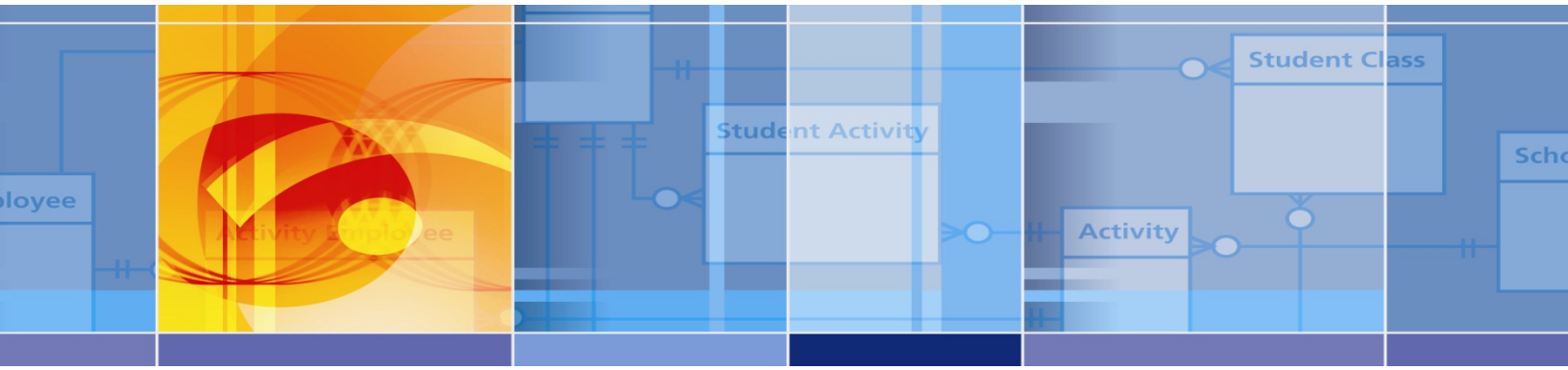

DataSpecs™ v5.2

User's Guide Overview

www.espsg.com/dataspecs

ESP Solutions Group

To obtain a username and password for DataSpecs, contact your agency's designated DataSpecs administrator.

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1. Introduction to DataSpecs

DataSpecs Overview

DataSpecs™ is a metadata inventory application that compiles information about data resources and standardizes data definitions, codes, and formats to facilitate sharing of information across all applications without the need to reformat data time and time again.

DataSpecs provides abilities to:

- Complete a comprehensive inventory of existing data resources
- View data items included in the collections and the reports where these data items are published
- Load, modify, and track data elements as they appear in the agency through collections, repositories, and reports
- Establish and maintain a data element dictionary, and document data element definitions, data types, and formats
- Link data items in collections, repositories, and outputs/reports to data dictionary elements

We believe it is useful to make the distinction between data items and data elements. Data items are included in data collections. They may be questions for which an open-ended answer is desired or they may require a choice from a set of codes or options. Name is an open-ended data item; sex is usually a coded choice. Data elements are the core bits of data as they exist in your data system. Data items may be combined to create data elements. The same data element may be collected in different ways – or using different data items.

Data elements (the core data dictionary elements for your agency) and collection items which are loaded in DataSpecs may be linked to national standards, such as the National Center for Education Statistics (NCES) Handbooks, the U.S. Department of Education ED*Facts*/EDEN reports, and the Schools Interoperability Framework (SIF) specifications.

You begin by creating a data dictionary called Elements in DataSpecs. To link to NCES Handbooks elements you will load collection items, repository fields, and report items into DataSpecs and link each item/field to the corresponding element in the DataSpecs dictionary. To link to U.S. Department of Education EDFacts/EDEN data, you will flag the element entry as "EDEN-related" in the data dictionary. To link to SIF specification object/elements, you will load collection items into DataSpecs and link each item to the appropriate SIF specification object/element.

DataSpecs' CourseWalk functionality supports the linking of state and local courses to the NCES course classification system called "School Codes for the Exchange of Data" or SCED.

Developing and maintaining these links to national standards helps to support student record exchange at both local and state levels.

DataSpecs Terms and Relationships

The normal process of data management for an organization is to:

1. Collect data
2. Store the data in a repository
3. Process the data, possibly moving it into other repositories

4. Generate various outputs and reports from the repositories

A data collection consists of a set of data items that are grouped together and "collected" from various sources. For state education agency operation, the collections would be primarily from school districts and/or schools. In many organizations, the data items appear on a form (or several forms) or in electronic format(s). The individual fields or components of the collection are called "items."

Data are typically stored in a database of some kind – the most common being a relational database system. Oracle, SQL Server, Access, FoxPro, and SAS are common examples of such systems. These data repositories are structured as data tables that consist of strictly defined fields or columns.

Reports and other system outputs are often structured similarly to the collections. In fact a report from one organization (e.g., a school district) may be a collection for another (e.g., a state education agency). Thus, a report or output can be decomposed to a set of items.

The detailed data reside in and move across collection items, table fields, and output/report items. For consistency, these items and fields should be uniformly defined, formatted, and applied.

DataSpecs documentation can be approached using different strategies. For example, you could focus on student data collections, repositories and reports/outputs, or focus on collections, repositories and outputs/reports required to meet certain reporting requirements. The DataSpecs tool set is flexible.

One strategy for using DataSpecs functionality is to use the following steps:

1. Load information on **Offices** and **People** (the organization offices and people with data management roles – usually data stewards - within the agency). Offices and People are referenced in **Collections**, **Repositories**, and **Outputs/Reports**.
2. Load initial **Elements** (create the initial Data Dictionary).
3. Load initial **Option Sets** and **Options** (code sets) as required for Data Dictionary Elements.
4. Relate Data Dictionary Elements to Option Sets.
5. Load **Collections** and **Collection Items**.
6. Relate Collection Items to available Data Dictionary Elements, adding Element entries as needed.
7. Relate Collection Items to available Option Sets, adding Option Sets and Options as needed. (Note that specific option sets may be referenced directly by a Collection Data Item.)
8. Load **Repositories**, **Tables**, and **Repository Fields**.
9. Relate Repository Fields to available Data Dictionary Elements, and add Element entries as needed.
10. Relate Repository Fields to available Option Sets, adding Option Sets and Options as needed.
11. Load selected **Outputs/Reports** and **Output/Report Items**.
12. Relate Output/Report Items to available Data Dictionary Elements, and add Element entries as needed.
13. Relate Output/Report Items to available Option Sets, adding Option Sets and Options as needed.
14. Document Collection Cycles.
15. Load Validation Rules.
16. Relate (Map) Collection Items to Repository Fields.
17. Relate (Map) Collection Items to SIF specification objects and elements.
18. Relate (Map) Output/Report Items to Repository Fields.
19. Enter information on the Associated Links to Internet resources on documentation, rules, submission sites, etc. for Collections, Repositories, and Outputs/Reports.

Throughout the above steps, the project would support review of definitions and option sets referenced by data items and fields against the standard definitions and option sets provided through NCES Data Handbooks to verify that important distinctions are included in the definition, and to examine the agency's current option sets against similar option sets included in the agency data dictionary, against NCES Data

Handbooks data element option sets, and against option sets used within SIF specifications. Both NCES Data Handbooks and SIF specifications are available within DataSpecs.

DataSpecs implementation supports users to access, review, and to improve the clarity of communication with the community users of education data.

Entry Effective Date and Expiration Date

Many DataSpecs entries include an "effective date," an "expiration date," and some entries include a version number. These constructs are useful to support documenting data management over time, as is required for a longitudinal data system. Thus, when an entry is modified, the older entry should be assigned an expiration date, and the new entry would be assigned an effective date reflecting the actual (or scheduled) implementation date.

An entry is identified as "active" as long as its "Expiration Date" has not passed. Once the "Expiration Date" is reached, the entry is identified as "inactive". "Filters" on many screens support the option to view only the "active" entries.

These entry date stamps are important when DataSpecs is being used to plan, prepare and deploy new collections, repositories, and outputs/reports, or for modifications to collections, repositories, and outputs/reports.

2. Login and User Roles

DataSpecs users require a valid website login and an assigned role for access to and/or for modification of data within the DataSpecs application.

User Set Up (Create Login ID and password)

For initial product setup, the customer provides ESP with names and email addresses of the persons for whom login accounts are to be created. Login accounts, security, and application role information will be set up and these users will use the logins created to manage the product.

Definitions of User Roles

After the System Administrator for the network environment creates a user's login for access to the site, the Administrator for the DataSpecs site would use the "System Administration > User Management" screen to establish the users account. Each user is defined with both a Security Role and an Application Role. These roles enable access to various capabilities within the DataSpecs application.

Security Roles

Security Role	Security Role Description
Unauthenticated	The "Unauthenticated" security role allows users to view DataSpecs content but not access the System Administration functions.
Authenticated	The "Authenticated" security role allows access to create, read, update, and delete DataSpecs content but does not provide access to System Administration functions.
Administrator	The "Administrator" role provides access to manage users and their roles, to manage the system option tables, and to perform all of the functions allowed for "Authenticated" users.
ESP Administrator	The "ESP Administrator" security role allows the user access to all DataSpecs areas.

Application Roles

Application Role	Application Role Description
ESP Staff	The "ESP Staff" application role enables ESP staff to set up initial roles and complete the initial DataSpecs set up for the installation.
State Data Staff Administrator	The "State Data Staff Administrator" role is the administrator(s) of DataSpecs at the state level.
State Content Area Specialist	This role identifies the user as a Content Area specialist at the state level.
LEA Data Staff	This role identifies the user as a Data Manager at the local education agency (LEA or school district) level.
LEA Content Area Specialist	This role identifies the user as a Content Area specialist at the local education agency level.
School Data Staff	This role identifies the user as a Data Manager at the school level.
School Content Area Specialist	This role identifies the user as a Content Area specialist at the school level.

Application roles for State Data Staff Administrator, State Content Area Specialist, and ESP Staff are the major roles associated with entering and maintaining DataSpecs content. LEA and School roles provide access to view (read) DataSpecs information.

Users should email the DataSpecs administrator from the Login screen for information on, or changes, to the above roles.

3. Getting Started

Login

To login to DataSpecs, enter the URL for the host site. The DataSpecs Login Screen is the entry point to the application.

From this screen, you may login to the application as an authorized user, or access predefined public reports from the host site without logging in. The reports are available in the "Other Reports" scroll list.

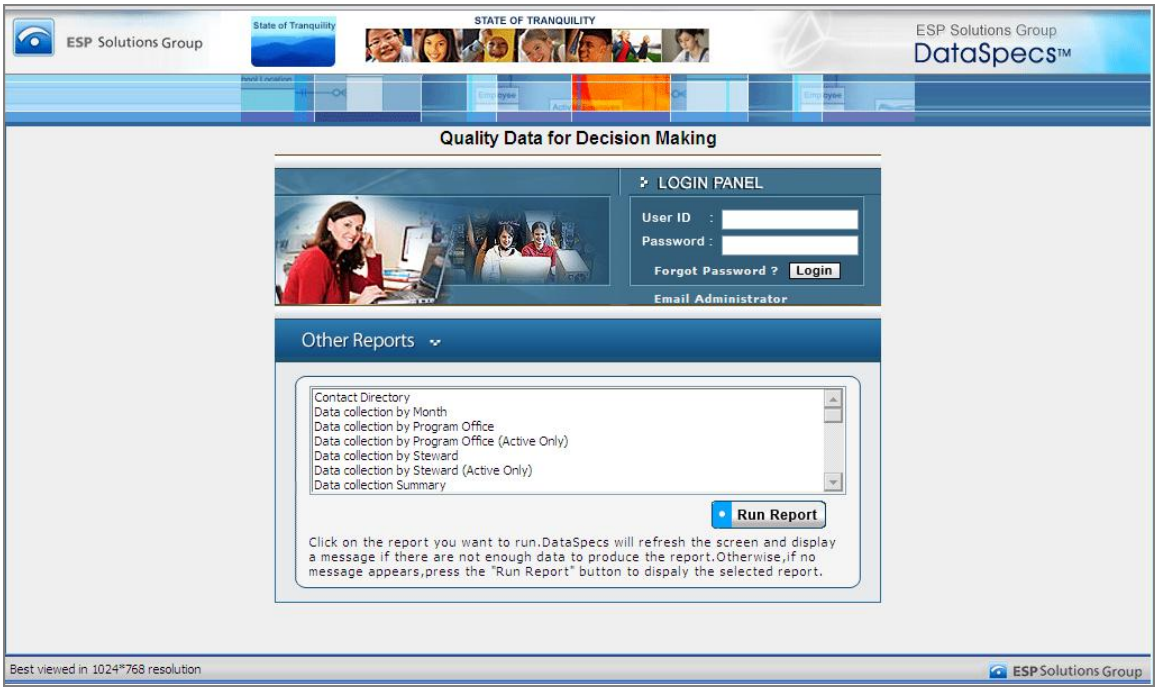

Figure 1 - Login Screen

Enter the assigned User ID and password and select the "Login" button, and the DataSpecs Home screen is returned for a successful login.

If the user needs additional assistance, links are available for "Forgot Password?" and to "Email Administrator" just below the User ID and Password.

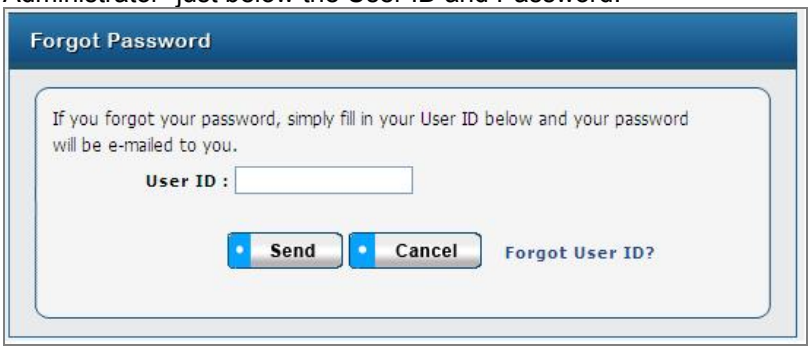

Figure 2 - Forgot Password Screen

The "Forgot Password?" screen is available to request the password for the User ID. The password is sent to the user's email address.

To request the User ID, a link to "Forgot User ID?" is available from the "Forgot Password?" screen. The user enters the email address which is associated with the DataSpecs account, and the User ID is returned to the user via email.

Figure 3 - Email Administrator Screen

You may contact the person who acts as the DataSpecs administrator from the Login Screen by selecting the "Email Administrator" hyperlink. You provide your User ID and Email Address, type the message in the body area, and select the "Send" button to transmit the message. The "Cancel" button closes this message box.

Home Screen

The Home Navigation Screen is presented after a successful Login to DataSpecs.

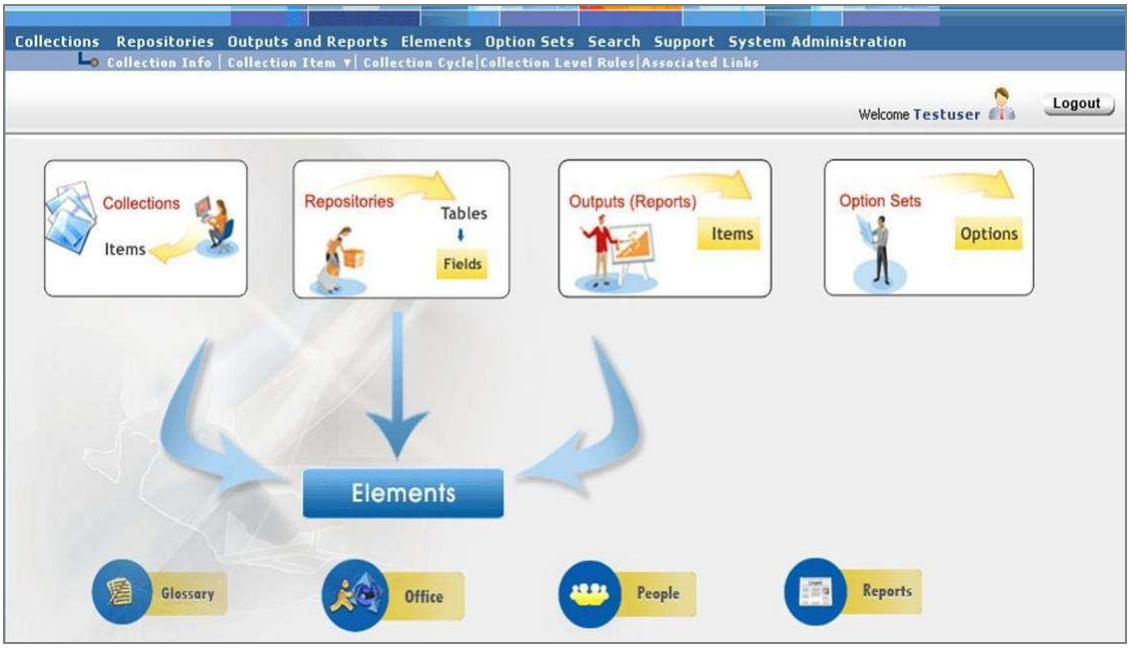

Figure 4 - "Home" Navigation Screen

The DataSpecs "Home" navigation screen (above) includes a two-tiered menu bar in the upper section of the screen.

Figure 5 - Two-tiered Menu Bar

The first menu bar provides links to each of the DataSpecs components (Collections, Repositories, Outputs and Reports, Elements, and Option Sets), to the Search function, and to System Administration tools. The second bar of the menu provides links to functions within the above components. Selections in the second bar change with the selection from the upper bar.

When you select "Collections," the second bar references the functional metadata components for Collections, including Collection Info, Collection Item, Collection Cycle, etc., as shown above.

When you select "Repositories" the second bar display presents the components for Repositories.

Below the menu bar, a graphic depiction of DataSpecs components represents operating relationships across DataSpecs metadata sets.

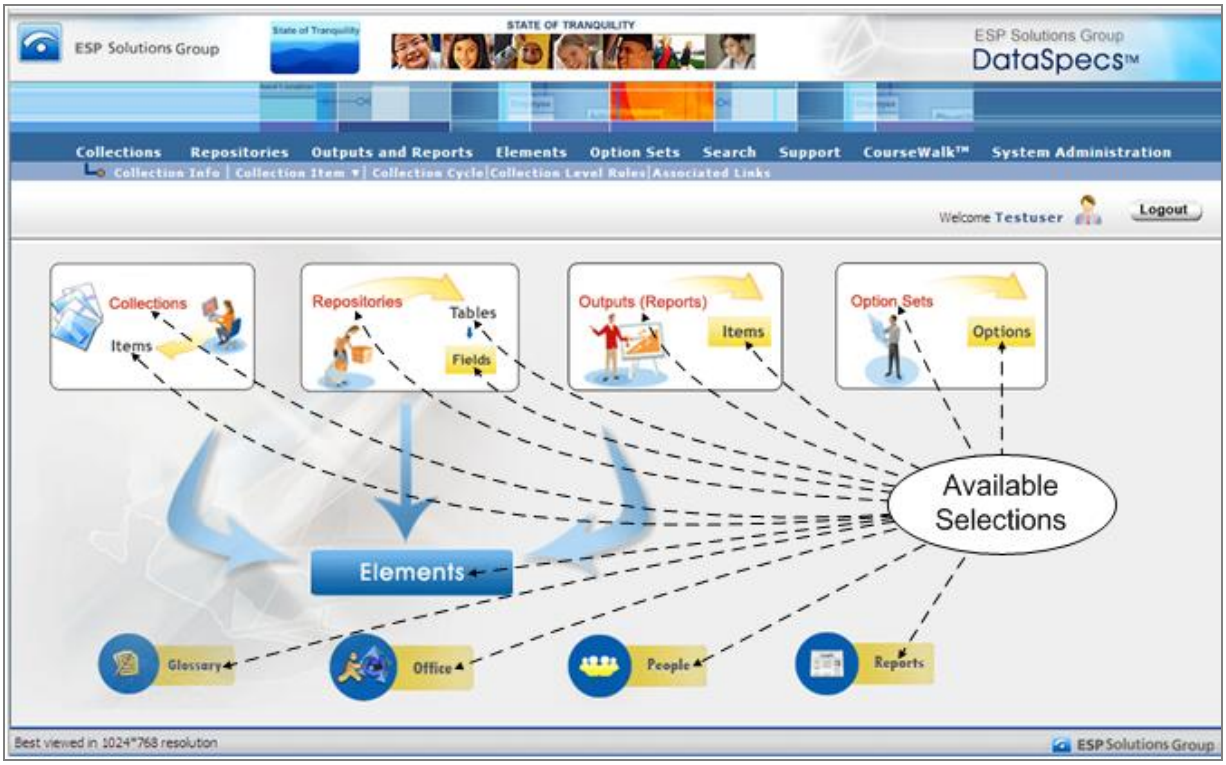

Figure 6 - Available Selections from DataSpecs Home Page

The DataSpecs home page is a graphic illustration of the relationships included within the DataSpecs database and functionality.

In the above image "Collections" include "Items." "Items" are linked to "Elements" in the Data Dictionary.

The text terms within the diagram are hyperlinks which can also be used to access the associated data screens. The available selections are identified by arrows in the above diagram

DataSpecs Screens

The menu bar sections of DataSpecs include the following screens and functionality:

Collections

Collection Info | Collection Item ▼ | Collection Cycle | Collection Rules | Associated Links
Map to Repository
Map to SIF

Repositories

Repository Info | Repository Table Info | Table Fields | Associated Links

Outputs and Reports

Output Info | Output Item ▼ | Associated Links
Map to Repository

Elements

Element Info | NCES Handbook ▼ | Categorize
Map to NCES

Option Sets

Option Sets | Options

Search

Search Function

Support

Glossary | Offices | People

System Administration

System Tables | User Management

Exit or Logout

To exit a DataSpecs session, select the "Logout" button at the upper right, just below the menu bars.

About Collections

A Data Collection consists of a set of data items that are grouped together and "collected" from one or more sources. For state education agency operation, collections are usually data brought in from districts and schools. For district operation, collections usually include data brought in from schools and other operational entities in the district, including transportation and school food service. In many organizations, the data items appear on a form (or several forms) or in electronic format(s). The individual fields or components of the collection are called "items."

Summary information on each documented Collection includes:

- collection name and number
- status (active, inactive, under review, etc.)
- available collection documentation
- effective date (date when the collection was or will be implemented)
- expiration date
- collection version
- collection description (abstract)
- mandate (purpose or reason for the collection)
- owner information (responsible office, steward, or contact)
- collection type or purpose
- level of detail
- collection method
- privacy restrictions
- target audience
- periodicity (frequency of collection)
- month(s) collected

(Definitions of the terms are included in the "Collections" section of the User's Guide.)

Collection name, effective date, and version fields are "required" fields, and the remaining information about a collection is optional.

About Repositories

Once data have been received in a collection, these data are typically stored in one or more databases – the most common database structure is a relational database. The storage locations are called Repositories. These data repositories are structured as data tables that consist of strictly defined fields or columns.

The summary information on each Repository may include:

- repository name
- status (active, being revised, consolidated, inactive, etc.)
- repository type (staging, development, operational, data warehouse, etc.)
- repository description
- file server name
- IP address
- database/instance name
- database software name and software version
- contacts
- responsible office
- effective date
- expiration date
- version

(Definitions of the terms are included in the "Repositories" section of the User's Guide.)

Repository name, effective date, and version fields are "required" fields, and the remaining information about a repository is optional.

About Outputs/Reports

Outputs and Reports are the methods of presenting data using the contents of repositories. The reports or outputs created (or being designed) are documented as Outputs and Reports.

The summary information on each Repository may include:

- output or report name
- report set
- report number
- status (active, being revised, consolidated, inactive, etc.)
- target audience
- responsible office
- steward(s)
- output or report abstract (description)
- mandate
- report characteristics (media, format, detail level)
- privacy restriction
- periodicity (months reported)
- effective date
- expiration date

- version

(Definitions of the terms are included in the "Outputs and Reports" section of the User's Guide.)

For Outputs and Reports, the name, effective date, and version fields are "required" fields, and the remaining information is optional.