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Maxim’s POS Polling Enterprise Service Bus Implementation Service

**EL-FY16-902**

**Sales/Master/Pricing Data Exchange**

Technical Design Specification

# Document Control

## Document History

| Version | Date | Author | Revision Remark |
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| 0.9 | 20/01/2017 | Steven Chen | 1st draft |

## Document/Design Owner

| Name | Title |
| --- | --- |
| Steven Chen | System Analyst |
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## Key Comments

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# Background

## Document Purpose

The purpose of the Technical Design Specification (TDS) is to describe the detailed system design specification for a project and its main aim is to provide system design context for the project and its objectives. It will provide the input for system development activities.

The Technical Design Specification is part of the deliverables in the Business Case Development phase of Project Delivery Lifecycle.

## Document Scope

The scope of the Technical Design Specification (TDS) is to describe the technical views of the system. It has section such as Data Schema, Job Control Logic Specification, etc.

## Document Audience

The audience of this Technical Design Specification (TDS) is the technical staff of the IT department of the project owner.

## Terms & Abbreviations

|  |  |
| --- | --- |
| **Abbreviation** | **Description** |
| ESB | Enterprise Service Bus |
| API | Application Programming Interface |
| EDW | Enterprise Data Warehouse |
| EOD | End of Day |
| POS Client | One Database Owner on the Sales side, provided by the POS machine vendor/manufacturer |
| DB | Database |
| POS | Point of Sales |
| Staging DB | The service bus database to stage the polling data |

## Reference Materials

| Document Names |
| --- |
| Maxim’s POS Polling ESB Implementation Service Proposal EL-FY16-902-v3.docx |
| POS Polling User Requirement Confirmation-20161121-Discussion Note.xlsx |

# Executive Summary

The aim of the ESB project is to migrate three data processing flows in Maxim’s current enterprise architecture using database provided technologies (linked server & stored procedure) to a new platform using Oracle Enterprise Services Bus technology. In the new ESB polling system (ESB system), three data processing flows will be implemented:

* Sales data real time processing to EDW
* Sales data EOD processing to EDW
* Synchronize master data to POS clients (e.g. Pricing/Master)

The ESB system will use JDBC to connect to the databases of existing POS clients in outlets by pre-configured connection information in order to collect sales data from the existing POS systems and update the pricing/master data back to the existing POS clients. Referring to the polling logic found in the production IT51 server, for any connection error, the ESB system will log down the error and retry data synchronization. After reaching maximum retry count, the ESB system will halt the synchronization for that particular POS client and generate alert to related parties for follow up.

All POS clients’ connection settings are configurable and maintainable by Maxim’s IT. It makes the adding of new POS client easy and no alteration of programming code is required. The ESB system can invoke several configurable concurrent threads to poll/push the data to/from POS clients concurrently for maximizing system performance.

# Data Flows

## POS Clients to Staging

## Staging to EDW

# Database Schema

## Business Related Tables

## Non-Business Related Tables

## Pricing/Master Tables

# Job Control Specification

## Job Controller Specification

## Task Scheme Definition – Single Task Detail Flow

## Sales Data Real Time POS to Staging DB

## Sales Data Real Time Staging to EDW

## POS Client EOD Data Process POS to Staging DB

## POS Client EOD Data Process Staging to EDW

## Pricing/Master Data Processing

## Pricing/Master Data Distribution

# Infrastructure

# Interface Clients Management

# UI Application Program Flows

# Backup & Housekeeping

## History Table

## DBF File / CSV File

## OSB Log Files Removal

## Database Backup

# High Level Interface Design

# Functional Design

# Non-Functional Design

# System Interface Specification

# Interface Specification

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