

Tender Reference: BELTS/IT/2025/1A

Tender Title: The Design, Supply, Install, Implement, Commission, Maintenance And Support
of IT Network Infrastructure Refresh Project



سولوسي لجوروتراين، لوكيستيك دان لاتيهن بروني
Brunei Engineering, Logistics and Training Solutions

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SECTION 2

TECHNICAL SPECIFICATIONS AND REQUIREMENTS

FOR

THE DESIGN, SUPPLY, INSTALL, IMPLEMENT, COMMISSION, MAINTENANCE AND SUPPORT OF IT NETWORK INFRASTRUCTURE REFRESH PROJECT

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1 INTRODUCTION

1.1 Objective

- 1.1.1 The tender is issued for a project implementation effort with the main aim for a technology refresh initiative optimizing hybrid cloud and on-premise technology.
- 1.1.2 The key implementation objectives are to replace and upgrade BELTS on premise network appliance, implement network monitoring tools and implement solutions to manage and monitor network traffic on all deployment sites.
- 1.1.3 The project implementation shall also include redundancy for primary data center and secondary data center sites. Scalability of the solutions shall also be put into consideration to address future expansions.
- 1.1.4 The expected outcome is to provide secure, highly available and scalable IT systems and infrastructure that support the core business functions towards organizational operational excellence.
- 1.1.5 The tender shall include the supply, site preparation, installation, implementation, commissioning of the whole solution inclusive of all systems' hardware, software, network equipment and infrastructure, with maintenance and support over a period of five (5) years. Where possible and deemed appropriate, solution shall be cost- effective by allowing consolidation of physical server hardware, network infrastructure and deployment of bundled software products.
- 1.1.6 The project implementation shall deliver enhanced control and management of all systems and infrastructure centrally from BELTS Primary Data Center (UNN Colocation) and BELTS secondary Data Center (BELTS head office).
- 1.1.7 Proposed solution and configurations should adhere to the recommendation and comply with CIS Security Controls Version 8 framework.

1.2 Products and Services Sought

- 1.2.1 Tenderers are invited for the design, supply, delivery, installation, configuration, testing, training, commissioning, maintenance and support of new hardware and software, the project management and other related services for a technology refresh of BELTS network infrastructure.
- 1.2.2 Tenderers are required to propose a system solution which can be implemented and commissioned within a strict timeline of **3.5 months** for the entire project's supply, delivery, implementation, UAT and Go-Live by April 2026.
- 1.2.3 The successful Tenderer shall be the Contractor and single point of contact for all products and services offered and shall be fully responsible for the overall project management.
- 1.2.4 The Tenderer shall propose the system solution, including the high-level architecture diagram in **Schedule 9 – Preliminary Design Document** of **Section 3 – Tender Schedules**, which shall demonstrate the capabilities and functions required.

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2 TECHNICAL SPECIFICATION AND REQUIREMENTS

2.1 Deployment Sites

- 2.1.1 The Tenderer shall install and deploy the systems and the relevant infrastructure and components at the following **MANDATORY sites**;
- 2.1.1.1 BELTS Primary Data Center, UNN Colocation (UNN site to be confirmed at a later date)
 - 2.1.1.2 BELTS Head Office, Setia Kenangan Complex, Kiulap (Secondary Data Centre)
 - 2.1.1.3 BELTS Engineering Office, Tapak Perindustrian Salar, Muara (Branch site)
 - 2.1.1.4 BELTS Paintball Arena Jerudong, Kampong Jerudong (Branch site)
- 2.1.2 The Tenderer shall propose installment and deployment of the systems and relevant infrastructure and components at the following **OPTIONAL sites**, which shall be undertaken only upon formal request by BELTS;
- 2.1.2.1 BELTS State Medical Store, Madaras, Rimba (Branch site)
 - 2.1.2.2 BELTS Training, Training Simulation Centre, Penanjong Garrison, Tutong (Branch site)
 - 2.1.2.3 BELTS Training, Naval Training Centre, Tanjung Pelumpong, Muara (Branch site)
- 2.1.3 The Tenderer shall propose all network equipment/appliances that come with redundant power supply components for connection to Uninterrupted Power Supply (UPS) systems at all the deployment sites.
- 2.1.4 All network equipment/appliances **must fit into existing racks at all deployment sites. These existing racks are equipped with existing UPS system.**

Table 2.1.4.1 For Mandatory Deployment Sites

Deployment Sites	Dimension	Quantity
BELTS Primary Data Center	42U, 750 mm Wide x 1200 mm Depth	1
BELTS Head Office / DR Site	42U, 600 mm Wide x 870 mm Depth	2
BELTS Engineering Office	42U, 600 mm Wide x 870 mm Depth	1

Table 2.1.4.2 For Optional Deployment Sites

Deployment Sites	Dimension	Quantity
BELTS Medical Store	28U, 600 mm X 800 mm Depth	1
BELTS Training Simulation Centre	42U, 600 mm Wide x 1100 mm Depth	1

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2.1.5 The Tenderer shall supply and install new additional racks and new UPS system for the following deployment sites and requirements;

Table 2.1.5.1 For Mandatory Deployment Sites

Deployment Sites	Dimension	Quantity
BELTS Paintball Arena Jerudong	28U, 600 mm X 800 mm Depth	1

Table 2.1.5.2 For Optional Deployment Sites

Deployment Sites	Dimension	Quantity
BELTS Naval Training Centre	28U, 600 mm X 800 mm Depth	1

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2.2 Network Infrastructure

2.2.1 The Tenderer shall provide the physical and logical network architecture design for the proposed system with

2.2.1.1 Secure standard-based encrypted transmission using SSL technology on all connections.

2.2.1.2 Redundancy, fail-over and load balancing components to ensure high network uptime and availability for all BELTS sites except for 2.1.1.6 BELTS Paintball Arena Jerudong, Kg Jerudong (Branch site).

2.2.1.3 Dedicated replication link utilizing Ethernet Private Line (50 MBPS) link between Primary Data Center and Secondary Data Center.

2.2.1.4 Secure SD-WAN Connection between BELTS branch sites to Primary data center and secondary data center

2.2.1.5 A minimum capacity to operate the number of devices and users stated in the table below.

Table 2.2.1.5.1 For Mandatory Deployment Sites

	BELTS Primary Data Center	BELTS HQ / Secondary Data Center	BELTS Engineering Office	BELTS Paintball Arena Jerudong
Server (Physical/virtual)	25	10	Nil	Nil
End user	Nil	100	40	2
Workstation	Nil	200	80	4
Printers	Nil	9	3	1

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Table 2.2.1.5.2 For Optional Deployment Sites

	BELTS State Medical Store	BELTS Training Simulation Center	BELTS Naval Training Centre
Server (Physical/virtual)	1	Nil	Nil
End user	70	20	8
Workstation	140	40	16
Printers	3	2	2

2.2.2 The Tenderer shall include with the supply of all network equipment/appliances such as but is not limited to the following components;

2.2.2.1 All wiring, cabling and other components for interconnections between systems at all deployment sites and it should be properly labelled and documented.

2.2.3 The Tenderer shall supply all new network equipment and appliances stated in [Item 1 – NETWORK INFRASTRUCTURE ANNEX A – TECHNICAL SPECIFICATIONS](#) inclusive of all related software to operate them and in the appropriate quantities, and shall be utilised for but is not limited to the following services and/or functions;

2.2.3.1 Next Generation Firewall (NGFW) with features below:

- a. Intrusion prevention
- b. Web application firewall
- c. Ransomware protection
- d. Malware protection
- e. Secure SD-WAN
- f. Universal Zero Trust Network Access

2.2.3.2 Core Switches

2.2.3.3 Access Switches

2.2.3.4 External Switches

2.2.3.5 Wireless Controller

2.2.3.6 Access Points

2.2.3.7 Log Management System

2.2.3.8 Network Monitoring System

2.2.3.9 Enterprise AAA service

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- 2.2.4 The Tenderer shall supply new network appliances and solutions for all deployment sites stated in Clause **2.2.2**.
- 2.2.5 The tenderer shall supply network cables required for the proposed network infrastructure including patch chords.
- 2.2.6 The tendered shall include the implementation of new network connection uplink between the core switch on the 5th floor to the 6th floor access switch at BELTS HQ.
- 2.2.7 Tendered shall implement and configure “Network Shaper” to control the flow of data across the network to regulate bandwidth usage and prioritize traffic of critical services to ensure optimal performance and prevent congestion.

2.3 Business Continuity Management

- 2.3.1 The proposed network infrastructure shall have redundancy, fail-over and workload balancing to ensure systems’ high availability on the primary data center site and secondary data center site.
 - 2.3.1.1 The network solution shall include a disaster recovery capability to be operated at a secondary data center site.
 - 2.3.1.2 The Tenderer shall include a **Disaster Recovery Plan** no later than **two (2) weeks** prior to the date of Commissioning that includes but is not limited to the following:
 - a. Detailed Standard Operating Procedures for DR Management.
 - b. Quarterly failover checks and procedures.
 - c. Synchronization mechanism.
 - d. Alerts and Reports.

2.4 Hardware

- 2.4.1 The Tenderer shall specify the **List of Hardware** to be supplied in **Schedule 6 of Section 3 – Tender Schedules**, in order to meet the requirements of relevant **Clause 2.2 to 2.9** of this **Section 2 – Technical Specifications and Requirements**, whereby the proposed hardware shall meet or exceed the following:
 - 2.4.1.1 Delivers high performance, responsiveness, and reliability of the entire system solution to support the business operations.
 - 2.4.1.2 Delivers high availability and redundancy of the entire system solution to ensure continuity of daily business operations.
 - 2.4.1.3 All new hardware supplied by the Tenderer shall have standard manufacturer warranty from the Original Equipment Manufacturer for a coverage period of **five (5) years**.
- 2.4.2 **Obsolescence Management**
 - 2.4.2.1 The Tenderer shall propose up-to-date hardware for this project, whereby the item’s debut to market does not exceed more than **eighteen (18) months** from the Tender Submission Deadline.
 - 2.4.2.2 In the event where the proposed hardware exceeds its debut to market beyond **eighteen (18) months** at the time of Contract Award, the Contractor shall supply and deliver hardware that is equivalent to or better than their initially proposed

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hardware.

- 2.4.2.3 The final list of hardware shall require approval from BELTS, prior to supply and delivery.

2.5 Software

- 2.5.1 The Tenderer shall propose all software and licenses in order to meet all requirements as stated in relevant **Clause 2.2 to 2.9** of this **Section 2 – Technical Specifications and Requirements**. All software supplied shall be procured with;
 - 2.5.1.1 all relevant licenses to operate the entire system and users as stated in **Clause 2.2.1.5**.
 - 2.5.1.2 inclusive of all costs from the initial acquisition and all subsequent renewal fees for a coverage period of **five (5) years**.
- 2.5.2 The Tenderer shall propose software to cater for all necessary system environments, including the production environment, testing environment, training environment, and etc. whereby the Tenderer shall be responsible for the preparation of their own development and testing environment.
- 2.5.3 The Contractor shall also be responsible to provide its own software/tools to perform all Implementation and Related Services (see **Clause 3**).
- 2.5.4 The full **List of Software and Licenses** shall be included by the Tenderer in **Schedule 7** of **Section 3 – Tender Schedules**.
- 2.5.5 For the software proposed in **Clause 2.11.1** the Tenderer shall propose the newest stable version of software available.
- 2.5.6 All software and utilities package proposed by the Tenderer shall be made available in the British English Language.
- 2.5.7 The Tenderer shall propose for all necessary licenses for software and hardware licenses (if any) listed above, that are required to be installed on site(s) and any required hardware. The full list of licenses to be included in **Schedule 7** of **Section 3 – Tender Schedules**.
- 2.5.8 The Tenderer shall ensure that all software and hardware licences (if any) are sufficiently proposed to enable all devices to operate in full.
- 2.5.9 The Tenderer shall ensure that all software and hardware licences (if any) are sufficiently proposed to enable all devices to operate in full.
- 2.5.10 The Tenderer shall ensure that all licenses provided as per **Clause 2.11.4** shall be valid within the coverage period of five (5) years.
- 2.5.11 The Contractor shall be responsible for scheduling and executing any software updates or patches, and to schedule upgrades or updates as necessary, within the Warranty and Support period. Prior to any upgrades, the Contractor shall also be responsible in ensuring that upgrades or updates shall not negatively impact existing software, and to minimise the period of downtime.
- 2.5.12 The Contractor shall provide the original Installation media and user guide for the proposed solution.

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3 IMPLEMENTATION AND RELATED SERVICES

3.1 General Requirements

- 3.1.1 Implementation and Related Services refer to the services provided by the awarded Tenderer ("The Contractor") from the commencement of the Implementation Phase of the project to the complete and stable business operation of the solution, and includes the following:
- 3.1.1.1 Project Management;
 - 3.1.1.2 Implementation Services;
 - 3.1.1.3 Installation and Integration;
 - 3.1.1.4 User Acceptance Testing;
 - 3.1.1.5 Change Management;
 - 3.1.1.6 Data Migration;
 - 3.1.1.7 Training;
 - 3.1.1.8 Warranty; and,
 - 3.1.1.9 Maintenance and Support.
- 3.1.2 The Contractor shall warrant that the proposed overall solution design, infrastructure, components, and related maintenance and support services shall achieve but are not limited to the following expectations:
- 3.1.2.1 Value for Money;
 - 3.1.2.2 Positive Return on Investment;
 - 3.1.2.3 Highly Efficient and Highly Available; and,
 - 3.1.2.4 Robust and Scalable, with a minimum service life of **five (5) years**.
- 3.1.3 BELTS shall furnish the Contractor with pertinent information, knowledge, and assistance as the Contractor may reasonably and properly require to enable it to perform its obligations stipulated in this tender.
- 3.1.4 The Contractor shall exercise all reasonable skills, care, and diligence in its conduct of the implementation and related services.
- 3.1.5 Contractor shall comply with all reasonable instructions of the BELTS Project Team so far as they are applicable to the implementation and related services. Nothing in this paragraph shall be deemed to affect the responsibility of the Contractor in connection with the duties undertaken by it under this Tender.

3.2 Project Management

- 3.2.1 The Tenderer is required to submit an initial **Project Implementation Plan** in **Schedule 8 of Section 3 – Tender Schedules** for the Implementation and Related Services as listed in **Clause 3.1.1**, which includes at minimum the following:
- 3.2.1.1 Overview of Project Management approach;
 - 3.2.1.2 Estimated Project Duration;

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- 3.2.1.3 Overview of Project Stages and estimated duration, to be displayed on a Project Timeline or Gantt Chart;
 - 3.2.1.4 Description of key activities, deliverables, or project milestones at each Project Stage; and,
 - 3.2.1.5 Identification of initial risks and their mitigation (**Risk Management Plan**).
 - 3.2.2 The Contractor shall produce a **Detailed Project Implementation Plan** within **one (1) week** after Contract Award, which includes detailed breakdown of the works to be conducted, and describes at minimum but not limited to:
 - 3.2.2.1 A Detailed Project Master Schedule
 - 3.2.2.2 The detailed breakdown of activities (Work Breakdown Structure) and their duration and sequence
 - 3.2.2.3 Project Milestones
 - 3.2.2.4 Project Resource Requirements required for specific stages in the Implementation Phase
 - 3.2.2.5 Project Deliverables to be produced on completing specific Project Milestones
 - 3.2.2.6 Project and Quality Management Approach such as Project Governance
 - 3.2.2.7 Approach for continuous Risk Identification
 - 3.2.3 The Contractor shall nominate, at minimum, one full-time Project Manager, whereby the responsibilities of the Project Manager shall be, but not limited to, the following:
 - 3.2.3.1 Perform day-to-day planning, control, and administration of the project, including acting as liaison between other suppliers/sub-contractors and the project team;
 - 3.2.3.2 Oversee, control, prepare Progress Reports, and monitor the performance of all services throughout the Implementation Phase, in accordance to the **Detailed Project Implementation Plan**;
 - 3.2.3.3 Advise BELTS in a timely manner on any deviations from the Detailed Project Implementation Plan, and to recommend appropriate preventive and corrective actions;
 - 3.2.3.4 Ensure the successful implementation of the solution within the specified schedule and timeframe, and in accordance to the specifications and performance expectations; and,
 - 3.2.3.5 Attend regular and ad-hoc meetings, progress briefings, and reviews for end-stage evaluations for project milestones as required by BELTS.
 - 3.2.4 Replacement or substitution of the full-time Project Manager shall require the prior written consent of BELTS. In the event that the proposed human resource suddenly becomes unavailable, the Contractor shall be responsible to find an acceptable, qualified, and equivalent substitute within **three (3) working days**.
 - 3.2.5 The Contractor shall provide quality management and assurance services, including regular quality checks on Implementation and Related Services, as well as quality assurance on all the deliverables.
 - 3.2.6 In addition, the Contractor shall be responsible for managing and overseeing all the works and services performed during the Implementation Phase, including those provided by its Sub-Contractor(s).

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3.3 Implementation Services

- 3.3.1 The Tenderer shall submit in **Schedule 4 of Section 3 – Tender Schedules**, their company and proposed personnel's track records or past experiences in similar IT refresh project implementation and deliverables of the proposed hardware, software, appliances and systems including any supporting qualifications or references.
- 3.3.2 **Design**
- 3.3.2.1 The Tenderer shall submit a **Preliminary Design Document** in **Schedule 9 of Section 3 – Tender Schedules** for the proposed solution, in accordance to the requirements and specifications in **Clause 2**.
- 3.3.2.2 On award, the Contractor shall conduct a detailed system and architecture analysis and design exercise taking into considerations the existing infrastructure and systems at all deployment sites, and submit a **Detailed Design Document** as part of the Implementation Services for the proposed solution for the review and approval by BELTS.
- 3.3.2.3 The **Detailed Design Document** shall be developed no more than **four (4) weeks** after the commencement of the Contractor's services.
- 3.3.2.4 The Contractor shall be responsible for revising and re-submitting the **Detailed Design Document** subject to amendments, discrepancies, or requirements as identified by BELTS.
- 3.3.3 **Develop**
- 3.3.3.1 The Contractor shall develop the proposed solution based on the approved **Detailed Design Document** as stated in **Clause 3.3.2.2**.
- 3.3.3.2 Any deviation to the **Detailed Design Document** shall be formally communicated to BELTS via the Project Manager, and shall require the prior written consent of BELTS before its execution.
- 3.3.4 **Supply**
- 3.3.4.1 The Contractor shall ensure that the supplied hardware and software does not deviate from those listed in **Clause 2**, without prior written consent from BELTS.
- 3.3.4.2 In the event of product discontinuity or unavailability for items to be supplied, the Contractor shall secure a suitable replacement of the product with similar or higher specifications than those stated in **Clause 2**.
- 3.3.4.3 The Contractor shall ensure that the replacement item as per **Clause 3.3.4.2** above is compatible to the proposed solution and application.
- 3.3.4.4 The Contractor shall submit the **Bill of Materials (BOM)** as part of the Implementation Services for the proposed solution, which shall consist of all products to be supplied no more than **four (4) weeks** prior to the date of delivery, for the review and approval by BELTS.
- 3.3.4.5 The prices for the supply of hardware and software shall be firm and fixed, and detailed in **Schedule 18 of Section 3 – Tender Schedules**.
- 3.3.5 **Delivery**
- 3.3.5.1 The Contractor shall deliver the hardware and software to be supplied, in accordance to the scheduled date within **Detailed Project Implementation Plan** as per stated in **Clause 3.2.2**.

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- 3.3.5.2 The Contractor shall be responsible for provisioning all the necessary equipment, tools, and etc. to perform the delivery services to the designated BELTS site(s), at no additional cost to BELTS.

3.3.6 Installation

- 3.3.6.1 The Tenderer shall inform BELTS of any alterations, modifications, or renovations required to the designated BELTS site(s), in order to successfully install the proposed solution, and shall be appropriately costed as part of the supply of hardware and software in **Schedule 18 of Section 3 – Tender Schedules**. Additional alteration, modification, or renovations shall be considered as part of the works, and shall come at no additional cost to BELTS.
- 3.3.6.2 The Contractor shall submit an **Installation Test Plan** as part of the Implementation Services for the proposed solution, no more than **two (2) weeks** prior to the commencement of the Installation Testing period for BELTS's review and approval.
- 3.3.6.3 The Contractor shall perform installation services of all the hardware and software to be supplied including wiring/cabling for the interconnection between various components and/or systems at the designated BELTS site(s) in accordance to the design and specifications proposed.
- 3.3.6.4 The Contractor shall ensure that all delivered hardware are installed with the relevant and required drivers, software and application.
- 3.3.6.5 The Contractor shall take all necessary measures to minimise interruption or downtime to BELTS operations during the installation works.
- 3.3.6.6 The Contractor and its workers shall observe all ordinances and/or regulations enforced in Brunei Darussalam, as well as maintain compliance to any procedures and/or instructions deemed reasonably necessary by the responsible organisation throughout the performance of Installation Services at all designated site locations.
- 3.3.6.7 The Contractor shall also take appropriate measures to protect the installation sites and the existing facilities from damaged caused by the installation works.
- 3.3.6.8 The Contractor shall ensure that all hardware and software are installed to good working conditions, and perform all installation tests to the satisfaction of BELTS in accordance to the Installation Test Plan as per Clause 3.3.6.2.
- 3.3.6.9 The Contractor shall produce an Installation Test Report to be submitted no more than two (2) weeks upon completing the installation tests as per Clause 3.3.6.8, detailing the outcomes of the installation tests, and shall detail at minimum but not limited to:
- 3.3.6.10 Tabulated testing procedures;
- 3.3.6.11 Outcomes of the test procedures;
- 3.3.6.12 Success or Non-Compliance statements; and,
- 3.3.6.13 Acknowledgement or acceptance of non-compliance statements.
- 3.3.6.14 The Contractor shall be responsible to make-good of any damage to BELTS property at no additional cost to BELTS which may occur as a result of the works performed during installation or at any point of the Implementation Services and as well as the subsequent Maintenance and Support Services.

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3.3.7 Configuration

- 3.3.7.1 The Contractor shall perform configuration services for the hardware and software as per the scheduled dates in the **Detailed Project Implementation Plan in Clause 3.2.2**, to ensure the proposed solution configuration baselines are recorded and tracked over the duration of the Implementation Services.
- 3.3.7.2 The Contractor shall document all hardware and software configuration states either in its factory default setting or customised settings, of all hardware and software deployed for this project. The configuration states shall be detailed in a **Configuration Management Document**, which shall be delivered no more than **two (2) weeks** after completing the configuration services.

3.3.8 Testing

- 3.3.8.1 The Contractor shall perform the Testing services for the proposed solution in accordance to the requirements described in **Clause 3.3.6.8, 3.4.4, and 3.5**.
- 3.3.8.2 All test procedures shall be conducted in the presence of the BELTS representative(s), using the approved test plans.
- 3.3.8.3 The Contractor shall be responsible for provisioning of all the necessary material, resources, equipment, tools, test environments and etc. as needed to perform the test procedures at no additional cost to BELTS.
- 3.3.8.4 In the event that test procedure was not successfully completed, BELTS may call for a re-test, or revision of the test procedure at the expense of the Contractor.

3.3.9 Commissioning

- 3.3.9.1 The system shall be commissioned upon completion of all testing procedures and on formal acceptance by BELTS.
- 3.3.9.2 Prior to Commissioning, the Contractor shall ensure that all relevant material has been transferred to the custody of BELTS, and that all services and deliverables to be provided as part of the Implementation Services have been completed and accepted by BELTS.
- 3.3.9.3 The relevant material and deliverables to be accepted by BELTS shall include all items stated in **Clause 4**, and any which might be requested in writing by BELTS over the course of the Implementation Services.
- 3.3.9.4 Following Commissioning, the Contractor shall be responsible for conducting a Post-Implementation Review which shall include but not limited to the following:
 - a. To evaluate the overall solution and services delivered, and ensure that all outstanding issues have been satisfactorily resolved;
 - b. To propose solutions, corrective actions, or improvements to the system and the relevant support services;
 - c. To evaluate utilisation of the system functionality to attain its full usage and productivity; and,
 - d. To determine a system upgrade and support roadmap to ensure sustainability of the system implemented.

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3.4 Acceptance Testing

- 3.4.1 The **User Acceptance Test** shall be performed after all installation, integration, and configuration works have been successfully completed, tested and accepted by BELTS.
- 3.4.2 The proposed acceptance test procedures shall be designed in that the solution demonstrates the relevant system characteristics:
- 3.4.2.1 Hardware is delivered as per the requirements specified in **Clause 2.10**;
 - 3.4.2.2 Software is delivered as per the requirements specified in **Clause 2.11**;
 - 3.4.2.3 The solution is able to perform and meet the requirements as detailed in **Annex A** of this **Section 2 – Technical Specifications and Requirements Document**, subject to any non-compliance as agreed by BELTS; and,
 - 3.4.2.4 The solution delivered is compatible and fully integrated with existing systems, software, hardware, and infrastructure.
- 3.4.3 The Contractor shall prepare and submit an **Acceptance Test Plan** detailing the acceptance procedures described in **Clause 3.5.2** no more than **two (2) weeks** prior to the scheduled testing period for BELTS's review and approval. If within the reasonable opinion of BELTS that the acceptance procedures do not sufficiently test all the functions and facilities of the system specified, the Contractor shall be responsible for amending the **Acceptance Test Plan** to the satisfaction of BELTS.
- 3.4.4 All acceptance test procedures shall be performed in the presence of nominated BELTS representative(s). In the event that an acceptance test procedure was not successfully completed, BELTS may call for a re-test at the expense of the Contractor.
- 3.4.5 The Contractor shall be responsible for providing all labor, materials, transportation, and documentation required to conduct the acceptance tests.
- 3.4.6 On completion of the User Acceptance Test, the Contractor shall be required to submit **two (2)** copies of the **Acceptance Test Report**. An Provisional **Acceptance Certificate will be issued by** BELTS to the Contractor. BELTS shall countersign the **Acceptance Test Report** and Provisional **Acceptance Certificate** to indicate acceptance of deliverables in-line with the system Go-Live date.

3.5 Change Management

- 3.5.1 The Contractor shall perform Change Management services, to ensure smooth transition of BELTS personnel onto the implemented solution.
- 3.5.2 The Contractor shall submit a **Change Management Plan**, which shall be submitted to BELTS not more than **one (1) month** after the completion of the Design and Development services for review and approval. The **Change Management Plan** shall provide a description of but is not limited to:
- 3.5.2.1 Proposed User engagement and transition strategy;
 - 3.5.2.2 Proposed breakdown of change activities and their schedules;
 - 3.5.2.3 Procedures for reviewing change outcomes; and
 - 3.5.2.4 Document version control.

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3.6 Data Migration

- 3.6.1 Where and if it is deemed applicable, the Tenderer shall submit a detailed and comprehensive **Data Migration Plan** in **Schedule 11** of **Section 3 – Tender Schedules** should the Tenderer identified and proposed any data migration needed for this project. Data Migration Plan shall provide information on how the data migration effort shall be conducted.
- 3.6.2 The **Data Migration Plan** shall indicate the proposed methodology , including but is not limited to:
 - 3.6.2.1 Breakdown of Data Migration activities;
 - 3.6.2.2 Description of Data Items required for the proposed solution to operate; and,
 - 3.6.2.3 Description of method used for Data Migration.
- 3.6.3 The Tenderer shall list down the use of any hardware and/or software required for the Data Migration effort in **Schedule 6, 7, and 18** of **Section 3 – Tender Schedules** respectively including any applicable licenses which are required for its duration.

3.7 Training

- 3.7.1 The Tenderer shall submit a detailed and comprehensive **Training Plan** in **Schedule 12** of **Section 3 – Tender Schedules**, which shall provide information on how the Training Package shall be delivered, its breakdown, and scheduling in accordance to the requirements described in **Clause 3.8.7 to 3.8.9**.
- 3.7.2 The **Training Plan** document shall indicate a programme of courses to facilitate training for the categories detailed in **Clause 3.8.7.9**, and describes at minimum, but is not limited to the following:
 - 3.7.2.1 Training objectives of each course or session;
 - 3.7.2.2 Sequence of learning activities;
 - 3.7.2.3 Outline curriculum of the courses;
 - 3.7.2.4 Category of Trainee, e.g. Administrator, and etc.;
 - 3.7.2.5 Training mode, e.g. classroom-based, online training, hands-on supervision;
 - 3.7.2.6 Training venue;
 - 3.7.2.7 Required resources;
 - 3.7.2.8 Proposed duration and schedule; and,
 - 3.7.2.9 Post course assessment method, if applicable.
- 3.7.3 The Contractor shall coordinate closely with BELTS to finalize the **Training Plan** in accordance with any amendments and/or requirements from BELTS which may arise during the Implementation Period of the project.
- 3.7.4 The Contractor shall also be responsible for amending the Training Plan should any scheduling conflicts be made aware in writing by BELTS representative.
- 3.7.5 BELTS reserves the right to accept part of or all of the training courses, and the Contractor may be instructed by BELTS to amend the **Training Plan** as necessary.
- 3.7.6 The Contractor shall be responsible for submitting a revised **Training Plan** to BELTS for review and approval prior to commencement of Training Services.

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3.7.7 General Requirements

- 3.7.7.1 The Contractor shall provide training to meet the following objectives:
- a. To enable BELTS Technical Team to manage and administer all systems on a day-to-day basis, including common troubleshooting, configuration, and routine management through the systems' back-end;
 - b. To enable knowledge transfer from the Contractor to BELTS nominated Technical Team, the capability of providing minimum Level-2 support and maintenance;
- 3.7.7.2 The Contractor shall provide qualified trainers with the expectation that Trainers are able to communicate well and attend to various training needs of the Trainees at all levels.
- 3.7.7.3 BELTS may, at its discretion, request for replacement Trainers should the Trainers fail to meet the requirements described in **Clause 3.8.7.1** and **3.8.7.2**.
- 3.7.7.4 The Contractor shall be responsible for providing all equipment necessary to successfully deliver all trainings. This shall include any devices, equipment, workstations with access to the system, presentation slides, Trainer's guides, and etc., as deemed necessary for efficient delivery of each training course or session.
- 3.7.7.5 The Contractor shall deliver training preferably on premise, using the systems deployed, unless explicitly instructed or requested by BELTS. The Contractor shall make all reasonable efforts to prepare the training environment in said premises accordingly.
- 3.7.7.6 The Contractor shall deliver the training in the English language, and shall supply all necessary resources and training material in the English language.
- 3.7.7.7 The Contractor shall prepare and supply each Trainee with a complete set of up-to-date **Training Documents** and materials as a deliverable prior to the acceptance of Training services. BELTS reserves the right to reject or delay acceptance of the Training services due to incomplete supply of training material to Trainees.
- 3.7.7.8 All reference and training materials supplied in accordance to **Clause 3.8.7.7** shall become the property of BELTS for reproduction, duplication, transfer, or as otherwise handled by BELTS as they see fit. Master copies of the **Training Documents** shall be provided to BELTS in both hardcopy and softcopy formats.
- 3.7.7.9 The Contractor shall prepare and deliver the following categories of Training:
- a. Administrator Training (minimum Level 2 Support);
- 3.7.7.10 The Contractor shall be responsible for qualifying or ensuring that all trainees are sufficiently trained, and are capable of executing their daily operations on the system without supervision or regular support.

3.7.8 Administrator Training

- 3.7.8.1 The Contractor shall be responsible for conducting Administrator Training for all BELTS Technical Team prior to the commissioning of the System.
- 3.7.8.2 The Contractor shall be responsible for designing and delivering the appropriate mode of training, which is set-up in such a way that it closely replicates or represents the actual workflow and operational processes of the working environment allowing BELTS Technical Team to familiarise with the processes and procedures.

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- 3.7.8.3 The training course shall at minimum deliver the following outcomes:
- a. Familiarisation of the main functionalities of the system, system troubleshooting, monitoring, configuration, and any other relevant administration functions that will enable the System Administrators/Technical Team to perform a minimum of Tier 2 level support maintenance and skill sets.
- 3.7.8.4 In addition, the Contractor shall supply all relevant documentations and reference material required to perform the activities in **Clause 3.8.9.3** as part of the **Training Documents** deliverable.

3.8 Warranties

- 3.8.1 The Contractor shall provide **six (6) months Defects Warranty Period** for the system which shall commence after the all deliverables stated in the Implementation Services are completed, and after acceptance of the entire system. This period is also referred to Stabilisation Warranty Period in which the contractor will be responsible for resolving any defect and/or issue that may arise.
- 3.8.2 The Defects Warranty Period stated in **Clause 3.9.1** shall include Warranty Services which shall not be chargeable to BELTS and includes:
- 3.8.2.1 Replacement or repair of unserviceable hardware parts where any of the items are found to be:
- a. Defective in design, materials, or workmanship;
 - b. Supplied as a whole or part of a design or configuration which is not in accordance to the agreed specifications; or,
 - c. Unable to function properly of meet the desired performance requirements, through no fault of BELTS or its End-Users.
- 3.8.2.2 Replacement, reconfiguring or software where any of the items are found to be:
- a. Defective in design, materials or workmanship;
 - b. Incompatible or in conflict with existing platforms, software and/or applications;
 - c. Supplied as a whole or part of a design or configuration which is not in accordance to the agreed specifications; or,
 - d. Unable to function properly or meet the desired performance requirements, through no fault of BELTS or its End-Users.

3.9 Maintenance and Support

- 3.9.1 Following the expiry of the Defects Warranty Period, the Tenderer shall provide maintenance and support services for the system implemented according to the terms specified and in accordance with the requirements detailed in this **Clause 3.10**.
- 3.9.2 The Tenderer shall propose the **Maintenance and Support Plan** in **Schedule 13** of **Section 3 – Tender Schedules** which shall provide a breakdown of the activities performed, its associated costs in accordance to the requirements detailed in this **Clause 3.10**.
- 3.9.3 The Contractor shall be responsible for providing maintenance and support services in accordance to the **Maintenance and Support Plan** for a period of **five (5) years**.
- 3.9.4 The Tenderer shall detail within the **Maintenance and Support Plan** the various maintenance levels offered, and person(s) responsible (by role) to support the entire system over the

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- duration of the service period. This shall also include details on how the support shall be delivered, i.e. remotely, on-premise and etc.
- 3.9.5 The Tenderer shall also indicate the proposed response times for the different maintenance levels, and expected defect rectification period or downtime.
- 3.9.6 The Contractor shall ensure a suitable **Maintenance and Support Plan** shall enable BELTS to achieve a system availability of **99.9%** availability.
- 3.9.7 The Contractor shall make available, a locally based maintenance and support team, which shall be capable of responding to BELTS maintenance and support requirements up to Level 3 Maintenance and Support capabilities.
- 3.9.8 The Contractor shall establish a direct line, helpdesk and/or email and detailed processes for raising customer service requests to be made accessible to BELTS Technical Team, and documented within the **Maintenance and Support Plan**.
- 3.9.9 The Contractor shall ensure that the direct line, helpdesk and/or email shall be manned and accessible to BELTS Technical Team during normal working hours of **08:00hrs to 19:15hrs Monday to Saturday**.
- 3.9.10 The Contractor shall perform maintenance and support services which shall include but are not limited to:
- 3.9.10.1 Providing general guidance and support to BELTS Technical Team in resolving system errors or failures either remotely or on-premise;
- 3.9.10.2 Diagnosing or troubleshooting defects, bugs, or recurring issues, either remotely or on-premise;
- 3.9.10.3 To attempt defect, bug, or issue rectification remotely or on-premise;
- 3.9.10.4 Recording customer complaints or bug reports, and raising issue tickets as End-User reference; and
- 3.9.10.5 Raising defects or identified faults to relevant maintenance and support team for corrective action (as necessary).
- 3.9.11 **General Requirements**
- 3.9.11.1 The Contractor shall ensure that execution of maintenance and support services shall have minimal disruption to BELTS operations, and needs to be pre-planned and scheduled well ahead.
- 3.9.11.2 On completion of any maintenance and support service, the Contractor shall submit a **Maintenance Report** which details at minimum but not limited to the following:
- a. Identified defects, bugs, issues, and etc.;
- b. Overview of works performed e.g. inspections, corrective actions, and etc.; and,
- c. Proposed follow-ups, or date of next activity.
- 3.9.12 **Preventive Maintenance**
- 3.9.12.1 The Contractor shall provide on-site **quarterly inspections and preventive maintenance** of all hardware and software supplied by the Contractor or its Sub-contractors, in accordance to the **Maintenance and Support Plan**.
- 3.9.12.2 The scope of Preventive Maintenance Services shall include but not limited to:
- a. Perform routine inspections of hardware and software;

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- b. Ensure that all systems is up-to-date and in good working condition by performing scheduled updates, patches, and fixes;
- c. Perform Installation and Testing for software updates and patches when new software releases are made available;
- d. Perform system performance analysis to identify problem areas;
- e. Provide recommendations for replacement or upgrade of hardware and software components of the system to rectify problem areas or defects; and,
- f. Perform any other works the Contractor deems necessary to ensure good-working condition of the system.

3.9.12.3 The Contractor shall be responsible for minimising disruptions to daily operations when conducting Preventive Maintenance Services, including scheduling works to be performed during BELTS off-hours.

3.9.13 Corrective Maintenance

3.9.13.1 The Contractor shall perform Corrective Maintenance Services to restore the system functions and capabilities on an ad-hoc basis or upon the request of BELTS.

3.9.13.2 In the event of a defect or issue arising within the system which necessitates Corrective Maintenance, the Contractor shall make available their expertise in order to:

- a. Perform the necessary corrective actions which include, assessing, diagnosing, repairing, or resolving the defect/issue in accordance to the Contractor's obligations within the Warranty Period; or,
- b. Beyond the Warranty Period, propose the complete scope of rectification or corrective actions required to restore the system functions and capabilities, and its associated costs, to be submitted to BELTS for review and approval;
- c. Upon receiving approval or formal instructions to proceed, to repair and rectify the defect/issue in accordance to the proposed work scope; and,
- d. Perform any necessary reconfiguration, installation, recovery, re-commissioning, data transfer, or other works as necessary.

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4 DOCUMENTATION AND DELIVERABLES

4.1 General Requirements

- 4.1.1 The Contractor shall be responsible for producing all relevant deliverables and documentations for the purpose of ensuring successful delivery of the proposed solution and the associated services as specified in this Tender.
- 4.1.2 The Contractor shall be responsible for maintaining proper documentation control and versioning for all materials and documentation as required in this **Clause 4.1**.
- 4.1.3 The Contractor shall submit and handover **two (2) printed copies** and **one (1) editable soft copy** format of all deliverables and documentation as required in this **Clause 4.1**, in a format which is compatible with Microsoft Office, in accordance to **Annex B – List of Deliverables and Documentation** of this **Section 2 – Technical Specifications and Requirements**.
- 4.1.4 All deliverables and documentations provided by the Contractor shall be written clearly in the English Language.
- 4.1.5 The Contractor shall be responsible for providing any revised editions, supplementary materials, or new publications relevant to the operation of the proposed solution at no additional cost to BELTS.

4.1.6 Acceptance of Documentation and Deliverables

- 4.1.6.1 The Contractor is required to produce and deliver all the relevant deliverables and documentation in accordance to the descriptions and periods specified in **Annex B** of this **Section 2 – Technical Specifications and Requirements** or as otherwise agreed in the approved **Detailed Project Implementation Plan** as per **Clause 3.2.2**.
- 4.1.6.2 The Contractor shall be responsible for timely submission of the deliverables and documentations to allow for sufficient review, revisions, and acceptance by BELTS.
- 4.1.6.3 Prior to acceptance to the deliverables or documentation by BELTS, the Contractor shall be responsible for executing any corrections or amendments to the deliverables or documentation as advised or required by BELTS as a result of the review in **Clause 4.1.6.2**.

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5 HEALTH, SAFETY, SECURITY AND ENVIRONMENT MANAGEMENT

5.1 Additional Defined Terms

Where used in this Section, the following capitalized words and expressions will have the following meanings. Other capitalized words in this Section have the meaning given to them in the Definitions and Interpretation Section of the Contract.

ALARP	(As Low As Reasonably Practicable) meaning the principle of reducing risk to the lowest level that is achievable without disproportionate cost or effort.
Emergency Response	Coordinated measures and procedures undertaken during or immediately after an incident to protect people, property, and the environment.
Hazard	An agent with the potential to cause harm to people, damage to assets, or an impact on the environment or reputation.
High Potential Incident	A HIGH POTENTIAL INCIDENT can result in injury, or illness to people or damage to assets, the environment or COMPANY's reputation, or it can be a near miss.
HSSE	Health, Safety, Security and Environment
HSSE-MS	(HSSE Management System) meaning a documented system comprising the structure, practices, procedures, processes, resources and responsibilities that a business does to manage and meet its HSSE objectives.
Incident	An unplanned event or chains of events that result or could result, as in the case of near misses, in injury or illness to people of damage to assets, the environment or reputation.
Permit To Work (PTW)	A written system used to control and approve work and to communicate work requirements. It identifies the individuals who are responsible for specifying controls, verifies conditions at the work site authorizes the work, and records by signature the individual's understanding of these controls and duties.
SHENA	Safety, Health and Environment National Authority of Brunei Darussalam.
Workplace Safety and Health (WSH)	The overall discipline and practice of ensuring safe and healthy work environments through compliance with laws and standards.

5.2 General Requirements

In connection with performance of the Services, the Contractor will adhere to the following requirements:

- 5.2.1 The Contractor in performing Services, will conduct all activities in accordance with the Contractor's HSSE-MS, the requirements of which are further detailed below.
- 5.2.2 Where the Contractor identifies that there are risks associated with scope of the Project which are not covered by the HSSE Standards, or where the Contractor concludes that HSSE Standards may be inadequate, the Contractor will immediately notify BELTS. The Contractor will thereafter work with BELTS to agree on additional or revised HSSE Standards prior to proceeding with the relevant part of scope of the Project.

5.3 HSSE Management System (HSSE-MS)

- 5.3.1 The Contractor will ensure it has an effective HSSE-MS that meets the BELTS applicable HSSE

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Standards as determined by BELTS. At BELTS request, and without limiting the Contractor's obligations, the Contractor will provide BELTS information documenting the Contractor's HSSE-MS for review by BELTS.

- 5.3.2 BELTS has the right to verify the overall effectiveness of the HSSE-MS in place and assuring that the HSSE-MS of both BELTS and the Contractor are materially equivalent.
- 5.3.3 If the Contractor's HSSE-MS is certified by a recognized body, the Contractor will ensure that such certification remains in place during the entirety of the performance of the Services.

5.4 HSSE Leadership and Commitment

- 5.4.1 The Contractor shall, at all times, comply with relevant national legislation requirements, including but not limited to requirements stipulated under the Workplace Safety and Health Order (WSHO, 2009) and its regulations and the Environmental Protection and Management Order (EPMO, 2016) including directives by the authority and any related International Standards.
- 5.4.2 The Contractor shall comply with BELTS management systems throughout the execution of the Service:
 - a. Quality Management System;
 - b. Environmental Management System; and
 - c. Occupational Health and Safety Management System.
- 5.4.3 The Contractor shall also be responsible for consulting with the responsible BELTS personnel at each BELTS site(s) on any applicable guidelines or compliance requirements as may be adopted at the respective site(s).
- 5.4.4 The Contractor shall demonstrate its commitment to HSSE and will ensure that all managerial and senior supervisory personnel of the Contractor and subcontractor:
 - a. Establish HSSE as a high priority;
 - b. Be actively involved in HSSE matters;
 - c. Continuously improve HSSE performance through leadership and action planning; and
 - d. Lead the Contractor's organization to comply with HSSE Standards and the Contractor's own manuals, standards, rules and procedures.
- 5.4.5 The Contractor is obligated to safeguard the safety and health of its personnel and the surrounding environment from potential hazards arising from their activities.
- 5.4.6 Throughout the Service, the Contractor shall ensure that workers conduct operations in a manner that minimizes impacts on the safety and health of people, the environment, assets, communities, and the reputations of both the Contractor and BELTS.

5.5 Competence Training

- 5.5.1 The Contractor will identify HSSE critical roles and shall ensure that its personnel possess the requisite competence to execute the Services outlined in this Contract safely and efficiently. All personnel shall hold valid and relevant training certificates, and other supporting documents, ensuring compliance with industry standards. These certifications must be kept up-to-date, and upon request by BELTS, readily provided for inspection.
- 5.5.2 The Contractor shall implement a competency assurance process to assure that all of its personnel have and maintain HSSE competencies throughout the duration of the Contract.
- 5.5.3 The Contractor shall conduct periodic reviews of personnel competency, ensuring that it aligns with the evolving needs of the project and industry standards. Any identified gaps in

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competency shall be promptly addressed through training or reassignment.

5.6 Risk Management

- 5.6.1 The Contractor will continuously manage the HSE risks associated with the Project by means of a structured methodology following internationally recognized practices in line with HSSE Standards.
- 5.6.2 The Contractor shall ensure risk management activities will demonstrate that Hazards are identified and where the Hazard cannot be eliminated, the risks are managed to ALARP.
- 5.6.3 The Contractor shall ensure that all control measures specified in the risk assessment are fully implemented, monitored, and reflected in actual work practices throughout the duration of the Contract.
- 5.6.4 The risk management will include:
 - a. Development of a list of all activities that will be used as a basis to determine the Project of reviews;
 - b. Development of a list of the HSSE Hazards of each identified activity;
 - c. The assessment of the risk associated with the each identified activity, and applying a risk assessment matrix (RAM) assessment that is aligned with the BELTS risk assessment matrix. The Contractor's risk assessment will be submitted to the BELTS for review and comment;
 - d. A description of how each Hazard will be controlled and the need for specific job hazard analysis when the normal procedures and controls are expected to be inadequate;
 - e. Implementation of risk reduction measures to control or mitigate the hazard and its effects; and
 - f. Planning for recovery in the event of a loss control leading to an unacceptable effect.

5.7 Permit to Work (PTW)

- 5.7.1 The Contractor shall comply with BELTS Permit To Work System and all relevant procedures to manage the risks of hazardous work.
- 5.7.2 The Contractor's assigned worksite supervisor must raise and complete a comprehensive Permit to Work (PTW) form which must be submitted and approved by BELTS prior to any work commencing. No high-risk work shall be executed without Permit to Work (PTW).

5.8 Emergency Preparedness and Response

- 5.8.1 The Contractor will incorporate necessary Emergency Response plans, including those for medical emergencies and spills or releases into the environment to maintain preparedness.
- 5.8.2 The Contractors personnel shall participate in any emergency drill conducted at site or office as and when applicable.
- 5.8.3 The Contractor shall provide their own certified First Aider on site and must bring their own first aid kit, ensuring that it is adequately stocked and maintained throughout the performance of the Service.
- 5.8.4 The Contractor shall ensure that all its personnel are familiar with the site and are informed of the designated emergency contact persons, emergency contact numbers, emergency exits and the location of the assembly point.

5.9 Incident Notification, Incident Investigation and Reporting

- 5.9.1 The Contractor is required to report all incidents, injuries, and near misses, including occupational illnesses, related to the Service activities to BELTS representative as soon as

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reasonably practicable, at any Contract related premises.

- 5.9.2 The Contractor will comply with BELTS reporting requirements regarding Incidents associated with the Service and cooperate in all cases where BELTS determines to investigate the Incident. The Contractor personnel will, at the request of BELTS, attend and contribute to BELTS Incident investigation in a manner prescribed by BELTS.
- 5.9.3 BELTS may recommend and communicate corrective action arising from an Incident investigation to the Contractor and the Contractor will be solely responsible to ensure that all recommended actions are taken.

5.10 Housekeeping and Waste Management

- 5.10.1 The disposal of any waste materials from the worksite shall be in accordance with national laws and regulations (i.e. JASTRe requirement) and BELTS waste management system procedure.
- 5.10.2 The Contractor shall keep the worksite and its surroundings clean, tidy and in good order.
- 5.10.3 The Contractor shall ensure that waste which is produced as a result of the Services shall not be allowed to accumulate so as to constitute a Hazard in the worksite and are responsible to ensure that such waste is disposed immediately.
- 5.10.4 The Contractors shall be responsible to ensure such waste material is segregated, collected, and managed properly at their own cost and resources.

5.11 Electrical Safety

- 5.11.1 The Contractor shall ensure that only competent personnel with valid electrical certification are assigned to perform electrical tasks. No unqualified or incompetent personnel shall be allowed to carry out any electrical work.
- 5.11.2 The Contractor will use only authorized instructions that control ignition of flammable atmospheres caused by electrical equipment or electrical phenomenon by:
 - a. Controlling the selection and installation of electrical equipment in classified areas; and
 - b. Using equipment and work practices that control static electricity.
- 5.11.3 The Contractor will control work on or near electrical equipment and provide safe isolation by:
 - 5.11.3.1 Obtaining electrical certificates for activities that could expose people to harmful electrical energy as specified by the electrical safety rule as outlined in this provision, and following PTW requirements;
 - 5.11.3.2 De-energising and isolating equipment as required in the safe isolation as set out in the Contract, or if not set out in the Contract, as required by BELTS;
 - 5.11.3.3 Verifying that there are no voltage and, when required, using earthing, physical barriers, protective equipment, special tools, or other controls to prevent harm to personnel when it is not possible to de-energise equipment;
 - 5.11.3.4 Obtaining signed authorization from a PERSON designated by the electrical safety rules for switching, testing, and working on electrical equipment; and
 - 5.11.3.5 Controlling work, equipment, and use of ladders near underground and overhead electrical Hazards to prevent contact with energized lines or equipment.
- 5.11.4 The Contractor will control electrical work in design and construction by:
 - 5.11.4.1 Providing a mutually agreed upon system to review and approve the design, installation, and bringing into service of permanent or temporary electrical systems and facilities.
 - 5.11.4.2 Obtaining BELTS approval whether newly constructed electrical equipment may be connected to BELTS electrical power distribution and generation systems; and

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5.11.4.3 Verifying that electrical drawings are provided and maintained.

5.12 Working at Height

- 5.12.1 For activities in a work location identified having worked at height, the Contractor shall ensure suitable safe means of access and egress, for any Services or activities to be carried out at height.
- 5.12.2 The Contractor shall ensure the Hazards and risks associated with working at height have been identified and controls are addressed and implemented prior to the start of Services.
- 5.12.3 The Contractor shall ensure the following:
 - a. Correct method of working at height is used;
 - b. Provision of safe working platform;
 - c. Provision of falling object protection;
- 5.12.4 The Contractor acknowledges that no uncertified or self-made ladders are allowed to be used during the performance of Services.
- 5.12.5 The Contractor shall ensure that any work-at-height activity exceeding 1.8 meters is carried out only by a certified Work-at-Height (WAH) person.
- 5.12.6 The Contractor shall ensure that all equipment used during the operation is in good and satisfactory condition, well maintained, and that all personnel are equipped with and properly use the required Personal Protective Equipment (PPE) appropriate to the nature of the work.
- 5.12.7 The Contractor shall provide details of all lifting equipment and machinery to be used during the project. If any heavy machinery is involved, the Contractor shall also submit the latest maintenance records and inspection certificates issued by an approved Third-Party Inspection Agency (TPIA).

5.13 Security Management

- 5.13.1 The Contractor shall comply to the requirement of secure access and egress onto and around the work site for people and vehicles. Any security violation or security breach may be subject to consequences or legal precautions.
- 5.13.2 The Contractor shall provide a complete list of all personnel assigned to work within BELTS premises, including their names, identification details, and designated project roles. Any amendments to this list shall be immediately reported and updated with the designated person in charge prior to site entry.
- 5.13.3 BELTS shall have the right to schedule or randomly request the details of the Contractor's personnel as required for security verification with the security authority.

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ANNEX A: TECHNICAL SPECIFICATIONS

Ser	Item	Minimum Specification
1	NETWORK INFRASTRUCTURE The Tenderer shall propose solutions based on Fortinet products and technologies. This is to ensure seamless compatibility across all product offerings, reduce complexity and improved visibility across the entire network. For items 1.2, 1.3 & 1.4, the tenderer shall propose solutions with common security features such as but not limited to: • Port security – limit the number of valid MAC address allowed on a specific port to prevent unauthorized access. • VLAN (Virtual Local Area Network) – network segmentation • Network layer control • DHCP snooping – prevents unauthorized DHCP server from providing IP address to clients • Dynamic ARP Inspection – ARP spoofing protection • IEEE 802.1x authentication	
1.1	Firewall	Shall have higher specifications than current <i>DELL SonicWall NSA 3600</i> , and must have but not limited to the following requirements: - Minimum 10 Gbps uplink port - Web Application Firewall - Web filtering - Antispam services - Malware protection/Gateway anti-virus - Intrusion prevention - Ransomware protection - Secure SD-WAN - Universal zero-trust network access - License and support up to minimum 250 SSL VPN concurrent connections - Rack mountable

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Ser	Item	Minimum Specification
1.2	Core Switch	Shall have higher specifications than current <i>DELL Networking N4064</i>, and must have but not limited to the following components: - Minimum 10 Gbps uplink port with POE+ ports - Modular Bay - Stacking functions - Dual power Supply - Rack mountable
1.3	Access Switch	Shall have higher specifications than current <i>DELL Networking N2024P</i>, and must have but not limited to the following components: - Minimum 10 Gbps uplink port with POE+ ports - Modular Bay - Stacking functions - Dual power Supply - Rack mountable
1.4	External Switch	Shall have higher specifications than current <i>DELL Networking N2024P</i>, and must have but not limited to the following components: - Minimum 10 Gbps uplink port with POE+ ports - Modular Bay - Stacking functions - Dual power Supply - Rack mountable

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Ser	Item	Minimum Specification
1.5	Wireless Controllers	Shall have higher specifications than current <i>Ruckus ZoneDirector 1200</i>, and must have but not limited to the following components: - Supports up to 100 AP's - Supports up to 500 client devices - Mac-address Filter minimum 500 mac-addresses - Cloud management portal - Supports integration with AAA server (RADIUS, TACACS+) - Support user authentication using WPA2/WPA3/Captive portal - Support encryption protocol 802.1X, AES - Rack mountable
1.6	Wireless Access Points	Minimum requirements listed below: - Supports dual-band (2.4 GHz & 5 GHz) and tri-band (6E/7 GHz) - Support up to 500 concurrent clients. - Support user authentication using WPA2/WPA3/Captive portal - Support encryption protocol 802.1X, AES - POE+ - Include ceiling/wall mount kit

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Ser	Item	Minimum Specification
1.7	Log management tool	The solution must have the features listed below: - Centralized log and analysis appliance - 2x RJ45 GE - Minimum 4 TB storage - Up to 25 GB/ day of logs
1.8	Network Monitoring Tool	The solution must have the features listed below: - Performance monitoring - Issue detection and alerts - Traffic analysis - Device Management - Historical data and reporting
1.9	Enterprise Authentication, Authorization, Accounting (AAA) Services	The solution must have the features listed below: - Login management (VPN, Network Appliances, Servers, - Role-based access control (RBAC) - Network access control (NAC) - Resource monitoring - Monitor and audit user behavior across the network - Audit trails and reporting

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Ser	Item
2	GENERAL SYSTEM REQUIREMENTS
2.1	Controlled Use of Administrative Privileges
2.1.1	Use Multi-Factor Authentication for All Administrative Access <i>Use multi-factor authentication and encrypted channels for all administrative account access.</i>
2.1.2	Use Dedicated Workstations For All Administrative Tasks <i>Ensure administrators use a dedicated machine or all administrative tasks or tasks requiring administrative access. This machine will be segmented from the organization's primary network and not be allowed Internet access. This machine will not be used for reading email, composing documents, or browsing the Internet.</i>
2.1.3	Log and Alert on Changes to Administrative Group Membership <i>Configure systems to issue a log entry and alert when an account is added to or removed from any group assigned administrative privileges.</i>
2.1.4	Log and Alert on Unsuccessful Administrative Account Login <i>Configure systems to issue a log entry and alert on unsuccessful logins to an administrative account.</i>
2.2	Maintenance, Monitoring, and Analysis of Audit Logs
2.2.1	Utilize Three Synchronized Time Sources <i>Use at least three synchronized time sources from which all servers and network devices retrieve time information on a regular basis so that timestamps in logs are consistent.</i>
2.2.2	Activate Audit Logging <i>Ensure that local logging has been enabled on all systems and networking devices.</i>
2.2.3	Enable Detailed Logging <i>Enable system logging to include detailed information such as an event source, date, user, timestamp, source addresses, destination addresses, and other useful elements.</i>
2.2.4	Ensure Adequate Storage for Logs <i>Ensure that all systems that store logs have adequate storage space for the logs generated.</i>

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2.3	VPN Connections should have the feature below enabled.
2.3.1	Multi-Factor Authentication for All VPN connection to internal resources
2.3.2	Strong encryption and authentication (IKE/IPsec)
2.3.3	Zero-Trust Network Access
2.3.4	Identity-Based Access Control

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ANNEX B: LIST OF DELIVERABLES AND DOCUMENTATION

No	Deliverable or Documentation Name	Description
1	Hardware Documentation	The deliverables for Hardware consist of but are not limited to: • Hardware Setup, Installation, and Configuration Instructions • Hardware Administration and Maintenance Manuals • Equipment Operating Procedures • Hardware Technical Specifications and Warranties • Technical Manuals
2	Software Documentation and Deliverables	The deliverables for Software consist of but are not limited to: • Software License Specifications • Software Setup, Installation, and Configuration Instructions • System Integration Configuration Manual • System Administration and Maintenance Manuals • Operation Procedure Manuals • Technical Manuals • Original Installation Media
3	Detailed Project Implementation Plan	A document which shall contain the plan for implementing the proposed solution, and describes at minimum: • A Detailed Project Master Schedule • The detailed breakdown of activities (Work Breakdown Structure) and their duration and sequence • Project Milestones • Project Resource Requirements required for specific stages in the Implementation Phase • Project Deliverables to be produced on completing specific Project Milestones • Project and Quality Management Approach such as Project Governance • Approach for continuous Risk Identification
4	Risk Management Plan	A periodically updated document which shall describe the risks and issues identified by the Project Manager or the Project Team, its severity and likelihood, as well as mitigation strategies to minimise its effect on the project.

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No.	Deliverable or Documentation Name	Description
5	Progress Reports	Periodic reports to be submitted by the Project Manager, which shall include information on the following: • Status of Project Completion • Summary of Activities from Last Reporting Period • Upcoming Activities and Deliverables • Issues raised • Decisions or Actions required
6	Detailed Design Document	A document which shall provide a detailed description of the proposed solution, its features and functional characteristics, the detailed system design, architecture and relevant diagrams, and communication interfaces.
7	Bill of Materials (BOM)	A document which shall provide a serialised list of all Hardware and Software procured and supplied as part of the proposed solution, which shall detail at minimum: • Name and Description of product • Quantity Supplied • Serial No. or Identifier • OS and firmware version
8	Delivery Acceptance Report	A document which shall provide proof of acceptance of the delivery of the Hardware and Software items to BELTS premises, and shall contain a verification signature from an authorised BELTS personnel.
9	Installation Test Plan	A document which shall describe the Installation Test procedure(s) to be conducted as part of the Installation Test, and shall detail at minimum: • Scheduled date(s) of Installation Test(s) • Person(s) required • Resource(s) required • List of Installation Procedures • Pass-Fail Criteria for each procedure
10	Installation Test Report	A tabulated report of the Installation Test procedures executed as per the Installation Test Plan. The report shall contain the outcomes (Pass/Fail) of the Installation Test(s), statements of non-compliance, statements of acceptance, as well as proposed corrective actions and action plans as necessary, including any necessary re-tests.
11	Configuration Management Document	A version-controlled document which shall describe the system architecture, its sub-systems, and its components for both hardware and software, as well as the configurations and states as set during delivery, or as modified during the implementation phase.

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No.	Deliverable or Documentation Name	Description
12	Acceptance Test Plan	A document which shall describe the Acceptance Test procedure(s) to be conducted as part of the User Acceptance Test, and shall detail at minimum: • Scheduled date(s) of Acceptance Test(s) • Person(s) required • Resource(s) required • List of Acceptance Procedures • Pass-Fail Criteria for each procedure
13	Acceptance Test Report	A tabulated report of the Acceptance Test procedures executed as per the Acceptance Test Plan. The report shall contain the outcomes (Pass/Fail) of the Acceptance Test(s), statements of non-compliance, statements of acceptance, as well as proposed corrective actions and action plans as necessary, including any necessary re-tests. The report shall include the verification and signature by BELTS to signify acceptance of the test report.
14	Change Management Plan	A document which shall describe the Change Management effort required for successful implementation of the system, and shall detail at minimum: • Changes to Business Process or Workflows • Affected roles • Proposed User engagement and transition strategy • Proposed breakdown of change activities, and their schedules
15	Data Migration Plan (where applicable)	A document which shall describe the Data Migration effort required for transferring existing BELTS data into the proposed system, and shall detail at minimum: • Breakdown of Data Migration activities and their schedules • Description of Data Items required for the proposed solution to operate Description of method used for Data Migration.

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No.	Deliverable or Documentation Name	Description
16	Training Plan	A document which shall describe the programme of training courses to facilitate training for the End-User and Technical Team. The Training Plan shall detail at minimum: • Training objectives of each course or session • Sequence of learning activities • Outline curriculum of the courses • Category of Trainee, e.g. End-User, Administrator, and etc. • Training mode, e.g. classroom-based, online training, hands-on supervision
17	Training Documents	This deliverable shall consist of all the relevant documents, and learning materials, both digital and physical copies, which are to be distributed to the trainees during the Training sessions.
18	Maintenance Report	A document which shall be provided on completion of a scheduled or unscheduled support activity. The document shall detail at minimum: • Description of works performed • Identification of any defects or issues • Recommended or Corrective actions to be undertaken • Next scheduled support activity
19	Business Continuity Process	This deliverable shall contain plans and procedures for sustaining business operations in the event of temporary system outage or malfunction and shall address and detail at minimum: • Detailed Policies and Procedures for Business Impact and its analysis, including: ○ Preventative controls; and, ○ Recovery strategy, • Periodic auto-generated reports for last checks; and, Templates for manual activities, and recording and upload process.
20	Disaster Recovery Plan	This deliverable shall contain plans and procedures for recovering business operations in the event that a disaster or negative event results in a loss of business functions at the primary site. The plan shall detail at minimum: • Detailed Policies and Procedures for DR Management; • Quarterly failover checks and procedures; • Synchronisation mechanism; and, Alerts and Reports