

**Minutes of the Pre-bid Meeting for Procurement of Data Buoy, held on
14.02.2020, 11.30 AM, in the Conference Hall, 1st Floor, B2 Block, NCSCM, Chennai**
[Package No. NPMU/G-126]

Members Present:

1. Dr. D. Chandramohan, External Expert
2. Dr. Dipnarayan Ganguly, Scientist C
3. Dr. Gurmeet Singh, Scientist C
4. Dr. Robin R. S., Scientist C
5. Mr. Alok Ranjan Samal, Manager - Finance/ Accounts
6. Mr. Pradeep Tripathy, Procurement Consultant

Representatives of Participating Firms:

1. M/s. Elektroniklab India Pvt. Ltd. - Mr. Sivakumar D.
2. M/s. Elektroniklab India Pvt. Ltd. - Mr. Ramesh
3. M/s. Elektroniklab India Pvt. Ltd. - Mr. Suresh

As scheduled, the pre-bid meeting for procurement of Data Buoy was held on 14.02.2020 under the chairmanship of Dr. Chandramohan, External Expert, NCSCM, Chennai. Only one prospective bidder attended the pre-bid meeting through three nos. of representatives. The Chairman welcomed all the participants to the meeting.

The participants were invited to present their queries on the bid document for Supply of Rio Grande ADCP. The queries/ suggestions made by the prospective bidders and the clarification/ response thereon along with the modification in the relevant provisions of the bid document are appended here with as **Annex-A**.

The prospective bidder was invited to participate in the bidding process after careful consideration to provisions of the bid document published and possible amendment/s subsequent to the present pre-bid meeting.

Queries/ Suggestions and response thereon for Procurement of Data Buoy

Sl. No.	Particulars	Query / Suggestion	Clarification / Response
1.	Page no.43, Clause – Section III. Evaluation and Qualification Criteria (4. Post-Qualification requirement ITB 38.2)	Pre qualification criteria – Page no.43, Clause – Section III. Evaluation and Qualification Criteria (4. Post-Qualification requirement ITB 38.2) Point b, Experience and Technical Capacity: States as “the equipment shall be same or similar”. We have supplied “Wave Rider Buoy” in the past. Hence please clarify whether this proof would be acceptable since it is a similar product.	No, this is not acceptable.
2.	Bidder shall furnish documentary evidence to demonstrate	The Bidder shall furnish documentary evidence to demonstrate that he has successfully supplied, installed and commissioned at least 100% of the quantity of items included in a lot as detailed in Schedule of requirements (the equipment shall be same or similar in nature) in any one of the last five Financial Years i.e. from 2014-15 to 2018-19. - to be amended to read as follows The Bidder shall furnish documentary evidence to demonstrate that he has successfully supplied, installed and commissioned at least 100% of the quantity of items included in a lot as detailed in Schedule of requirements (the equipment shall be same or similar in nature) in any one of the last Eight Financial Years i.e. from 2011-12 to 2018-19.	No change.
3.	OEM technical qualification experience is acceptable if the Indian distributor bids for the tender	Please also clarify whether OEM technical qualification experience is acceptable if the Indian distributor bids for the tender since many of the other government organizations do accept the OEM experience.	No, this is not acceptable. Pease refer Para 4 (b) (ii) of Section III - Evaluation and

Sl. No.	Particulars	Query / Suggestion	Clarification / Response
			<p>Qualification Criteria at Page No.43 of the bid document, which is as follows -</p> <p>In case the bidder is not the manufacturer or producer of the goods it offers to supply and has submitted the bid in accordance with ITB clause 19.1 (a), the bid shall include the above information about the manufacturer whose goods has been offered, and the said manufacturer shall meet the requirement specified in (ii) above.</p>
4.	Deployment location	Location of buoy deployment?	To be decided by NCSCM later.
5.	Boat / Vessel under NCSCM scope or vendor scope	Installation : Please clarify whether boat / vessel is under NCSCM scope or vendor scope ?	Boat/Vessel is under NCSCM scope.
6.	Buoy diameter: Page no. 64 Clause 3, Technical specification	Buoy diameter: Page no. 64 Clause 3, Technical specification ;The diameter varies from manufacturer to manufacturer. For better stability and to withstand tidal variations, larger diameter buoys are generally recommended by manufacturers. Hence we request to consider 1.2 meter to 2.0 meter so that it would suit for more buoy manufacturers	Please refer to Amendment

Sl. No.	Particulars	Query / Suggestion	Clarification / Response
7.	Battery submerged: Page no.64 Clause 3, Technical specification	Battery submerged: Page no.64 Clause 3, Technical specification; Any particular reason to have battery submerged? The battery positioning in the buoy would vary from manufacturer to manufacturer and hence we request if this clause could be deleted	Please refer to Amendment
8.	Buoy material: Page no.64 Clause 3, Technical specification;	Buoy material: Page no.64 Clause 3, Technical specification; 316 stainless steel structure. The Buoy instrument cylinder material would vary from manufacturer to manufacturer as some of the manufacturers do use Aluminum and some use galvanized steel and hence we request if this clause could be deleted. This would enable buoy manufacturers to quote any of the suitable material.	Please refer to Amendment
9.	Full 316 Stainless Steel Structure, point no.8	The sentence “Full 316 Stainless Steel Structure” may please be deleted due to reason explained in point no.8	Please refer to Amendment
10.	Page no. 65 Clause 3, Technical specification;	Page no. 65 Clause 3, Technical specification; Transmitter should be upgradable from GPRS/GSM to Satellite modem in future with minimal changes in hardware/software may please be amended to read as Data logger should support integration of satellite modem in future.	Please refer to Amendment
11.	Page no.65 Clause 3, Technical specification;	Page no.65 Clause 3, Technical specification; Must feature a door switch and siren for tracking and security purpose. This clause may be deleted or amended to read as watch circle alarm facility to track the buoy shall be available.	Please refer to Amendment
12.	Page no.67 Clause 3, Technical specification;	Page no.67 Clause 3, Technical specification; Micro controller features mentioned in the tender for the water quality sensor may be deleted because these specifications corresponds to internal electronics of sensors and therefore varies from manufacturer to manufacturer.	Please refer to Amendment

Sl. No.	Particulars	Query / Suggestion	Clarification / Response
13.	Technical specifications	Further with regard to technical specifications we have attached document in which we have highlighted the amendments required to the specifications. We request to kindly consider and change the sensor specification as attached.	Please refer to Amendment

Queries and Revised technical specifications for Databuoy (Amendments)

		Technical Specifications for Databuoy	Technical Specifications for Databuoy - Revised (Blue)	
S.No.	Instruments / Sensors	Features & Specification	Instruments / Sensors	Features & Specification
1.	Data Buoy	<ul style="list-style-type: none"> • CTD, DO, pH, Turbidity, Chlorophyll and meteorological sensors to be deployed • To be deployed at 5-15 m depth range coastal areas which are biologically rich environments with corals etc., • Tidal variation is ~ 5 meter • 1.2m diameter Buoy with moon pool arrangement • Should be able to perform maintenance of sensors without removing the buoy completely. • Moulded high visibility top section fitted with four 27W Solar panels • Must feature a submerged battery canister with separate waterproof electronics enclosure • Modular design for easy transportation and replacement of equipment to be simple 	Data Buoy	<ul style="list-style-type: none"> • CTD, DO, pH, Turbidity, Chlorophyll and meteorological sensors to be deployed • To be deployed at 5-15 m depth range coastal areas which are biologically rich environments with corals etc., • Tidal variation is ~ 5 meter • 1.2 meter to 2.0 meter diameter buoy • Should be able to perform maintenance of sensors without removing the buoy completely. • Moulded high visibility top section fitted with suitable Solar panels • Must feature a suitable battery canister with separate waterproof enclosure • Modular design for easy transportation and replacement of equipment to be simple

	<ul style="list-style-type: none"> • Buoy hull material made of rotationally moulded polyethylene around a 316 stainless steel structure • Full internal cable routing to ensure the proper fit • Self-Ballasting • Full 316 SS to suit the harsh environment conditions • Yellow in colour to signify an environmental mooring system • Should have internal Battery with > 60AH capacity • Should operate on battery for min. 10 days in weak weather conditions (no sunlight) • Should have an inbuilt data logger • To provide a ready to use data logger software that can integrate CT(D)-DO, pH, Turbidity, Chlorophyll, meteorological sensors and display the output in user readable format • Should have an in-built transmitter to send the data to onshore location via GPRS/GSM telemetry • Should have the option to configure the sampling interval from any remote location (control center) through internet • Must feature a software that can automatically contact buoy over the internet at periodic set intervals and download data into a database on the local PC • Data viewing Software should facilitate to change the sensor sampling rates from the control center • Transmitter should be upgradable from GPRS/GSM to Satellite modem in future with minimal changes in hardware/software. • Must feature an in-built GPS system • Must feature a door switch and siren for tracking and security purpose • To provide on-site training 	<ul style="list-style-type: none"> • Buoy should withstand in sea water condition with suitable hull material to maintain buoyancy • Full internal cable routing to ensure the proper fit • Self-Ballasting • Full 316 SS to suit the harsh environment conditions • Yellow in colour to signify an environmental mooring system • Should have internal battery with suitable backup • Should operate on battery for min. 10 days in weak weather conditions (no sunlight) • Should have an inbuilt data logger • To provide a ready to use data logger software that can integrate CT(D)-DO, pH, Turbidity, Chlorophyll, meteorological sensors and display the output in user readable format • Should have an in-built transmitter to send the data to onshore location via GPRS/GSM telemetry • Should have the option to configure the sampling interval from any remote location (control center) through internet • Must feature a software that can automatically contact buoy over the internet at periodic set intervals and download data into a database on the local PC • Data viewing Software should facilitate to change the sensor sampling rates from the control center • Data logger should support integration of satellite modem in future with minimum change in hardware and software. • Must feature an in-built GPS system • Watch circle alarm facility to track the buoy should be available if drifting occurs. • To provide on-site training
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		<ul style="list-style-type: none"> • Must provide marine grade underwater connectors • Two point or single point mooring system • It should have 1 or 2 mooring points and 2 lifting points • Should support Anchor type mooring 		<ul style="list-style-type: none"> • Must provide marine grade underwater connectors • Two point or single point mooring system • It should have 1 or 2 mooring points and 2 lifting points • Should support Anchor type mooring 																						
2.	Integrated CT(D) DO, pH, Turbidity & Chlorophyll sensors	<ul style="list-style-type: none"> • Require excellent bio-fouling protection for conductivity, temperature, optical dissolved oxygen and pH is provided by EPA-approved anti-fouling devices • Factory calibrated, field proven sensors ensure long term data stability. • The pH sensor should be ion-selective field effect transistor type 	Integrated CT(D) DO, pH, Turbidity & Chlorophyll sensors	<ul style="list-style-type: none"> • Require excellent bio-fouling protection for conductivity, temperature, optical dissolved oxygen and pH is provided by EPA-approved anti-fouling devices • Factory calibrated, field proven sensors ensure long term data stability. • The pH sensor should be ion-selective field effect transistor type 																						
	Measurement Range:	<table border="1"> <tr> <td>Conductivity</td> <td>0 to 70 mS/cm</td> </tr> <tr> <td>Temperature</td> <td>-5 to 45 °C</td> </tr> <tr> <td>Pressure</td> <td>0 - 20 m</td> </tr> <tr> <td>Optical Dissolved Oxygen</td> <td>120% of surface saturation in all natural waters</td> </tr> <tr> <td>pH</td> <td>6.5 - 9.0 pH</td> </tr> </table>	Conductivity	0 to 70 mS/cm	Temperature	-5 to 45 °C	Pressure	0 - 20 m	Optical Dissolved Oxygen	120% of surface saturation in all natural waters	pH	6.5 - 9.0 pH		Measurement Range:	<table border="1"> <tr> <td>Conductivity</td> <td>0 to 70 mS/cm</td> </tr> <tr> <td>Temperature</td> <td>-5 to 45 °C</td> </tr> <tr> <td>Pressure</td> <td>0 - 20 m</td> </tr> <tr> <td>Optical Dissolved Oxygen</td> <td>120% of surface saturation in all natural waters</td> </tr> <tr> <td>pH</td> <td>6.5 - 9.0 pH</td> </tr> </table>	Conductivity	0 to 70 mS/cm	Temperature	-5 to 45 °C	Pressure	0 - 20 m	Optical Dissolved Oxygen	120% of surface saturation in all natural waters	pH	6.5 - 9.0 pH	
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	Initial Accuracy:	<table border="1"> <tr> <td>Conductivity</td> <td>± 0.003 mS/cm</td> </tr> <tr> <td>Temperature</td> <td>± 0.002 °C (-5 to to 35 °C); ± 0.01 °C (35 °C to 45 °C)</td> </tr> <tr> <td>Pressure</td> <td>± 0.1% of full scale range</td> </tr> </table>	Conductivity	± 0.003 mS/cm	Temperature	± 0.002 °C (-5 to to 35 °C); ± 0.01 °C (35 °C to 45 °C)	Pressure	± 0.1% of full scale range		Initial Accuracy:	<table border="1"> <tr> <td>Conductivity</td> <td>± 0.003 mS/cm</td> </tr> <tr> <td>Temperature</td> <td>± 0.01 °C (-5 to to 35 °C); ± 0.05 °C (35 °C to 45 °C)</td> </tr> <tr> <td>Pressure</td> <td>± 0.1% of full scale range</td> </tr> </table>	Conductivity	± 0.003 mS/cm	Temperature	± 0.01 °C (-5 to to 35 °C); ± 0.05 °C (35 °C to 45 °C)	Pressure	± 0.1% of full scale range									
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			Optical Dissolved Oxygen	larger of $\pm 3 \mu\text{mol/kg}$ (0.07 ml/L, 0.1 mg/L) or $\pm 2\%$				Optical Dissolved Oxygen	larger of $\pm 3 \mu\text{mol/kg}$ (0.07 ml/L, 0.1 mg/L) or $\pm 2\%$			
			pH	0.05 pH				pH	$\pm 0.1 \text{ pH}$			
	Typical Stability:		Conductivity	0.003 mS/cm per month			Typical Stability:	Conductivity	0.003 mS/cm per month			
			Temperature	0.0002 °C per month					Temperature	0.0002 °C per month		
			Pressure	0.05% of full scale range per year					Pressure	0.05% of full scale range per year		
			Optical Dissolved Oxygen	sample-based drift <math> < 1 \mu\text{mol/kg}/100,000 \text{ samples}</math> (20 °C)					Optical Dissolved Oxygen	sample-based drift <math> < 1 \mu\text{mol/kg}/100,000 \text{ samples}</math> (20 °C)		
			pH	0.003 pH/month					pH	0.003 pH/month		
	Resolution:		Conductivity	0.0001 mS/cm			Resolution:	Conductivity	0.0001 mS/cm			
			Temperature	0.0001 °C					Temperature	0.0001 °C		
			Pressure	0.002% of full scale range					Pressure	0.01 m		
			Optical Dissolved Oxygen	0.007 mg/L (0.2 $\mu\text{mol/kg}$)					Optical Dissolved Oxygen	0.1% air saturation		
			pH	0.004 pH					pH	0.01 pH unit		

3.	Meteorological Sensors	Wind Speed	Range	0.1 m/s to 60 m/s	Meteorological Sensors	Wind Speed	Range	0.1 m/s to 60 m/s	
			Accuracy	± 3% to 40 m/s, ± 5% to 60 m/s			Accuracy	± 3% to 40 m/s, ± 5% to 60 m/s	
			Resolution m/s	0.01			Resolution m/s	0.01	
			Starting speed	0.1 m/s			Starting speed	0.1 m/s	
			Sampling Rate	1 Hz			Sampling Rate	1 Hz	
			Method	Ultrasonic			Method	Ultrasonic	
			Units	m/s, km/hr, mph, kts, ft/min			Units	m/s, km/hr, mph, kts, ft/min	
		Wind Direction	Range	0-359°	Wind Direction	Range	0-359°		
			Accuracy	± 3° to 40 m/s ; ± 5° to 60 m/s		Accuracy	± 3° to 40 m/s ; ± 5° to 60 m/s		
			Resolution	1°		Resolution	1°		
			Sampling Rate	1 Hz		Sampling Rate	1 Hz		
			Method	Ultrasonic		Method	Ultrasonic		
		Temperature	Range	-40°C to +70°C	Temperature	Range	-40°C to +70°C		

			Resolution	0.1					
			Accuracy	± 0.3°C @ 20°C					
			Sampling Rate	1 Hz					
			Units	°C, °F, °K					
		Humidity	Range	0-100%					
			Resolution	1%					
			Accuracy	± 2% @ 20°C (10%-90% RH)					
			Sampling Rate	1 Hz					
			Units	% Rh, g/m ³ , g/Kg					
		Pressure	Range	300 – 1100					
			Resolution	0.1 hPa					
			Accuracy	± 0.5 hPa @ 25°C					
			Sampling Rate	1 Hz					
			Units	hPa, bar, mmHg, inHg					
			Resolution	0.1					
			Accuracy	± 0.3°C @ 20°C					
			Sampling Rate	1 Hz					
			Units	°C, °F, °K					
		Humidity	Range	0-100%					
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			Units	hPa, bar, mmHg, inHg					

		Global Solar Radiation	Wavelength	300 to 3000 nm				Global Solar Radiation	Wavelength	300 to 3000 nm	
			Sensitivity						Sensitivity		
			Output Range	0 to 1600 w/m ²					Output Range	0 to 1600 w/m ²	
			Resolution	1 w/m ²					Resolution	1 w/m ²	
			DIN Standard	ISO 9060 Second Class					DIN Standard	ISO 9060 Second Class	
			Sampling Rate	1 Hz					Sampling Rate	1 Hz	
		Units	w/m ²	Units	w/m ²						
		Outputs	Output Rate	1/s, 1/min, 1/hr				Outputs	Output Rate	1/s, 1/min, 1/hr	
			Digital Comms Modules	Serial RS232, RS422, RS485, SDI-12, NMEA, MODBUS, ASCII					Digital Comms Modules	Serial RS232, RS422, RS485, SDI-12, NMEA, MODBUS, ASCII	
		Power	Power Supply	5 to 30 Vdc				Power	Power Supply	5 to 30 Vdc	
			Power (Nominal)	~25 mA continuous high mode. ~0.7 mA eco-power mode (1 hour polled)					Power (Nominal)	~25 mA continuous high mode. ~0.7 mA eco-power mode (1 hour polled)	
			IP Rating	66					IP Rating	66	

		Environmental Conditions	Operational temperature range	-40°C to +70°C		Environmental Conditions	Operational temperature range	-40°C to +70°C		
			EMC Standard	BS EN 61326 : 2013 FCC CFR47 parts 15.109				EMC Standard	BS EN 61326 : 2013 FCC CFR47 parts 15.109	
			CE Marking	YES				CE Marking	YES	
			RoHS Compliant	YES				RoHS Compliant	YES	
			Weight	< 1 Kg				Weight	< 1 Kg	
4.	Colored Dissolved Organic Matter (CDOM), Turbidity, Chlorophyll	Colored Dissolved Organic Matter (CDOM)	Wavelength	ex/em: 370/460 nm	Colored Dissolved Organic Matter (CDOM), Turbidity, Chlorophyll	Colored Dissolved Organic Matter (CDOM)/ Fluorescent Dissolved Organic Matter (FDOM)	Wavelength	ex/em: 370/460 nm		
			Sensitivity	0.09 ppb				Sensitivity	0.09 ppb	
			Range	0–500 ppb				Range	0–300 ppb	
			Linearity	99% R ²				Linearity	99% R ²	
		Turbidity	Wavelength	700 nm	Turbidity, Chlorophyll		Wavelength	700 nm		
			Sensitivity	0.01 NTU			Sensitivity	0.01 NTU		
			Range	0 – 200 NTU						
		Chlorophyll	Wavelength ex/em	470/695 nm						

			Sensitivity	0.025 µg/l Chl			Range	0 – 200 NTU	
			Range	0 – 75 µg/l			Chlorophyll	Wavelength ex/em	470/695 nm
								Sensitivity	0.025 µg/l Chl
								Range	0 – 75 µg/l
5.	Marine beacon and internal Radar Reflector	<ul style="list-style-type: none"> Lighting should not affect Protected Marine Environmental habitat It should be an International Certified Marine beacon 	Marine beacon and internal Radar Reflector	<ul style="list-style-type: none"> Lighting should not affect Protected Marine Environmental habitat It should be an International Certified Marine beacon 					
6.	Microcontroller features	<ul style="list-style-type: none"> Linearity: 99% R2 Integrated Bio-wiper™ and copper faceplate for antifouling Internal batteries and memory RS 323 Output: 19200 Baud Digital Output resolutions: 12 bit Sample rate : User selectable to 8 Hz Input voltage: 7-15 VDC Current typical: 50mA/60mA Weight: < 1 kg Depth Rating: 50m/300m Communication RS 232 / SDI 12 	Microcontroller features	<ul style="list-style-type: none"> Suitable microcontrolled features should be supported for the sensors. 					
7.	Others	<ul style="list-style-type: none"> Field deployment SS 316 - 10m anchor chain should be provided. 	Others	<ul style="list-style-type: none"> Field deployment SS 316 - 10m anchor chain should be provided. 					

		<ul style="list-style-type: none"> Necessary D shackles for the deployment should be provided During the deployment of the instrument, the company technical person should accompany with our team. 		<ul style="list-style-type: none"> Necessary D shackles for the deployment should be provided During the deployment of the instrument, the company technical person should accompany with our team.
8.		New Additions		Two sets of all spare sensors should be provided separately along with each databuoy

The amendment mentioned above is to be treated as amendment to the terms and conditions of the bid document. All other terms & conditions of the published bid document shall remain the same.

The bidders have to submit a copy of this Minutes along with the amendment and bid documents. Each page of the bid document as well as this Minutes along with the amendment are to be signed by the authorized Signatories of the bidders.

Sd/-
DIRECTOR