

PART 2
OBP SPECIFICATIONS

OUTCOME-BASED PROCUREMENT ON DEVELOPMENT OF INTELLIGENT WEBCRAWLER

1. BACKGROUND

- 1.1. Enterprise Singapore (ESG) is the government agency championing enterprise development. We work with committed companies to build capabilities, innovate and internationalise.
- 1.2. We also support the growth of Singapore as a hub for global trading and startups, and build trust in Singapore's products and services through quality and standards.
- 1.3. In October 2018, ESG launched an online tech startup database known as Startup SG Network (SSN) to:
 - (i) Strengthen linkages among the players within the tech startup ecosystem;
 - (ii) Become a one-stop portal for information and data for startups, investors and accelerators; and
 - (iii) Be the key source of data to draw insights and monitor growth of Singapore's startup ecosystem.
- 1.4. In order to effectively fulfil the objectives of SSN, the information on SSN needs to be constantly updated with the latest developments in the ecosystem. To establish SSN as the trusted source of information for startups and investors to facilitate partnership and investment opportunities, ensuring that data is accurate and reliable is imperative. However, while the portal is gaining traction, current data mining and curation is labour intensive, which poses risks to timeliness, accuracy and completeness of data.
- 1.5. Hence, ESG would like to explore opportunities to harness innovative technologies to automate the data collection and curation for all entities on the SSN platform.

2. SCOPE AND DESCRIPTION

- 2.1. This Outcome Based Procurement (OBP) seeks to invite interested Tenderer(s) to submit a design proposal for a solution that addresses the following scope:
 - (i) Extract and provide continual updates to the data points defined by ESG for all entities on SSN from trusted online structured or unstructured sources using, but not limited to, Natural Language Processing (NLP) technology.
 - (ii) Conduct data exchange and integrate with, but not limited to, SSN.
 - (iii) Improve accuracy of the data points updates based on user feedback via machine learning.
 - (iv) Achieve 80% accuracy rate upon production deployment.

- 2.2. Apart from submitting the design proposal, selected Tenderers will be required to conduct a Pilot Trial to demonstrate the performance and capability of the proposed solution and its associated technology to meet the requirements set out in this OBP. Upon successful completion of the Pilot Trial, and solely at ESG's discretion, the selected Tenderer will be required to fully implement the proposed solution based on the requirements set out in this OBP.
- 2.3. The support and maintenance for the System, if such option is elected by Enterprise Singapore, shall be for up to five (5) years, subjected to renewal by Enterprise Singapore on a yearly basis. Such support and warranty services shall commence only after the expiry of the System Warranty Period.

3. STAGES OF OUTCOME-BASED PROCUREMENT (OBP)

- 3.1. This OBP comprises two stages, namely Pilot Trial and Full Implementation (Final Award).

3.2. PILOT TRIAL

- 3.2.1 Depending on the evaluation assessment of the submitted proposals, ESG may select **up to two (2)** Tenderers to conduct the Pilot Trial.

- 3.2.2 The selected Tenderer(s) shall, upon receipt of the Letter of Award, commence this Pilot Trial and promptly deliver the solution based on the following requirements:

3.2.2.1 Sources to crawl

- The Solution will maintain a list of trusted sources to crawl from provided by ESG. ESG can request to add additional sources or remove sources if deemed necessary.
- The Solution shall be able to check the target sources for any terms and conditions that prohibit crawling activity and alert ESG before each crawling.

- 3.2.2.2 Data Points to be produced via crawling and processing from both structured and unstructured sources for entities on SSN.

Startups	Investors (e.g. Venture Capital, Private Equity, IHLs, Government-linked, Crowdfunding Platforms, Corporate VCs, Angels, Family Offices)	Incubators & Accelerators
1. Official website 2. Sector	1. Official website	1. Official website

Startups	Investors (e.g. Venture Capital, Private Equity, IHLs, Government-linked, Crowdfunding Platforms, Corporate VCs, Angels, Family Offices)	Incubators & Accelerators
3. Market presence (e.g. Singapore) 4. Funding stage Rounds Raised (multiple rounds, including acquisitions) 5. Date 6. Amount raised 7. Funding stage 8. Investor name 9. Source	Investment overview 2. Notable investees (logo, UEN or ACRA registered name) Rounds Made (multiple) 3. Date 4. Company invested 5. Amount raised 6. Funding stage 7. Investor name 8. Source	2. Incubator type (e.g. Institutes of higher Learning)

3.2.2.3 The Solution shall be able to produce curation of insights.

- Alert on new entities (such as startup/investor/incubator & accelerator) relevant to the local tech startup ecosystem that are not yet on the Startup SG Network (SSN) platform with data points defined in Clause 3.2.2.2 for user to review.
- Alert on entities that have ceased operations.
- Relationship insights derived from the crawled data.
 - I. derive key influencers of the startup ecosystem, such as founders which are most connected or are serial entrepreneurs
 - II. Derive relationships among investors, such as which are their common co-investment partners and how does that influence deals made
 - III. Other relationships proposed by the Tenderer
- Verify claims made in SSN profile for the following categories of the claims. (e.g. Solution needs to identify claims related to categories identified below from SSN profiles, then validate against online sources that are related to the claim but are not yet defined for the crawler.)
 - I. Award winner
 - II. Government grant recipient

- III. Patent holder
- IV. Partner of certain Government programme
- V. Key partner of R&D collaboration

3.2.2.4 The Solution shall allow dynamic addition of extra Data Points to crawl. Such addition shall be self-helped by ESG officer without the need for additional development effort.

3.2.2.5 The Solution shall be able to recommend new credible sources to crawl from for ESG admin to review.

3.2.2.6 The Solution shall provide a basic User Interface (UI) for user to provide the following feedback so that Data Points updates accuracy can be improved over time.

- Each set of update produced for Clause 3.2.2.2 and 3.2.2.3 should be grouped by each entity.
- Each Data Point produced shall be accompanied by the source URLs for human review. If there are conflicting results for the same Data Point, present up to top 4 ranked results accompanied by source URLs based on pre-defined algorithms. Factors for ranking will be finalized later.
- Ability for user to Accept/Reject/Ignore the curated update. The user will have the flexibility to respond to the entire set of the entity or respond individually for each Data Point.
- Accept will allow the Solution to do more of the same action (e.g. more weightage to source).
- Reject will let the Solution do less of it.
- If user is not able to confirm, he/she can use the Ignore option which will not send any feedback to Solution

3.2.3 The Tenderer shall submit a proposal that details the end-to-end development and implementation plan for the Pilot Trial. The Pilot Trial shall incorporate all the features specified in Clause 3.2.

3.2.4 The Tenderer shall supply the necessary hardware to host the Solution during Pilot Trial for access by end-users during the contract period. The Tenderer shall include detailed information on the types of hardware, software and configurations used. The information shall minimally include:

- List of both mandatory and optional software services for both client and server required for operation (e.g., Operating System, Plug-ins);
- List of connectors and pre-built application programming interfaces (e.g. to portals, search engines, content management systems) if applicable;
- Other third party tools; and

- Any other components required for deploying, operating and supporting the Pilot Trial.

3.2.5 The selected Tenderer(s) shall complete this trial within **fourteen (14)** weeks which shall include development, testing, demo, user acceptance testing, documentation and submission of deliverables. During this period, the Tenderer(s) shall develop the solution that meets the requirements stipulated at Clause 3.2.2 and demonstrate the proposed solution meets the following KPIs and success criteria. The Tenderer can propose additional KPIs and targets that would be relevant to this project, and share how the baseline would be determined to measure the success of the KPIs.

Project Phase	Key Performance Indicators	Success Criteria
Pilot	<ol style="list-style-type: none"> 1. Demonstrate the capabilities to crawl form various sources. 2. Demonstrate the capabilities to produce data points from both structured or unstructured sources. 3. Demonstrate advanced and innovative capabilities to produce curated insights from large amount of data. 4. Demonstrate advance scalability in terms of sources and data points. 5. Demonstrate the potential of continuous improvement via machine learning. 	<ol style="list-style-type: none"> 1. Able to alert ESG on source that does not allow crawling. 2. Able to crawl 90% of the sources given by ESG, assuming such sources don't prohibit crawling. 3. Able to crawl for 90% of the existing entities on SSN which must include every entity type: Startup, Investor, Incubator. 4. Able to crawl and produce 95% of the Data Points specified in Clause 3.2.2.2, achieving an accuracy rate of at least 70%. (benchmarked against the data points produced by human curation) 5. Able to produce curated insights specified in 3.2.2.3 that are acceptable by ESG. 6. Able to allow user to add additional data points to crawl relatively easily. 7. Able to recommend new credible sources for ESG to consider.

Project Phase	Key Performance Indicators	Success Criteria
		8. With 20 working days of Pilot Trial usage, the Solution is able to demonstrate at least 5% of accuracy improvement.

3.3. FULL IMPLEMENTATION

3.3.1 Upon completion of Pilot Trial, and depending on the evaluation assessment of this trial, ESG has the option to extend the project to Full Implementation phase.

3.3.2 Upon exercising of such option, the Tenderer(s) shall work with ESG to further refine detailed requirements and solutions that will potentially evolve throughout the project, in alignment with the overall project objectives and implementation approach. The Tenderer shall submit a proposal that details the end-to-end development and implementation plan for the Full Implementation.

3.3.3 ESG may select **one (1)** Tenderer to work on the Full Implementation phase or **two (2)** Tenderer to work on the Full Implementation phase jointly.

3.3.4 The selection will be based on the KPIs of the Tenderer's solution in Pilot Trial and the evaluation assessment of the refined proposal.

3.3.5 The selected Tenderer shall, on receipt of the Letter of Final Award, promptly deliver the Solution which shall incorporate all features from Clause 3.2 Pilot Trial and additional features specified in Clause 3.3 Full Implementation. The Tenderer may also propose and incorporate any other features to be included.

3.3.6 The selected Tenderer shall promptly deliver the Solution based on the following requirements, incorporating all the features that have been delivered in Pilot Trial:

3.3.6.1 Sources to crawl

- The Solution will maintain a list of trusted sources to crawl from provided by ESG. ESG can request to add additional sources or remove sources if deemed necessary.
- The Solution shall be able to check the target sources for any terms and conditions that prohibit crawling activity and alert ESG before each crawling.

3.3.6.2 Data Points to be produced via crawling and processing from both structured and unstructured sources for entities on SSN.

Startups	Investors (e.g. Venture Capital, Private Equity, IHLs, Government-linked, Crowdfunding Platforms, Corporate VCs, Angels, Family Offices)	Incubators & Accelerators
1. Logo 2. Official website 3. Sector 4. Market presence (e.g. Singapore) 5. Funding stage 6. Social media 7. Date incorporated 8. Company email 9. Contact number 10. Employee Range 11. Company Description 12. Founder and key management (name, designation, email)	1. Logo 2. Official website 3. Company email 4. Contact number 5. Social media 6. Date incorporated 7. Year established 8. Employee range 9. Market presence (e.g. Singapore) 10. Investor type 11. Company Description 12. Founder and key management (name, designation, email)	1. Logo 2. Official website 3. Incubator type (e.g. Institutes of higher Learning) 4. Company email 5. Contact number 6. Social media 7. Date incorporated 8. Year established 9. Incubation Model (e.g. Early stage acceleration) 10. Countries Present (e.g. China) 11. Employee Range 12. Company Description 13. Founder and key management (name, designation, email)
Rounds Raised (multiple rounds, including acquisitions) 13. Date 14. Amount raised 15. Funding stage 16. Investor name 17. Source	Investment overview 13. Portfolio size 14. Focus investment stage (e.g. Seed) 15. Notable investees (logo, UEN or ACRA registered name)	Incubation Activities 14. Cohort size 15. Investment (Y/N) (If Y, give range and currency) 16. May take equity (Y/N)
Pitch details 18. Latest valuation (date, valuation amount, source) 19. Revenue 20. Business model (B2B, B2C etc) 21. Key partners & customers for R&D collaborations	Rounds Made (multiple) 16. Date 17. Company invested 18. Amount raised 19. Funding stage 20. Investor name 21. Source	17. Incubator involvement (Direct/Indirect) 18. Notable incubates (logo, UEN or ACRA registered name) 19. Global presence (Y/N)(if Y, list countries)
	Fund Overview 22. Fund name 23. Fund size	Programme (multiple) 20. Programme name

Startups	Investors (e.g. Venture Capital, Private Equity, IHLs, Government-linked, Crowdfunding Platforms, Corporate VCs, Angels, Family Offices)	Incubators & Accelerators
22. Intellectual property & patents (number of patents obtained) 23. News	24. Investment range & currency 25. Sector focus 26. Market focus	21. Description 22. Sector focus (list sectors) 23. Investment stage focus (e.g. Seed)

3.3.6.3 The Solution shall be able to produce curation of insights.

- Alert on new entities (such as startup/investor/incubator & accelerator) relevant to the local tech startup ecosystem that are not yet on the Startup SG Network (SSN) platform with data points defined in Clause 3.3.6.2 for user to review.
- Alert on entities that have ceased operations.
- Relationship insights derived from the crawled data.
 - I. derive key influencers of the startup ecosystem; such as founders which are most connected or are serial entrepreneurs
 - II. Derive relationships among investors; such as which are their common co-investment partners and how does that influence deals made
 - III. Other relationships proposed by the Tenderer
- Verify claims made in SSN profile for the following categories of the claims. (e.g. Solution needs to identify claims related to categories identified below from SSN profiles, then validate against online sources that are related to the claim but are not yet defined for the crawler.)
 - I. Award winner
 - II. Government grant recipient
 - III. Patent holder
 - IV. Partner of certain Government programme
 - V. Key partner of R&D collaboration

3.3.6.4 The Solution shall allow dynamic addition of extra Data Points to crawl. Such addition shall be self-helped by ESG officer without the need for additional development effort.

3.3.6.5 The Solution shall be able to recommend new credible sources to crawl from for ESG admin to review.

3.3.6.6 The Solution shall provide a set of Application Programming Interfaces (APIs) for integration with SSN for sending the produced Data Points and Curation of Insights

to SSN and for SSN user to provide the following feedback back to the Solution so that Data Points updates accuracy can be improved over time.

- Each set of update produced for Clause 3.3.6.2 and Clause 3.3.6.3 should be grouped by each entity.
- Each Data Point produced shall be accompanied by the source URLs for human review. If there are conflicting results for the same Data Point, present up to top 4 ranked results accompanied by source URLs based on pre-defined algorithms. Factors for ranking will be finalized later.
- Ability for user to Accept/Reject/Ignore the curated update. The user will have the flexibility to respond to the entire set of the entity or respond individually for each Data Point.
- Accept will allow the Solution to do more of the same action (e.g. more weightage to source).
- Reject will let the Solution do less of it.
- If user is not able to confirm, he/she can use the Ignore option which will not send any feedback to Solution

3.3.6.7 Other considerations

- By-passing evolving anti-scraping mechanisms of the target sources shall bear no additional cost to ESG.
- Crawling requests can be triggered for a number of entities on ad-hoc basis or for entire SSN directory
- In the full directory mode, crawler should be able to crawl for 500 entities within 24 hours (open for reasonable suggestions).

3.3.7 The selected Tenderer(s) shall complete the Full Implementation within fourteen (14) weeks which shall include development, system integration testing, demo, user acceptance testing, documentation and submission of deliverables, user training. During this period, the Tenderer(s) shall develop the solution that meets the requirements stipulated at Clause 3.3.6 and demonstrate the proposed solution meets the following KPIs and success criteria. The Tenderer can propose additional KPIs and targets that would be relevant to this project, and share how the baseline would be determined to measure the success of the KPIs.

Project Phase	Key Performance Indicators	Success Criteria
Full Implementation	<ol style="list-style-type: none"> 1. Demonstrate the capabilities to crawl form various sources. 2. Demonstrate the capabilities to produce data points from either structured or unstructured sources. 3. Demonstrate advanced and innovative capabilities to produce curated insights from large amount of data. 4. Demonstrate advance scalability in terms of sources and data points. 5. Demonstrate the potential of continuous improvement via machine learning. 6. Easy to integrate with. 7. Efficiency of the Solution 	<ol style="list-style-type: none"> 1. Able to alert ESG on source that does not allow crawling. 2. Able to crawl 95% of the sources given by ESG, assuming such sources don't prohibit crawling. 3. Able to crawl for all the existing entities on SSN which must include every entity type: e.g. Startup, Investor, Incubator. 4. Able to crawl and produce 100% of the Data Points specified in Clause 3.3.6.2, achieving an accuracy rate of at least 80% upon production deployment. (benchmarked against the data points produced by human curation) 5. Able to continue to improve accuracy of the updates to achieve beyond 90% with live usage. (benchmarked against the data points produced by human curation) 6. Able to produce curated insights specified in 3.3.6.3 that are acceptable by ESG. 7. Able to allow user to add additional data points to crawl relatively easily.

Project Phase	Key Performance Indicators	Success Criteria
		<p>8. Able to recommend new credible sources for ESG to consider.</p> <p>9. A comprehensive set of APIs for third party to integrate with.</p> <p>10. Able to complete crawling for large number of entities within a reasonable period of time agreed by ESG.</p>

3.3.8 The Tenderer shall work closely with the existing SSN vendor on the integration between SSN platform and the Solution.

3.3.9 The Tenderer shall host the Solution during Full Implementation in a cloud environment provided by ESG for access by end-users during the contract period (i.e. up to end of System Warranty). The Tenderer shall include detailed information on the types of infrastructure, software and configurations used. The information shall minimally include:

- List of both mandatory and optional software services for both client and server required for operation (e.g., Operating System, Plug-ins);
- List of connectors and pre-built application programming interfaces (e.g. to portals, search engines, content management systems) if applicable;
- Other third party tools; and
- Any other components required for deploying, operating and supporting the Full Implementation.

3.4. Security Review

3.4.1 The Tenderer shall propose approach and tools (if any) subjected to approval by ESG to conduct application security review to ensure compliance to the Security Policy.

3.4.2 The Security Review Report shall contain evidence of testing conducted and actions carried out. The Tenderer shall be responsible to address and remediate the audit findings identified during the security review at no additional cost to ESG.

- 3.4.3 The Tenderer shall propose tools to conduct security vulnerability assessment and penetration test on all the components in the System before System Commission.
- 3.4.4 The Security Vulnerability Assessment and Penetration Reports shall contain evidence of testing conducted and actions carried out. The Tenderer shall be responsible to address and remediate any security risks identified during the security vulnerability assessment and penetration test at no additional cost to ESG. The reports shall be submitted to ESG no later than one (1) week after the test is conducted.
- 3.4.5 The Tenderer shall ensure that the System is patched with the latest updates before System Commission.
- 3.4.6 The System shall be free from all known vulnerabilities prior to System Commission.

3.5. Software Maintenance and Support

- 3.5.1 The Tenderer shall be responsible for the maintenance and support of the System.
- 3.5.2 The Performance Guarantee Period (PGP), Warranty & Maintenance support shall cover all system software and the application software supplied by the Tenderer. Details of support and maintenance scope is detailed at **Part 1 Section D Software Maintenance and Support**.
- 3.5.3 All requirements in this document shall apply to all stages of the contract including, but not limited to, support prior to system commissioning, Performance Guarantee Period, System Warranty and Maintenance Period.

4. GENERAL REQUIREMENTS

- 4.1. All Solution requirements are mandatory unless otherwise stated.
- 4.2. ESG reserves the right to request the Tenderer to provide additional information or materials and to make presentation(s) and proposal walkthrough(s) to support the Tenderer's claims of the various services and the Tenderer shall bear all costs with regards to such a request which may include but not limited to the following:
- Conduct business, technical presentations of product(s) stated in the proposal
 - Demonstrate the proposed components or software products
- 4.3. The Tenderer shall submit a detailed proposal to ESG on its proposed Solution as well as the Implementation Plan to deliver the proposed Solution as part of the Tenderer's Proposal.

- 4.4. If any functionality or performance cannot be met / demonstrated by the proposed Solution in accordance to the OBP Requirement Specifications, the Tenderer shall propose alternatives for consideration by ESG. Details of the alternative proposal shall be provided as part of the Tenderer's Proposal.
- 4.5. The Tenderer shall be responsible to ensure that all OBP Requirement Specifications are met and to highlight to ESG any design assumptions and limitations that do not comply or align with the requirements stipulated in the OBP Requirement Specifications.
- 4.6. The Tenderer shall be responsible for project management, design, development, supply, installation, deployment, testing, technical support, operation and maintenance, data analysis, reporting, auditing, and any other related activity to ensure the successful implementation and operation of the Solution in accordance to the OBP Requirement Specifications.
- 4.7. The Tenderer shall be responsible for project management, design, development, supply, installation, deployment, testing, technical support, operation and maintenance, data analysis, reporting, auditing, and any other related activity to ensure the successful implementation and operation of the Solution in accordance to the OBP Requirement Specifications.

5. TENDERER PERSONNEL

- 5.1. The Tenderer's Proposal shall include the list of key personnel who will be involved in the Pilot Trial and Full Implementation for ESG's consideration.
- 5.2. The Tenderer shall also submit the individual Curriculum Vitae and relevant Project Track Record of each of the listed key personnel as part of the Tenderer's Proposal.
- 5.3. The Tenderer shall appoint a Project Manager to represent the Tenderer in all dealings with ESG's representative for the Pilot Trial and Full Implementation
- 5.4. The Project Manager shall be suitably qualified and experienced to manage the project phase(s) and liaise with ESG's representatives. The Project Manager shall have the authority to represent the Tenderer in all decisions made with ESG.
- 5.5. The Tenderer shall not change any listed personnel without written approval from ESG and in the case of such change, duly inform ESG one (1) calendar month before any such change. The Tenderer shall submit the Curriculum Vitae of a suitable replacement to ESG for approval within fifteen (15) calendar days; and if accepted by ESG, commence the appointment and its responsibilities within one (1) calendar month.

- 5.6. ESG reserves the right to request the Tenderer to replace any listed personnel in writing if deemed by ESG to be inappropriate. The Tenderer shall, upon being notified of such request, submit the Curriculum Vitae of a suitable replacement to ESG for approval within fifteen (15) calendar days; and if accepted by ESG, commence the appointment and its responsibilities within one (1) calendar month.
- 5.7. ESG reserves the right to request the Tenderer deploy additional manpower at no further cost to ESG, if it is deemed that the performance of the Tenderer has been unsatisfactory.

6. TRAINING

- 6.1. The Tenderer shall provide a training plan for the users of the Solution, to enable independent usage of the Solution. The training plan should minimally provide the number of training sessions and training schedule in order for the training to be delivered effectively to ensure users are adequately trained to use the System independently.
- 6.2. The scope of all training courses and training data to be used shall be endorsed by ESG before training commences. The training shall include the functions of the solution, operational and on-boarding processes.
- 6.3. The Tenderer shall propose the date, duration, and syllabus for each training session for ESG's consideration.
- 6.4. The Tenderer shall provide at no cost to ESG, adequate sets of training documents and materials for the trainees. The trainees shall be allowed to keep the training materials.
- 6.5. For every course conducted by the Tenderer, a complete set of user manuals and teaching materials shall be made available to ESG. ESG shall have the right to use these training materials to conduct in-house training for its personnel and relevant 3rd Parties.
- 6.6. Training materials shall be updated and based on the Solution implemented.

7. DOCUMENTATION

- 7.1. The Solution shall not be deemed to be operational and complete until it has been thoroughly documented in each phase.

- 7.2. The Tenderer shall ensure that documentations submitted to ESG are of the latest version and propose a document control mechanism to track all changes made to the documents, subject to ESG's approval.
- 7.3. In case where ESG has requested amendments to the documentation, the Tenderer shall resubmit the amended documents within three (3) working days.
- 7.4. All documentation shall be in English, and written in a clear and comprehensible manner.
- 7.5. The Tenderer shall provide any revised editions, supplementary materials or new publications relevant to the proposed Solution and documentation on enhancements at no additional cost to ESG. This shall also apply to documentation of third party hardware or software.
- 7.6. Where appropriate the Tenderer shall utilise clearly labelled and referenced illustrations, videos and photos, tables, diagrams and drawings to ease the understanding and appreciation of the documentation and work done.
- 7.7. ESG reserves the right to request the Tenderer to provide and include any such illustrations, videos and photos, diagrams and drawings where it helps to ease understanding.
- 7.8. The Tenderer shall produce and submit the following documents to ESG for each the Pilot Trial and Full Implementation phase:
 - a. Project Implementation Plan
 - b. Progress Reports
 - c. Detailed Design Proposal
 - d. Detailed Test Plan
 - e. All Test Report
 - f. User Manuals

Project Implementation Plan

- 7.9. The Tenderer shall produce and maintain a working copy of the Project Implementation Plan during the Pilot Trial and Full Implementation if applicable. The Project Implementation Plan shall be a working document that the Tenderer shall be charged to maintain in case of any changes to the Project and distribute the latest plans to the relevant parties involved.
- 7.10. The Project Implementation Plan shall include but not limited to the following:
 - (a) Executive Summary
 - (b) Scope of work
 - (c) Implementation Plan:

- a. Milestones that shall be implemented during development;
- b. Various types of test to be done for each development milestones and the proposed criteria to be met;
- (d) Project Timeline and Milestones Dates
- (e) Project Team Members and their Roles and Responsibilities
- (f) Resource Plan
- (g) Quality Assurance Plan
- (h) Key Risks and Risk Mitigation Strategy

The Tenderer shall adhere to the Project Plan and ensure the timely execution of tasks to meet the overall schedules as set forth in the Specification.

Progress Reports

- 7.11. The Tenderer shall regularly update ESG on the progress of the Project.
- 7.12. The Progress Reports shall comprise but not limited to the following topics:
 - (a) Executive Summary
 - (b) Details of on-going and planned development items
 - (c) Details of Technical or Work problems (if any)
 - (d) Details of Under/Over Estimation (if any)
 - (e) Schedule Updates
 - (f) Request for Management Decision/Intervention (if any)
 - (g) Issues, Action Plan, Progress Updates
 - (h) Risks assessment, Mitigation Plan, Dependencies, Constraints (if any)
 - (i) Project Status Classification
 - (j) Report of all SIRs (System Incident Report) raised during any Testing phase (if any)
 - (k) Testing Progress Status Report during any Testing phase

Test Plan

- 7.13. The Tenderer shall submit a Test Plan for ESG's approval prior to the conduct of the Tests, including the test schedule and resource plan to ensure that the key functionalities have been covered as described in this OBP Requirement Specifications.
- 7.14. The Test Plan shall include, but not limited to the following:
 - (a) Test Methodology, Scenarios, and Acceptance Criteria for individual requirements as stated in the OBP Requirement Specifications
 - 1) Test Design
 - 2) Test Execution
 - 3) Test Reporting
 - 4) Defects and Mitigation Measures

- (b) Test Resources
- (c) Test Team
- (d) Roles and Responsibilities
- (e) Test Setup
- (f) Test Equipment, Tools, and Script

Test Report

- 7.15. At the end of each Test within the different phases or sprint, the Tenderer shall produce a Technical Test Report based on the outcome of the Technical Test. The Technical Test Report shall include a detailed write-up of, but not limited to, the following topics:
- (a) Executive Summary
 - (b) Test Setup
 - (c) Test Methodology
 - (d) Test Scenarios
 - (e) Acceptance Criteria
 - (f) Test Results and Analysis
 - (g) Failures and Rectification
 - (h) Report of all SIRs (System Incident Report) raised
 - (i) Learning Points
 - (j) Other Findings and Recommendations
- 7.16. Test Report shall be reviewed and formally accepted by ESG before each test phase is considered completed.

8. TENDERER'S PROPOSAL AND PRICES

- 8.1. The Tenderer shall submit its prices for the Full Implementation services in the Cost Schedules in the format found in Part 3 Guidelines for OBP. The Tenderer must provide the unit cost for the Services and items, where applicable. The unit cost may be in man-days or in the unit of the Services. Any proposal that does not include any of the items in the Cost Schedule may not be accepted by ESG. Incomplete information in the Cost Schedule shall be treated as non-submission by the Tenderer.
- 8.2. The Tenderer is welcome to propose and quote for any items in addition to those stipulated in the Outcome-based Procurement that will enhance the quality of the service delivery
- 8.3. The Tenderer is also welcome to provide any information that may be useful to the evaluation of the Tenderer's ability to develop the Solution.
- 8.4. The Tenderer shall describe its competency and experience in the area of services rendered for in a brief write-up. References for projects of similar nature

undertaken by the Tenderer shall be taken into consideration in the evaluation of the tender.

- 8.5. With the exception of GST, the Tenderer must set out in his Cost Schedule all taxes and/or duties which are chargeable by the Tenderer under the relevant laws applicable to the Tenderer for its supply of the Services to develop the Solution to ESG. Any tax or duty not specifically provided for by the Tenderer in the Cost Schedule shall be wholly borne by the Tenderer and ESG shall not be obliged to reimburse, compensate or make any payment to the Tenderer in respect thereof.
- 8.6. ESG reserves the right to award the Contract in part or in whole, or to jointly award to more than one Tenderer.

9. MANAGEMENT OF THIRD PARTIES

- 9.1. The Tenderer shall be responsible for coordinating with all relevant parties and providing the relevant and accurate information required, in a timely and professional manner to ensure that the project at the 2 phases are completed on schedule.
- 9.2. The Tenderer shall obtain all relevant information and approvals from relevant third parties or authorities, so as to complete all tasks according to schedule.
- 9.3. For all phases of the project the Tenderer shall commit to promptly resolve all matters in a timely and prompt manner so as to minimise delays.