31st FIGHTER WING

31st CIVIL ENGINEERING SQUADRON

31st CES/CENM PROJECT MANAGEMENT ELEMENT

PROJECT ASHE 22-1058

REPAIR DOORS ZULU LOOP 1ST GEN PASs

(Z4, Z5, Z6, Z9, Z11, Z13)

Area F, AVIANO AB, ITALY

TECHNICAL SPECIFICATIONS

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SCOPE OF PROJECT

The purpose of this project is to repair six (6) first-generation PAS doors located within the Zulu Loop area. These doors exhibit significant wear on their main hinges, internal bearings, seals, and associated wear components. The Contractor shall perform all necessary repairs, replacements, adjustments, and testing to restore full operational functionality.
The work includes, but is not limited to:

- removal and reinstallation of each door leaf
- complete refurbishment of upper and lower hinges
- replacement of bearings, seals, rings, and wear components
- replacement of bearing housings and main pivot pins
- refurbishment of spring rollers and locking devices
- alignment of each door leaf
- functional testing with the end user

Upon completion of the work, **each door shall be fully operable by human force only**, without mechanical assistance. The opening and closing sequence shall be smooth, continuous, and free of abnormal resistance. All door leaves shall be **perfectly aligned**, ensuring proper engagement of locking devices, lower wipers, and safety rollers. Attachment 01 shows pictures and lesson learned for the pilot project ASHE 22 1041 “Repair Doors in Z2”. Attachment 02 contains sample “As-Built” carpentry shop drawings related to the Pilot Project ASHE 22 1041 “Repair Doors in Z2”. These drawings are not binding and are provided only as a reference model. **Although reference drawings and dimensional models of the replacement components are provided, the Contractor remains fully and solely responsible for verifying all actual dimensions of the components to be removed, refurbished, reconstructed, and reinstalled. The Contractor shall ensure that every component conforms to the real in situ conditions and guarantees the correct and safe operation of the doors. Any discrepancies, dimensional deviations, or required adjustments shall be identified and resolved by the Contractor at no additional cost to the Government.**
Because all six PAS units were originally handcrafted, each door assembly presents dimensional variations. The Z-2 drawings are provided as a baseline for developing the required “As-Built” drawings for the remaining six PAS units.
At the end of the project, the Contractor shall provide complete carpentry shop drawings (AutoCAD DWG and PDF), including assembly drawings, ballooning, tolerances, torque values, lubrication specifications, and detailed drawings of all non-commercial components.
The Contractor shall also provide a complete O&M Manual with a **clear Maintenance Plan**, ensuring that preventive maintenance (lubrication, inspections, alignment checks) can be performed **without cranes or special lifting devices to allow man-size stand-up maintenance**.

AC1 - 1. SUBMITTAL OF MATERIALS

In accordance with Paragraph 2.5 of the technical specification No. 01100, entitled “GENERAL CONDITIONS” of the Master Specifications (new edition, 2020), the materials listed in "MATERIAL SUBMITTAL SCHEDULE" shall be submitted as required by the time schedule indicated, for the approval by the Contracting Officer (CO). The Contractor shall provide, for all the materials that will be furnished and installed, a written certification, completed with catalog data from which shall be clear the total absence of toxic-noxious materials. Number of copies will be as required on "MATERIAL SUBMITTAL SCHEDULE".

AC1 - 2. CONSTRUCTION AREA SCREENING

All construction sites and material storage areas shall be securely fenced around the entire perimeter within an area defined by the Contracting Officer (CO). Bilingual signs, "VIETATO L'INGRESSO - LAVORI IN CORSO / WORK AREA - NO ENTRY" shall be placed at the work area entry and along each side of the fencing. Fence type, height, and screening color should also be specified by Base Civil Engineering (BCE). Fencing shall be completely secured at top and bottom to prevent access. Fences shall be screened with opaque screening material to prevent visibility inside the fenced area. Fences and screens shall be adequately staked and/or anchored to prevent blowing over during high wind conditions. Contractor shall not start installation of area screening until approved, in writing, by Contracting Officer (C.O.). Contractor shall submit photos or samples of the screening material for approval by C.O. The Contractor shall replace or repair in a timely manner, as determined by C.O., all fences and screening sections that have damage or develop unsightly rips or holes. It is strictly forbidden to install advertisement signs and/or logos including contractors along the construction site fence. At the end of the work or when exterior work requires it, temporary fencing shall be removed. Night warning lights shall be installed to illuminate the work area, from sunset to dawn.

AC1 - 3. PROJECT SIGN

The Contractor shall furnish a project sign on site in accordance with Section 01101. The sign shall be made of a durable material and maintained in good condition. Lettering is to be white gloss, exterior-type enamel. The sign and posts shall be given one prime coat and two finish coats of dark brown gloss exterior enamel paint. The sign shall be erected at the designated location and shall be maintained in good condition by the Contractor until completion of the contract. The sign shall remain the property of the Contractor and shall be removed from the site upon final inspection and acceptance of the facility. Contractor identification and logo shall be allowed only on this sign and nowhere else on the exterior of the job site, with the exception of company vehicles. There should be no signs for the purpose of advertising anywhere on the site. Contractors shall submit sign proposal to C.O. for approval.

AC1 - 4. JOB SITE MOBILIZATION

The Contractor shall submit a proposal to C.O. diagramming their construction site and all material storage areas in locations separate from a construction site. The Contractor shall submit this plan 14 calendar days prior to the start of construction. Material mobilization and construction execution cannot begin until the plan has been approved by Contracting Officer (CO). Contractor shall fence and highlight the construction site perimeter with low profile jersey barriers as shown on page 13 of 14 of the attachment "*ASHE221058_Attachment 01_Pilot project lesson learned*". Jobsite utility connections are the responsibility of the Contractor and shall be coordinated through BCE. Temporary overhead utility runs are prohibited. Contractor shall include a plan for supplying required utilities to their site in their proposal.

AC1 - 5. SAFETY

Contractor's activities shall be in compliance with the following: OSHA 29 CFR 1926 Construction Regulations, US Corps of Engineers Manual EM385-1-1 Nov. 2014, AFMAN 91-203 Air Force Occupational Safety, Fire, and Health Standards, and Italian Legislative Decree 81/08 including subsequent amendments: in case of any differences, the more stringent applies.

An appointed professional shall develop a site-specific safety plan (PSC - Piano di Sicurezza e Coordinamento), in accordance with Legislative Decree 81/08). PSC is considered equivalent to the Accident prevention plan required by Manual USACE EM385-1-1.

Contractor shall consider in advance interference hazard through a preliminary assessment plan: the DUVRI - Documento Unico per la Valutazione Rischi da Interferenze shall be coordinated with 31 FW/CCPP Base employees safety representative (Phone 0434 30 5709), in accordance with Legislative Decree 81/08.

Contractor shall develop a site-specific plan for operational safety (POS - Piano Operativo di Sicurezza) in accordance with Legislative Decree 81/08, prior to starting planned work activities. Employees training certificates shall be included in the POS documents.
Contractor's activities connected with maintenance of Base facilities and infrastructures shall be in compliance with OSHA 29 CFR 1910 General Industry regulations. For maintenance, surveys, repairs and plants installation requiring access to roof structures, activities shall be executed in accordance with OSHA 1910.28(b)(9)(i)(D) on fall arrest systems for fixed ladders, and Friuli Venezia Giulia Regional Law 24/2015 for mandatory directions on permanent fall protection measure on roofing systems.
Contractor's activities connected with construction, installation, maintenance and repairs of systems, equipment, tools and machinery (including parts, accessories and appurtenances) covered by European Machinery Directive 2006/42/EC shall be performed so as to maintain current compliance with mentioned directive. Machinery control logs shall be duly signed after each repair or maintenance operation by a certified Contractor's representative. Recertification processes, revamping or retrofitting of systems, equipment, tools and machinery (including parts, accessories and appurtenances) shall be performed in accordance with European Machinery Directive 2006/42/EC. Related compliance certificates shall be duly signed by a Contractor representative.
Contractor's representatives shall receive a safety briefing during the pre-performance conference from Base 31 FW/SEG Occupational Safety Office. Electronic copy of POS will be provided to 31 FS/SEG (Phone 0434 30 4817).

AC1 - 6. CUSTODY OF HAZARDOUS WASTE AND HAZARDOUS MATERIALS

Prior to bringing any hazardous material into the base, the Contractor must contact BCE to coordinate the storage and handling of all hazardous materials. Contractor is responsible for complying with all applicable environmental regulations and laws pertaining to the storage, handling, and transportation of hazardous materials and hazardous waste.

- Hazardous materials: The Contractor shall identify all hazardous materials required for completion of the project.
- Safety Data Sheets: The Contractor shall furnish English language versions of the Safety Data Sheets (SDS) of hazardous materials, chemical, toxic, and noxious, that will be used in the construction work, to 31st CES/CEIE for approval and coordination through SEG and SGPB. The Contracting Officer will provide sample of the SDS form to the Contractor.
- Hazardous Waste Management Plan: The Contractor shall provide to Contracting Officer (CO) the hazardous waste management plan.
- Chemicals Materials: The Contractor shall ensure that hazardous materials utilized during construction do not contain any chemicals listed as EPA 17 toxins. A list of the EPA 17 toxins con be obtained from the 31st CES/CEIE office.
- Liquid, flammable or toxic substances: Any liquid, flammable, or any other toxic substances that are required for the execution of the works, shall be kept in properly labeled, special containers. Relative data (quantity, characteristics and location) shall be transmitted to 31st CES/CEF or 31st CES/CEIE through the Director of Works.
- Asbestos Containing Materials: Asbestos containing materials can be encountered during demolition work. It shall be the responsibility of the Contractor to handle and dispose asbestos containing materials in the appropriate manner, as prescribed by Italian Law, governing the handling of such materials, and to provide all required documentation and related coordination to obtain the necessary authorizations. Removal, handling and disposal of asbestos containing materials shall be in compliance with Section 13281 of this contract document and all local and national applicable regulations.

AC1 - 7. PRESERVATION OF EXISTING CONDITIONS

The Contractor shall preserve and protect all structures, equipment, and vegetation (such as trees, shrubs, grass) on or adjacent to the work site, which are not to be removed, and which do not unreasonably interfere with the work required under this contract. The Contractor shall return all areas disturbed during construction to their original condition before final acceptance by the base.

AC1 - 8. WORK SITE CONDITIONS

The work areas shall be made available to the Contractor as follows:

a. Building Location: facilities Z4, Z5, Z6, Z9, Z11, Z13 are in a **restricted area,** and **they will require controlled entry/exit and escort at all times**. Contractor shall strictly comply with the Contracting Officer's instructions. Delays may happen when the Contractor will enter the areas due to military operations or exercises. In this case the unproductive time will not be at the expense of the USA Government. The government will not be held liable for unproductive time and other related costs due to delays in access/exit to/from the restricted areas or unannounced and immediate suspension of work due to military operations and/or exercises or safety reasons. USA Government will only be able to guarantee an extension of the contractual time equal to the time of the delay caused by what is described above.

b. The Contractor is permitted to use reasonable quantities of available electricity and water at the work site. The Contractor shall not alter characteristics and shall observe conservation practice at all times. All connections shall be the responsibility of the Contractor, including restorations to initial conditions.

c. Work can be done **only 1ea PAS at the time**. Before work starts, contractor will submit a **detailed works schedule** to CO for coordination and approval. Upon completion of each PAS and consequent BOD (Beneficial occupancy Date), the CO will authorize commencement of the work on the following PAS.

d. Administrative Containers: Containers required on site for administrative reasons (office space, conference space, break room) must be in like new condition and painted a color which coordinates with the base architectural plan and is approved by C.O., unless it is hidden by the opaque fencing material. Administrative containers in need of painting and / or repairs or that are in an unsightly condition will not be allowed at the project site. A nameplate, no greater than 0.5 meters X 0.5 meters in size, shall be displayed on the exterior of all trailers which lists the name of the Contractor's company, 24-hour Contractor's point(s) of contact (POC) and telephone number where they can be reached.

e. Before welding operations, the Contractor shall ensure a welding permit is obtained from the Aviano Air Base Fire Department prior to performing welding operations.

f. The Contractor shall be responsible for ensuring all personnel engaged in the performance of this contract observe all host country laws concerning safety and in particular D. lgs. 81/2008 and latest reviews. The Contractor shall prepare a site-specific Plan for Operational Safety (POS) IAW D. lgs 81/08. Electronic copies of safety-related plans and documents shall be transmitted to 31FW.SEG@us.af.mil <mailto:31FW.SEG@us.af.mil>. Contractor shall attend a pre-performance briefing on applicable regulations prior to starting work.

g. The Contractor shall perform no digging until receipt of a completely coordinated AF form 103 from the Contracting Officer. Digging permit will not be issued for the entire contract at one time. Contractor shall submit request for digging permit 30 days prior to excavating in each area segment. Contractor shall clearly mark proposed digging and excavation routes with white paint or chalk prior

to Government marking.

h. Aircraft Shelters: The shelters will be set free by Government Personnel; the doors will be closed prior to the start the job. The Contractor will decide which leaf will be opened as first and the Base personnel will proceed to open the door in coordination with the Contractor.

i. Material Storage: Storage containers will be in like new condition and painted a color which coordinates with the base architectural plan and is approved by C.O., if it is not hidden by the opaque fencing material. Contractor shall display a nameplate on the exterior of all storage units with the name of the Contractor's company, the Contractor's point(s) of contact (POC) and telephone number where they can be reached. Storage of materials at the work site is at the Contractor's risk. The Contractor shall not use any area(s) for material or equipment storage that has not been approved by C.O.

j. Loading and Unloading Construction Materials and Equipment: Unloading of materials will be allowed within the fenced work area. Contractor personnel, vehicles and equipment must not obstruct access to roads to other buildings. Temporary parking of vehicles, for loading or unloading materials and equipment is permitted in the proximity of the work area, unless such operations obstruct traffic flow.

k. Housekeeping and Site Cleanup: At the end of each working day, the Contractor shall be responsible for cleaning the area surrounding the building involved in the work. Since the adjacent buildings are used every day, the Contractor shall ensure that the surrounding areas are kept constantly clean and accessible, completely safe, and that the facilities are not in any way aesthetically damaged, even temporarily. Such functions include disposal of accumulated waste materials and rubbish and other operations necessary to always present a neat appearance. Grass within the construction sites and material storage areas shall never exceed 10 cm in height. All rubbish and waste materials shall be placed in Contractor furnished containers. Contractors ensure all lightweight debris at the construction site is properly secured in waste receptacles so that it does not blow to another area or onto the airfield. During the laying of asphalt roads, streets and/or parking surfaces, areas soiled by residual asphalt shall be cleaned the same day.

l. Aircraft Taxiways: Special care shall be paid for driving and/or crossing paved areas dedicated to aircraft taxing. It is forbidden to drive on these surfaces with vehicles and equipment that could release stones, soil, and other hazardous materials for the aircraft safety; therefore, prior entering such areas the Contractor shall verify the complete absence of danger conditions. Special Airfield Driving License will be required for driving on taxiways, coordinate with CO.

m. Traffic interruptions: In the event of traffic interruptions, caused by the construction works, and approved by the Contracting Officer, they must be coordinated with 31ST. SPS/SPOL.

AC1 - 9. AIRFIELD SAFETY TRAINING

Contractor shall contact Airfield Management to receive flight line driver and airfield safety training prior to start of any work on the flight line.

AC1 - 10. PARKING

Contractor or Contractor's employees, including subcontractors, shall obey all traffic laws on installation. The Contractor shall park all vehicles, including heavy equipment vehicles, only in unobtrusive locations within the fence line of the construction site or lay-down areas. Every effort must be made to avoid parking vehicles or heavy equipment, where it can be easily observed by the public. The Contractor shall not park outside the construction zone unless approved through C.O. The Contractor shall clearly identify their vehicles using company logos or signs on their vehicles.

AC1 - 11. ACCESS ROUTES

The Contractor shall provide a haul route plan for approval by C.O. For road detour/closures the Contractor shall submit a written request to the Contracting Officer or his authorized representative for approval four (4) weeks prior to his scheduled starting work.

AC1 - 12. TRUCKING AND ROADS

Trucks loaded with loose material that can create a dust, debris or falling hazard shall be secured and covered. Fasten suitable cover, such as tarpaulin, over the load before entering surrounding streets. The Contractor is solely responsible for spillage from their vehicles and such spillage shall be cleaned up immediately. All roads shall be always maintained free of debris. The Contractor is responsible for ensuring all haul routes and site access areas are maintained in a clean and orderly fashion, free from mud, debris and clutter at all times. Special consideration must be given to haul routes that cross active taxiways. No amount of debris at these locations shall be tolerated. The Contractor shall sweep these areas continuously as long as material deliveries are being made.

AC1 - 13. NOISE CONTROL

The Contractor shall comply with all applicable country, local, and installation laws, ordinances, and regulations relative to noise control, to include applicable base quiet hours.

AC1 - 14. EXCAVATIONS

Every trench/excavation, if any, shall be returned to its original condition within ten days of the original excavation; this may be extended to 30 days if approved by the BCE. Contractor shall phase trenching and excavation operations in order to comply. At minimum, Contractor shall restore the site to pre-excavation conditions. All soil stockpiles shall be hidden from view to the maximum extent possible. Prior approval by BCE is required if soil stockpiles are to remain exposed for long periods of time. Dust control measures are the responsibility of the Contractor and shall be implemented as directed by BCE. All road cuts must be approved by BCE prior to execution.

AC1 - 15. LAWN MAINTENANCE

Grassy areas disturbed by any type of construction work including storage, equipment staging, and material delivery areas shall be sodded, or hydro-seeded, where required by BCE. Sodding, or seeding, damaged areas should be accomplished at the earliest planting season possible. Contractor shall be responsible for the successful growth and maintenance of all sodded, or seeded, areas under this contract for a period of thirty (30) days or three mowing after final acceptance of the work. All grass, shrubbery, and ornamental plants fenced by the construction site shall be maintained to base standards by the Contractor.

AC1 - 16. LAWN ESTABLISHMENT

Within seven (7) workdays of actual completion of work at contract site, the Contractor shall prepare all disturbed areas inside and outside of the fenced site for sodding, or hydro-seeding, as provided in contract specifications. Contractor shall restore the site to a condition and appearance equal to or better than existing before the work occurred. Such restoration work will not be considered complete, and the facility not accepted, until approved by BCE. Additionally, no seeding shall be authorized for lawn establishment, whether new, or for restoration purposes unless specifically authorized by BCE.

AC1 - 17. CONSTRUCTION SITE RESTORATION

All Contractor owned items such as, but not limited to, stakes, traffic/safety cones, barriers, warning tape, erosion control fences, that are erected during construction, shall be removed entirely after completion of project and within five (5) days of Government acceptance of the project site. The Contractor, at his own expense, shall return to the site to remove any items left at or near the project site after this time period. All trailers, equipment/storage units, residual construction materials shall be removed also within five (5) days of Government acceptance of the project site.

AC1 - 18. PROCEDURES AND WORK PHASES

Prior to starting any work, the Contractor shall submit a Work Plan for approval by the Contracting Officer. As already mentioned, work can be done only 1ea PAS at the time.

AC1 - 19. INITIAL CONDITION ASSESSMENT

Before the commencement of any work, a **Joint Initial Condition Assessment** shall be conducted by the Contractor, the End User, and the Contracting Officer's Representative (COR/Project Manager and project inspector). This assessment is intended to document the exact as found condition of each PAS door, ensuring full transparency and minimizing the risk of future disputes related to differing site conditions or final performance. The resulting **Joint Initial Condition Assessment Report** shall be signed by all parties and will serve as the official baseline reference for the execution of the works and for all subsequent acceptance evaluations.

AC1 - 20. SALVAGEABLE MATERIALS/MATERIALS DISCARDING

If the scope includes equipment to be removed, stored and subsequently reinstalled, shall be the responsibility of the Contractor to remove salvageable items with maximum care to avoid any damages; and to transport them to the storage areas as indicated by the Contracting Officer (CO). It shall be the responsibility of the Contractor to provide containers for material disposal and/or transportation of the salvageable items. All discarded materials shall be transported to an authorized public dump site by the Regional and National Regulation according to the typology of the related material. Transportation of discarded materials shall be extended, to an authorized dump site, even if the dump site is located outside the authority limits of the Aviano City Council Territory.

AC1 - 21. TECHNICAL SPECIFICATION

Specifications for construction projects of the Air Base in Aviano, Master Technical Specifications Revision 2020 and applicable modification, shall be applicable to the present project, together with the List of Work Items to be performed. All the above-mentioned specifications are available at 31CES/CENM office during duty hours. Furthermore, the works included in this project shall be in accordance, when applicable to the Aviano Design Guide 2020 Revision, NFPA, ASTM, UNI, CEI, NTC 2018 and any other European, Italian and Regional applicable norm and Standard.

AC1 - 22. ATTACHMENTS

The following attachments are included as part of the technical specifications:

- ASHE221058_Attachment 01_Pilot project lesson learned
- ASHE221058_Attachment 02_Pilot project shop drawings
- ASHE221058_Attachment 03_Pilot project steel support structure
- ASHE221058_Attachment 04_Pilot project photo report
- Aviano AB Masterspecs 2020.

Schedule of Material Submittals

Project Number: ASHE 22-1058	**Project Title:** REPAIR DOORS 1ST GEN PASs ZULU LOOP	**Solicitation / Contract Number:**

Line Number	**(To be completed by Project Engineer)**															**(To be completed by Contract Administrator)**								
	Item or Description of Item, Contract Reference, Type of Submittal	Work Items Item n.	Number of Copies Required												Required Submission Date	Date Received in Contracting	Date to Civil Engineering	Return Suspense Date	Submittal Numbers	Date Contractor Notified		Contractor Resubmittal	Final Approval	Remarks
			Certificate of Compliance	Shop Drawings	Samples	Color Selection	Manufacturer's Recommendation	Manufacturer's Warranty	Catalog Data	Operating Instructions	Schedules, Listings, Reports, Plans	Technical Data	Test Reports	Field Reports	Material Safety Dada Sheet (MSDS)						Appro-ved	Disap-proved			
1	Material safety data sheets	4							1	1						Within 30 days from the date of NTP									
2	Grease/Lubricants	4, 8					1		1	1															
3	Anti-rust Paint	6				1	1																		
4	Bearings	4	1	1			1	1	1	1															
5	Seals	4, 6	1	1			1		1	1															
6	Screws, washers	4	1	1			1		1	1															
7	Wall mounted bumpers	6		1			1	1		1															
8	Upper Hinge Housing Block	4		1			1	1		1															
9	Lower Hinge Housing Block	4		1			1	1		1															
10	Main Pivot Pin	4		1			1	1		1															
11	Ceramic gasket disposal certification	10	1																						
12	New ceramic gasket	11	1				1		1																
13	As Built drawings, Doors Mech Assembly, part list, details, O&M manual and required certifications	12		1			1	1		1															

SCHEDULE OF WORK ITEMS

SCHEDULE OF WORK ITEMS

1. EACH ITEM OF THE SCHEDULE IS INCLUSIVE OF FURNISHING AND INSTALLATION OF MATERIALS AND EQUIPMENT, SCAFFOLDING, TRANSPORTATION TO DUMP OR STORAGE OF DEMOLISHED AND/OR REMOVED MATERIALS, IN ACCORDANCE WITH CONTRACTING OFFICER'S INSTRUCTIONS AND ALL FINISHING WORK REQUIRED TO MAKE EACH ITEM COMPLETE IN A WORKMANLIKE MANNER.

2. ALL THE QUANTITIES THAT ARE INDICATED OR SUCCESSIVELY ADDED, ARE ESTIMATES. THEREFORE, THE GOVERNMENT SHALL BE NOT HELD RESPONSIBLE FOR THE ACCURACY OF THE ESTIMATED QUANTITIES. THE CONTRACT REQUIRES A COMPLETED PROJECT ON A LUMP SUM BASIS.
   IT IS THEREFORE THE RESPONSIBILITY OF THE CONTRACTOR TO CALCULATE, FORESEE AND PERFORM ALL QUANTITIES AND WORK NECESSARY EVEN IF NOT MENTIONED IN THE SPECIFICATIONS BUT INCLUDED IN THE DRAWINGS OR MANIFESTLY NECESSARY TO DELIVER A COMPLETE PROJECT BASED ON ITS OVERALL SCOPE.

SCHEDULE OF WORK ITEMS

1. TEMPORARY SUPPORT STRUCTURES: Supply and installation of two temporary steel support frames, which shall be HDG (Hot-Dip Galvanized) steel with a powder coating of RAL 1003, to ensure safe stabilization and controlled handling of each hangar door during all repair activities. Supports must be installed in a manner that does not interfere with adjacent PAS operations and shall remain fully under Contractor responsibility for the entire duration of the works. At the end of the project, the two structures will become the property of the government..
Item includes:

- Design, fabrication, supply, and installation of **two temporary metal support frames** for each door.
- Structural assessment to verify adequate load-bearing capacity and stability.
- Positioning of supports to avoid any disruption to nearby PAS operations.
- Provision of all materials, tools, lifting devices, and safety equipment required for the activity.
- Continuous monitoring and maintenance of the support throughout the works.
- Transport, unloading and positioning of the two supports in a location chosen by the government within area F at the end of the project.
- Full compliance with applicable safety regulations, base access procedures.
- All risks, costs, and liabilities associated with design, installation, use, and removal of the supports.
- All operations necessary for the workmanlike execution of the work.

Item n.	*quantity*	*unit of measure*	*sub-item*
	2	Ea	

2. PAS DOORS REMOVAL: Each hangar door shall be safely detached from its rotating steel box structure and positioned onto the designated temporary supports using certified lifting equipment. All lifting operations shall be executed under Contractor responsibility and planned to ensure full control, stability, and safety throughout the activity.
Item includes:

- Definition of the complete lifting and removal sequence, including risk assessment and method statement.
- Provision and use of suitable crane and certified lifting devices (chains, shackles, eye bolts, slings, etc.).
- Removal of all bolts along the main rotating steel box structure to fully release the door.
- Controlled lifting, handling, and positioned of the door onto the temporary supports previously installed.
- Coordination with adjacent PAS operations to avoid any interference or operational impact.
- Provision of all personnel, tools, equipment, and safety measures required for the activity.
- Full compliance with applicable lifting regulations, base access rules.
- All risks, costs, and liabilities associated with the lifting plan, equipment, and execution.
- All operations necessary for the workmanlike execution of the work.

Item n.	*quantity*	*unit of measure*	*sub-item*
	12	Ea	

3. CLEANING OF REMOVED DOORS AND PERIMETER CONCRETE SURFACES: All removed doors and the entire concrete perimeter of the shelter in contact with the door shall be thoroughly cleaned prior to reinstallation. The Contractor shall also clean all areas surrounding the hinges, pivot assemblies, and any new components installed, ensuring proper adhesion, visibility of defects, and long-term durability of the works.
Item includes:

- Complete cleaning of each removed door leaf, including:
  - Removal of dust, debris, grease, and old residues
  - Cleaning of internal and external surfaces
  - Cleaning of hinge housing, pivoting interfaces, and contact areas
- Thorough cleaning of the concrete perimeter of each shelter where the door interfaces, including:
  - Removal of accumulated dirt, rust stains, and deposits
  - Cleaning of the contact strip between door and concrete
  - Preparation of surfaces for correct sealing and alignment
- Cleaning of all areas around hinges, pivot pins, spring rollers, bumpers, and newly installed components, including:
  - Removal of metal shavings, drilling dust, and installation debris
  - Degreasing where required
  - Ensuring clear visibility for inspection and alignment
- Use of appropriate cleaning methods and products compatible with steel, painted surfaces, and concrete.
- Removal and disposal of all waste generated during cleaning in compliance with applicable regulations.
- Provision of all personnel, tools, materials, and PPE required for the activity.
- Full compliance with applicable safety regulations, environmental rules, base access requirements, and PM instructions.
- All risks, costs, and liabilities associated with cleaning, waste handling, and preparation of surfaces for subsequent operations.
- All operations necessary for the workmanlike execution of the work.

Item n.	*quantity*	*unit of measure*	*sub-item*
	6	Ea	

4. HINGES REPLACEMENT: The existing upper hinge, lower hinge, and main pivot pin of each door shall be fully removed and replaced with new components in accordance with the item list of "*ASHE221058_Attachment 02_Pilot project shop drawings*" and the referenced assembly drawings. All new parts must match the required dimensional tolerances, hole spacing, materials, and treatments specified in the project documentation. The Contractor is responsible for supplying compliant components, performing all reassembly operations, and ensuring full protection and finishing of all new parts.
Item includes:

- Removal and disposal of the upper hinge, lower hinge, and main pivot pin from each door.
- Supply and installation of brand-new components
- Specific hole spacing requirements for left and right pivot pins, including preparation and submission of new shop drawings
- Reassembly of all new components into the hinge subassemblies, including:
- Reinstallation of hinges on the main pivot.
- Reinstallation of the hinge-pivot assembly on the door box structure.
- Replacement of all old screws with new ones of equivalent or superior grade.
- Surface protection and finishing of new components, including:
  - Anti-rust enamel paint on all raw or externally exposed surfaces, color-matched to existing paint.
  - Application of Tectyl 506 on all machined surfaces involved in coupling, rotation, or sliding.
  - Supply of all commercial components exclusively from primary brands such as SKF, FAG (Schaeffler), or Timken. Components from NSK or manufactured in China are not accepted.
- For all machined components (e.g., main pivot pin, upper/lower hinge housings), collection and submission to the Government of:
  - Certificates of chemical composition.
  - Certificates of massive or surface heat treatments.
  - Hardness test results and any other required material certifications.
- Provision of all tools, equipment, personnel, and safety measures required for the activity.
- Full compliance with applicable technical standards, base access rules.
- All risks, costs, liabilities, and potential delays associated with component supply, machining, certification, installation, and reassembly.
- All operations necessary for the workmanlike execution of the work.

Item n.	*quantity*	*unit of measure*	*sub-item*
	12	Ea	

5. SPRING ROLLERS and LOCKING DEVICES: The spring rollers and locking devices installed on each door shall be fully serviced to restore their safety function, operational reliability, and correct alignment. Spring rollers act as safety devices in case of accidental door lowering and must be overhauled to ensure proper performance. All the other locking mechanisms (main door lever, pedestrian door lever, door latches and floor pins) shall be cleaned, lubricated, painted, and adjusted to achieve full functionality.
Item includes:

- Disassembly of spring rollers, including springs, wheels, and related components.
- Cleaning, inspection, greasing, and re assembly of all spring roller parts.
- Application of anti-corrosion enamel paint on exposed or raw surfaces.
- Cleaning, lubrication, and painting of all locking devices, including:
  - Main door locking lever.
  - Pedestrian door locking lever.
  - Floor pins.

- Adjustment of all locking mechanisms to ensure 100% functional operation, including:
  - Alignment correction.
  - Matching and engagement verification.
  - Sealing and closure correction.
- Verification of correct operation of spring rollers as safety devices against accidental door lowering.
- Provision of all tools, materials, consumables, and PPE required for the activity.
- Full compliance with applicable safety regulations, base access rules.
- All risks, costs, and liabilities associated with disassembly, servicing, adjustment, painting, and re-installation of the components.
- All operations necessary for the workmanlike execution of the work.

Item n.	*quantity*	*unit of measure*	*sub-item*
	12	Ea	

6. <u>WALL MOUNTED BUMPERS REMOVAL AND REPLACEMENT</u>: All wall mounted bumpers installed to prevent the steel door from impacting the concrete structure shall be removed and replaced with new devices of equivalent or superior performance. The Contractor is responsible for the complete removal, supply, installation, and structural reinstatement of all anchoring points, including any masonry works required to restore the integrity of the walls.
Item includes:

- Removal of all existing wall mounted bumpers and related anchoring hardware.
- Cleaning, inspection, and preparation of the wall surfaces prior to installation of new devices.
- Supply of new bumpers with dimensions, materials, and shock absorbing performance equivalent or superior to the existing ones.
- Installation of new bumpers using appropriate anchoring systems suitable for the existing wall substrate (concrete, masonry, or mixed).
- Execution of all masonry works required to restore or reinforce the anchoring areas, including:
  - Repair of damaged concrete or masonry.
  - Rebuilding or patching deteriorated sections.
  - Drilling, grouting, and resin anchoring where required.
  - Surface finishing to match the existing wall conditions.
- Verification of correct bumper positioning to ensure proper protection of the steel door during operation.
- Touch up painting or protective coating on repaired wall areas and new bumpers, where required.
- Removal and disposal of all demolition debris and installation waste in compliance with applicable regulations.
- Provision of all personnel, tools, materials, and PPE required for the activity.
- Full compliance with applicable safety regulations, base access rules, and PM instructions.
- All risks, costs, and liabilities associated with demolition, masonry works, supply, installation, alignment, and final functional verification
- All operations necessary for the workmanlike execution of the work.

Item n.	*quantity*	*unit of measure*	*sub-item*
	12	Ea	

7. DOORS RE-INSTALLATION: Each hangar door shall be lifted from the temporary support towers and reinstalled onto the existing slots on the steel columns using suitable lifting equipment. All operations shall be executed under Contractor responsibility, ensuring controlled movements, correct alignment, and full restoration of the door's structural and functional conditions.
Item includes:

- Provision and use of a crane adequately rated for lifting and handling the door.
- Controlled lifting of the door from the temporary support towers.
- Repositioning of the door into the existing slots on the steel columns, ensuring correct alignment and engagement.
- Installation and tightening of all fixing screws with new hardware where required.
- Verification of door alignment, rotation, and smooth operation after reinstallation.
- Touch-up painting on affected areas using anti-corrosion enamel color-matched to the existing finish.
- Implementation of all safety measures, exclusion zones, and communication protocols during lifting operations.
- Provision of all personnel, tools, equipment, and PPE required for the activity.
- Full compliance with applicable lifting regulations, base access rules.
- All risks, costs, and liabilities associated with lifting, alignment, reinstallation, and finishing activities
- All operations necessary for the workmanlike execution of the work.

Item n.	*quantity*	*unit of measure*	*sub-item*
	12	Ea	

8. DOOR ALIGNMENT: Each door leaf shall be aligned to ensure perfect matching of all contact surfaces, full freedom of movement across the entire opening/closing stroke, and proper operation of all locking and sealing components. The Contractor shall perform all adjustments, lubrication, and functional checks required to restore optimal alignment and smooth operation.
Item includes:

- Alignment of each door leaf to ensure perfect matching of all contact surfaces between adjacent doors.
- Verification that each door moves freely and without obstruction across its full stroke, from fully open to fully closed.
- Adjustment of all locks and lower wipers to achieve 100% functional operation, including:
  - Alignment correction.
  - Engagement and sealing verification.
  - Smooth actuation
- Adjustment of the spring wheel to ensure correct lifted position and proper safety function.
- Lubrication of all hinges using heavy duty grease suitable for low temperatures, water exposure, and dust, with preferred (or equivalent approved) products:
  - SKF LGWM 2
  - Klüberlub BE 41 542
  - Mobil Grease Special
- Functional testing of the entire door system after alignment and lubrication.
- All risks, costs, and liabilities associated with alignment, lubrication, adjustments, and functional restoration.
- All operations necessary for the workmanlike execution of the work.

Item n.	*quantity*	*unit of measure*	*sub-item*
	12	Ea	

9. DOORS TEST: Each door shall be tested jointly with the User by performing three consecutive operational cycles to verify correct movement, locking, and alignment. The Contractor is fully responsible for conducting the tests safely, documenting all results, and correcting any issue identified during the process.

Item includes:

- Execution of three consecutive full operational cycles for each door, including:
  - Opening
  - Closing
  - Locking
  - Unlocking
- Joint execution of the test with the User/End User representative.
- Visual inspection after each cycle to identify:
  - Misalignments
  - Improper lock engagement
  - Irregular movements
  - Abnormal noises or resistance
- Immediate correction and adjustment of any issue detected during testing, at no additional cost.
- Preparation and submission of a Test Report, including at minimum:
  - Photographic documentation of each test cycle
  - Notes on alignment, locking, and functional checks
  - Description of any corrective actions performed
  - Final confirmation of successful test completion signed by the Contractor
- Provision of all personnel, tools, equipment, and safety measures required for the activity.
- All risks, costs, and liabilities associated with testing, adjustments, documentation, and retesting until full functionality is achieved.
- All operations necessary for the workmanlike execution of the work.

Item n.	*quantity*	*unit of measure*	*sub-item*
	6	Ea	

10. ASBESTOS-CONTAINING GASKETS REMOVAL (PAS Doors Z6 & Z9): Removal of the two existing perimeter gaskets on PAS doors Z6 and Z9. These gaskets contain asbestos and shall be removed exclusively by a Contractor certified for asbestos handling and disposal in accordance with current Italian legislation. All removal, packaging, transport, and disposal activities must be executed under strict safety and environmental controls, ensuring full compliance with applicable regulations.
Item includes:

- Execution of asbestos removal activities by licensed personnel holding all required qualifications under Italian Law (D.Lgs. 81/2008, Titolo IX, Capo III, and related regulations).
- Preparation and submission of the Piano di Lavoro Amianto (PdL) to the competent authorities, including risk assessment, removal methodology, confinement measures, and waste management plan.
- Implementation of all required containment, isolation, and safety measures, including:
  - Controlled area setup
  - Warning signage
  - Dust suppression systems
  - Use of certified PPE and respiratory protection
- Safe removal of the asbestos containing perimeter gaskets from PAS Z6 and Z9 doors.
- Packaging, labeling, and sealing of asbestos waste in accordance with ADR and Italian regulations.
- Transport and disposal of asbestos waste to an authorized landfill, fully compliant with national and regional requirements.
- Delivery to the Government of the complete disposal certificate, including:
  - FIR (Formulario Identificazione Rifiuto)
  - Disposal plant certification
  - Chain of custody documentation
- Cleaning and decontamination of the work area after removal.
- Provision of all personnel, equipment, materials, and safety systems required for the activity.
- All risks, costs, liabilities, and potential delays associated with asbestos removal, transport, and disposal.

Item n.	*quantity*	*unit of measure*	*sub-item*
	2	Ea	

11. NON-ASBESTOS GASKETS REMOVAL (PAS Doors Z4, Z5, Z11 & Z13): Removal of the four existing perimeter gaskets on PAS doors Z4, Z5, Z11, and Z13. These gaskets are non-hazardous and shall be removed by the Contractor in accordance with current Italian legislation for standard waste. All removal, packaging, transport, and disposal activities must be executed under proper safety and environmental controls.
Item includes:

- Execution of removal activities by qualified personnel in compliance with standard safety practices.
- Preparation and implementation of a safe work plan, outlining the removal methodology and waste management procedures for non-hazardous materials.
- Packaging and labeling of standard construction waste in accordance with Italian regulations.
- Transport and disposal of the waste to an authorized facility, fully compliant with national and regional requirements for non-hazardous waste.
- Delivery to the Government of the waste disposal documentation (FIR - Formulario Identificazione Rifiuto).
- All risks, costs, and liabilities associated with the removal, transport, and disposal of non-hazardous gaskets.

Item n.	*quantity*	*unit of measure*	*sub-item*
	4	Ea	

12. INSTALLATION OF NEW CERAMIC GASKETS: New ceramic gaskets shall be supplied and installed to replace the removed asbestos gaskets on all the six PASs. The new gaskets must match the original dimensions, geometry, and functional properties to ensure proper sealing and operational performance of the PAS doors.
Item includes:

- Supply of new ceramic gaskets with dimensions, characteristics, and performance equivalent to the original asbestos gaskets.
- Verification of compatibility with the existing door structure and sealing interfaces.
- Installation of the new gaskets along the full perimeter of the PASs doors.
- Adjustment and alignment to ensure proper sealing, compression, and functional performance.
- Touch up painting or protective coating where required.
- Removal and disposal of any installation waste in compliance with applicable regulations.
- Provision of all personnel, tools, materials, and PPE required for the activity.
- All risks, costs, and liabilities associated with supply, installation, adjustments, and functional restoration.

Item n.	*quantity*	*unit of measure*	*sub-item*
	6	Ea	

13. AS BUILT DOCUMENTATION DELIVERY: At the completion of all works, the Contractor shall prepare and deliver to the Government two paper copies of the complete As Built Design Package. Drawings composed of, but not limited to a mechanical assembly with ballooning of each trade and drew component, assembly information, dimensions, tolerances (main fit between shaft and bearing and between bearing external ring and support, tightening torque of screws, brand/model/ family of the grease or lubricant to be used), together with a complete part list, section views, detail drawings of each component. All documents must accurately reflect the final configuration of the works performed and comply with the project references and attachments.
Item includes:

- Preparation and delivery of CAD drawings and two complete paper sets of the As Built Design Package.
- Inclusion of all required shop drawings, updated to reflect the final installation conditions, including but not limited to:
  - Left and right pivot pin detail drawings with the specific hole spacing for each shelter, prepared in accordance with reference drawings attached.
- Preparation of a summarizing drawing showing:
  - A top view of the Zulu Loop.
  - Leader notes describing the pivot pin configuration.
  - A table listing the drawing codes of each left and right pivot pin for every shelter.
- Verification that all drawings are complete, accurate, and consistent with the final executed work.
- Use of professional drafting standards, clear annotations, and correct revision control.
- All risks, costs, and liabilities associated with preparation, printing, accuracy, and timely delivery of the As Built documentation.

Item n.	*quantity*	*unit of measure*	*sub-item*
	1	Ls	