

Electronic Data Exchange and Evaluation System



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Who are We?



- EPA's Analytical Services Branch (ASB) provides its customers with timely and consistent planning, implementation, analysis, data review, and data deliverable tools and services to support a diverse spectrum of screening and legally defensible environmental data collection projects across Superfund and other EPA programs.
- In our effort to be the premier provider of data review/evaluation tools, ASB is making EXES and other related tools available to other EPA Offices, Federal and State Agencies.

What is Our Goal?



To provide data assessment and management tools that efficiently evaluate analytical data regardless of the underlying method and data reporting requirements.



- **E**lectronic data e**X**change and **E**valuation **S**ystem (**EXES**)
- **EXES** **D**ata **M**anager (**EDM**)
- **SEED** **E**ssentials (**SEES**)
- **My EXES**



Better Data; Better Preparedness; Lower Cost



- Applies to any size monitoring program that involves laboratory analysis of samples — food, clinical, environmental, agricultural, or forensic
- Leverages technology to minimize cost while simultaneously maximizing data quality and ensuring legal defensibility when necessary or needed
 - **Better data:** ASB's Electronic data eXchange and Evaluation System (EXES) provides independent assessment and validation of laboratory data
 - **Lower costs:** During the past 15 years, EXES has saved EPA *more than \$60 million* through automation

Where are We now?



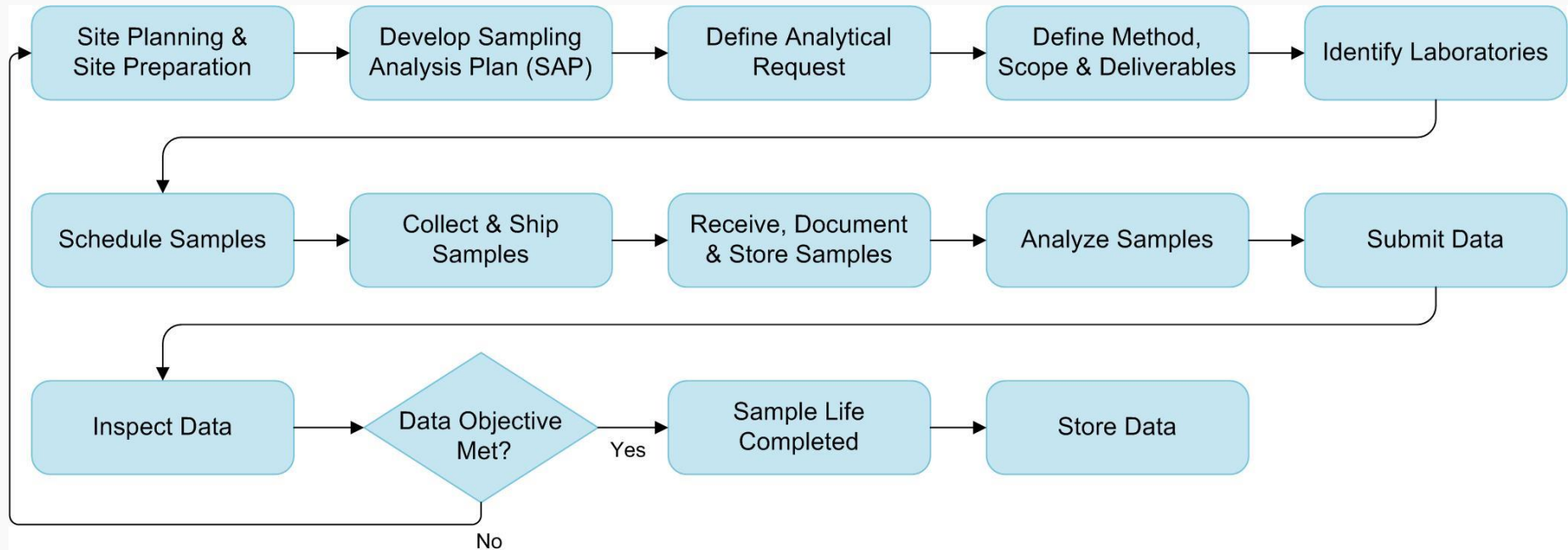
- We are currently piloting EXES and EDM with:
 - EPA Region 2 laboratory
 - EPA Region 3 laboratory
 - EPA Region 9 laboratory
 - EPA Region 10 laboratory
 - USACE
 - Great Lake National Program
 - MEDQ



WHY EXES?



Life of a Sample



Note: The sample can be an environmental sample collected from a Superfund site or a sample collected in support of FDA, NIH, DOD, etc.

What Sets EXES Apart From Others on the Market



- Efficiently evaluates analytical data **regardless of the format of the data deliverable** that is submitted.
- Provides users with advanced customization capabilities to **review, edit, and add evaluation parameters, tests, Method Quality Objectives (MQOs)**, and Quality Assurance Project Plan (QAPP) requirements.
- EXES is comprised of **a dynamic test creation core** working in tandem with an expandable reference data set that is not limited to specific analytical processes and procedures.

How Does It Work?

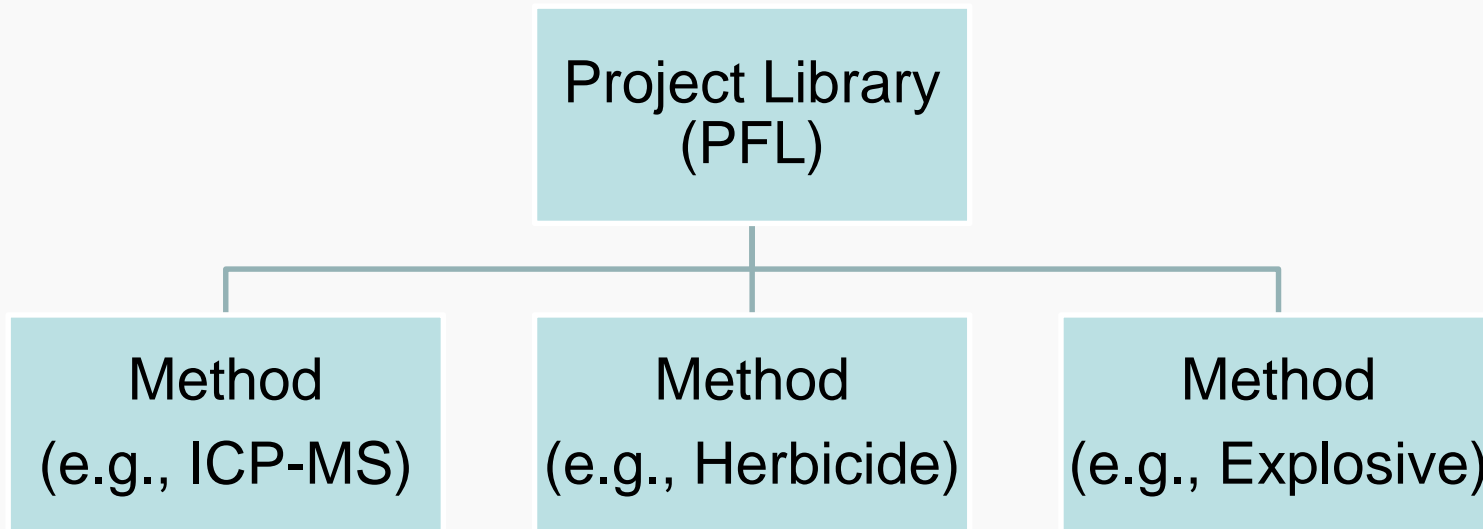


- A Web-based data assessment/validation and management tool that can evaluate analytical data. It uses:
 - Format neutral domain and data model
 - Re-usable Project Libraries
 - Method Evaluation Libraries (MELs)
 - Method Evaluation Procedures (MEPs)
 - UI for custom test creation
- It is capable of supporting Federal, State and commercial laboratory data assessment needs.

What is a Project Library?



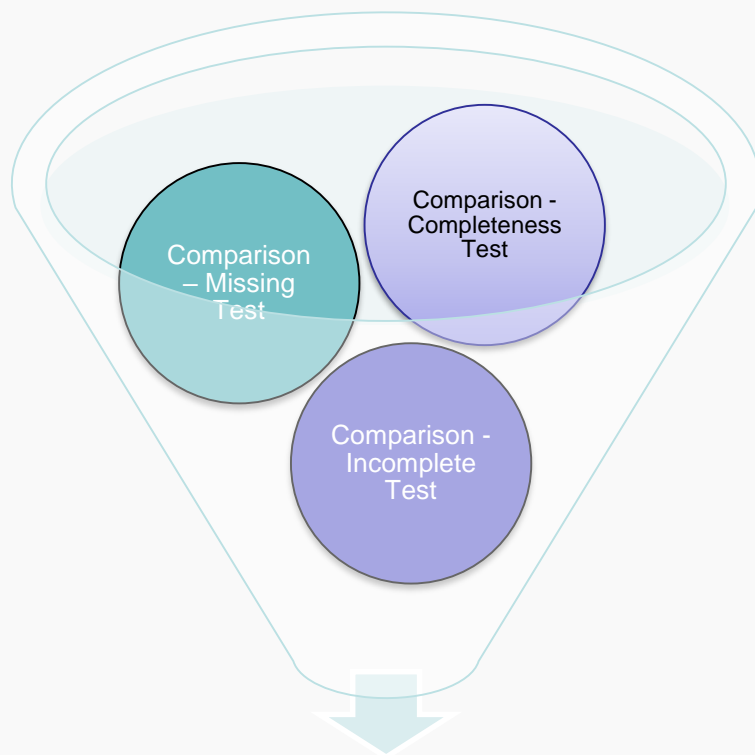
- What analytical methods will I be using?
- What type of data deliverables?
 - Hardcopy, EDD, PDF of hardcopy.
 - What Types of electronic deliverables (XML, Excel, CSV, etc.)
- What services will be performed on the submitted data?
 - Method compliance review
 - Data validation assessment



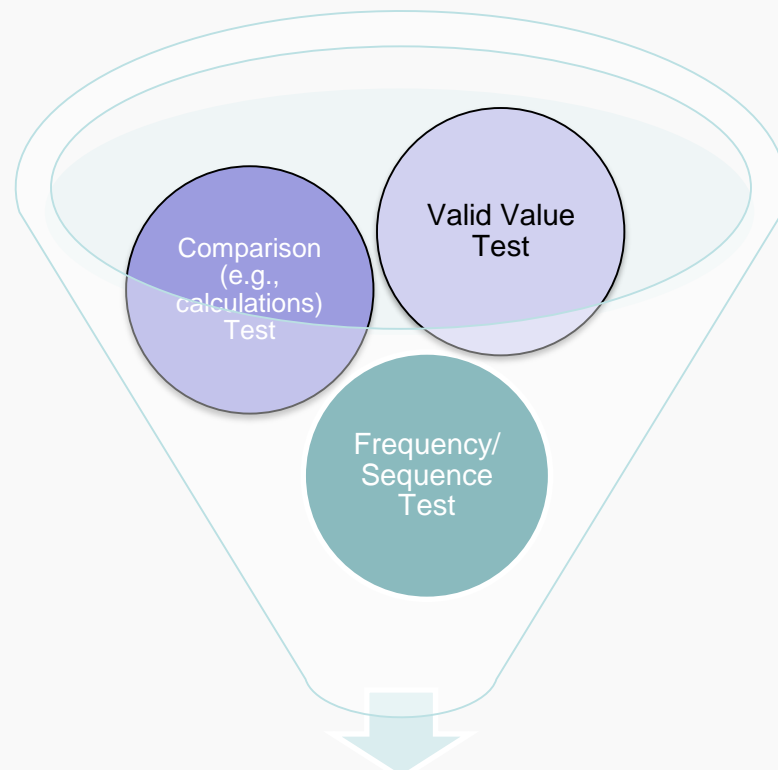
Method Evaluation Procedure (MEP)



- How do I want to assess my methods?
- MEPs are containers of tests that would be applied to the method data.
- One method will have one or more associated MEP(s) based on the type and level of review requested/needed.



Method compliance
Assessment MEP



Data Usability/Validation
Assessment MEP



- Tests are assessment criteria applied to the EDD.
- Tests are generic and can be reused across methods.
- Tests use method reference data stored in the Method Evaluation Libraries (MELs) in order to properly assess the data.

Test Types



Comparison:

Calculation
Reported vs. Calculated
Reported vs. MQOs/MELs

Valid Value:

Is the reported value a valid value acceptable by the method and/or to the client?

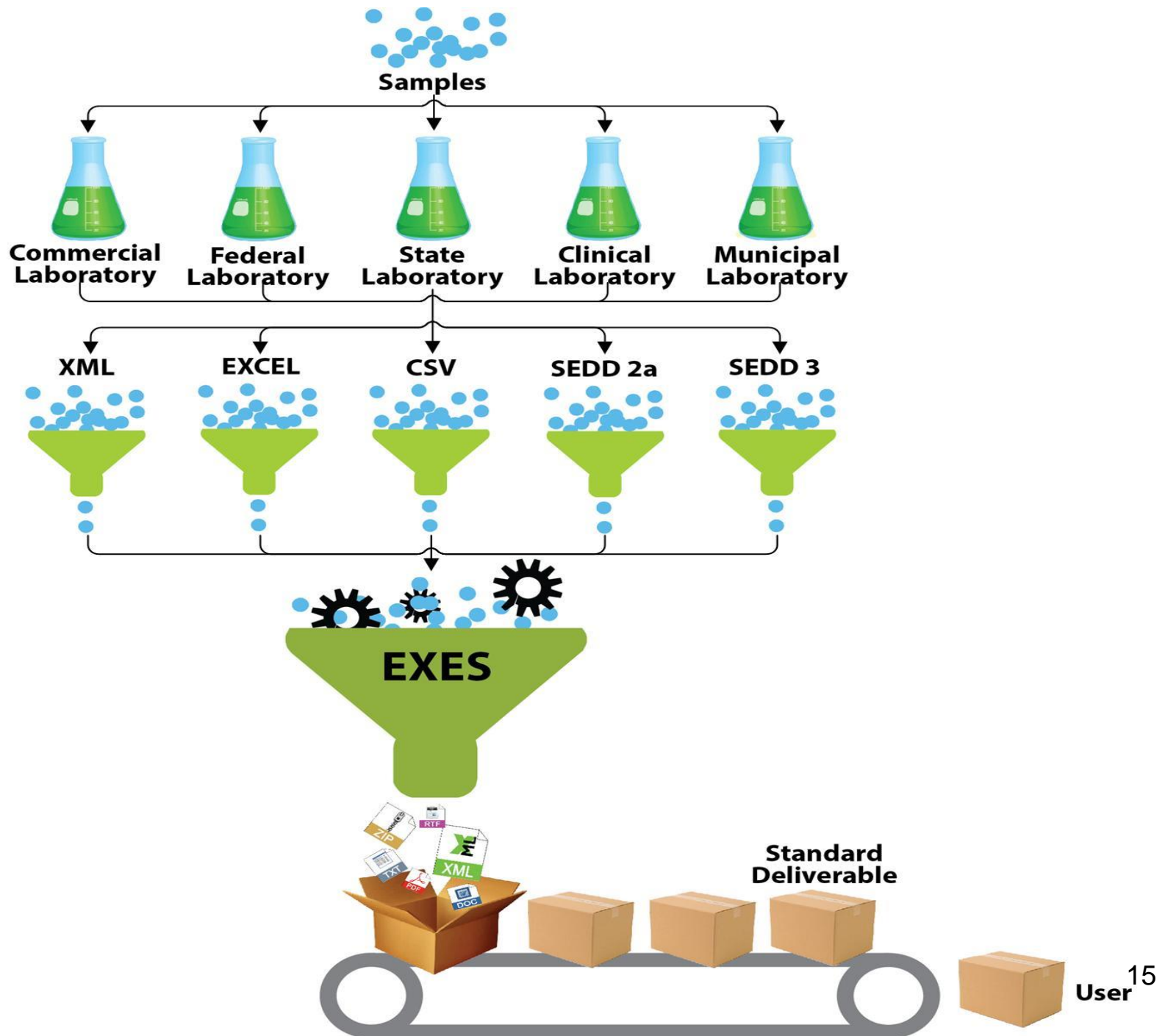
Four General Types
Of Tests

Frequency :

Do we have the correct number of initial/blank/QC performed? Is the frequency as outlined in method?

Sequence:

Do we have the correct sequence of analysis as outlined in the method?



EXES Benefits/New Features – You Are in Control



Flexible - user interfaces that enable you to create test rules, data review criteria and reports dynamically; **select and create your desired level of assessments.**



Reusable - features allow users the ability to create new libraries or search and modify existing libraries; saving time and effort, and resulting in cost savings.



Consistent - reproducible and independent electronic review improves overall project transparency.



Customizable - tailored deliverable process flow to meet your specific analytical evaluation needs. **Capability to support multiple programs with different program needs.**



- EDM provides a Web-based/centralized data management tool:
 - Stores all laboratory deliverables
 - Data assessment/validation reports available within minutes of data upload
 - Spreadsheets and outputs include both field and analytical data ready for upload to databases and mapping tools
 - Provides results based on data user's assessment criteria
 - Allows users to edit and regenerate all dynamic reports
 - Provides an audit tracking log of all changes made by user name and date/time
 - Who can have access to what portion of data or reports in EDM can be set based on the data user's requirements



- Accepts and processes data submission files associated with multiple MQOs –multiple methods in one EDD
- Provides a collaborative work space for the project team
- Enhanced project initiation functions:
 - User management function
 - Requires a pre-existing project prior to laboratory upload
 - Allows reuse of the previous project MQOs
 - Allows users to share methods across their projects
 - Comprehensive publication feature allowing users to publish and share their methods and their associated MQOs with users outside their projects.
- User friendly and simple laboratory submission interface for:
 - Self-inspection
 - Official submission
- All reports are stored on EXES Data Manager for review, edit and download by the project team



- SEES is designed to provide a simple assessment tool for those that are at the early stages of creating SEDD deliverables and seeking feedback on their file format.
- Allows inspection at the stage 2a, 2b or 3 level.
- Method independent and provides feedback on the compliance of the submitted EDD with the SEDD format and not the analytical quality of the file.
- The resulting report provides information about the EDD, including the errors found and their location within the EDD.

Contact Information



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