notified to the vendor at least two days in advance. On completion of installation, a duly signed report is given to vendor on daily basis	RFP terms will be maintained by the user agency.
2.13	Page 38: Field Installation & Terminal Maintenance: It is envisaged to have user terminal depot at six (6) districts of Tamil Nadu. Limited number of terminals may be proposed to be stationed there as immediate replacement of faulty units. This will be finalized at the time of design review in consultation with user agency.	We assume the spares are from the total quantity of the PO. Kindly indicate % of quantities to be maintained as spare (from the ordered quantity) at each location.	It is envisaged to maintain 10% spare. (Spare quantity is included in ordered quantity) However exact distribution will be decided by end user after PO.

2.14	Page 39. Development Schedule (Terminal), Point 8	The field trials are assumed to be conducted only at one location in TN	Yes
2.15	Page 39, Development Schedule (Terminal), Point 10.	The Delivery of terminal hardware to user depot shall begin after 12 weeks from the date of obtaining production clearance. So, request you to include Tp+12 weeks in lieu of T0+30 weeks. (6 Weeks is inadequate to manufacture / test and ship 2750 or 5500 units as the case may be). We assume a storage space for the terminals shall be provided by User at each location.	Please refer corrigendum.
2.16	Page 41. Table 7: Commercial Bid Format Point 1.	Since the MOQ is 1000+ then the Slab of 1 – 1000 is irrelevant	Please quote as per RFP slabs Qty.
2.17	Page 41, Table 7: Commercial Bid Format Point 2. Annexure-I Page 44, 45, 46, 47 1. Rack mount Server, Point 16 2. External Storage, Point 13 3. 10G Switch, Point 5 5. Desktop Computer for Operator Console: Point 15	In Commercial Bid Format it is asked for 1-year Warranty whereas in Annexure it is mentioned as 5 years Warranty. Given that AMC is for additional two-years, the Annexure-I should also reflect 3 years (1+2) instead of 5 years. Kindly confirm for L1 purposes, one Year Warranty + Additional two years AMC shall be considered.	Warranty of complete NMS system for 12 months is after successful installation is vendor's responsibility. 3 years comprehensive onsite warranty for all major NMS hardware subsystem from OEM to be provisioned. Refer to RFP for L1 criteria.
2.18	Page 42, Table 7: Commercial Bid Format Point 5, 6 and 7	While the bid is determined considering the AMC cost of various components but in the description the AMC is "placed by User on	The evaluation criteria as specified in RFP (Clause 6.0,

		need basis”. Is the AMC guaranteed or not? If it is optional, then it may be omitted for L1 computation.	second bullet after Table-7) remain unchanged.
2.19	Page 42, • Vendors should also submit their willingness and an undertaking in writing that they agree to supply only terminals for an MOQ of 1000+ terminals based on mutually acceptable terms & conditions. This declaration should be submitted with the bid.	Is this MOQ undertaking for future requirements and what is the validity of this undertaking?	All the undertakings are for this project only and till completion of project.
2.20	Page 43	Kindly confirm, LD shall be applicable on pro-rata basis for the terminal quantities that are delivered beyond the final delivery date (not on per batch basis). LD shall be restricted to 10% of the terminal value (not full value of PO), excluding taxes	Liquidated damages shall be applicable only on the undelivered/ delayed materials and services @0.5% per week limited to MAXIMUM 10% of order value of such delayed supplies.
2.21	Page 43 General T&C, IP re-use	We understand the IP-reuse is only limited to the information shared by ISRO to the vendor under this contract and does not impact the vendor from reusing his pre-existing IP/IP ownership.	All source code and IP rights for user NMS will be with user/ISRO. However terminal firmware and source pertaining to information provided by ISRO will only be deliverables. It will not impact

			the vendor from reusing his pre-existing IP/IP ownership
2.22	Page 47, Annexure I Point 7	What is this Unified threat management devices: Quantity 2 nos. Please elaborate	UTM is an advanced firewall device for ensuring cyber safety rules.
2.23	Bidding Submission related Supporting Document from Vendor (Price Related)	What are the documents to be submitted under this section? Is this a list of deliverables with price masked?	Please refer RFP Table-7: <ul style="list-style-type: none"> •Price break up in a pdf document as per Table-7. Taxes and duties as applicable need to be clearly mentioned in (%) separately. Any other relevant document for clarity on the price bid. A copy of this document with prices MASKED shall be submitted with techno-commercial bid.
2.24	Tax Collected at Source(TCS)	In addition to GST, the Finance Act 2020 has made an amendment to Tax Collected at Source(TCS) clause on sale of goods to buyers exceeding INR 50 Lakhs. As per the amended requirement effective from Oct 1, 2020, Seller of goods needs to collect 0.1% TCS on the total invoice amount including GST from buyer and remit the same to Income Tax Department.	The provision of TCS does not apply if the buyer is Central /State Government etc. Please refer amendment to Sec. 206(c) of Income Tax Act 1961 in Finance Act 2020. However TDS shall be applicable as per statutory requirements.

		<ol style="list-style-type: none"> 1. Is ISRO exempted from TCS? If so, please provide us a Certificate to this effect. 2. If not, please advise us how to reflect this in our price bid part while we bid for the tender 	
2.25	GST reduced rate certificate at 5%	<p>This has an implication on the price bid hence we would request you to share appropriate GST certificate for reduced rate of 5% instead of 18% for supply of goods at the earliest (preferably on or before 15th October 2020).</p> <p>For the service part, we agree the GST charge rate will be at 18%</p>	GST concession certificate shall be issued on award of the tender to the successful bidder after acceptance of the order. As specified in the tender, bidders may assume concessional rate of GST under relevant notification. The concessional rate shall be applicable only for goods supplies. No exemption is available for supply of services.
2.26	Statutory taxes	All Statutory taxes at the time of invoice shall be applicable	Accepted. However, no claims for upward revision of tax rates shall be entertained if the supplies are delayed beyond specified delivery schedule.
2.27	Furnishing of Performance Bank Guarantee.	In lieu of the performance bank guarantee, ISRO can withhold 10% of the invoice value for <u>supply of goods</u> towards PBG and the same	Bidders are requested to indicate their proposals in the techno-commercial bid.

		shall be paid to the vendor on completion of Warranty period. Kindly request you to consider this request and provide for it in the bidding template.	Decision w.r.t. same shall be taken with the approval of competent authority at the time of award of tender.
2.28	Best Lead Time (Development Schedule Point 10)	From the date of receipt of Production Clearance, we shall commence the deliveries by 12 th week and plan to complete the same by end of 20 th week. The delivery schedules may be impacted should there be any lockdowns imposed due to the ongoing pandemic.	Refer to corrigendum

3. Pre-bid Queries from Alpha Design Technologies Pvt Ltd.(ADTL)

S. No.	Features / Specifications Reference	Query	Response
3.1	Should support geo-fencing alarm (through Android APP) to pilots when boat crosses a pre-defined maritime boundary (Page 8)	Implementation methodology/ algorithm to be shared by SAC for implementing this feature.	It is vendor responsibility. However necessary guidelines will be provided during design review.
3.2	Reception of Broadcast information (weather alerts, potential fishing zone) from control station and display on the fisherman/ Pilot gadgets/ Smartphone. (Page 8)	Format of Broadcast Information to be shared by SAC	Will be shared & finalized during design review.
3.3	Packaging Related Weight: 1.0 – 1.5 Kg (Page 9)	Could it be relaxed to < 2.0 Kg? If it is required to support GPS & IRNSS, a dual band (L1 & L5) Chipset and corresponding Antenna needs to be provisioned and this might need additional space and weight.	Weight to be maintained as specified in RFP
3.4	DC Power Consumption 3.8 W – During Reception 15 W – During Transmission (Page 9)	Given specs are very tight to realise. Could they be relaxed as follows: 5 W – During Reception 17 W – During Transmission	The Design should meet 24 hours of standalone operation
3.5	Baseband with RF Transceiver System: (Page 12)	Do we need to support both GPS & NAVIC Support (/IRNSS) simultaneously? Or, one at a time? Also, do we need provide a switching option for selection of GPS/ NAVIC?	NavIC with GPS is to be used.

S. No.	Features / Specifications Reference	Query	Response
3.6	Baseband with RF Transceiver System: external LCD/ keypad (Page 12)	Does the Vendor need to provide External LCD and Keypad as part of deliverables (/accessories)?	No. External LCD & Keypad are not deliverables
3.7	Boat Owner Features (Page 17)	It seems separate Android Apps (though there will be some common features amongst these apps) to be developed as follows: 1. App for fisherman 2. Boat Owners 3. Coast Guard 4. Maintenance/ Debug Please confirm the above and also in case any additional apps to be developed.	Two apps are to be developed. One for fisherman and second for boat owner & NMS user.
3.8	Page: 9 Environmental Condition: Temperature Specification	It is requested to amend the Temperature specification as +50 Deg C (as it was mentioned in the Pilot Project)	Terminal specifications to be followed as per RFP
3.9	Page 13 & 14 Mechanized Boat Battery Voltage to be specified	Boat Battery Voltage (whether 9-12 V or 9-24 V DC) that will be provided to the Terminal for Charging the Li-Ion Battery pack to be provided/confirmed.	Terminal input DC voltage is 9V to 24V.
3.10	It shall provide access to particular GIS resources and functionality, such as managing base maps,	What will be the number of users for the GIS Map Server Module?	Refer to replay in point 2.3 above

S. No.	Features / Specifications Reference	Query	Response
	displaying map layers, creating and managing areas on map, measuring distances and areas and other related GIS map-based operations. (Page 21)		
3.11	The User NMS shall be a web-based application which combines the spatial and non-spatial functionalities. (Page 21)	What will be the number of users for the Web Application?	Refer to replay in point 2.3 above.
3.12	The User NMS shall provide tools for monitoring of vessel location, viewing of vessel track in real time and offline mode, viewing vessel location on GIS map and also in tabular format. (Page 22)	What does offline mode mean here?	Offline mode refers to historical data rendering.
3.13	The vessel location shall be displayed on the GIS map with option of using various basemaps. Basemap consist of a background of geographical context. Operators can change the basemap of the current map any time by selecting the suitable basemap from the gallery. (Page 22)	Who is going to provide the GIS Basemap?	GIS basemap is responsibility of vendor during development & operationalization. However it should be upgradable, if user provides higher resolution map
3.14	The application shall display the live position of individual vessels. It	At what frequency will the location data be transmitted from MSS to	Will be shared during design review

S. No.	Features / Specifications Reference	Query	Response
	shall display the location and velocity of each vessel in a user friendly manner. (Page 24)	hub NMS? As this will have impact on the sizing of the hardware and storage for archiving.	Hardware & storage specification to be followed as per RFP
3.15	The User NMS shall enable the operator stationed at control centre to send messages to vessels in the sea. These messages can be weather alerts, PFZ, text messages or any emergency message. (Page 26)	Is there any limit on the data transmission between MSS and hub NMS?	The data exchange between MSS terminal & Hub NMS is limited by specified data rate.
3.16	The User NMS should have the ability to combine information from a range of different data sources (vessel devices, sensors, AIS, etc.). (Page 29)	What will be the format of the information (data) received from the data sources?	The different data formats will be shared at the time of design review by user agency.
3.17	The User NMS shall interface with INCOIS server to take Potential Fishing Zone data and with IMD server to take weather alerts data. This data shall be appropriately formatted and sent to ISRO Hub NMS for forwarding to terminals. (Page 29)	What will be the data availability format and frequency?	It will be shared at the time of design review by user agency. The user NMS has to segment the data before sending it to ISRO NMS as per mutually agreed data format.

S. No.	Features / Specifications Reference	Query	Response
3.18	Page 20: The computing resources will consist of high performance servers in High Availability mode, storage server, network switch, SMS gateway (as per user requirement), firewall/UTM in a rack based solution.	We would need the information on number of concurrent users for Firewall/ UTM Devices	Refer to replay in point 2.3 above
3.19	Page 39 : Manufacture and Supply of 25/ 15 Proto-units for Field Testing	Please clarify/ confirm exactly how many proto units are required to be delivered for field testing.	Please refer to corrigendum
3.20	Page39 : Field Trials and review of trial results for production clearance	It is requested that a timeframe of 4 weeks be provided for Field Trails and Commencement of production clearance, as this phase will include Qualification Tests like Vibration, Thermal Cycling etc...	Please refer to corrigendum for updated delivery schedule
3.21	Page39: Delivery of all terminal hardware to user depot	Given the Covid-19 situation in the country and around the world, certain delays in procuring long lead time components could be expected. Also, for mechanical housing, a mould (wither ABS Plastic based or Aluminium based) will be prepared	Please refer to corrigendum for updated delivery schedule

S. No.	Features / Specifications Reference	Query	Response
		<p>upon the confirmation of production clearance by SAC/ User. Hence, it is requested that the Timeframe for the Delivery of all terminal hardware to user depot (which includes Manufacturing of subsystems/ modules, assembly/ Integration, Lab level characterisation and Testing with Satellite) be considered as To+42 Weeks instead of To+30 Weeks</p>	
3.22	Page 43: Terminal & User NMS Hardware Procurement & Software Development :Payment Terms	30% (on total cost of the project) advance payment is requested.	<p>"The payment terms as specified in the RFP remain unchanged. In case a bidder asks for advance payment, such payments must be against unconditional bank guarantee of equal value valid till complete execution of the order/contract. The payment terms if at variance with those specified in RFP will also have bearing on the evaluation of offers to determine rank of the bid. Appropriate costs of extending advance shall be loaded by SAC during evaluation. "IT MAY ALSO BE NOTED THAT CONSIDERING</p>

S. No.	Features / Specifications Reference	Query	Response
			PREVAILING ECONOMIC PRIORITIES, GOVERNMENT OF INDIA HAS DIRECTED TO DISCOURAGE ALL ADVANCE PAYMENTS."
3.23	Page 44-47: Warranty for NMS Hardware	5 Years comprehensive onsite warranty to be made as OEM Provided Standard Warranty.	Please refer to corrigendum for updated warranty terms

4. Pre-bid Queries from EBIW Info Analytics Pvt Ltd.

S. No.	Features / Specifications Reference	Query	Response
4.1		We have not found any Pre-Qualification Criteria in the tender document-Please describe in point wise what are the pre-qualification criteria required for bid this tender	Please refer RFP.
4.2		Please provide the checklist for submittals for better understanding to prepare and submit the bid smoothly	
4.3		Is there any Tender document fee and EMD require for bid this tender	Tender fee and EMD are not applicable for this tender.
4.4		What are the criteria for Technical and Commercial bid evaluation	Please refer RFP.

4.5	<p>In case the vendor wishes to use “SAC modem ASIC” in the terminals, SAC will provide modem ASIC at cost of Rs.1504.00 each as Free Issue Material [FIM] against Bank Guarantee [BG] of equivalent value from SBI / Nationalized Bank. The BG shall be valid till completion of the project. Bidders need to take this into account while submitting their quote. The FIM modem ASIC shall be collected by the vendor from SAC, Ahmedabad at their own cost. The maximum wastage of FIM modem ASIC admissible will be 10%.</p>	<p>We tend to use SAC MODEM ASIC. Is it possible to receive it over post? When can we have it</p>	<p>SAC Modem ASIC & datasheet will be made available in soft format for decision making on its usage. The supply of ASIC is subjected to bank guarantee against the firm PO.</p>
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4.6	PFZ – The Potential Fishing Zone information shall be displayed once this icon is touched. There should be an option to select radius of a circle (in Kms). Once input is given in 10 Kms, it should show all the PFZs within that radius.	What is the data source for this information? Will this be provided	It is not vendor's responsibility to get this information. This will be provided by user agency in a specified format. The format details will be shared at the time of design review.
4.7	Ownership of data(Figure 7 in RFP)	Will this be owned by the vendor or ISRO?	Figure-7 explains the Network architecture as proposed by ISRO and all data related to network design shall be owned by ISRO/User Agency

5. Pre-bid Queries from Bharat Electronics Ltd.

S. No.	Features / Specifications Reference	Query	Response
5.1	Instructions to Tenderers-Page 6 Para10.b.1 : (i) to recover from the Contractor as agreed liquidated damages and not by way of penalty, a sum of 0.5% per week of the price of any stores which the Contractor has failed to deliver as aforesaid or during which the delivery of such store may be in arrears subject to a minimum of 10%	It should be maximum 10%.	LD shall be recovered for delayed supplies/services on pro-rata basis @0.5% per week limited to <u>MAXIMUM</u> 10% of the order value of the delayed supplies.
5.2	Instructions to Tenderers-Page 14: The Purchaser is eligible for concessional rate of GST as per Notification No. 45/2017-Central Tax (Rate) dt.14.11.2017 and Notification No. 47/2017 dt.14.11.2017-Integrated Tax (Rate) issued by Department of Revenue, Ministry of Finance, Government of India. The necessary certificate will be provided by the Purchaser for the items covered under the said notification	Please confirm that concessional rate of GST is applicable for all items in the tender including Terminals, NMS Hardware and software, Installation cost, Leased Line cost, AMC Cost Etc.	GST concessional rate as per relevant notification is applicable for all goods supplies. However, the exemption is not available for services.

5.3	Instructions to Tenderers-Page 14: Purchaser is eligible for concessional rate of Customs Duty and IGST on imports as per Notification No. 5/2018-Customs dt.25.01.2018 issued by Department of Revenue, Ministry of Finance, Government of India. For the items covered under the said notification, Purchaser will provide the necessary exemption certificate. Accordingly, prices shall be quoted exclusive of Customs Duty and IGST component	Please confirm if concessional rate of Custom duty is applicable for items under the subject RFP.	Customs duty exemption certificate can be issued by SAC for items imported by the Supplier for execution of this requirement. Supplier must submit copies of all relevant documents confirming import of the goods for SAC to issue the CDEC sufficiently in advance of the arrival of the consignment. The bill of material submitted with tender should clearly indicate the imported materials. Please also note that in order to qualify under the Make In India guidelines of Government of India, this information MUST be submitted with the techno-commercial bid without prices.
5.4	RFP– Page 9, Sr No. 8: Environmental condition Temperature: 0 to 60 C	Pl confirm if environmental specifications for Terminal are 0 to 60C operating or storage. Whether environmental specifications for Battery will remain same as that of terminal or not.	Environmental specifications are for the terminal including battery.
5.5	RFP -Page9, Sr. No. 7: Weight 1-1.5kg (<1kg preferable), Size :	How much variation in Terminal size of 150X150X100 is permissible? Recommended size with inbuilt	The size & packaging of the terminal should be as per RFP. IP-67 enclosure is required.

	15cmX15cmX10cm approx, Packaging: Ip-67 compliance	battery is 200X150X100. Is the weight of 2kg for terminal acceptable? Packaging: Requirement of IP67 is mentioned in current tender. However, in earlier tender IP65 was specified for marine environment. Is IP65 sufficient.	
5.6	RFP -Page 9, Sr. No. 13: User interface: Built in audio alarm for message reception from HUB.	Pl confirm what type of audio alarm will be required for message reception from HUB. Is it beep or some message to be sounded.	No audio message is to played Siren/ Beep is sufficient.
5.7.	RFP-Page 10, table 1: Sr. No. 17- Data rate (0.6kbps/ 1.2kbps/ 2.4kbps) reconfigurable Sr. No. 24- Data rate (9.6kbps/ 19.2kbps/32kbps) reconfigurable	Whether reconfiguration of data rate(receive and transmit both) is required on the fly and do we need to keep provision in Android application.	Re-configurability on the fly is not envisaged. However data rate should be configurable through app & firmware.
5.8	RFP-Page 12, table 2: Specification of RF Front end module : RX chain gain: 50dB min, TX input 0dBm+- 1dBm	In the specifications of RF front end module, RX chain gain of 50dB min and TX input of 0dBm +- 1dB is mentioned. However it is recommended that instead of specifying Tx input and RF chain gain for RF front end module, system level parameters of TX output power and Set level	Vendor is free to choose any hardware architecture to meet terminal specification as specified in RFP.

		sensitivity respectively should be sufficient.	
5.9	RFP - Page 20 Para 3.2: This data centre will be established at user site/ control room	(i) Please confirm that space with adequate security, required power supply connection, Air conditioning and other civil work required for setting up data centre will be provided by user. (ii) Please confirm that the internet/ intranet connection required by various users to access User NMS is not in scope of bidder.	Adequate civil & electrical infra structure will be made available by end user. The internet/ intranet connection will be users responsibility.
5.10	RFP - Page 29 Para 3.5: The User NMS shall interface with INCOIS server to take Potential Fishing Zone data and with IMD server to take weather alerts data. This data shall be appropriately formatted and sent to ISRO Hub NMS for forwarding to terminals.	Please confirm that connectivity to INCOIS Server and IMD Server is not in scope of bidder.	Data connectivity to INCOIS Server and IMD Server is not in the scope of work.
5.11	RFP-Page 33 Table 5, Sl No 7: Field trial for functional verification as per protocol documents of developed proto hardware units with smartphone application (25	At Page 35, The Qty of Proto Units is mentioned as 20. Pls confirm how many proto units are required from Prime Vendor and other two vendors.	Please refer to corrigendum

	number of terminals by prime bidder)		
5.12	RFP-Page 35 Table 5, Sl No 2: Packaged Final units with installation mast/structure and required accessories	Pls confirm if Pole/mast will be part of delivery or it will be available on boat Pl confirm if AC/DC adapter to be part of deliverables or not.	The terminal mounting arrangement should cater to pole & mast mounting. Boat mast to be used. NO AC-DC adaptor to be provided.
5.13	RFP-Page 35 Table 5, Sl No 3,4,5: 3. Software/Firmware of all the peripheral & components in source form 4. Circuit schematics, Gerber for PCB, Drilling details, component mounting details, component list, mechanical design file & document Package design document 5. All documents (Design document including schematic, BOM etc., ATP document, Factory test result of each unit, User Manual, environmental test results etc.)	(i) Pls confirm that design data/source code is for internal use of ISRO only and will not be passed on to any other vendor in future for any purposes. (ii) Pls confirm that bidder will continue to hold all rights of this design data for all purposes.	All the network, protocol, NMS design details & source code will be property of user agency & ISRO and will be used for the project. No information on network deployment, protocol etc. to be used by vendors without any written approval from ISRO. However vendor will be free to use the terminal hardware design knowledge for other projects.
5.14	RFP-Page 37 List of deliverables (User NMS: 3. Networking components (10G/1G switch, cables, etc)	(i) Pls provide the no of switches required. (ii) Pls confirm if UPS is also required to be supplied by bidder	Minimum numbers of switches are indicated in RFP. However, any increase in number of switches due

	9. Other control room IT infrastructure and power supply/UPS related accessories and devices)		to architectural change as proposed by vendor to be incorporated. UPS is not part of deliverable. However the interface adapter/connector for connecting the NMS sub-systems to the UPS to be provisioned
5.15	RFP-Page 39 Development Schedule: 7. Manufacture and supply of 25 /15 Proto-units for Field Testing	Pls confirm how many proto units are required from Prime Vendor and other two vendors.	Please refer to corrigendum
5.16	RFP-Page39 Development Schedule: 7. Delivery of all terminal hardware to user depot (T0+30)	(i) It is proposed to link this milestone to date of production clearance. i.e. 6 months from the date of production clearance. (ii) Pls confirm that proposed schedule is for only delivery of terminals. installation activity is separate to the proposed schedule.	Please refer to corrigendum
5.17	RFP Page 49-AnnexII: NC NC capability demonstration	Pl confirm if data transmission at all the data rates of 600bps/1200bps/2400bps to be demonstrated. At present transmission at 4.8kbps is achieved, for other data rates MIDU configuration to be provided by SAC.	Basic frame format, transmission parameters details will be provided after reception of hardware details along with NCNC trial request by respective vendors.

5.18	RFP Page 49-AnnexII: NC NC capability demonstration	Transmission in TDMA mode to be done every 500ms/1 second. Pl confirm at what data rates the transmission to be demonstrated.	
5.19	RFP Page 49-AnnexII: NC NC capability demonstration	For transmitter and receiver functionality and RF performance, kindly specify which parameters to be measured.	
5.20	Miscellaneous: Deliverables	Requirement of software is not mentioned in Deliverables.kindly clarify whether any RDBMS,middleware, SLBs etc. will be provided by SAC.	All the software related to user NMS is deliverable in source form with complete details & dependencies. All middleware software, database etc. to be provided by the vendor.
5.21	Miscellaneous	How is Remote updation/ configuration of field devices planned	This will be discussed & decided during design review.
5.22	Miscellaneous	Terminal installation cost may also be taken as slab wise.	Please refer RFP. Price bid is to be submitted only as mentioned in RFP.
5.23	Miscellaneous: Tender Fee and EMD Payment	(i) Pls confirm if there is any tender fee and EMD applicable for this tender. (ii) If yes, Pls confirm the exemption of Tender Fee and EMD for DPSU.	Tender fee and EMD are not applicable for this tender.
5.24	RFP Page 9, Table 1: Pt no. 15- RTC synchronization of the order	Pl confirm if the RTC resolution can be made upto 100msec	RTC resolution of 10ms is required as per RFP

	of 10msec using NaVIC enabled GPS receiver		
5.25	Miscellaneous: As Bluetooth Application point of view were asked many option in RFP like PFZ, Trip Dela ration, Drop Pin,My routes, Boundary alert,My Map,Harbors,my boat,boat owner Features etc .	In the earlier tender these features were not there. Pl provide implementation documents	All the features of present RFP to be implemented by the vendor.
5.26	Miscellaneous: Payload size	Pl confirm the payload size	Not Applicable

6. Pre-bid Queries from Accord Software and Systems Private Limited

Sr. No.	Features / Specifications Reference	Query	Response
6.1	Regions of operation in MSST Network: Section 1	Is there any relation between the 5 Operational Beams of Current MSST Network and Zones which is described here? Are these zones are circular Zones in geographical shape like Beams/ Beam center?	There may be multiple zones within a given beam of operation depending on distance from the shore.
6.2	Frequency tuning: Table 1: Specifications of MSS Terminal	Frequency tuning is mentioned as 1kHz. Does this mean Channel spacing will be 1kHz?	NO. Channel spacing is different from frequency tuning step size
6.3	Built-in audio alarm for message reception from Hub: Table 1: Specifications of MSS Terminal	Any specification of Maximum/ Typical sound output required for maritime environment?	The sound output should cover range upto 24 mtr.
6.4	Wi-Fi/ Bluetooth Interface: Table 1: Specifications of MSS Terminal	Any Preference between Bluetooth and Wi-Fi.	Wi-Fi or Bluetooth interface will be acceptable.
6.5	Baseband Card: Table 3: Specifications of baseband card with S-band transceiver	Any Specific reason for giving separate specifications for Baseband card? Can the Baseband card be integrated along with RF Front end for miniaturization? Document does say that Power	Vendors are free to choose their own hardware architecture.

		module can be integrated into single board for miniaturization.	
6.6	GNSS Receiver – Interface: Table 4: NavIC enabled GPS Receiver Specifications	Accord’s own GNSS Receiver (Both GPS L1C/A+ IRNSS-L5SPS) design can be integrated into baseband card. So, will Baseband Card’s external serial connector for GNSS receiver still necessary?	External serial connector is required for interfacing with additional sensors, if required.
6.7	GNSS Receiver – Position modes Table 4: NavIC enabled GPS Receiver Specifications	Any specific positioning mode required? GPS Only mode/ IRNSS only Mode/Hybrid Mode. Any preference for the mode for terminal positioning ?	Hybrid mode is preferred option.
6.8	S-Band RX Chain gain; Table 2: Specifications of RF Frontend Module	RF Transceiver like AD9364 has interval configurable LNA stages. So, can that also be considered for RX Chain gain?	Vendors are free to choose their own hardware architecture to meet the terminal specifications.
6.9	Environmental Qualifications tests	What are the Environmental Qualifications tests involved?	Please refer RFP. The details on duration of test, testing methodology will be discussed during design review.
6.10	GIS Base map: 3.4 Features and Functional Requirements of User NMS	Can Bhuvan map availed for GIS Base map?	Vendor has to use their own base-map. However there should be provision to incorporate high resolution map.
6.11	Messages from Hub/ NMS Server	Do both Hub/ User NMS formats the downlink messages to terminals? Will there be Hub specific	All the format details will be provided after Placement of order.

		messages/ Controls to the terminals?	
6.12	Maintenance/ Repair of terminals during warranty and AMC	How long this support needs to provided post warranty and AMC?	Post warranty AMC is requested for 2 years. Please refer RFP.
6.13	Terminal smart phone Application feature	<p>a. There is requirement for role based login but we did not find requirements related to User Registration and Management in case of Terminal smart phone Application.</p> <p>b. My Maps requirements says; "it should open a map with Compass.." please clarify what type of maps we should display like maps which are listed under NMS section or will it be general maps i.e. google maps ?</p>	<p>Terminal app has to operate with offline map stored in smart phone memory.NMS/Boat owner app will have internet connectivity and it may use online/offline map.</p> <p>Details on user registration, login credential etc. will be finalized at the time of design review.</p>
6.14	User Network Management System (NMS)	<p>a. Do we need to support only Raster Maps ? also, please list of the Raster formats should be supported.</p> <p>b. Do we need to support loading of different level Maps (tiles) based on Resolution/ Zoom Level ?</p> <p>c. We assuming that ISRO will</p>	<p>Available open source GIS base-map has to be used for development.</p> <p>Support for loading of different level Maps (tiles) based on Resolution/ Zoom Level to be provided.</p> <p>GIS base-map is responsibility of vendor during development & operationalization. However it should be upgradable, if user provides higher resolution map</p>

		provide the required map format datasets for development purpose.	
6.15	NMS on Smartphones	<p>a. Does the NMS on Smartphones should all features of Web-based NMS? or is it a mini version of the Web-based NMS?</p> <p>b. Can we implement NMS on Smartphones Using Webview or it should be implemented in Native App only ?</p>	<p>Please refer RFP for requested feature of NMS app. Vendor to propose their development plan with platform details during design review. However, the decision of design review committee will be binding.</p> <p>Native app development is mandatory.</p>

7. Pre-bid Queries from Azista Industries Pvt. Ltd

Sr. No.	Features / Specifications Reference	Query	Response
7.1	NCNC Trial	Carrier EIRP for Hub To Terminal	Basic frame format, transmission parameters details will be provided after reception of hardware details along with NCNC trial request by respective vendors.
7.2	NCNC Trial	Procedure to get Interface board of SAC Modem ASIC with all relevant technical details required for NCNC trial.	