ADVISORY

CGI

Sm@rtering Volume Tests

Monitoring report - Executive Summary

kpmg.pt

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Executive Summary

The Sm@rtering platform allows for the collection, management and processing of data from Advanced Metering Infrastructures (AMI). CGI performed Volume Testing procedures, monitored by KPMG, to validate the ability of the Sm@rtering platform to process millions of meters. KPMG has confirmed that the Sm@rtering platform successfully processed all data relative to 5 million meters, for all the business processes within the test scope.

The Sm@rtering platform is a modular system, based on three modules:

- AMI HEAD-END, which includes all the functionalities that allow scheduling and communicating with the AMI network (e.g. meters and sensors), using different types of protocols. This component is also responsible for the translation of the data to a standard Sm@rtering format and for loading data into the system.
- MDM/EDM, holds all the business logic necessary to support the installation processes and operation of the metering equipment, including the storage, validation and the estimation of all the data collected. This module also includes the ability to calculate billing determinants that provide information to other business processes (e.g. billing).
- AMI SUPERVISION & GRID (SUP), allows the monitoring and control of the performance of the AMI and also monitoring of the status of the electrical grid and correlation with other relevant data to anticipate and reduce the outages. This module is supported by operational dashboards and real-time event processing.

The main goal of these Volume Tests is to demonstrate the ability of the different Sm@rtering modules to manage the data of a relevant number of meters. The Volume Testing was performed using release 3.5 of the Sm@rtering Platform.

Considering its criticality, CGI designed and performed 8 test scenarios to evaluate the capability of the Sm@rtering platform to handle the data generated by either 5 million meters or 10 million meters (depending on the test scenario).

KPMG monitored the CGI team during the execution of the test scenarios to (a) confirm that the test scenarios were executed in accordance with the predefined workload and test conditions; (b) ensure that the results were monitored, recorded and reported accurately; and (c) verify if the results met the success criteria.

In this exercise, KPMG procedures were focused on monitoring and reporting the data volumes used and the time required to execute each test scenario. The measure of success was the creation/update of collected/processed data in the relevant database tables. KPMG did not perform procedures to validate the Sm@rtering platform business logic, further evaluate the Sm@rtering platform performance, or assess the correctness of the processed data.

The results shown in the following table were recorded by KPMG:

Test Scenarios			
Scenario	Name	Business Processes executed	Elapsed time until last write in the database (hh:mm:ss)
1	Daily readings, 5 million meters	1. Load Assets Data 2. Validate, Edit and Estimate 3. Billing Determinants	01:22:58
2	1h Load Profiles, 5 million meters	1. Load Assets Data 2. Validate, Edit and Estimate	01:24:37
3	Real Time Events, 5 million meters	4. Event Processing	00:47:30
4	Data Collection, All, 5 million meters	1. Load Assets Data 2. Validate, Edit and Estimate 3. Billing Determinants 4. Event Processing	04:36:30
5	Calculate Key Performance Indicators, 5 million meters	5. Calculate KPIs / Dashboards	00:34:24
6	15min Load Profiles, 5 million meters	1. Load Assets Data 2. Validate, Edit and Estimate	01:56:12
7	1h Load Profiles, 10 million meters	1. Load Assets Data 2. Validate, Edit and Estimate	02:55:20
8	Real Time Events, 10 million meters	4. Event Processing	01:41:49

The test results demonstrate that the Sm@rtering platform is capable of processing the data volumes described in each of the test scenarios in the reported elapsed times.

The test scenarios were performed under specific conditions. Those specific conditions and assumptions considered for each business process are detailed in the complete report. KPMG conclusions are made specifically under these conditions. Furthermore, the projection of any conclusions to future periods is subject to the risk that changes made to the system, or the failure to make required changes to the system, may alter the validity of such conclusions.

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