

Biman Bangladesh Airlines
Engineering & Material Management Directorate

Name of the Tender: Selection of Agency for Repair/Overhaul of
APS1000 (T-62T-46C12) APU

01. Introduction

Biman Bangladesh Airlines Ltd. (Biman) is currently operating 03 De-Havilland Dash8-400 aircraft. 02 more brand new aircraft are scheduled to join in the fleet by first quarter of 2021. Among 05 Dash8-400 aircraft, 04 aircraft are owned by Biman and remaining 01 will be operated under dry lease until October 2023. Currently Biman has 01 spare APS1000 (T-62T-46C12) APU to support operation of 05 Dash8-400 aircraft fitted with APS1000 (T-62T-46C12) APU.

Biman hereby invites offer from the OEM and OEM approved engine MRO having proven capability and experience on repair/ overhaul of APS1000 (T-62T-46C12) APU. The APU MRO selected by this Tender shall be responsible for all scheduled and unscheduled Repair /Overhaul of Biman APS1000 (T-62T-46C12) APU fleet.

02. Biman Fleet Status

Biman APS1000 (T-62T-46C12) Model APU status as on 30th November 2020 is as follows:

SI No	APU SI No.	TSN	CSN	TSLSV	CSLSV	Remarks
01.	SP-E104887	9794	15578	714	1145	In Operation.
02.	SP-E084760	9818	20619	3290	5355	Dry Leased. In Operation.
03.	PW-P409098	16	46	16	46	In Operation.
04.	PW-P409087	0	0	0	0	In Storage
05.	PW-P409102	0	0	0	0	EIS in February, 2021
06.	TBD	0	0	0	0	EIS in February, 2021

03. Biman Operation

Biman operates Dash8-400 Aircraft in domestic and regional routes with average monthly utilization 100 APU hour with an APU hours/cycle ratio of 0.50/1 (approximately).

04. Term of Agreement:

The agreement shall be valid for a period of five (05) years from the date of signing unless terminated by either party giving to the other party not less than 3 months in advance written notice prior to the date such termination becomes effective.

05. Tenderer Qualifications (Mandatory):

The Tenderer shall provide following Information / Technical Documents and must agree with the following term and conditions:

(a) The Tenderer must be an approved MRO capable of in-house repair and overhaul of APS1000 (T-62T-46C12) APUs having Certificate of Approval(s) from (i) either FAA and/or EASA and (ii)

local Regulatory Authority. In addition, the Tenderer must agree to comply with all applicable directive(s) / instruction(s) issued by the Civil Aviation Authority of Bangladesh (CAAB).

(b) The minimum period of general experience of Tenderer in repair/ overhaul of Aircraft Auxiliary Power Unit (APU) shall be five years.

(c) Tenderer should have the experience of Repair/Overhauling at least 10 (Ten) APS1000 (T-62T-46C12) APUs as of the date of participating this tender. Proven experience of repair/overhauling at least 05 (Five) APS1000 (T-62T-46C12) APUs over the last three years (January 2018 to December 2020 inclusive) is required.

(d) A Tender submitted by a Joint Venture, Consortium or Association (JVCA) is not acceptable.

(e) An APU MRO, capable to repair/ overhaul APS1000 (T-62T-46C12) APUs but without having in-house APU Test Cell with certified Test capability, shall not be considered as capable.

(f) Tenderer should have major in-house repair capability for repair/ overhaul of APS1000 (T-62T-46C12) APU breakdown parts at piece part level and components.

(g) Any discussion/ negotiation will be done directly with the Tenderer MRO. Biman shall not deal with any Agent/Broker during the process of evaluation and finalization of the proposal or agreement.

06. Tender Mandatory Requirements:

The Tenderer shall agree and provide response for the following Mandatory requirements to qualify as Responsive tenderer:

Tender requirement	Tenderer Response
<p>(a) Each Shop-in to Shop-out Turn-Around-Time (TAT) shall not be more than 35 (Thirty five) calendar days, lower preferable. The TAT and its term and condition(s) shall clearly be specified in the offer and draft agreement. Tenderer must agree to pay US\$300 compensation per day for extension of TAT. However, for zero-spare situation due to TAT failure, the Tenderer must support Biman with FOC (free-of-charge) lease APUs. Biman will pay only usage fee may but no daily rent for such FOC lease APUs.</p>	<p><input type="checkbox"/> Agreed <input type="checkbox"/> Not agreed Sign_____</p>
<p>(b) The workscoping of Biman's APU during any APU shop visit at Tenderer's facility will be carried out jointly by Biman's representative and Tenderer's engineering personnel in reference to the applicable documents/manuals issued by APU manufacturer. In case of lease aircraft APU, Lessor's designated representative would also participate during workscoping. Biman will maintain control of APU 'workscape' requirements at all times and will have the right to change the workscape during the early stages of shop visit.</p>	<p><input type="checkbox"/> Agreed <input type="checkbox"/> Not agreed Sign_____</p>
<p>(c) Warranty periods for APU repair/overhaul shall be more than 1,200 APU hours or 12 months after installation of the APU on aircraft, higher is preferable. The Tenderer must also warrant their subcontractor's work.</p>	<p><input type="checkbox"/> Agreed <input type="checkbox"/> Not agreed Sign_____</p>

Tender requirement	Tenderer Response
(d) The Tenderer shall agree to undertake any warranty claim(s)/issue(s) with Manufacturer/subcontractor on behalf of Biman.	<input type="checkbox"/> Agreed <input type="checkbox"/> Not agreed Sign_____
(e) If any engine is due for redelivery to aircraft Lessor before next planned shop visit, the repair agency needs to ensure at the time of delivery of engine to Biman after shop visit, that the engine meets all the redelivery requirements/conditions as per the aircraft lease agreement.	<input type="checkbox"/> Agreed <input type="checkbox"/> Not agreed Sign_____
(f) Serviceable Biman parts left after any APU shop visit shall be monitored and maintained in Biman parts stock at Tenderer's facility for future use by Biman during the tenure of the contract. The Tenderer shall provide FOC storage and management of such parts. The stock of Biman parts should be returned to Biman or to a place designated by Biman once the contract is terminated for any reason.	<input type="checkbox"/> Agreed <input type="checkbox"/> Not agreed Sign_____
(g) QEC/LRU overhaul / repair and test must be performed either in-house or by FAA/EASA approved subcontractor. This shall also include wiring harnesses and wire bundles.	<input type="checkbox"/> Agreed <input type="checkbox"/> Not agreed Sign_____
(h) All Used Serviceable Parts (including LLPs, LRUs etc.) installed in Biman APUs by Tenderer shall have proper documents, traceability, back to birth history and such parts should be of around same or lower age and same or higher modification standard than corresponding Biman parts.	<input type="checkbox"/> Agreed <input type="checkbox"/> Not agreed Sign_____
(i) APU delivery and re-delivery shall be done at Biman's base station Dhaka at the expense of Repair Agency. The repair agency shall be responsible for organizing such transportation to and from Biman Hangar located at Hazrat Shah Jalal Int'l Airport, Kurmitola, Dhaka.	<input type="checkbox"/> Agreed <input type="checkbox"/> Not agreed Sign_____
(j) APUs shall be checked at receipt and dispatch time. A list of missing items must be made shop-in & shop-out, should be reported at APU induction & redelivery and such list shall accompany the APU documentation.	<input type="checkbox"/> Agreed <input type="checkbox"/> Not agreed Sign_____
(k) APU release documentation should be to a format that is acceptable to Biman. A list of all AD's and SB's with applicability/ compliance data applicable to the APU model should be provided in the shop visit report. Both Electronic copy Hard copy of APU shop visit report to be provided after each APU shop visit.	<input type="checkbox"/> Agreed <input type="checkbox"/> Not agreed Sign_____
(l) Use of PMA part and DER repairs are not allowed for the APUs . However, any specific cost effective DER repair may be discussed, and can only be applied subjected to an approval from aircraft Lessor and Biman.	<input type="checkbox"/> Agreed <input type="checkbox"/> Not agreed Sign_____

Tender requirement	Tenderer Response
<p>(m) All disassembly, assembly, repair, Overhaul, inspection, cleaning, testing, modification, alteration, or any other process, technique required during APU shop visit must be up to the manufacturer's approved repair/WPG standard and must comply with regulatory requirement. An NTO (No Technical Objection) should be sought for repairs not covered within applicable Repair Manuals and prior concurrence from Biman must be taken before incorporation of the same.</p>	<p><input type="checkbox"/> Agreed</p> <p><input type="checkbox"/> Not agreed</p> <p>Sign_____</p>
<p>(n) The Tenderer shall have an independent Quality Assurance program that monitors compliance with applicable airworthiness regulations, requirements and their own maintenance procedure manual. Such program shall also address the specific requirement of the customer's Quality Assurance program as detailed in customer's Maintenance Control Manual.</p> <p>Tenderer must comply with applicable clauses of Biman Quality Assurance Audit Checklist, Form - QA/AUD/CHK/002/029. Tenderer must ensure and provide Certificate annually that their personnel are trained and competent to perform SMS (Safety Management System) duties.</p>	<p><input type="checkbox"/> Agreed</p> <p><input type="checkbox"/> Not agreed</p> <p>Sign_____</p>
<p>(o) The repair agency must assist Biman by providing Lab report, estimated cost of repairing/overhauling an APU due to FOD (Foreign Object Damage), accident/incident, unscheduled removal etc. whenever requested by Biman.</p>	<p><input type="checkbox"/> Agreed</p> <p><input type="checkbox"/> Not agreed</p> <p>Sign_____</p>
<p>(p) 12 months Preservation, Packaging, shipment and transportation requirements must be of Industry standard and acceptable to Biman.</p>	<p><input type="checkbox"/> Agreed</p> <p><input type="checkbox"/> Not agreed</p> <p>Sign_____</p>
<p>(q) The Tenderer must respond to quality complaints formally and promptly.</p>	<p><input type="checkbox"/> Agreed</p> <p><input type="checkbox"/> Not agreed</p> <p>Sign_____</p>
<p>(r) Full In-house capability is preferred however, for the parts subcontracted, the agency must agree to provide subcontractor's invoice. Charges for handling of parts including insurance and warranty will be the responsibility of the agency.</p>	<p><input type="checkbox"/> Agreed</p> <p><input type="checkbox"/> Not agreed</p> <p>Sign_____</p>
<p>(s) The Tender validity period shall be 120 days minimum. Biman may request further validity extension, if needed.</p>	<p><input type="checkbox"/> Agreed</p> <p><input type="checkbox"/> Not agreed</p> <p>Sign_____</p>

Tender requirement	Tenderer Response
<p>(t) In case of multiple facility owned under the same Group, the Tenderer may participate in the bid separately against each of the facility and provide Certificate of Approval for that corresponding facility along with the offer. During the contracted period, the Tenderer must agree on not to send the complete APU to any Sub-contractor or any other facility under the same Group, than contracted facility.</p>	<input type="checkbox"/> Agreed <input type="checkbox"/> Not agreed Sign _____
<p>(u) Biman shall have full control over APU removal and shop visit planning. Biman may decide to not repair any APU at its sole discretion.</p>	<input type="checkbox"/> Agreed <input type="checkbox"/> Not agreed Sign _____
<p>(v) Tenderer must offer APU FOC (Free of Charge) APU Health Monitoring service to Biman.</p>	<input type="checkbox"/> Agreed <input type="checkbox"/> Not agreed Sign _____
<p>(w) Tenderer must quote Fixed Price in Annexure para A-4.1 for a single shop visit of Biman APS1000 (T-62T-46C12) Model APU fleet. The quoted Fixed Price must include following services: i. All Routine/Non-routine Labor, consumables and expendables cost. ii. APU Disassembly, assembly, inspection, balancing, grinding, testing, shipping preparation and preservation. iii. Repair and Overhaul of APU parts as necessary. iv. Scrap replacement of necessary APU parts. v. Inspection, bench check, repair and overhaul of all APU QEC and LRUs. vi. Compliance with all Airworthiness Directives and Service Bulletins Category 1~6 published up to the date of contract signing. vii. Both ways APU Transportation in and out of DAC.</p>	<input type="checkbox"/> Agreed <input type="checkbox"/> Not agreed Sign _____
<p>(x) Prices quoted by the Tenderer in this Price Schedule Annexure-A shall preferably be fixed for duration of the contracted period. In case of changes in quoted price during the proposed contracted period, the methodology and financial figure should be clearly mentioned for any escalation or reduction of prices. Annual price escalation rate must be capped by a certain value in percentage which will be used during financial evaluation process. As such Tenderer must propose an Annual Escalation Cap in addition to the methodology and financial figure in Annexure-A para 5.1.</p>	<input type="checkbox"/> Agreed <input type="checkbox"/> Not agreed Sign _____
<p>(y) All prices shall be quoted in US\$.</p>	<input type="checkbox"/> Agreed <input type="checkbox"/> Not agreed Sign _____
<p>(z) The APU shall be repaired on Time-and-Material basis with Fixed Price as quoted in Annexure-A para A-4.1. Tenderer must quote flat rated prices as stipulated in paragraphs of Annexure-A. Biman shall pay either the Fixed Price amount quoted in Annexure-A para A-4.1 or the actual repair/overhaul cost of any APU, whichever is lower. Annexure-A shall be part of the agreement.</p>	<input type="checkbox"/> Agreed <input type="checkbox"/> Not agreed Sign _____

Tender requirement	Tenderer Response
(aa) Tenderer must agree that new part prices should be applicable as of Workscope Finalization date and not at the date of Final Invoice.	<input type="checkbox"/> Agreed <input type="checkbox"/> Not agreed Sign_____
(bb) Tenderer must agree that Used Serviceable part price must not exceed 60% of new part price.	<input type="checkbox"/> Agreed <input type="checkbox"/> Not agreed Sign_____
(cc) Biman shall be responsible for all taxes/ GST/VAT payable in Bangladesh. Tenderer must agree to pay all taxes/ GST/VAT (if any) outside of Bangladesh.	<input type="checkbox"/> Agreed <input type="checkbox"/> Not agreed Sign_____
(dd) Tenderer must possess APUs available for lease and will provide Biman lease APU when required in AOG condition. Biman shall not provide any of its APUs in Tenderer lease APU pool. Tenderer must quote daily rent and utilization fees for lease APU in Annexure-A para A-3.1.	<input type="checkbox"/> Agreed <input type="checkbox"/> Not agreed Sign_____

07. Documents to be provided along with the Tender Offer (Mandatory):

The Tenderer shall submit the following additional documents in English with Tender offer:

- (a) Copies of approval of FAA and / or EASA as applicable and Certificate of Approval from local regulatory authority of the approved APU maintenance services organization are to be provided.
- (b) Original tender offer must be submitted with signature of tenderer in every page along with original copy of Tender documents.
- (c) **A draft copy of the APU Maintenance Agreement highlighting each corresponding requirements of the Tender Mandatory requirements as mentioned in para 06 above.**
- (d) List of APS1000 (T-62T-46C12) APUs serial number repaired/overhauled during the period from January 2018 to December 2020 (inclusive).

08. Other Requirements:

- (a) The following documents will also be part of the draft APU Maintenance Agreement and to be finalized during contract negotiation.
 - i) APU Lease GTA highlighting the terms and conditions.
 - ii) APS1000 (T-62T-46C12) APU parts repair directory mentioning in house and subcontractor repair /overhaul price list and TAT.

- (b) APU Maintenance Agreement shall include/address following requirements:
- ✓ A list of facilities where the maintenance is to be carried out, including a list of satellite facilities that the tenderer may use;
 - ✓ A `Statement of Work' (SOW) for the Maintenance Agreement that contains the detailed technical requirements, including references to maintenance intervals, manuals, Airworthiness Directives (ADs), Service Bulletins (SBs) and operator special requirements. A clear, unambiguous and sufficiently detailed SOW and assignment of responsibilities are required to ensure no misunderstanding arises between the operator, the Contractor and the operator's Authority that could result in a situation where the work, which has a bearing on the airworthiness or the serviceability of operator's aircraft, is not properly performed;
 - ✓ A requirement for the repair agency to produce a suitable quality plan for the project;
 - ✓ Use and control of parts and materials;
 - ✓ Process for the approval of deviations from maintenance documents;
 - ✓ A need for an internal evaluation system by the repair agency;
 - ✓ Access by the customer's quality assurance department staff for the purpose of evaluating ongoing quality;
 - ✓ A reporting structure that immediately notifies the customer immediately if there is any defect, non-airworthy condition, failure or malfunction which are related to aircraft structure, powerplant, aircraft systems or equipment;
 - ✓ A system of completing, reviewing, retaining maintenance records;
 - ✓ A system of calibration of tooling and equipment;
 - ✓ A system of managing customer supplied parts;
 - ✓ A system of inspecting and testing, i.e., a quality control system;
 - ✓ A system of handling unsatisfactory product;
 - ✓ A system of handling, storage, packaging and delivery;
 - ✓ A system of product identification and traceability;
 - ✓ A system of training by the repair agency of its staff including continuation training not exceeding 36 months interval,
 - ✓ A system of Release To Service of an aircraft or component;
 - ✓ A system for communication between the customer and the repair agency;
 - ✓ A Service Level Agreement (SLA) that includes clear Key Performance Indicators as agreed between the customer and the repair agency for the assessment of achievement of ongoing quality levels (the definition of the specific indicators depends on the policy of the customer);
 - ✓ A system of periodic review meetings to include some or all of those below:
 - Contract Review Meeting
 - Technical Review Meeting
- (c) Repair Agency will provide Free of Charge training to Biman engineering personnel upon requested by Biman.
- (d) Under this Tender the selected bidder have to execute an agreement with the Biman, which shall be treated an independent agreement, more specifically it should not be correlated/interlinked with other existing (if any) or future agreement with the bidder.
- (e) Repair Agency will agree to redeliver APU after shop visit with partial payment of Estimated Cost as provided after APU induction.
- (f) Repair Agency will agree to provide on-site support at Dhaka or any out-station upon requested by Biman.

09. Tender Financial Evaluation

Only Technically Responsive offers shall be considered for Financial Evaluation. To be Technically Responsive, Offer must comply with all the mandatory requirements above. The following points shall be considered during Tender Financial Evaluation:

- (a) Fixed Price per APU shop visit as quoted in Annexure-A, para A-4.1; and
- (b) Annual price escalation or reduction rate as quoted Annexure-A, para A-5.1.

10. Tender offer submission procedure:

- a) Offer may be sent by Courier to the Office of Director Engineering and Material Management, Biman Engineering Hangar Complex, HSIA, Dhaka-1229, Bangladesh. or
- b) Offer may also be submitted in the Tender Box that will be placed only at Biman Engineering Hangar Gate # 8, HSIA, Dhaka on 04 February 2021. or
- c) Offer may also be sent through email to: aps1000tender2020@bdbiman.com

11. Clarification / Further Information:

For any further information/ clarification to the Tender, Tenderer is requested to contact with the following official:

Mr. A. R. M. Kaiser Zaman
Chief Engineer, Engineering Services
Biman Bangladesh Airlines
Tel: +880-2-890-1333
Cell: +8801777715539
email: chiefengr@bdbiman.com

Annexure - A

Price Schedule For Repair, Overhaul, Loan/Lease of APS1000 (T-62T-46C12) APU and its Components/ Accessories Installed on De-Havilland Dash8-400 Aircraft

A-1.0 LABOR AND EXPENDABLES

A-1.1 Please quote **Labor Hour Rate**.

A-1.2 Please quote **Fixed Routine Labor (Man Hour) and Flat-rated Expendables Cost (USD)** as per following table:

	Labor (Man-hour)		Expendables (Flat Rate, USD)	
Minimum Workscope (As per WPG)				
Opportunity Maintenance Shop Visit (As per WPG)	Power section Tasks	Gearbox tasks	Power section Tasks	Gearbox tasks
Assembly inspection Shop Visit (As per WPG)	Power section Tasks	Gearbox tasks	Power section Tasks	Gearbox tasks

Note:

- 1) **Fixed Routine Labor** must include disassembly, assembly, inspection, balancing, grinding, testing, shipping preparation and preservation for the respective workscope.
- 2) **Flat-rated Expendables Cost** must include all materials, expendables and parts which are replaced every time during disassembly regardless of their condition (eg. packings and o-rings).

A-1.3 Please quote **APU Test Run** fixed price (including Fuel, Oil and man hour).

A-1.4 Please quote **Component Flat Rate** charge which must include all Labor, material and break down part cost as pre following table:

Components	Typical P/N	Bench check cost in USD	Repair cost in USD	Overhaul cost in USD
Ambient Pressure Sensor	179427-2			
Exciter	4951070			
Flow Divider	4951745			
Fuel Control Assembly	4503139D			
High Oil Temperature (HOT) Switch	5908597			
Low Oil Pressure (LOP) Switch	5908599			
Oil Cooler	4951179			
Speed Sensor	4951121			

Thermocouple	4950626			
Starter Generator	1152400-5			
Solenoid Valve Assembly Main	4950240-1			
Solenoid Valve Assembly Start	4950240-2			
Main Fuel Manifold	4950245			
Nozzle Assembly, Start Fuel	4502052A			
Manifold Assembly, Fuel - Start	4951845			
Filter Assembly, Fuel	4952505			
Valve, Check	4950385			
Cable, Ignition	115352-2			
Valve, Bypass - Oil Filter Indicator	4951314			
Electronic Control Unit	4503069J			
Outline, Interconnect Harness – Fadec	4503093			
Harness Assembly, Engine Control	4503090B			
Data Memory Module Assembly	4505576A			
Nozzle Assy, Main Fuel	4508927			
Ignitor, APU	4952382			
Valve, Bleed	4956056			
Valve Assy, Solenoid	756722B			

A-2.0 MATERIAL

A-2.1 Please quote prices for replacement materials used during APU repair/overhaul as per following table. **Used parts price must not be more than 60% of New Parts price.**

	Price Source	Price (%)	Handling Charge	Handling Charge Ceiling
New Parts				
Used Parts				
LLPs		Pro-rata Value		

A-2.2 For the parts exchanged utilizing rotatable pool, Biman would pay repair price of the part. Please quote Exchange Fee as per following table

	Exchange Fee	Exchange Fee Ceiling
Non LLPs & Accessories		
LLPs		

A-2.3 For Repair/Overhaul of parts by Subcontractor, please quote Handling Charge as per following table

	Handling Charge	Handling Charge Ceiling
Non LLPs & Accessories		
LLPs		

A-3.0 APU LEASE SUPPORT

Tenderer shall agree to support Biman with lease APU whenever required. In case of AOG due to TAT extension, Tenderer must provide FOC (Free of Charge) loan APU in Biman's QEC configuration. Only usage fee may be paid by Biman (excluding daily fee).

A-3.1 Lease APU Charges

Please quote Daily and Utilization charge for Lease APU .

A-4.0 FIXED PRICE QUOTE

A-4.1

Tenderer must quote Fixed Price in Annexure para A-4.1 for a single shop visit of Biman APS1000 (T-62T-46C12) Model APU fleet. The quoted Fixed Price must include following services:

- i. All Routine/Non-routine Labor, consumables and expendables cost.
- ii. APU Disassembly, assembly, inspection, balancing, grinding, testing, shipping preparation and preservation.
- iii. Repair and Overhaul of APU parts as necessary.
- iv. Scrap replacement of necessary APU parts.
- v. Inspection, bench check, repair and overhaul of all APU QEC and LRUs.
- vi. Compliance with all Airworthiness Directives and Service Bulletins Category 1~6 published up to the date of contract signing.
- vii. Both ways APU Transportation in and out of DAC.

A-5.0 PRICE ESCALATION / REDUCTION

A-5.1 Prices quoted by the Tenderer in this Price Schedule Annexure-A shall preferably be fixed for duration of contracted period. In case of changes in quoted price during the proposed contracted period, the methodology and financial figure should be clearly mentioned for any escalation or reduction of prices. **Annual price escalation rate must be capped by a certain value in percentage which will be used during financial evaluation process.** As such Tenderer must quote an Annual Escalation Cap in addition to the methodology and financial figure.
