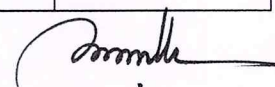


ANNEX E TO
TENDER NO 06.06.0000.279.07.037.26
DATED 07 OCTOBER 2026

TECHNICAL SPECIFICATION FOR PROCUREMENT OF 110 X MAINT-FREE SEALED LEAD ACID BATTERY FOR AIRCRAFT STARTING TROLLEY

Ser No	Nomenclature/ Description	Specification Specified	To be filled up by the principal/ manufacturer
1.	<u>Item Name</u>	Maintenance-Free Sealed Lead Acid Battery for Aircraft Starting Trolley	
2.	<u>Model / Equivalent Part No</u>	7HKM-182	
3.	<u>Purpose / Utility</u>	To provide reliable high-current electric power for starting aircraft engines and onboard systems while on ground through a Ground Power Unit (GPU) or starting trolley.	
4.	<u>Battery Type and Design</u>	a. <u>Battery Type.</u> Maintenance-Free Sealed Lead Acid (VRLA type), Valve-Regulated, Absorbent Glass Mat (AGM) technology. b. <u>Configuration.</u> 07 (seven) lead-acid cells connected in series forming a mono-block assembly. c. <u>Electrolyte Type.</u> Immobilized electrolyte absorbed in AGM separator: no free acid. d. <u>Maintenance Requirement.</u> Fully maintenance-free; no requirement for electrolyte top-up or water replenishment during service life. e. <u>Design Feature.</u> Spill-proof, leak-resistant, vibration resistant and low self-discharge suitable for rugged ground operations.	
5.	<u>Electrical Characteristics</u>	a. <u>Rated Voltage:</u> 14 VDC (2 V per cell x 7 cells). b. <u>Rated Capacity:</u> Minimum 182 Ah at 10-hour discharge rate (C10 rating) at 25°C (77°F). c. <u>Discharge Current (Cranking Load):</u> Capable of delivering a minimum of 600 Amps for 5 minutes continuously. (1) Final voltage per cell ≥ 1.5 V at $30^{\circ}\text{C} \pm 2^{\circ}\text{C}$ (2) Total final battery voltage ≥ 10.5 V at $30^{\circ}\text{C} \pm 2^{\circ}\text{C}$ d. <u>End-of-Discharge Voltage:</u> (1) Per Cell: Not below 1.70 V at 10-hour discharge rate (2) Battery Total: Not below 12.0 V at 10-hour discharge rate e. <u>Internal Resistance:</u> To be declared by the manufacturer (lower is preferable for high-current applications). f. <u>Self-Discharge Rate:</u> $\leq 3\%$ per month at 25°C	



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6.	<u>Mechanical Characteristics</u>	a. Max Overall Dimensions per Battery: (1) Length: ≤ 830 mm (2) Width: ≤ 178 mm (3) Height: ≤ 266 mm b. Approx. Weight per Battery: To be clearly stated by the bidder in kilograms (kg). c. Container Material: Hard rubber mono-block or equivalent durable, acid-resistant, flame-retardant casing. d. Terminals: Heavy-duty threaded or bolt-on terminals suitable for high-current aircraft connectors.	
7.	<u>Operating Environment</u>	a. Operating Temperature Range: (1) Discharge: -20°C to $+55^{\circ}\text{C}$ (2) Charge: 0°C to $+45^{\circ}\text{C}$ b. Storage Temperature: -20°C to $+50^{\circ}\text{C}$ c. Humidity: Up to 95% RH, non-condensing d. Vibration & Shock Resistance: Suitable for mobile ground equipment; must comply with relevant aviation GSE vibration standards.	
8.	<u>Charging Requirements</u>	a. Charging Method: Constant voltage or constant current charging per manufacturer's recommendation. b. Float Charging Voltage: 13.5 to 13.8 VDC c. Boost Charging Voltage: 14.4 to 14.8 VDC d. Max Charging Current: As recommended by OEM; typically $\leq 0.25C$ (i.e., 45A for 182Ah battery)	
9.	<u>Life and Durability</u>	a. Design Life: Minimum 5 years under float service at 25°C b. Cycle Life: ≥ 500 cycles at 80% Depth of Discharge (DOD) c. Shelf Life (without charging): Minimum 6 months at 25°C without degradation below 80% SOC	
10.	<u>Standards and Compliance</u>	Battery must conform to or exceed the following standards: a. IEC 60896-21 / 22: Valve-Regulated Lead-Acid (VRLA) Batteries b. SAE J537: Storage Battery Test Procedures c. IATA UN2800 Compliant: Non-spillable battery for air transport d. RoHS / REACH Compliance: Environmentally safe e. ISO/ CE / UL certification: To be provided if available	
11.	<u>Country of Origin</u>	Battery must be manufactured in: Japan/UK/USA/EU Countries/China/Hong Kong/South Korea.	



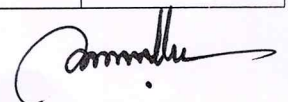
Ser No	<u>Nomenclature/ Description</u>	Specification Specified	To be filled up by the principal/ manufacturer
12	<u>Marking and Documentation</u>	a. Battery must be clearly marked with: (1) Manufacturer's name and logo (2) Part number and serial number (3) Rated voltage and capacity (4) Date of manufacture (month/year) b. Documentation to be provided with offer: (1) Technical datasheet with performance curves (2) Manufacturer's quality certification (ISO 9001 or higher) (3) Type test reports and compliance certificates (4) OEM authorization certificate (if bidder is not the manufacturer)	
13	<u>Warranty</u>	Minimum 02 (two) years from the date of acceptance/use, covering manufacturing defects, failure to meet capacity or premature degradation.	



TECHNICAL TERMS AND CONDITIONS FOR FOR PROCUREMENT OF 110 X MAINT-FREE SEALED LEAD ACID BATTERY FOR AIRCRAFT STARTING TROLLEY

The bidder is to mention "Comply/Not Comply/Appropriate Remarks against each terms & condition mentioned below. Otherwise the quotation will not be accepted.

Ser No	Description	To be Filled up by the Bidder
1.	<u>Eligibility of Bidder.</u> a. The bidder must be either the Original Equipment Manufacturer (OEM) of the offered battery; or an authorized representative/distributor of the OEM for the specific product. In case of Chinese origin item, the bidder must be duly authorized by the Chinese Government. b. In case of an authorized representative, a valid Authorization Certificate from the OEM must be submitted with the quotation, clearly authorizing the bidder to participate in this tender and sell the offered battery on behalf of the manufacturer.	
2.	<u>Documentation and Technical Literature.</u> a. The bidder must provide an OEM Certificate certifying that the batteries are genuine, brand new and manufactured by the OEM. b. The bidder is to submit original and unaltered technical literature (brochures, data sheets, manuals) in English containing detailed product specifications, performance parameters, safety and storage guidelines, charging and discharging characteristics c. Any document submitted in languages other than English must be accompanied by a certified English translation.	
3.	<u>Product Authenticity and Condition.</u> a. All batteries must be Brand new, unused and of the latest production batch, not earlier than the year 2026. All batteries must be free from manufacturing defects, shelf damage or previous deployment. b. The serial number and year of manufacture must be permanently engraved or embossed on the body of each battery. c. Batteries from refurbished, recycled or non-factory-authorized production lines will not be accepted under any circumstances.	
4.	<u>Warranty and Replacement Obligations.</u> a. The supplier must provide a replacement warranty for a minimum of 02 (two) years of trouble-free operation, effective from the date of acceptance by BAF. b. If any battery is found defective, unserviceable, or non-compliant during initial visual inspection or acceptance testing, it must be replaced with a new, serviceable unit at supplier's cost, including both-way freight and insurance, within 60 days from issuance of a formal discrepancy report. c. During the warranty period, if any battery becomes unserviceable or fails to perform as per specifications, the supplier is to: (1) Replace the item within 60 days of receiving an unsatisfactory report, (2) Bear all costs including freight, handling, insurance, and related charges, (3) Extend the warranty period by the duration of delay due to warranty replacement.	

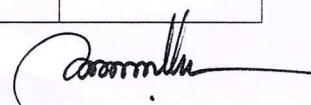


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Ser No	Description	To be Filled up by the Bidder
5.	<u>Storage Life Guarantee.</u> The supplier must guarantee a minimum storage/shelf life of 03 (three) years from the date of acceptance by BAF without significant degradation in performance (not less than 80% of rated capacity if stored under recommended conditions).	
6.	<u>Technical Compliance and Logbook.</u> a. Each battery must be accompanied by one logbook containing OEM specifications, quality check certificate, preservation and storage records, serial number, batch number and testing data. b. Logbooks must be original and authenticated by the manufacturer.	
7.	<u>Quantity Flexibility.</u> BAF reserves the right to reduce or increase the quantity of batteries at the time of contract or during contract execution based on operational requirements, budget, or availability.	
8.	<u>Delivery Terms.</u> a. All batteries are to be delivered within 210 days from the date of signing the contract. b. Batteries must be positioned at 201 MU BAF, Dhaka Cantonment at the supplier's cost and responsibility, including transportation, unloading, and handling.	
9.	<u>Inspection and Acceptance.</u> a. Final inspection and acceptance of the supplied items will be carried out at BAF AKR/201 MU BAF, in the presence of the supplier's authorized representative. b. Inspection will include physical verification, serial number and marking check, functional or acceptance testing (if applicable). c. Batteries failing to meet specification during inspection will be rejected and replaced under warranty terms.	

MISC TERMS & CONDITIONS

Ser No	Description	To be Filled up by the Bidder
10	The bidder is to mention the name and full address of the local agent (if any) in the offer.	
11	Item with changed/dissimilar part no/description is to be mentioned during submission of offer.	
12	Any changes required in contract/LC all expenses shall be borne by the responsible party.	
13	The bidder is to mention the port/country of shipment in the offer.	
14	Increase of price at any stage after submission of offer will not be accepted by BAF. The offered unit price and total price against each item must be correct. If the unit price or total price of an item is found incorrect, that unit price or total price will be taken into consideration which will be benefited to BAF.	



RESTRICTED

Ser No	Description	<u>To be Filled up by the Bidder</u>
15	The bidder is to quote 'FOB' and 'Freight' line item wise separately. If freight is not quoted separately for each item, total freight will be distributed against each item based on its proportionate FOB cost of all items. Bidders are requested to submit soft copy of Financial Offer in a CD along with the hard copy (according to the given proforma) of Financial Offer in closed envelope.	
16	Trans-shipment is not normally allowed. If bidder needs trans-shipment, it is to mention in the offer. In such requirement, the trans-shipment will only be allowed under single AWB/BL.	
17	Offer must remain valid up to 30th June 2027 . Within the validity of the offer, withdrawal of offer or unwillingness to sign the contract by the bidder will not be accepted. In such cases, actions would be taken against the principal supplier and local agent as per DGDP rules.	
18	Delivery schedule may be changed by DGDP/BAF. In such case, the contract would be signed within offer validity period. DGDP/BAF also reserves the right to get the offer validity extended with the consent of the supplier.	
19	Part shipment: Allowed but not more than two times.	
20	Part payment: Allowed but not more than two times.	
21	<u>Payment Terms.</u> Payment will be made through an irrevocable letter of credit (LC) as follows: a. <u>For Chinese Govt authorized Firms.</u> 80% payment will be made after shipment on production of shipping documents to the bank. Rest 20% payment will be made on satisfactory acceptance of all items by BAF after inspection/functional test (as applicable), on production of Certificate Receipt Voucher (CRV) and written clearance from DGDP to the bank. b. <u>For Others Firms.</u> 100% payment will be made on satisfactory acceptance of all items by BAF after inspection/functional test (as applicable), on production of Certificate Receipt Voucher (CRV) and written clearance from DGDP to the bank.	
22.	The items must be packed and supplied in standard air/sea worthy packing.	
23.	AWB/BL must be in the name of consignee.	
24.	For failure to supply the contracted goods in time, DGDP may cancel the contract with necessary punitive action.	
25.	Compliance of tender terms & conditions should be mentioned in the offer by the bidder as per sequence above. Bidder is to provide appropriate information against each clause clearly (where necessary) instead of 'complied'/'not complied'. No contradictory/hypothetical sentence/word/ (like, quote is subject to availability/prior to sell/subject to export license approval or words so) will be accepted by BAF.	
26.	Any other terms and conditions not covered here will be as per DGDP rules and regulations.	

