

**Facilities**  
**and**  
**Equipment**  
**Maintenance**  
**(FEM)**  
**System**

*Operating Location Hierarchy, Location Systems,  
and Equipment Hierarchy*

The relationships between and among the 3 FEM System hierarchy structures must be well understood by everybody. Duplication of hierarchies must be avoided to take maximum advantage of FEM System software capabilities. 'Enterprise' is used whenever a hierarchy level or hierarchy system is required to be used by everyone in USACE.

# C O N T E N T S

Operating Locations and Location Systems

Corps of Engineers Financial Management System (CEFMS)

Equipment Hierarchy

## Annexes

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### **Operating Locations and Location Systems.**

1. Water resource management is USACE's primary operational purpose. Project, district and division boundaries are delineated by drainage basins. Project boundaries are identified by the project's drainage basins; all district boundaries are identified by their projects' most external drainage basin boundary lines. Their districts' most external drainage basin boundary lines identify a division boundary. The main stem river of a drainage basin is made up of many tributary basins. A basin is often shared by 2 or more districts, but a basin is always within the boundary of a single division.
2. When one describes the projects and districts of a division, one is also describing the basins in the division. However, the basins, tributaries, rivers and canals are not usually included in the division or district title and often not even in the project title. Two exceptions are the Great Lakes and Ohio River Division and the Missouri River Regional HQ.
3. However, basins (and features of those basins such as rivers, lakes, etc.) cannot be named as part of the operating location hierarchy because often more than one project as well as more than one district shares responsibility for a basin. Other USACE organizations included in the recommended operating location hierarchy are the Engineering Research and Development Center (ERDC) which is at the hierarchy level of a division and regional HQ at the hierarchy level with Centers of Expertise, Field Operating Activities and laboratories (see Annex C).
4. The division, district and project titles are used also in the GL account hierarchy to track the cost performance of the 5 major USACE business functions. The project level should be the USACE enterprise level in the FEM System because this would allow the simplest cross-referencing to both the GL account hierarchy and the equipment hierarchy. Operations Managers should be given the operating location hierarchy below project level to provide the OMs' the maximum FEM

System flexibility to manage maintenance resources to accomplish work.

5. The FEM System software cannot have the same operating location, (e.g. Arkansas River Basin, Arkansas River) in 2 or more places (e.g., Tulsa District and Little Rock District) in the operating location hierarchy.
6. So, although the division/district/project titles are appropriate to use as the operating location hierarchy, location systems are needed to properly identify the real management entity: the water resources infrastructure. Location systems that wholly identify the water resources infrastructure ensures full use of the FEM System enterprise software capability.
7. The water resource infrastructure can be completely identified with 4 USACE enterprise location systems:
  - a. River/canal
  - b. Navigation
  - c. Basin
  - d. Lake/Pool

### **Corps of Engineers Financial Management System (CEFMS).**

#### **USACE Purpose.**

1. USACE's operational projects exist for the beneficial management of water resources. Management of water resources results in benefits that are accounted for by the 5 major USACE business functions:
  - a. Hydropower
  - b. navigation (locks/dams, dredging)
  - c. flood damage reduction
  - d. recreation
  - e. environmental stewardship (natural resources, environmental compliance)
2. The sole purpose of the Corps of Engineers Financial Management System (CEFMS) is financial accounting for the 5 major USACE business functions. In CEFMS, accounts track the cost performance of appropriated fund work allowances from the United States Congress and the President of the United States.
3. In the context of computer software hierarchies, 2 types of accounts are important: (1) parent accounts, and (2) child accounts. These 2 types are important because parent and child components are also

used to describe the other 2 hierarchy elements of the FEM System, equipment and operating location.

4. Therefore, all three FEM System hierarchies: CEFMS accounts, equipment and operating locations can be related through the parent/child descriptions.

**Equipment Hierarchy.**

A. In the most general sense at any level of detail, 'equipment' refers to anything that is maintained. The USACE enterprise equipment hierarchy levels should use the CEFMS asset hierarchy down to but not lower than 'principal item' as defined in ER 37-2-10, Chapter 31, Appendix A. This hierarchy should be established in the Asset Catalog of the Inventory Module with Asset Group as classification level 1 and, Principal item as Classification level 2 and sub-item as classification level 3. Use of the CEFMS asset naming convention synchronizes FEM System 'equipment' with CEFMS, REMIS and APPMS. This synchronization would provide the project OMs' the maximum opportunity to take full advantage of FEM System software capability.

B. The recommended FEM System enterprise equipment hierarchy would then be:

1. The Asset Classes of Personal Property and Real Property.

- a. Personal Property Asset Groups

- (1) Floating Plant
- (2) Automotive Land Plant
- (3) Other Mobile Land Plant
- (4) Office Furniture and Equipment
- (5) Material Handling Equipment
- (6) Shop Tools and Equipment
- (7) Laboratory and Testing Equipment
- (8) Portable Work Equipment and Tools
- (9) Communication Equipment
- (10) Audio Visual Equipment

- b. Real Property Asset Groups

- (1) Lands and Damages
- (2) Relocations
- (3) Reservoirs
- (4) Main Dam and Spillway
- (5) Outlet Works (Exclusive of Power)
- (6) Power Intake Works
- (7) Auxiliary Dams
- (8) Municipal and Industrial Water Delivery Facilities

- (9) Locks
- (10) Fish and Wildlife Facilities
- (11) Power House
- (12) Turbines and Generators (Including Station Service)
- (13) Power Plant, Accessory Electrical Equipment
- (14) Miscellaneous Power Plant Equipment
- (15) Tailrace
- (16) Switchyard
- (17) Roads, Railroads and Bridges
- (18) Channels and Canals
- (19) Levees and Floodwalls
- (20) Pumping Plants
- (21) Recreation Facilities
- (22) Buildings, Grounds and Utilities

- C. The asset group names listed in paragraph B.1.a.(1)-(10) would be collectively called Personal Property Asset Groups. The asset group names listed in paragraph B.1.b.(1)-(22) would be called Real Property Asset Groups. All of these asset group names come from ER 37-2-10, Chapter 31. Appendix A.
- D. The next level below asset group is the principal item. This is the lowest level recommended for the USACE FEM System enterprise, the level required to be used by all USACE FEM System users.
- E. FEM System software also allows users to define groups of principal items at the level below asset group. Users can also define their own unique sub-groups of principal items within the user defined principal item groups. Also, the FEM System user can assign components to either principal items, or principal item groups and sub-groups. The FEM System user does not have to define any groups or sub-groups. The FEM System user can simply assign principal items to enterprise operating locations or operating locations defined by the user below project level. Or, the FEM System user can do both. As a minimum all users must assign principal items to an appropriate enterprise asset group, operating locations and location systems
- F. FEM System equipment, the principal items assigned to an asset group, can be organized under the asset group level in user defined principal item groups and sub-groups (see Annex D). The principal items do not have to be further organized at levels below the asset group, but that capability is available to the Operations Manager. Managers above Operations Managers will be able to look at data for all the principal items of an asset group simply by retrieving a report on the asset group. All asset groups would be identical for all districts and divisions. So at any level above the Operation

Manager level (project), data for any asset group in an operating location hierarchy would be consistent.

## Annex A

### CEFMS Account Classification Codes

The Corps of Engineers Financial Management System (CEFMS) general ledger (GL) account classification system uses these code elements (this is not all the CEFMS codes, just some of the more commonly used ones):

**Appropriation** 7 position numeric code (e.g. 96X4902)

**Cost Work Item** 6 position alpha-numeric code (e.g. 001TL42)

**Work category** 5-position alphanumeric code (e.g. 60511)

**Element of resource** 4 position alpha-numeric code (e.g. 21T1)

**Location code** as many as 6 position alpha-numeric code (e.g. AFS-12)

**Organization code** 7 position alpha-numeric code (e.g. M4R0210)

**MOA** 2 position alphanumeric code (e.g., C1) This is Method of Accomplishment and the purpose is to explain how work will be done, e.g. contract inside government, contract outside government, in-house labor.

**Resource code** 10 Position alphanumeric code which classifies object of expense. This defines the type of goods and services that are being provided. There are 5 major groups of resource codes: bulk, services, manpower, real property and personal property.

**Category Element** 5 Position alphanumeric code which further breaks down the object of expense (e.g., 02610). This specifies what is being produced.

**Local Indicator** 5 Position alphanumeric code which is used locally for creating reports to higher HQ (e.g., 01480) This is a CEFMS capability to attach codes to single or multiple ordering work items and funded work items to track and consolidate cost data.

## **Annex B**

Example (non-navigation): *Cougar Dam* (Portland District, Northwestern Division)

1. *River/Canal: South Fork McKenzie River (OR)*
2. *Navigation: (non-navigation)*
3. *Basin: Willamette River (OR)*
4. *Lake/Pool: Cougar Lake*

Example (navigation): *Newt Graham Lock and Dam* (Tulsa District, Southwestern Division)

1. *River/canal: Verdigris River (OK)*
2. *Navigation: McClellan-Kerr Arkansas River Navigation System*
3. *Basin: Arkansas River (CO)*
4. *Lake/Pool: Newt Graham Lake*

Example (navigation): *Norrell Lock* (Little Rock District, Southwestern Division)

1. *River/canal: Arkansas Post Canal (AR)*
2. *Navigation: McClellan-Kerr Arkansas River Navigation System*
3. *Basin: White River (AR)*
4. *Lake/Pool: Arkansas Post Canal*

These USACE enterprise location systems provide connectivity outside USACE where there are non-USACE projects. Water resource infrastructure can also easily be identified in cases where a project/area office is responsible for projects in 2 or more systems.

Annex C - Table of Operating Locations

## **Enterprise *Operating Locations***

▶ **Operating Locations that are used by everyone**

**USACE (U.S. Army Corps of Engineers )**  
**Divisions, ERDC**  
**Regional HQs, Centers, FOAs, labs**  
**Districts**  
**Project groups**  
**Projects, District office elements**

Annex D - Equipment Hierarchy Summary

## Equipment

- ▶ **Principal Item *Groups* (user-defined)**
  - **Principal Items**
    - ✓ Principal Item Components (user-defined)
  
- ▶ **Principal Item *Sub-Groups* (user-defined)**
  - **Principal Items**
    - ✓ Principal Item Components (user-defined)

## **Annex E - FEM System Asset Groups and USACE Business Process Relationships**

### **Joint**

- All Personal Property Asset Groups
- Real Property Asset Groups
  - Buildings, Grounds and Utilities
  - Municipal and Industrial Water Delivery Facilities
  - Roads, Railroads and Bridges

### **Environmental Stewardship (natural resources, environmental compliance)**

- Lands and Damages
- Relocations
- Fish and Wildlife Facilities
- Miscellaneous Power Plant Equipment

### **Recreation**

- Reservoirs
- Recreation Facilities

### **Flood Damage Reduction**

- Main Dam and Spillway
- Outlet Works (Exclusive of Power)
- Auxiliary Dams
- Levees and Floodwalls
- Pumping Plants

### **Navigation**

- Locks
- Channels and Canals

### **Hydropower**

- Power House
- Power Intake Works
- Turbines and Generators (Including Station Service)
- Power Plant, Accessory Electrical Equipment
- Tailrace
- Switchyard

**Annex F - FEM System Hierarchy Worksheet**

CFEMS Codes	Operating Location(s)		Location Systems	<b>Equipment</b> Asset Classes: Personal property, real property.		
	US Army Corps of Engineers	USACE	River			Asset Group
	Division, ERDC			Navigation	Principal Item(s)	
	regional HQ, center, FOA, lab		Lake/Pool			
	District					Basin
	Project Group					
	Project, district office element					
	Principal Item Group					
	Principal Item Sub-Group					