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BI Dimensions

PepsiCo International

Design Document

10/18/2013

# Version 0.1

# Revision Control

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| Template Version: | PepsiCo International Design Document v1.6 / KnowledgeNet Release Date (06-2010) |

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| Author: | | Armando Díaz | | |
| Revision Date | By: | | Version | Description of Change  (Include reference to any request for change numbers) |
| 10-18-2013 | Armando Díaz | | 1 |  |
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# Review/Approval History

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| Review / Approval Date | By: | Action |
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# Project Tailoring Details

This section identifies detailed modifications to BIS PLM deliverables from the standard template version for this project. If no changes are documented, the most current version of the template should be used by the project team. All tailoring of key template deliverables should be approved by the appropriate BIS Process Owner.

Possible actions for tailoring a deliverable to meet project needs are ADD, Modify, and N/A. Do not delete any sections within this template. Document the section of the template that was modified or changed and a detailed description of the change including justification and/or the alternative approach used.

| Action | Document Section | Tailoring Description and Rationale |
| --- | --- | --- |
| <Ex. ADD> | <Integration Management> | <Action: Add a project organization chart to the Management section.  Rationale: Needed to show an integrated teaming approach with functional areas that the team interfaces with.> |
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1. Purpose

The purpose of this document is to formally document the design for the Sales ETL (Extract, Transform, Load) System for PepsiCo CARICAM.

This document has to be strictly supervised and signed off by Architect. This should include Data aspects and Key Controls.

<Upon completing the Project Identification – Project Specifics section of this document (below), please right-click in the Project Signature section, and select Update Field to view the changes in the auto-text populated for the Project Name, Project Number and Date..>

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| --- | --- | --- |
| Project Identification - Project Specifics | | |
| Project Name | Project Number | Date Document Created |
| BI Dimensions |  |  |
| Current Phase | Project Tier Classification | Business Sponsor |
|  |  | **Ana Domínguez** |
| Division(s) Impacted | BIS SLT | Project Manager |
| **Pepsico Foods** |  |  |

2. Design Considerations

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| Decision Overview |
| Describe the system design in broad terms including alternative designs and why one was chosen. Consider benefits, costs and schedule, and technical risks. Describe how the proposed solution aligns with the enterprise architecture. |
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| Other Considerations |
| Describe other considerations used to make design choices. |
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3. Architecture

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| Major Subsystems |
| Describe the major subsystems (major clusters of functionality), their responsibility, and preliminary list of modules or classes that will be contained in each subsystem.  Describe how the system architecture fits into the current systems design. Identify any required changes to the current application components as a result of this high-level design. |
| **The major Subsystems are:**   1. Sales Data Mart 2. Client applications for Sales Data Mart Dimensions and Measures data management.   **Dimensions and Measures Data Source Systems:**   1. Sales Data Mart   **Common Characteristics across systems:**   1. All systems are physically located in a Data Center in Mexico 2. All systems use Microsoft SQL Server as DBMS 3. All systems have more than one instance 4. BIDimensions can act on Dimensions and Measure Groups from Sales Data Mart for management.   **Unique characteristics of each system:**   1. **Sales Datamart**    1. Dimensions tables    2. Measure Groups 2. **Tool for data management:** The BIDimensions tool is the core user interface for maintenance of dimensions and measure groups data.      1. **User interfaces**     1. **BIDIMENSIONS**       1. Minimized options to run the application will make it as simple as possible.       2. Designed to be heavily processed by business layer that will take care with well-known inputs and outputs to translate requests into a format understood by components within the layer. |
| Communication |
| Describe the communication between the sub-systems. |
| SQL is used for Communication between Packages in iBItoSAP.  The Client system (BIDimensions) will only add and modify data from the supplier system (Sales Datamart). Deletion of data is avoided to maintain data integrity. |

4. External Interfaces

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| Inputs |
| Identify input interfaces, function call protocol, and the nature of the data structures passed across the interface. |
| **BIDimensions** is an End User application that acts as a client to the **Sales Datamart Database**. The user will retrieve data to perform edition or addition of data.  The communication between the BIDimensions and Sales Datamart Database is realized via the data structure of table.  Non-uniform approach is used since data access methods will not change too much mainly because there are not different databases.  Data from the UI to middle tier is passed using getter and setter and from the middle tier to the data access layer using arrays/list and comma separated.    From middle tier the data will be pulled from the data access layer using dataset/datatable/XML that will be converted it into strong type objects    All data processing will use multi-tier architecture, in a disconnected approach.  SSL encryption protocol will be enabled in functions call to establish a secure connection to SQL Server. |
| Outputs |
| Identify output interfaces, function call protocol, and the nature of the data structures passed across the interface. |
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5. User Interfaces

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| Menus |
| List Menu Names and Layout of Menu Structure. |
| **BIDimensions**  BIDimensions will perform a hierarchical structure menu user interface to perform tasks by user selection |
| Screen Layouts |
| List Screen Names, Purpose, Fields and Definitions, Function Keys and Actions. |
| Appendix 11 |
| Report Layouts |
| List Report Name, Purpose, User Type, Frequency, Sort and Filter Criteria, and Fields and Definitions. |

6. Database Organization and Data Storage

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| Logical Data Model |
| Provide a description of the logical data model. (The model should account for data required on all reports, menus, screen layouts, as well as user actions.) Provide appropriate diagrams. (May be attached in appendix). |
| **Dimensions and Measure Groups tables**  The Sales Datamart Database is designed with two schemas:  **Dimensions tables**: that holds users membership and profile information.  **Measures Groups tables**: with the configuration data to process the generation of ledgers.  Both schemas are related through the **aspnet\_Roles** and **Ledger\_Header** tables where **Role\_Id** is the relation Key. |
| Database Management System |
| Identify the DBMS (if applicable) that will be used for construction the relational database model. Describe the rationale for selecting the DBMS. |
| SQL Server 2008 R2 is being used in BIDimensions. |
| Data Storage |
| Describe how non-database information is stored. |
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7. Programming Language

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| Programming Language |
| Identify the programming language(s) that may be used to implement the design. |
| Visual Basic .Net version 2013 developed in Visual Studio (Visual Basic)  SQL 2008 R2 |
| Recommendations |
| Provide a rationale for selecting the appropriated programming language. |
| Is a RAD and design layouts & applications easy and fast.  Great tool for the designing of user friendly database application. |

8. Data Conversion Mapping

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| Identify any required logic, translation, transformation, formatting, default values, etc. necessary to achieve the input required by the target application. Please note, the Field Mapping Document may be used in conjunction to support this section. |
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9. Other Design Considerations

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| Discuss any other design considerations including: memory management, concurrency/threads issues, string messages, error handling, security, networking considerations, etc. |
| BIDimensios will be used in all CARICAM area.  Error Log  In order to execute the interface user must provide his GPID. |

10. Security Role Design

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| **Access Controls – Authorization (Key Control Point)**  For Key Control Compliance, Security Role and Segregation of Duties Design are required for all NEW applications that become in-scope Key Control applications.  Security Role Design ensures that role profiles are created for end users to ensure the right level of access. Segregation of Duties ensures that duties are separated so that one person does not perform processing from the beginning to the end of the process. Duties that should be segregated include:  - Authorization  - Custody of the assets  - Recording transactions  *See the Security Role Design Matrix and the PCS Role Definition Process & Responsibilities Design Guideline in KnowledgeNet for assistance in creating this section.*  Discuss the varying levels of access control required by the application/system. Consider user types, roles (viewers only, administrators, etc.)poiu |

11. Appendix

BIDimensions





| Project Signatures |
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| Refer to the Project Job Roles Alignment document for required signatures. . Please indicate in the “comments” section if Project Workspace or email voting buttons are used to capture required signatures. |

<**NOTE:** Please highlight the Project Identification section below, right click mouse and select Update field. The data from the Project Specifics section will auto-populate.>

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| Project Identification - Project Specifics | | |
| Project Name | Project Number | Date Document Created |
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**\*Your signature indicates your review and agreement with the content in this document and that you are accountable for the sign-off of this completed key deliverable.**

| Printed Name/Title/Division | Approval Signature Date |
| --- | --- |
| <List the Name>  <List the title of the person *(ex. Project Manager, CIO, IT Owner, CTO, Supporting ITO Owner)*>  <List the division of the person> | □ Yes  □ No  Comments: |

| Printed Name/Title/Division | Approval Signature Date |
| --- | --- |
| <List the Name>  <List the title of the person *(ex. Project Manager, CIO, IT Owner, CTO, Supporting ITO Owner)>*  <List the division of the person> | □ Yes  □ No  Comments: |