

1.0 Overview

The Federal Emergency Management Information System (FEMIS[®])^(a) information resources are described in this *FEMIS Data Management Guide*. To comprehend what types of data are present, where the data is located, and how it is managed during the life span of the system, a basic understanding of the FEMIS architecture is necessary. The system is being developed by Pacific Northwest National Laboratory (PNNL)^(b) under the direction of the U.S. Army Soldier and Biological Chemical Command (SBCCOM). FEMIS was initially designed for Chemical Stockpile Emergency Preparedness Program (CSEPP) sites that have multiple Emergency Operations Centers (EOCs). FEMIS has been expanded to allow EOCs to use the system for non-CSEPP emergencies, such as floods.

Each EOC has personal computers (PCs) that emergency planners and operations personnel use to do their jobs. These PCs are connected via a local area network (LAN) to servers that provide efficient EOC-wide services. All EOCs are interconnected via telecommunications links.

FEMIS is a client/server system where much of the application software is located on the client PC. This client software consists of the FEMIS application, government furnished dispersion and evacuation models, and Commercial-Off-The-Shelf (COTS) software tools, such as the ArcView geographic information system (GIS) and Microsoft Project (electronic planning).

A UNIX server provides data management services, ARC/INFO GIS capabilities, evacuation (Evac) modeling, and meteorological (Met) input processing.

Figure 1.1 illustrates a conceptual view of FEMIS and the types of information required. Much of this information is located in the Oracle database management system (DBMS). Between EOCs, the DBMSs cooperate to share data, which allows multiple PC users to share the information while maintaining the integrity and persistence of the data. The user then adds information, makes decisions, displays maps, or uses other FEMIS functionality. Decisions and/or information are passed back to the FEMIS database and notifications are made to the FEMIS users. Other information exists on the UNIX file system and the Met server. The COTS tool information is used by the GIS, project management, and E-mail are present on the client file system. Table 1.1 summarizes the types of relational data used by FEMIS and the general use of that data.

Note: See the *FEMIS Installation Guide* for assistance with creating the database and installing the Oracle server as well as the relational database management system (RDBMS). See the *FEMIS System Administration Guide* for database administration tools and troubleshooting.

(a) FEMIS software was copyrighted in 1995 by Battelle Memorial Institute.

(b) Pacific Northwest National Laboratory is operated for the U.S. Department of Energy by Battelle Memorial Institute under Contract DE-AC06-76RLO 1830.

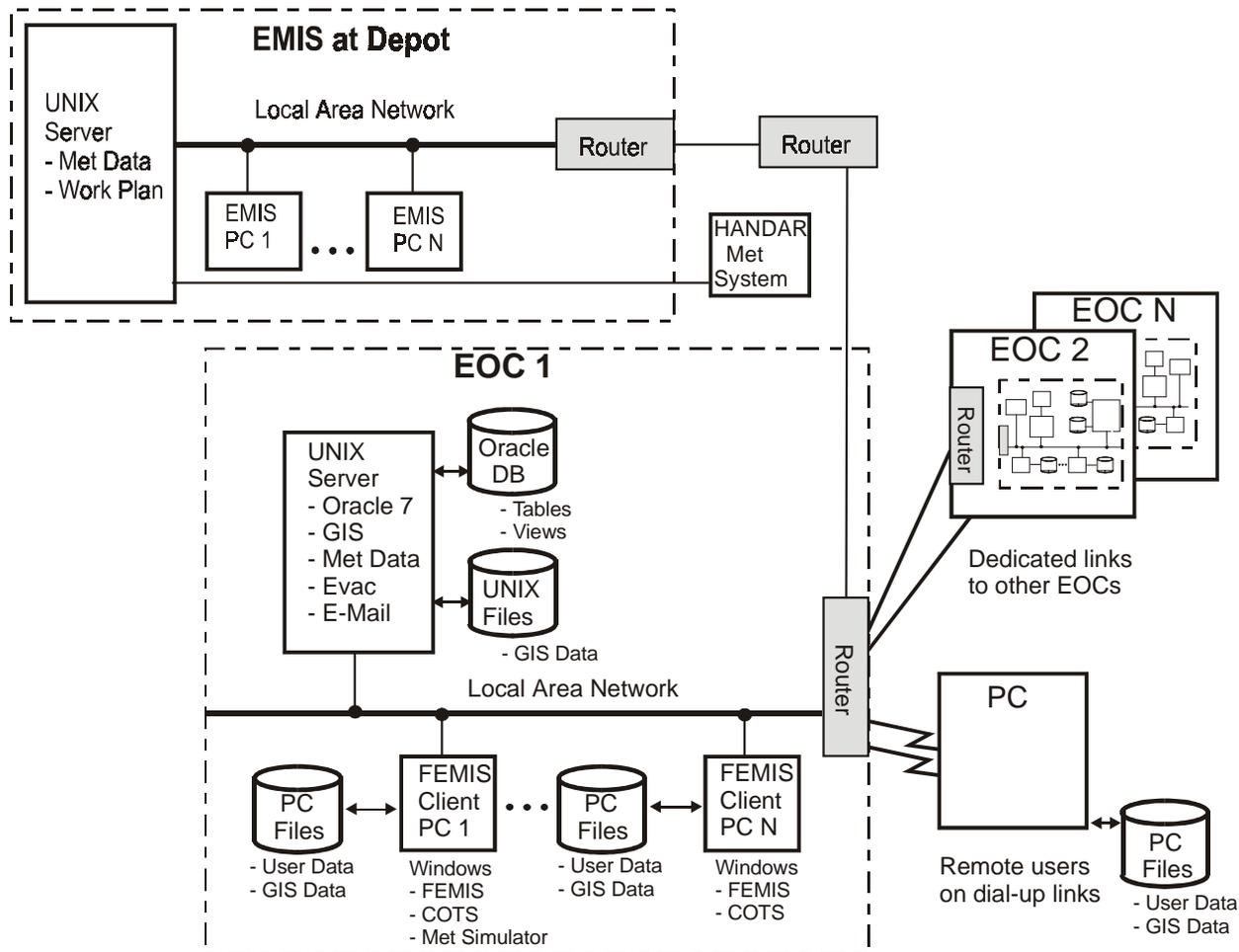


Figure 1.1. Conceptual View of FEMIS

Table 1.1. Types of Relational Data and General Use Description

| Data Type | Data Use Description |
|----------------------|---|
| D2PC Data | Relational data tables used by the dispersion model |
| Electronic Plan Data | Supporting electronic planning information |
| Evacuation Data | Relational data tables used by the ESIM ^(a) Evacuation Model |
| Facility Data | Facilities, resources, and shelters information |
| Hazard Data | Supporting multi-hazard planning and operations use |
| Meteorological Data | Weather conditions and tower information |
| Personnel Data | Person and organization information and user control data |
| Population Data | Population information including special populations |
| Resource Data | Resources and Memoranda of Understanding information |

| Data Type | Data Use Description |
|---|---|
| Risk Data | Plumes, wedges, threatened areas, and Protective Action Decision (PAD)/Protective Action Responses (PARs) information |
| Site Data | CSEPP site information including EOC data |
| Source Data | Chemical agents, munitions, bunkers, events, and casualties data |
| Spatial Data | Relational data supporting the GIS |
| Work Plan Data | Work Plans, Maximum Credible Event (MCE) data, the journal, and D2PC/Evacuation case management data |
| Zone Data | Emergency planning zones information |
| (a) Evacuation SIMulation (ESIM) model is part of the Oak Ridge Evacuation Modeling System (OREMS). | |

1.1 Point of Contact

We encourage you to contact us with suggestions or to ask questions. You can contact us by mail, telephone, fax, or E-mail:

Ranata L. Johnson
Pacific Northwest National Laboratory
P.O. Box 999, MS K7-28
Richland, WA 99352
Telephone: (509) 375-6311
Fax Number: (509) 375-3641
E-mail address: ranata.johnson@pnl.gov

1.2 Document Organization

This document is organized into nine sections and four appendices that contain supporting information.

Section 1.0 – Overview – contains an overview for managing the FEMIS data.

Section 2.0 – Resource Documents – lists documents referenced or used as resources for this document.

Section 3.0 – Building the Initial Information – describes how the initial information was compiled and how the relational and spatial data were initially loaded.

Section 4.0 – Managing Relational Data – discusses how the relational data is managed during system operation.

Section 5.0 – Managing Spatial Data – describes how the spatial data is managed after it was installed.

Section 6.0 – Managing Exercise Data – discusses how the exercise data is managed.

Section 7.0 – Managing Meteorological (Met) Data – discusses how the real-time meteorological data is managed.

Section 8.0 – Managing Evacuation (Evac) Data – describes how the evacuation data model is managed. Subsections describe opening, saving, deleting, and importing a case.

Section 9.0 – Managing D2PC Model Data – discusses how the D2PC model data is managed. Subsections describe creating, opening, saving, deleting, importing, and exporting a case.

Section 10.0 – Folder Management and Archiving – discusses external storage, folder data collection, archiving D2PC cases, and archiving limitations.

Appendix A – Site Survey Form – consists of a Site Survey form example. The site specific survey was used to collect an essential set of site parameters needed to preset the site database.

Appendix B – FEMIS Database Changes – consists of the Oracle database schema and GIS changes that have been implemented for FEMIS v1.4.7.

Appendix C – FEMIS Data Dictionary – consists of the FEMIS data dictionary, which is a dynamic listing of the current database.

Appendix D – Database Data Models – consists of the FEMIS main data model.

1.3 Software Products

FEMIS integrates the following COTS software products.

Table 1.2. Integrated COTS Software Products

| Software Application | Software Company |
|----------------------------------|---|
| ArcView GIS | Environmental Systems Research Institute, Inc. (ESRI) |
| NFS Maestro | Hummingbird Communications Ltd. |
| Solaris and Solstice NFS Client | Sun Microsystems, Inc. |
| Microsoft Windows NT Workstation | Microsoft Corporation |
| Microsoft Project for Windows | Microsoft Corporation |
| Oracle | Oracle Corporation |
| Oracle ODBC Driver | Oracle Corporation |

FEMIS integrates the following government-furnished software products.

| | |
|--|---|
| D2PC (February 2000) | U.S. Army Soldier and Biological Chemical Command (SBCCOM) |
| PARDOS v3.1 (May 1997) | U.S. Army SBCCOM |
| Evacuation SIMulation Model (ESIM v2.1f13) | Oak Ridge National Laboratory |

The following software products are optional.

| | |
|-------------------|--|
| ARC/INFO | Environmental Systems Research Institute, Inc. |
| Corel WordPerfect | Corel Corporation |
| Microsoft Office | Microsoft Corporation |