



APPENDIX B: MARKET DATA ANALYTICS SCORING

CRITERIA 3: LIVE DEMONSTRATION (PHASE) (REFER TO BID DOCUMENT)

Scoring:

Each numbered requirement will be scored using the following criteria:

Score	Criteria
0	Did not meet the requirement
1	Partially met the requirement
2	Fully met the requirement.

The total achievable score equals 120 (60x2)

To obtain the score out of a maximum of sixty, the score obtained is divided by a factor of two.

IE:

Total score achieved equals ninety-five (95)

Ninety-five divided by two (2) equals forty-seven point five (47.5)

DATA WAREHOUSE / DATA MANAGEMENT TECHNICAL REQUIREMENTS

	DATA WAREHOUSE / DATA MANAGEMENT	Maximum Score:
	Solution General Requirements	
1.	The solution must support an agile data warehousing approach and iterative development and the rapid creation of subject-specific data marts.	2
2.	The solution must support graphical data modelling tools , logical and physical data modelling and source-to-target mapping.	2
3.	The solution must support multiple types of slowly changing dimensions (SCD) , enable conversion from one type to another, and generate and manage dimension surrogate keys as necessary.	2
4.	The solution must support the agile implementation of the following types of changes. <ul style="list-style-type: none"> • <i>Business relationships (changes to the relationships between existing data)</i> • <i>Business rules (changes to existing model structures)</i> • <i>New information (addition of new model elements and rules)</i> • <i>Retired information (the "expiration" of model elements and rules)</i> 	2
5.	The solution should capture changes to data entities over time, both in data and structure, to enable seamless reporting across periods regardless of changes in format.	2
6.	The solution must support model-driven development to be able to use a logical data model to create a physical data warehousing environment. It must support source-to-target mapping of data from multiple sources into this environment.	2

7.	The solution should support structure and model version history in addition to data history.	2
8.	The solution should support reporting at any point in time under the current data structure or under any previous data structure. This will also enable the data warehouse to be restored to any previous structural version.	2
9.	The solution should support reference data management to resolve multiple reference code representations for the same description and integrate reference data from disparate sources.	2
10.	The solution should support building and managing summary datasets graphically .	2
11.	The solution should support modification to data warehouse structures without requiring that data be unloaded and reloaded.	2
Solution Administration, Security and Architecture		
12.	The solution must have a robust, role-based security model that leverages user authentication technologies such as Active Directory.	2
13.	Enabling the authentication of users in real time via LDAP and/or Active Directory as an individual user, roles based, and as a member of a group.	2
14.	Allowing multiple concurrent users to log on to the same application with the same or different security privileges. (Granularity of privileges down to the row level or cell level is a key requirement.)	2
15.	Allowing a business author, of a report or analytic view, assign security permissions to the content they created, and have those permissions perpetually associated to the content as it is promoted to a server.	2

16.	Allowing for encrypted transmissions across a distributed client server architecture (supports HTTP-S, SFTP).	2
17.	Backup and recovery and reports/dashboards and flexibility in controls available to manage the number of historical instances to be maintained.	2
	Data Warehouse Deployment	
18.	The DWH solution supports an on-premises, at the SIU deployment, and cloud, multi-cloud or a hybrid deployment, and virtualised environments.	2
19.	All data storage and processing must be onsite; however, the solution must support offsite/cloud backup options.	2
20.	The solution must use Microsoft SQL Server as its relational database management system.	2
21.	The solution supports a graphical model-driven approach to master data management .	2
22.	Configurable workflow management by an administrator.	2
23.	The solution architecture supports the concept of enterprise data warehousing and independent data marts .	2
	Data Collection and Integration	
24.	<p>The data sources will comprise both quantitative and qualitative data in structured and unstructured format. The solution must enable the following activities:</p> <ul style="list-style-type: none"> • Data review and inspection • Cleaning of data • Enrichment of data 	2

	<ul style="list-style-type: none"> Transformation of data that will allow the modelling of data to identify useful information. Classification of data in preparation of data analytics processes. 	
25.	The solution should enable Data Engineers to perform Extract Transform Load (ETL) or extract Load Transform (ELT) / data integration capabilities.	2
26.	The solution must enable the continuous, scheduled and ad-hoc ingestion of data from multiple sources into the data warehouse.	
27.	The solution must include all technology to enable batch and real-time data ingestion from diverse sources.	2
28.	The solution should provide for incremental data loads.	2
29.	The solution should provide for the performing of parallel/multithread loading of data, breaking the source file(s) into multiple streams.	2
30.	The solution should enable the performing of refresh scheduling by source type that are available within the solution.	2
	Data Source Connectivity and Ingestion	
31.	The solution should provide connectivity capabilities to other data sources, such as web-based solutions, XML, RSS feeds, JSON, flat file, spreadsheets, etc.	2
	Data Storage and Management	2
32.	The solution leverages a normalized logical data model for creation of the enterprise data warehousing subject areas and supports dimensional modelling for independent data marts used for analysis and reporting.	2

33.	The solution should leverage existing analytic storage (e.g., X-IO Storage, data warehouse, third-party in-memory engines)	2
34.	Scalability – must provide the ability to scale storage and processing power as data volume grows.	2
35.	Capability to store structured, semi-structured and unstructured data .	2
36.	Capability to optimise storage of structured data for analysis and reporting.	2
	Data Processing and Analytics	2
37.	Query Performance – the solution should provide for a high-performance query engine to handle complex queries efficiently	2
38.	Analytical Tools – the solution should provide for and integrate with business intelligence (BI) or analytics tools for data visualisation.	2
	Interactive Visual Exploration & Analytics Dashboard	
39.	Supporting the interactive capabilities, such as: <ul style="list-style-type: none"> • Show detailed behind a visualization • Interactively create custom groupings for use as a new dimension or filter or within a hierarchy or offer similar functionality. • Allowing users to apply filters globally across all content within an analysis or across selected content, as determined by the user. • Binning capabilities. • Interactive formatting options for charts 	2

	<ul style="list-style-type: none"> Advanced visualization features (without coding) 	
40.	The solution should allow for reports, dashboards, ad hoc queries, and analysis to be created "out of the box" from at least one multidimensional online analytical processing (MOLAP) data source, such as Hyperion Essbase, SQL Server Analysis Services - traditional OLAP and/or tabular models, SAP BW or Oracle OLAP.	
41.	Machine Learning – support machine learning and advanced analytics.	2
	Data Governance and security	
42.	Data Governance – the solution should enable the enforcement of policies and procedures to ensure data quality, consistency and compliance.	2
43.	Security - Provide for the consistent application of security controls throughout the data collection, processing, analysis and output functions (e.g. search results, reports and workflow information must only be visible to a user that has the required clearance).	2
44.	Security - Enabling Administrators to track user access/activity to/on various data objects (dimensions and measures), by date, including whether the information was exported outside the DA solution.	
45.	Compliance – the solution should enable / comply with regulatory requirements such as GDPR, HIPAA etc.	2
46.	The solution support Information Lifecycle Management best practices.	2
47.	Include full audit trail capability from data collection, processing, analysis, and output.	2
	Interoperability and Usability	

48.	API's and Connectors – the solution should provide for API's and native connectors to integrate with other systems and applications either in the cloud or on-premises (Microsoft Dynamics NAV, OpenText Vibe (Maria DB/SQL), Salesforce, NetSuite etc.).	2
49.	User Accessibility - Collaboration Workspaces (including having multiple users working on the same project or workflow task at the same time, having due consideration to user roles and permissions).	2
50.	User Accessibility - the solution should provide user-friendly graphical user-interfaces for data scientists, analysts, and business users alike.	2
51.	Metadata Management – The solution must provide tools for managing metadata to enhance data discoverability and usability	2
52.	Metadata Management - The solution generates metadata layers for reporting tools, such as SAP Business Objects Universes, IBM Cognos Framework Packages and Microsoft Analysis Services cube definitions.	2
53.	Metadata Management - The solution should provide for a single repository for ALL metadata, such as mappings of business concepts to underlying data structures (e.g., dimensions, measures), as well as layouts AND report configurations (e.g., prompts, filters).The solution support integration with business intelligence and data analytics tools at the semantic level. Changes to the data warehousing structures and semantics must be seamlessly provided to the BI tools.	2
54.	Metadata Management - The solution should enable a report consumer and a report author to view common definitions for metadata objects.	2
55.	Metadata Management - The solution should highlight changes in the source data (down to which fields are impacted within a report) that affect downstream reports.	2

56.	The solution should support data lineage to determine which source solutions contributed to the report regardless of which extraction, transformation, and loading (ETL) tool is used.	2
	Optimisation	
57.	Monitoring and Management – Provide tools for monitoring performance, managing resources and troubleshooting issues, enabling the SIU to conduct capacity assessments to determine future needs.	2
58.	The solution should allow for the managing and monitoring active data loads.	
59.	Automation – Provide the capability to automate routine tasks to improve efficiency and reduce errors.	2
60.	Resource Allocation – Efficient allocation of resources to balance performance and cost.	2