

DATA MANAGEMENT SYSTEMS TECHNICAL DIRECTION DOCUMENT

1.0 Purpose. The purpose of the Data Management Systems (DMS) Technical Direction Document (TDD) is to provide direction for the ongoing DMS software operations and sustainment effort.

2.0 Requirements. DMS products are required by Strike Warfare Directorate's Strike Application and Experimental Planning Lab Division (ST13) personnel to perform data administration tasks necessary to support Operational Plan (OPLAN)-level requirements directed to Strike Warfare Directorate's Combat Plans Division/USSTRATCOM (ST12). The DMS Software developer shall maintain and integrate the following Computer Software Components (CSCs) that compose the Data Management System:

2.1 DATMAN - The DATMAN application provides open-ended data movement capabilities. This is accomplished through user-defined rulesets and mappings. The ruleset is used to arrange the source to resemble the destination structure. The mapping assigns a source column to a destination column. The DATMAN application interfaces with Integrated Strategic Planning Network (ISPAN) Enterprise Database Data Version (EDBDV) and Enterprise Database New Look (EDBNL) via the Structured Query Language (SQL) to perform all necessary operations. Functions include:

- 2.1.1** Radar Fixed Point (RFP) – RFP is National Geospatial-Intelligence Agency (NGA) provided data that provides ground navigation points for Air Vehicles. RFP is provided by USSTRATCOM to external customers.
- 2.1.2** WINDS - Planners use climatological winds data to estimate air vehicle refueling requirements and radioactive fallout patterns
- 2.1.3** Terrain Contour Map (TERCOM) catalog loader - The TERCOM catalog is used to manage the ordering and delivery of National Geospatial-Intelligence Agency (NGA) TERCOM data used in mission planning for routing Air Launch Cruise Missile (ALCM) and Advanced Cruise Missile (ACM).
- 2.1.4** Digital Aeronautical Flight Information File (DAFIF) - DAFIF is a NGA product used by the Air vehicle Planning System (APS) for bomber route development. DAFIF data is versioned in EDBNL. The source DAFIF data resides on the spatial data server.
- 2.1.5** Non-Versioned NL to NL Data Mover - Moves non-versioned tables from one NL database to another NL database. Used to initialize/refresh databases or to move a working standalone database to a public database.
- 2.1.6** Versioned NL to NL Data Mover - Moves versioned tables from one NL database to another NL database on a configuration basis. Versioned objects in the source database configuration are copied to the target database and associated with the target configuration.
- 2.1.7** Targeting undercover NL to NL specialty data mover - Used by targeting as an internal targeting process mover. It updates the objects in the target

DRAFT 1.01

database configuration by comparing objects in the source database configuration and making the appropriate updates, inserts, or object association deletions to make the target configuration objects match the data in the source configuration.

- 2.1.8 Consolidated Air Defense Order of Battle (CADOB) - CADOB software system populates the EDBNL with CADOB data derived from EDBNL Generalized Military Intelligence (GMI). GMI data is copied from the Modernized Intelligence Database (MIDB). CADOB consists of Air Order-of-Battle (AOB), Missile (Strategic Surface-to-Air Missile OB (MOB), Tactical Surface-to-Air Missile OB (TOB), Radar OB (ROB) data consolidated for specific user requirements, and in other capabilities (PD loader, PC4 loader)
 - 2.1.9 External Support System (ESS) – ESS retrieves non-flight plan data from the EDB, and formats this data for direct media output (4/mm DAT or 9-track tape) as outlined in the corresponding Interface Control Documents (ICD):
 - 2.1.9.1 USSTRATCOM to AFMSS (U2A) ICDs
 - 2.1.9.2 Mission Data Preparation System (MDPS) to Air Combat Command (ACC) 9-Track Tape ICD
 - 2.1.10 EDBNL Targeting Data Mover (ENTDM) – ENTDM provides a mechanism to copy Targeting data from an EDBNL source to an EDBDV destination, one source configuration at a time. The ENTDM application interfaces with EDBDV and EDBNL via the Structured Query Language (SQL) to perform all necessary operations
- 2.2 **Automated Air Facility Information File (AAFIF)** – AAFIF software system processes and maintains data obtained from NGA to be managed on ISPAN and used in the production of the OPLAN 8044. The AAFIF input file contains a list of the current airport and runway information. The list is the source by which planners designate the final takeoff and recovery points for the ISPAN application.
- 2.3 **DVMOVER** – The DV to DV Mover software system allows a user to copy EDB data from selected tables of one DV to common tables in another DV or file.
- 2.4 **FILEVIEW** – The FILEVIEW system converts binary data to American Standard Code for Information Interchange (ASCII) format for viewing/validating.
- 2.5 **Fratricide Build (FRATBLD)** - FRATBLD constructs multiple sets of fratricide data.
- 2.6 **Reconnaissance Planning System (RPS)** – RPS is the automated tool used in the reconnaissance planning process. The system provides a graphical user interface to the data. RPS produces route and objective data for Document Production. RPS also produces DIA, 9th IS, and JCS files.
- 2.7 **TERCOM Placement and Evaluation (TPEP)** - TPEP provides an interactive graphics program which automates the placement, evaluation, and requesting of

ICBM?
pos
SCBM

DRAFT 1.01

TERCOM sites for the STRATCOM cruise missile planner. TPEP incorporates a NGA endorsed TERCOM site validation criteria and methodology.

2.8 EDBNL Application Programming Interface (ENLAP) – ENLAP provides Application Programming Interfaces (API) for the EDBNL environment. These APIs provide standard interfaces to the EDBNL database and the means to perform all functions necessary to maintain data integrity.

2.9 EDBNL Object Manager (ENLOM) – ENLOM provides a Graphical User Interface (GUI) to many of the APIs included in ENLAP and some functionality not provided in the API's. With appropriate permissions, ENLOM enables developers, data stewards and users to perform various data management operations.

2.10 EDBNL Data Mover (ENDAM) - ENDAM moves data from the Old Look EDB into EDB New Look. Moves non-versioned and versioned data in a pre-production environment. Used to set up developer databases and do the initial population of New Look databases in the Command.

3.0 Objectives/Justification. This TDD is to be used as a guideline for services to future and ongoing development, maintenance, and system support of the DMS effort. DMS, as part of ISPAN, will be managed as a WBS project within the overall Program effort. It is desired to merge DPS work into the overall contract effort where and when beneficial to the government to achieve Program objectives and cost efficiencies.

3.1 References.

- 3.1.1 USSTRATCOM Systems Architecture Document (SAD)
- 3.1.2 USSTRATCOM Technical Architecture Document (TAD)
- 3.1.3 ISPAN Production Schedule
- 3.1.4 Testing and Evaluation Master Plan (TEMP)
- 3.1.5 System Engineering Master Plan (SEMP)

4.0 Specific Tasks.

4.1 Software Engineering and System Integration. The main focus of the software developer team is to deliver software that satisfies the functional requirements detailed by the Program Manager. The software development contractor shall accomplish this by developing, maintaining, and integrating the Computer Software Components (CSCs) that compose the Data Management System as stated in section 2.0 of this TDD.

4.2 Maintenance Activity Tasks. The following is a list of the maintenance activities to be performed by the software developer. The software developer:

- 4.2.1 Performs integration and Formal Qualification Testing (FQT) of the DMS CSCs and shall provide support for DMS Operations Acceptance Testing activities performed by the government.

DRAFT 1.01

- 4.2.2 Includes, in the maintenance process, provisions to maintain reusability features of the DMS CSCs.
- 4.2.3 Ensures the DMS software delivery schedule facilitates:
 - 4.2.3.1 The actual production use of the software within the planning process.
 - 4.2.3.2 The use by both on-site and off-site developers to support application development and testing.
- 4.2.4 Maintains the DMS software by performing routine adaptive, corrective, and perfective maintenance.
- 4.2.5 Provides one-on-one training or classroom training for delivered DMS software.
- 4.2.6 Present all potential maintenance needs and activities to the Data Services (DS) Integrated Product Team (IPT) for validation and prioritization.
- 4.2.7 Proposes recommended software delivery schedules that meet USSTRATCOM requirements, for approval of the IPT.
- 4.2.8 The software developer shall maintain DMS and provide development utilities and tools required to support the DMS CSCs listed in section 2.0 of this TDD.

4.3 Corrective maintenance.

- 4.3.1 The software developer shall provide ongoing corrective software engineering to eliminate program deficiencies and errors uncovered by program users, testers, or developers. Any deficiencies or errors uncovered by users or testers shall be coordinated for Program Manager approval before correction.
- 4.3.2 The software developer shall provide technical assistance in trouble shooting existing programs.

4.4 Adaptive maintenance.

- 4.4.1 Under the CL15 Program Manager (PM) direction, the software developer shall modify the DMS functions on an as-required basis and adapt DMS CSCs to support the Strike Warfare Division operations.
- 4.4.2 Ongoing adaptive maintenance consists of the following activities:
 - 4.4.2.1 EDB modifications and integration, to include out of cycle change forms.
 - 4.4.2.2 External interface incorporation and maintenance
 - 4.4.2.3 The software developer shall incorporate guidance updates to support OPLAN 8044.
 - 4.4.2.4 The software developer shall design delivery schedules to meet STRATCOM requirements.

4.5 Perfective maintenance.

DRAFT 1.01

- 4.5.1 The software developer shall provide ongoing perfective software engineering to optimize the functionality of existing software as directed by the DS IPT to meet program users' needs.
 - 4.5.2 The perfective maintenance shall also include specific user requested interface enhancements.
 - 4.5.3 The perfective maintenance shall also include 'ease of use' enhancements.
- 4.6 New Functionality.** The software developer routinely provides the addition of enhancements, which are outside the normal maintenance activities, to the DMS. These items will be directed by the CL15 PM and will be accomplished by a government priority. Functional enhancements may include:
- 4.6.1 Incorporate AAFIF and File View into DATMAN.
 - 4.6.2 TPEP enhancements – rewrite of graphic display and map placement evaluation algorithm.
 - 4.6.3 Support the loading of data from the MIDB-C to the GMI database.
 - 4.6.4 Support ISPAN planners requirement for Forecast Winds data in the EDB.
 - 4.6.5 Incorporate RPS and TPEP into DATMAN.
 - 4.6.6 Incorporate any other new mission requirements that may be needed to support Unified Command Plan Change 2 (UCP CH2) missions.
- 4.7 IPT Support.** The software development staff shall participate in the DS and EDB IPT. The DS IPT shall be the primary means by which DMS planning issues are managed, addressed, and resolved. At regularly scheduled DS IPT meetings, the software developer should be prepared to discuss issues relating to planning functions, schedule changes, potential program modifications, risks, and coordination with other Government agencies.
- 4.8 Software Requirements Analysis.** The software developer develops and delivers software requirements. This is accomplished prior to the beginning of each new software version coding effort.
- 4.9 Optional tasks.** The following is a list of optional tasks to be performed by the software developer during the performance period of this contract:
- 4.9.1 Develop tools to support the import and export of data required to support conventional and non-kinetic weapon systems within the EDB.
 - 4.9.2 Develop APIs to enable ISPAN software components to access DMS tools, thus enabling the automation of data staging in support of time critical planning functions.
 - 4.9.3 Develop tools to provide data movement into and out of various security enclaves.
- 4.10 Performance period.** The initial performance periods for each of the extant products begins 1 October 2004. This is a delayed start, thereby making the extant product CLIN a contract option. The period of performance for each option year will end 31

DRAFT 1.01

January, with the following optional period of performance beginning 1 February, throughout the life of the contract.

4.11 Product deliverables.

4.11.1 Documentation. The software developer develops and delivers documentation in accordance with the contract Exhibit A, Contract Deliverables Requirements List (CDRL). Those items not included in Exhibit A may be provided in a contractor format acceptable to the government. The software developer may suggest, to the government, the tailoring (or elimination) of any document, or the use of CDRL A019 in place of the equivalent Exhibit A CDRL. Such recommendations shall occur in coordination with the DS IPT, coordinated through the Systems IPT. Recommended actions, as agreed upon by the CL15 Program Management Office, the IPT, and the Contractor, shall be implemented. The CDRL items required for the DMS software subsystem are listed below. Each shall be delivered separately from the program CDRL, until such time as the contractor proposes, and the government agrees, to incorporate them into equivalent program (framework function) CDRLs.

- 4.11.1.1 Software Design Description (SDD)
- 4.11.1.2 Software Development Plan (SDP)
- 4.11.1.3 Operations Concept Document (OCD)
- 4.11.1.4 Software Requirement Specification (SRS)
- 4.11.1.5 Interface Requirements Specification (IRS)
- 4.11.1.6 Interface Design Document (IDD)
- 4.11.1.7 Software Test Description (STD)
- 4.11.1.8 Software Test Plan (STP)
- 4.11.1.9 Software Test Report (STR)
- 4.11.1.10 Software Version Description (SVD)
- 4.11.1.11 Software User Manual (SUM)
- 4.11.1.12 Training Materials

4.11.2 Software. The software developer shall deliver the application software as identified in section 2.0 of this TDD. The following items shall be delivered IAW Exhibit A, CDRL A018. The DMS data shall be delivered separately, until such time as the contractor proposes, and the government agrees, to incorporate them into equivalent program (framework function) CDRLs.

- 4.11.2.1 Executables
- 4.11.2.2 Source code
- 4.11.2.3 Windows
- 4.11.2.4 On-line help files
- 4.11.2.5 Data

4.11.3 Reviews. The software developer shall accomplish the following reviews during the development cycle for each product. These reviews will include

DRAFT 1.01

representatives from the developer team, the Program Management, Functional Management and end users.

- 4.11.3.1 System Requirements Review (SRR)
- 4.11.3.2 System Design Review (SDR)
- 4.11.3.3 Requirements Joint Technical Review (JTR)
- 4.11.3.4 Preliminary Design Review (PDR)
- 4.11.3.5 Critical Design Review (CDR)
- 4.11.3.6 Design JTR
- 4.11.3.7 Test Readiness Review (TRR)
- 4.11.3.8 Production Readiness Review (PRR)

4.11.4 Earned Value Management System (EVMS). The software developer shall, on a monthly basis, deliver DMS specific EVMS data to the CL15 Program Management Office. This data should be incorporated into the program CDRL A013, unless the contractor can provide a best-value rationale for providing it separately. This data includes, at minimum:

- 4.11.4.1 Budgeted Cost of Work Scheduled (BCWS)
- 4.11.4.2 Budgeted Cost of Work Performed (BCWP)
- 4.11.4.3 Actual Cost of Work Performed (ACWP)
- 4.11.4.4 Budgeted at Completion (BAC)

4.12 Program events and milestones. Schedule milestones shall be provided in the program IMP/IMS. The contractor may also incorporate them as separate deliverable items. Schedule details will be worked with CL15 Program Office following the SDIP process, which may be tailored for this project. DMS is dependent on the Enterprise Data Base (EDB) business process which currently provides production deliveries approximately twice a year (June/Dec). DMS will have at minimum two deliveries each year to coincide with the EDB. An integrated baseline review schedule, that includes the tasks and milestones to support all specified deliverables should be included. Dependencies, resources, should be identified as well as the critical path.

5.0 Manpower/resources estimates. The DMS project has historically utilized approximately 12.1 FTEs to provide the functionality described, with an expected ramp-down to 7.5. (Note the ramp down to a stabilized funding stream with a real decrease over the life of the contract in FY2005 and beyond. This decrease is expected to result from total life cycle cost efficiencies.)

2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
1.742	1.779	1.815	1.106	1.106	1.106	1.106	1.106	1.106	1.106	1.106	1.106

6.0 Critical dependencies. DMS is dependent on the EDB, currently transitioning from Sybase 12 to Oracle 9i. There is a dependency of other IPTs on the delivery of DMS products to support application development and testing.

DRAFT 1.01

- 7.0 Risks.** A risk management plan, which may be incorporated into program CDRL A006, should provide real time access to the contractor's risk items, their status, mitigation strategies, OPRs, and related information.