1 Deliverable Description

ID and Title: D-19 Database Design Document

Description: The Database Design document maps the logical data model to the target database management system with consideration to the system's performance requirements. This document converts logical or conceptual data constructs to physical storage constructs (e.g., tables, files) of the target DBMS.

Deliverable Owner: Matt Kristin

Proposal/Contract Reference: Amendment No. 1 to Master Services Agreement, Exhibit E, section 1.2.3 Elaboration Deliverables

2 Content

Content Item	Description
1. Introduction	Describe the purpose, scope, approach, and methods for the database design. Provides a system overview, a list of acronyms and abbreviations, points of contact, and data owners.
2. System Overview	Introduce the system context and the basic design approach.
2.1 System Information	Describe the database management system configuration, the database software utilities, the support software, and the security.
2.2 Architecture	Describe the hardware and software architecture, the interfaces, and the data stores.
3. Assumptions, Constraints, and Risks	Describe assumptions or dependencies regarding the database design, describe any limitations or constraints that have significant impact and risks associated with database design and proposed mitigation strategies.
4. Database Design Decisions	Describe the decisions that impact the proposed database design such as assumptions made, known issues and constraints, performance, security, privacy, and maintenance decisions.
5. Database Administrative Functions and Monitoring	Define the responsibilities, naming conventions, the systems using the database, the relationship to other databases, schema information, entity mapping, de-normalization, performance improvement, business rules, storage, and recovery.
5.1 Roles and Responsibilities	Describe the roles and responsibilities
5.2 System Information • Database Management System Configuration • Database Support Software • Security and Privacy	Document the DBMS configuration, hardware configuration, database software utilities, and any support software used. If any of these software elements or hardware configurations are not CMS-standard architecture, indicate the date these items were approved or a waiver was granted.
5.3 Performance Monitoring and Database Efficiency • Operation Implications	Describe what parties will be responsible for monitoring performance (to include space utilization, system resource consumption, and query performance metrics), along with

• Data Transfer Requirements • Data Formats	tools that will help provide this monitoring.
6. Database Interfaces	Define the operational implications, data transfer requirements, and data formats related to the database interfaces.
7. Detailed Database Design, Physical and Logical Data Model	Describe the design of all DBMS files associated with the system, and any non-DBMS files pertinent to the database design.
7.1. Data Objects and Resultant Data Structures	For each functional data object, specify the date structure(s) which will be used to store and process the data. Describe any data structures that are a major part of the system, including major data structures that are passed between components.
7.2 DBMS Files	Provide an appropriate level of detailed design of the DBMS files, based on the DBMS chosen. Describe the file structures and their locations.
8. Glossary	Provide clear and concise definitions for terms used in the DDD that may be unfamiliar to readers of the document, listed in alphabetical order.
9. Acronyms	Proved a list of acronyms and associated literal translations used within the document.
10. Appendices	Utilize appendices to facilitate ease of use and maintenance of the DDD document. Each appendix should be referenced in the main body of the document where that information would normally have been provided.

3 Approver, Reviewers, and Work Plan

Approver: Justin Tease
Reviewer(s): Rick Ketcham, Paul Haigh, Gartner
Work plan tasks:

Task	Start	End	Notes
Deliverable: (D-19) Database Design Document	3/22/13	5/19/13	
Create Deliverable	3/22/13	4/18/13	
Document Database Design Document	3/22/13	4/18/13	
Review and Approve Deliverable	4/19/13	5/9/13	
Intl Rev & U/D – Database Design Doc	4/19/13	4/25/13	
Milestone: Database Design Document Submitted	4/25/13	4/25/13	
Rev, Rvs & Appr – Database Design Doc	4/26/13	5/9/13	
Milestone: Final Database Design Document Approved	5/9/13	5/9/13	

4 Acceptance Criteria

- Document will include the system context
- Document will include the database design
- Document will include the dependencies and Interfaces with other databases and/or systems
- Document will also include logical data model and physical data model including the database entities/tables/views
- Document will also include the definition of common understanding of the business elements and the inter-relations

Revision History

Version	Date	Modified By	Description
1.0	03/05/2013	Corina Gasner	Delivered to SOV for review
2.0	04/17/2013	Mike Blake	Revisions per IV&V review