eService Development Phase 5 Scope Statement – Bulk Plant Calculator

# Project Goal

* Implement eService Online essential framework
* Implement Rig Board page with the list of upcoming callsheets in rig tracker format.
* Implement Product Haul page with the list of product hauls.
* Implement Product Haul Editing page for creation/update
* Implement Bulk Plant Calculator to calculate product load sheet from call sheet product requirement.
* Implement Print Load Sheet as a web page

# Project Duration

Development Phase: July 17 - August 4

Initial Test: August 8 - August 11

Feedback and Improvement: August 14 – August 25

Pilot Operation: August 28

# Background

## Business Process

### Current Process

Currently the bulk plant calculator is an excel sheet shared through the portal.

The personnel at the bulk plant, will take the call sheet and enter the data into the “Master Bulk Plant Calculator” to give a “Bulk Plant Loading” sheet. This sheet is then passed back and forth between the bulk plant and dispatch for their verification process.

Once verified, a printed copy is provided to the bulk plant to create the load. The split of the blends/loads is written on the printed load sheet and stored on a clipboard in the bulk plant. This information is then entered into AX as a product movement.

### Future Process

In this phase, we are going to achieve following process.

1. Dispatcher create call sheet from program.
2. Dispatcher initiate product haul from call sheet which shows in a format of Rig Board.
3. Dispatcher select a blend needed in a call sheet, enter load amount to save a load sheet.
4. System will do the blend calculation to show proper product breakdowns for the blend.
5. Dispatcher print the load sheet to PDF.
6. Dispatch send to PDF load sheet to bulk plant operator as current process.

# eService Online

## Overview

eService Online is a web based application to provide additional functionalities on top of current eService Application. It won’t replace eService Application until it fully satisfies business needs. eService Online will adapt latest technologies to deliver supreme user experience and help to optimize business process in an integrated manner.

## Security

eService Online utilize Sanjel Security Service for permission control. eService Online extracts user domain name to be the username to retrieve the security data. Since the user must be a domain user and only have access within Sanjel intranet, no password needed for access.

## Technical Requirements

eService Online is built with ASP .Net technology which is able to deploy on IIS or running as self-hosted service. eService Online provide web pages for users and Web API for other applications’ integration. It is built on the top of eService Application and Sanjel Common Library. It needs to follow same design and architecture with eService Application, communicate with existing eService through existing services, access data in same Oracle database.

To achieve high desire of maintainability, eService Online implementation must follow same guideline with eService Application development to maintain the consistency of architecture.

# Rig Board – Call Sheet Only

Retrieve upcoming callsheets to display in Rig Board. Some columns need to be tweaked for display shorter. Just use the full length data for now. Leave the interface for processing. The detail requirements will be provided later.

# Cement Products Management Sub-system

This will be implemented in future phase.

Vision: Provides UI for Lab to manage the cement chemical products and blend recipes. Consolidate product publish process to ease the collaboration efforts among lab, client solution, engineering, finance, supply chain, etc. Build up the single source of truth product database to be the foundation of accurate cost and profit analysis.

# Blend Calculator Service

## Blend Loads Calculation

Blend Loads Calculation Service is in forms of Web API.

User Input: Blend on job recipe, Base Blend + Additives; Total Tonnage or Base Blend Tonnage, Water Requirement.

Output: Blend break down.

Dependency: Blend Recipe database, Blend Chemical Database.

## Blend Properties Calculation

This will be implemented in future phase.

Blend properties calculation will help to standardize the blend calculation process among lab, client solutions and field, to provide the beauty of consistency and accuracy. This will help to assure the job qualities.

# Cement Product Loads Management Sub-System

# Master Data

Bulk Plant Calculator has following master data involved and created. Current eService entity relationships between these master data entities need to be consolidated and enhanced while scope expanding.

Sanjel.Common.BusinessEntities.Reference.BlendFluidType – This is the base blend list in eService. This will be redefined as BaseBlend entity, but implementation needs to keep eService current implementation and extend it to be properly defined in BulkPlant Calculator.

Sanjel.Common.BusinessEntities.Reference.AdditiveType – This is the blend additive list in eService. This will be redefined as BlendAdditives entity, but implementation needs to keep eService current implementation and extend it to be properly defined in BulkPlant Calculator.

Sanjel.Common.BusinessEntities.Reference.BlendCategory – This is the blend category list in eService which is used to determine which blend needs calculation.

BlendChemical – New master data which will be the base class of BaseBlend and BlendAdditives, which contains the chemical properties of Blend itself.

BlendRecipe – New master data which contains composition of cement and additives.

Product – New master to reflects the linkage with price book item (Sales Product, Billing Product), inventory product (Inventory Product)

# Business Entities

Product Haul – Presents one product haul schedule which associate with a call sheet.

Blend Load Sheet – Present product loading details of one product haul.

# eService Unit and Personnel Integration

This will be implemented in future phase.

Assign units and personnel to a product haul will automatically populate the information to eService Application.

# Product Movement Journal Integration

This will be implemented in future phase.

Once we have blend load information, we will be capable to post it as movement journal to SBS.

# Work Breakdown for Phase 5

1. Data Model Design – Master Data and Business Entities
2. eService Online infrastructure – Rig Board
3. Master Data Preparation – Database setup, data import, data access service.
4. Recipe Management – Create database structure to host recipes. Import data. Implement data access service.
5. Blend Calculation Service – Calculate material amount from product requirement and recipe.
6. Blend List – Create database table to link up product section in eService, manage product overall information, sent and remains. This may be only calculated in the fly.
7. Load Sheets – Create Load Sheets database, and all Load Sheet UI, Call Sheet specific UI.
8. Print Loading Sheets & Breakdown Sheet – print as formatted web page, user can select printer to save it as PDF.