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

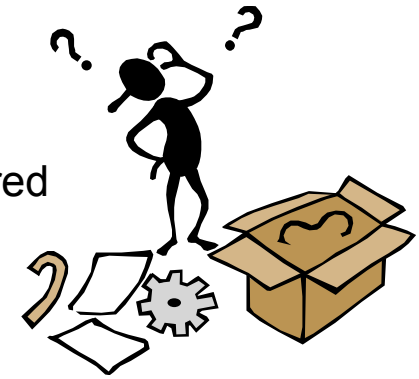
- Have copy of 700 + page document in .doc format
- Describes functional decomposition of a system as comprised of
- 1,887 composition units
  - 35 functions
  - 1,852 processes
- How to make use of it?
  - Wrap it in XML
  - Put it on the web

Wrap it in XML

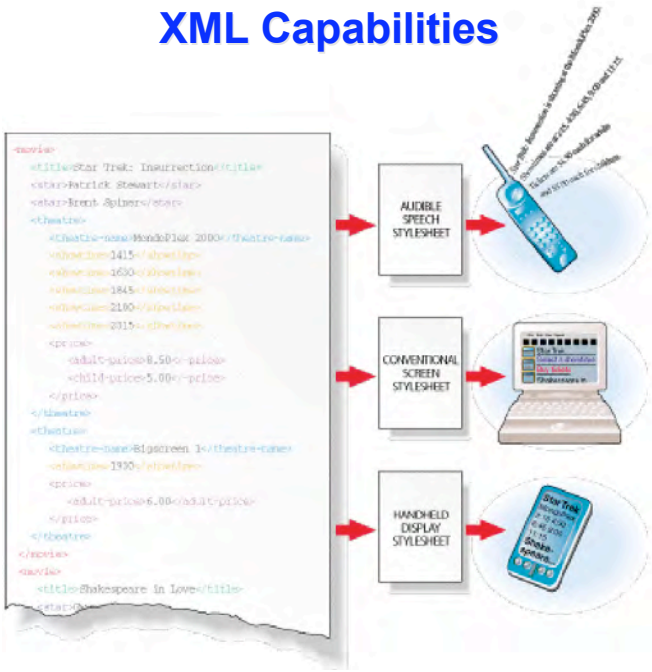

```xml
<?xml version='1.0' standalone='yes'?>
<!DOCTYPE documentation SYSTEM "CMS.dtd">

<documentation>
  <node>
    <name>AMS_ASSET_MANAGEMENT</name>
    <description>
      <origin>SAMMS &amp; 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>
    </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 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>
    </description>
    <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>
```


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

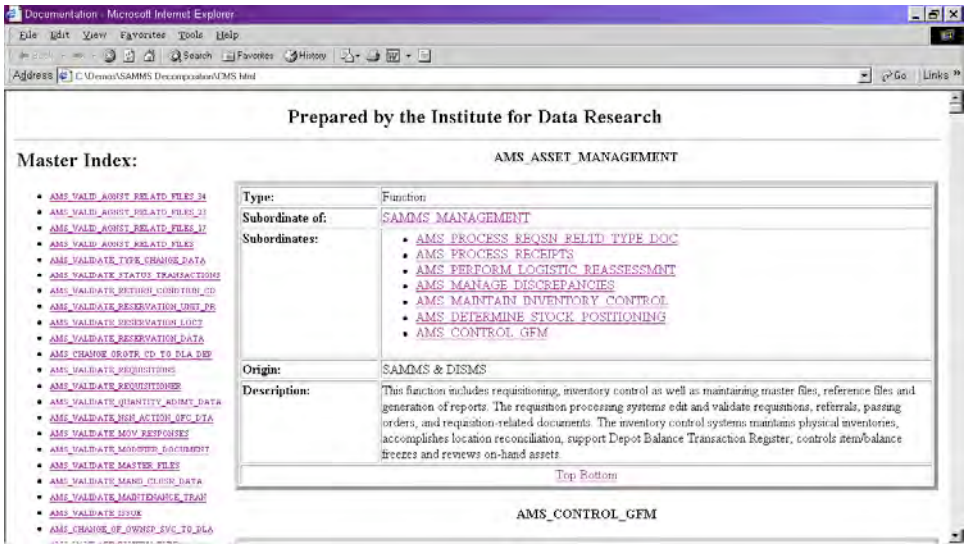


Point it towards a browser using XSLT

```
<?xml version="1.0" standalone='yes'?>
<!DOCTYPE documentation SYSTEM "CMS.dtd">

<documentation>
  <node>
    <name>AMS_ASSET_MANAGEMENT</name>
    <description>
      <origin>SAMMS &amp; 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 maintain physical inventories,
issues, takes and receipts, processes transactions, maintains "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 Material (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
GFM, GFE, and GLP issued to authorized End Item Contractors. LEGACY: "GFM
control", "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_PROVIDE_MCA_CONTROL</item>
      <item>AMS_PROVIDE_GFM_RSVRTN_CNTRL</item>
    </subordinates>
  </node>
```

```
<?xml version="1.0"?>

<!DOCTYPE xsl:stylesheet>

<xsl:stylesheet version="1.0"
          xmlns:xsl="http://www.w3.org/1999/XSL/Transform">
  <xsl:template match="/">
    <html><head><title>Documentation</title></head>
      <body bgcolor="#FFFFFF" text="#000000">
        <h1><center><a name="top">
            Defense Logistics Agency Data
            Documentation</a></center></h1>
        <h2><center>Prepared by the Institute for Data
            Research</center></h2>

        <hr width="100%" />

        <table width="100%" border="0">
          <tr><td width="20%" halign="left" valign="top">
              <p><h2>Master Index:</h2>
                <font size="-2">
                  <ul>
                    <xsl:for-each select="//documentation/node/name/.">
                      <xsl:sort select="position()" order="descending"/>
                      <xsl:variable name="tmp" select="."/>
                      <li><a href="#{$tmp}"><xsl:value-of
                                  select="$tmp"/></a></li>
                    </xsl:for-each>
                  </ul>
                </font>
              </p>
            </td>
            <td width="80%"><xsl:apply-templates/></td></tr>
        </table>
```

XML-based Function & Process Metadata



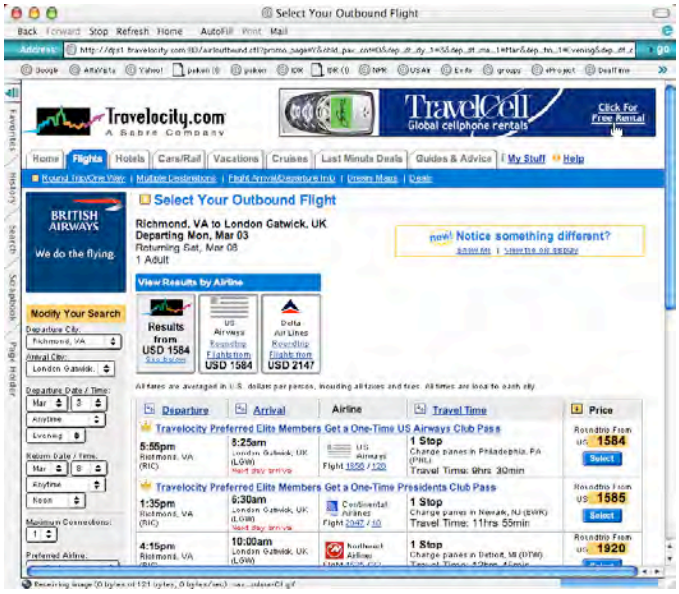
Show Me

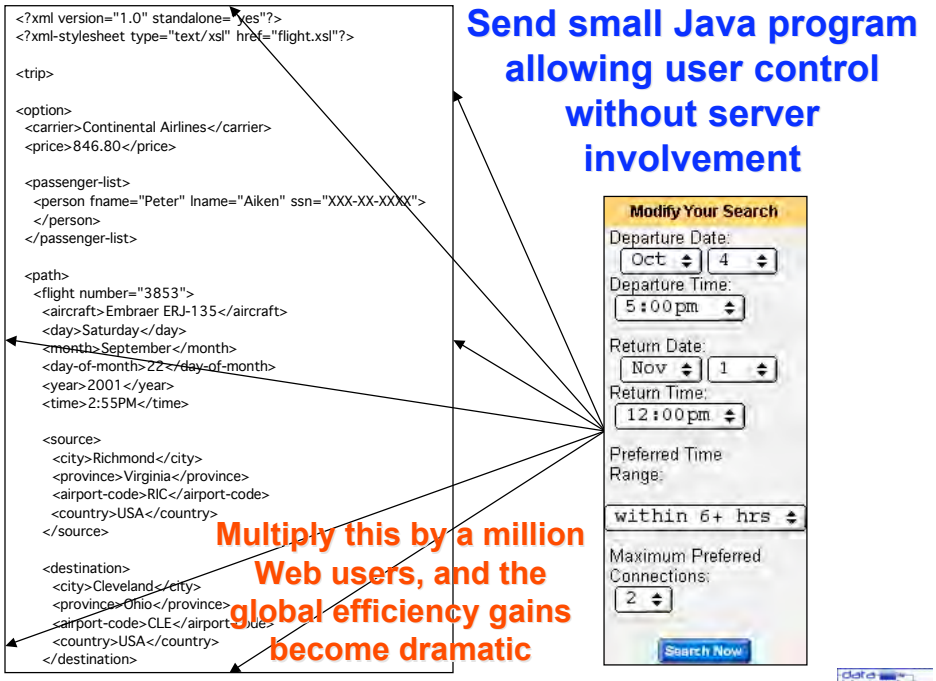
Web Efficiency Example Illustrates Both Points

Request information for flights from Richmond, VA to London on a specific date - several screens of data are returned

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





Transformation Management