

Update on SEDD – Specifications for Delivery of Laboratory Electronic Data



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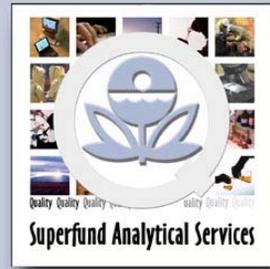
USACE Superfund Technical Liaison

March 6, 2002

USACE Chemists Business Meeting

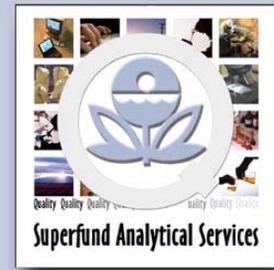
Jekyll Island, GA

Introducing SEDD and Other Related Terms



- SEDD - stands for Superfund Electronic Data Deliverable
- Provides specifications (rules) to be followed by the data requester (e.g., Agency) to create a Document Type Definition (DTD) and the resulting Electronic Data Deliverable (EDD)
- Specifications are program neutral

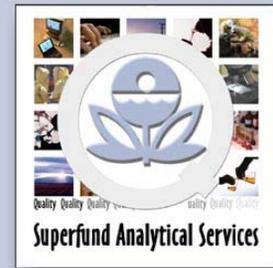
What are DTDs?



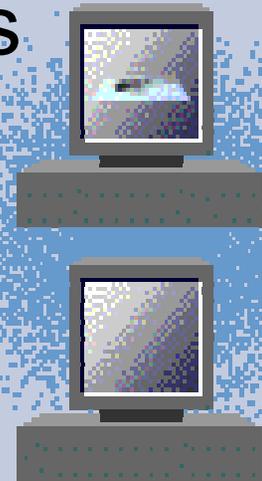
- DTD is the set of requirements established by the data requester (e.g, Agency) for the reporting of analytical data in an electronic format.
- The DTD is used by the data generator (e.g., laboratory) to create an EDD that will meet the data requester's needs.



EDDs

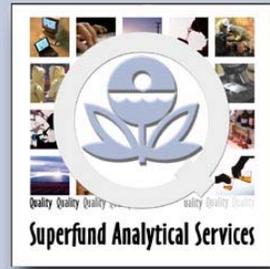


- The EDD is what the data generator (e.g, laboratory) sends to the data requester.
- The EDD must meet the requirements stated in the DTD.





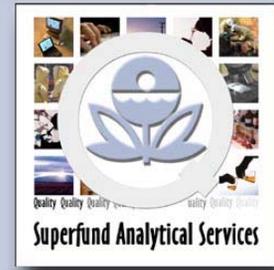
What is XML?



- XML – eXtensible Mark-up Language
- Final Recommended Standard by the World Wide Web Consortium
- Provides a common approach to representing information over the Web
- Under SEDD, the EDD from the laboratory is transmitted as an XML document



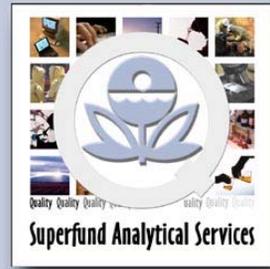
What are the Components of SEDD?



- Overview Guide – gives the specifications and structure to be followed when creating DTDs and the resulting EDDs, along with the minimum data elements required for structural integrity
- Data Element Dictionary (DED) – gives the definitions of the data elements within the DTD for consistent tagging of data



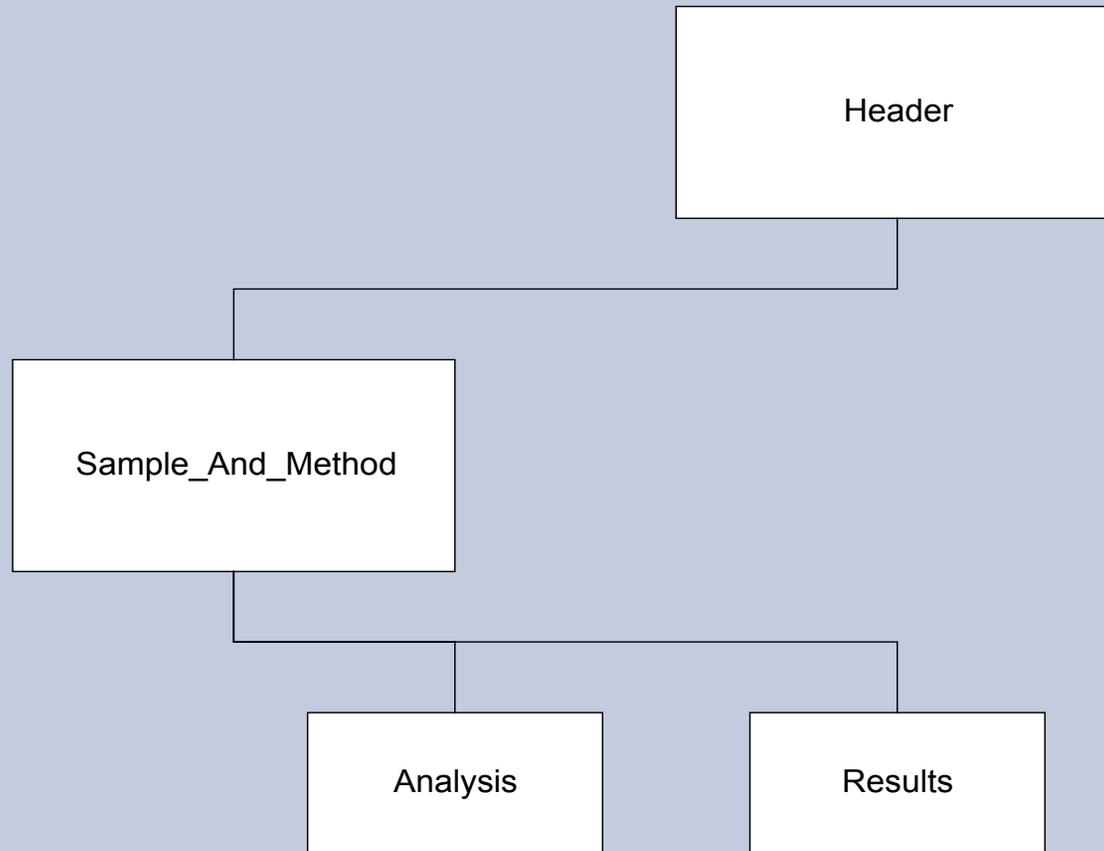
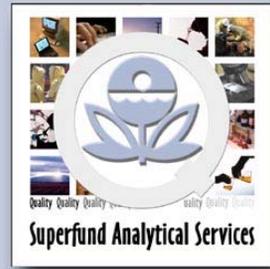
The Three Stages of SEDD



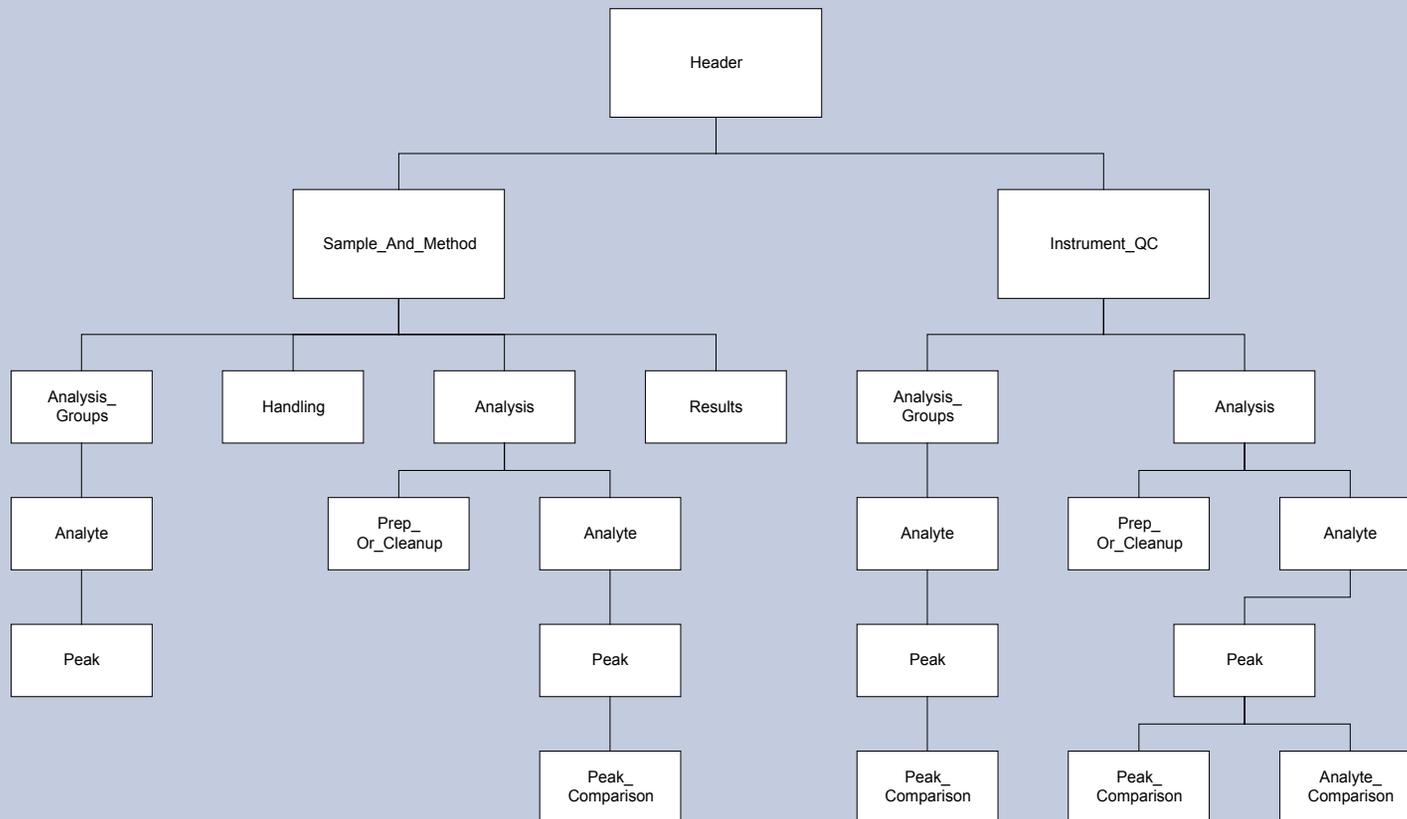
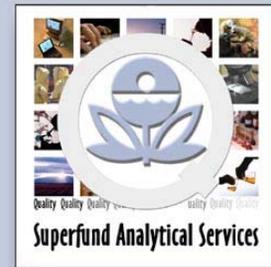
- Stage 1 - Contains the minimum number of analytical data elements to transmit results-only data.
- Stage 2 - Data content builds on Stage 1 by adding method (Stage 2a) and instrument (Stage 2b) QC data.
- Stage 3 - Data content builds on Stage 2 by adding additional measurement data to allow for the independent recalculation of the reported results (e.g., CLP).



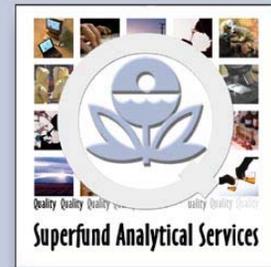
SEDD Stage 1 Structure



SEDD Stage 3 Structure



Example XML File



```
<Results>
```

```
  <Client_Analyte_ID>TNT</Client_Analyte_ID>
```

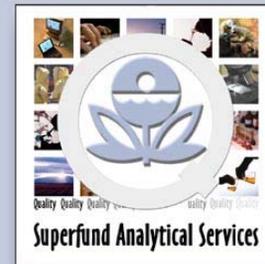
```
  <CAS_Number>118-96-7</CAS_Number>
```

```
  <Result>24.2</Result>
```

```
  <Result_Units>ug/L</Result_Units>
```

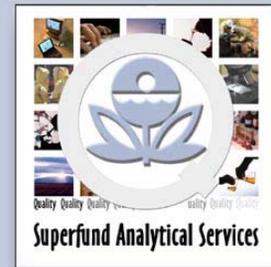
```
</Results>
```

Example XML File (in XML Notepad)



The screenshot shows the XML Notepad application window titled "sedd.outCom0331170944.xml - XML Notepad". The interface is split into two main panes: "Structure" on the left and "Values" on the right. The "Structure" pane displays a hierarchical tree view of the XML document, starting with "SEDDROOT" and branching into "DATA", "ADMIN", "RUN", and "ANALYSIS". Each element is represented by a folder icon, and the "ANALYSIS" folder contains several sub-elements, each with a red diagonal slash icon. The "Values" pane displays the corresponding values for each element in a table format.

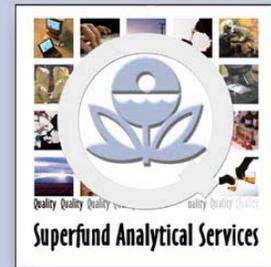
Structure	Values
SEDDROOT	
DATA	
ADMIN	
CASE_NUMBER	77777
EPA_CONTRACT_NUMBER	77-W-99-555
LABORATORY_CODE	LAB
LABORATORY_NAME	LAB CORP
SDG_NUMBER	AQA35
RUN	
COLUMN_IDENTIFICATION	DB624
COLUMN_INTERNAL_DIAMETER	DB624
FRACTION	V
INSTRUMENT_ID	MS7
METHOD	OLM04.1
METHOD_TECHNIQUE	GC/MS
ANALYSIS	
ANALYSIS_DATETIME	200002020148
ANALYTE_COUNT	54
CALIBRATION_DATETIME	200002012117
CALIBRATION_FILE	GY110
CLEANUP_GPC_DATETIME	200002012117
IPC_DATETIME	200002012043
IPC_FILE_ID	GY109
MATRIX	1
METHOD_BLANK_DATETIME	200002012229
METHOD_BLANK_FILE_ID	GY111
METHOD_LEVEL	L
STORAGE_BLANK_DATETIME	200002022115
STORAGE_BLANK_FILE_ID	GY125
ANALYTE	
ANALYTE	
ANALYTE	
ANALYTE	



How SEDD Works

- DTDs specify the requirements of the XML deliverable.
- DTDs are accessible to the laboratories via standard Web browsers at the data requester's (e.g., AOC, Navy) Web Site



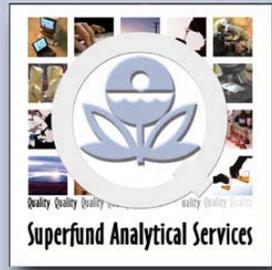


Advantages of Using SEDD

- For Laboratories - common structure and use of a common Data Element Dictionary (DED) would now be used to report a variety of data to multiple customers. This would reduce the number of EDDs that laboratories would be required to support.
- For Data Requesters - common tool sets could be developed and utilized for data verification, validation, and data processing.
- Site Needs -SEDD can be used to develop site-specific EDDs to meet user needs simply by developing a site-specific DTD.

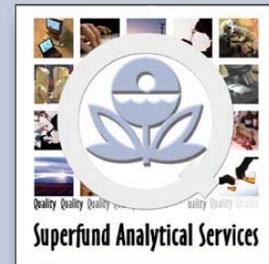


Advantages of Using SEDD (Cont.)



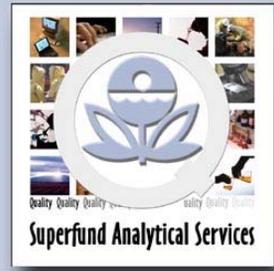
- SEDD easily accommodates future requirement changes with minimal modifications to existing systems through modification of the DTDs.
- The XML document (EDD) is independent of proprietary data systems. A variety of parsers are available for viewing, editing, or programmatically processing these files to interface with different database systems.

What's Going on With SEDD?



- Overview Guide, Data Element Dictionary, Example DTDs and EDDs posted on USACE and EPA Websites – December 2001 (Will be updated in March 2002)
- Video Conference With DOE, EPA, US Navy- January 2002
- EPA SEDD Stage 3 Pilots - Started February 2002

Who's Participating in Implementing SEDD?

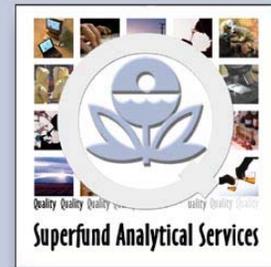


Offices from the following agencies:

- USEPA
- US Navy
- US DOE (Fernald)
- USACE Districts (we hope!)



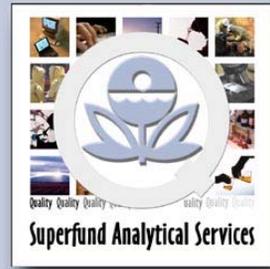
Tentative Implementation Schedule for SEDD



- USACE Quality Assurance (QA) Laboratory (2002)
- USACE Districts (2002)
- US Navy (2002)
- US DOE Fernald (2002)
- USEPA Analytical Operations/Data Quality Center (AOC) for the their Organic Contracts (2003)

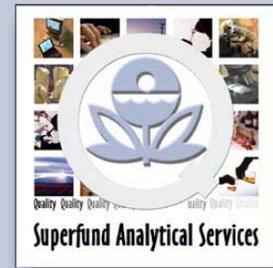


Additional Presentations



- Generation of XML Files Based on SEDD
- Example System for the Electronic Evaluation of a XML File Based on SEDD
- SEDD Implementation by USACE Districts

Contact Information



- For more information regarding the SEDD Specification, please contact:

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- e-mail: joseph.f.solsky@usace.army.mil

- Anand Mudambi, Phone: 703-603-8796,

- e-mail: mudambi.anand@epa.gov

- The following website:

<http://www.environmental.usace.army.mil/info/technical/chem/chemtopics/chemedd/chemedd.htm>