2. XML Usage & Examples in Data Management

- XML Usage Overview
- Web Efficiency Example
- Parser-based Integration Example
- B2B Example
- XML Conversion
- E-business Marketplace-based Strategies
- Envera
- Metadata Management Example
- Legacy System Evolution

Metadata Management Example

- Have copy of 700 + page document in .doc format
- Describes functional decomposition of a system as comprised of
  - 1,887 composition units
    - 35 functions
    - 1,852 processes
- How to make use of it?
  - Wrap it in XML
  - Put it on the web
<?xml version='1.0' standalone='yes'?>
<!DOCTYPE documentation SYSTEM "CMS.dtd">
<documentation>
    <node>
        <name>AMS_ASSET_MANAGEMENT</name>
        <description>
            <origin>SAMMS & DISMS</origin>
            <explanation>This function includes requisitioning, inventory control as well as maintaining master files, reference files, and master file updates. The requisition processing systems edit and validate requisitions, referrals, passing orders, and requisition-related documents. The inventory control systems maintains physical inventories, accomplishes location reconciliation, supports depot balance transaction register, controls item/balance freezes and reviews on-hand assets. </explanation>
        </description>
        <type>Function</type>
        <subordinate-of>SAMMS_MANAGEMENT</subordinate-of>
        <subordinates>
            <item>AMS_PROCESS_REQSN_RELTD_TYPE_DOC</item>
            <item>AMS_PROCESS_RECEIPTS</item>
            <item>AMS_PERFORM_LOGISTIC_REASSESSMNT</item>
            <item>AMS_MANAGE_DISCREPANCIES</item>
            <item>AMS_MAINTAIN_INVENTORY_CONTROL</item>
            <item>AMS_DETERMINE_STOCK_POSITIONING</item>
            <item>AMS_CONTROL_GFM</item>
        </subordinates>
    </node>

    <node>
        <name>AMS_CONTROL_GFM</name>
        <description>
            <origin>SAMMS</origin>
            <explanation>Control Government Furnished Materiel (GFM) Control. The Control Government Furnished Materiel (GFM) subsystem involves the establishment and maintenance of an accountable system for tracking government furnished materiel (GFM), Government Loaned Property (GLP), and Government Furnished Equipment (GFE) in the hands of End Item contractors. This function includes Provide GFM Control and Management Control Activity (MCA) Control. The GFM Control provides a complete audit trail of all issues, receipts, returns, and adjustments relating to End Item contracts. The MCA Control ensures that only authorized GFM, GFE, and GLP is issued to authorized End Item Contractors. LEGACY: None. </explanation>
        </description>
        <type>Function</type>
        <subordinate-of>AMS_ASSET_MANAGEMENT</subordinate-of>
        <subordinates>
            <item>AMS_PROVIDE_GFM_CONTROL</item>
            <item>AMS_PERFORM_MCA_CONTROL</item>
            <item>AMS_PROVIDE_GFM_RSVRTN_CNTRL</item>
        </subordinates>
    </node>
</documentation>

What about the usual questions?

- What are the user requirements?
- Who is going to use the metadata?
- How should it be delivered
  - Fax
  - Browser
  - Cell phone
  - Pager
- How should it be formatted for delivery?
XML Capabilities

Point it towards a browser using XSLT

```xml
<?xml version='1.0' standalone='yes'?>
<!DOCTYPE documentation SYSTEM "CMS.dtd">
<documentation>
  <node>
    <name>AMS_ASSET_MANAGEMENT</name>
    <description>
      <origin>SAMMS & DISMS</origin>
      <explanation>This function includes requisitioning, inventory control as well as maintaining master files, reference files and generation of reports. The requisition processing systems edit and validate requisitions, referrals, passing orders, and requisition-related documents. The inventory control systems maintains physical inventories, accomplishes location reconciliation, support Depot Balance Transaction Register, controls item/balance freezes and reviews on-hand assets.
    </explanation>
    <type>Function</type>
    <subordinate-of>SAMMS_MANAGEMENT</subordinate-of>
    <subordinates>
      <item>AMS_PROCESS_REQSN_RELTD_TYPE_DOC</item>
      <item>AMS_PROCESS_RECEIPTS</item>
      <item>AMS_PERFORM_LOGISTIC_REASSESSMNT</item>
      <item>AMS_MANAGE_DISCREPANCIES</item>
      <item>AMS_MAINTAIN_INVENTORY_CONTROL</item>
      <item>AMS_DETERMINE_STOCK_POSITIONING</item>
      <item>AMS_CONTROL_GFM</item>
    </subordinates>
  </node>
  <node>
    <name>AMS_CONTROL_GFM</name>
    <description>
      <origin>SAMMS</origin>
      <explanation>Control Government Furnished Materiel (GFM) Control. The Control Government Furnished Materiel (GFM) subsystem involves the establishment and maintenance of an accountable system for tracking Government Furnished Materiel (GFM), Government Loaned Property (GLP), and Government Furnished Equipment (GFE) in the hands of End Item contractors. This function includes Provide GFM Control and Management Control Activity (MCA) Control. The GFM Control provides a complete audit trail of all issues, receipts, returns, and adjustments relating to each End Item contract. The MCA Control ensures that only authorized GFM, GFE, and GLP is issued to authorized End Item Contractors. LEGACY: None.
    </explanation>
    <type>Function</type>
    <subordinate-of>AMS_ASSET_MANAGEMENT</subordinate-of>
    <subordinates>
      <item>AMS_PROVIDE_GFM_CONTROL</item>
      <item>AMS_PROVIDE_MCA_CONTROL</item>
      <item>AMS_PROVIDE_GFM_RSVRTN_CNTRL</item>
    </subordinates>
  </node>
</documentation>
```
Web Efficiency Example Illustrates Both Points

- Request information for flights from Richmond, VA to London on a specific date - several screens of data are returned.
- Typical HTML behavior is to shorten list with successive queries - fine tuning by departure time, price, airline, etc.
- Each refinement requires server access.
Send small Java program allowing user control without server involvement

Multiply this by a million Web users, and the global efficiency gains become dramatic

Transformation Management

A_ACCOUNT STATUS

Transformations A->EIL

B_ACCOUNT STATUS

Transformations B->EIL

EIL (enterprise integration layer)

Transformations EIL->???