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# BIRT LIBRARY FEATURE SPECIFICATION

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Draft 2

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## 1. Introduction

A library is a collection of ReportElements that can be re-used in multiple report designs. The elements include visual and non-visual components. When a report is created the library can be included and its components can be used in the report. The library file is represented by a .rptlibrary extension. It is labor-intensive to create a suite of reports that look the same. This specification proposes to simplify this task through a library feature.

Library support will be provided for the following ReportElements:

- All the visual Report Items like Label, Text, Table, Grid etc.
- DataSources
- DataSets
- Embedded Images.
- Master page
- Styles
- Parameters

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## 2. Use cases

The following are some of the common uses cases supported by the library feature.

### 2.1 Shared corporate header

- In a library create a grid item named "Corporate Report Heading" with an image in one cell, text such as company name and address in other cells, a placeholder for the report title. Set the font, font-size of the report title.
- In a report design, that includes the above library, drag the whole "Corporate Report Heading" grid, and override some of the properties of the header, like modify the report title text. Note: The report title will use the font property defined in the library.

### 2.2 Shared Style

- In a library create a style called "CustomerStyle", which defines the font and the background color.
- In a report design, that includes the above library; apply the library style "CustomerStyle" to all customer tables. All the tables in the report design will use the library defined "CustomerStyle"

### 2.3 Shared image

- In a library add an company logo image
- All the report designs, that includes the above library, can reference the company logo.

### 2.4 Shared dataSet

- Create a dataSet "dsCustomerOrders" in the library
- Create a report design, add a table, and bind the table to the dataSet "dsCustomerOrders" defined in the library.

## 3. Library Management

The following Library management operations are supported. A library developer creates a library and places it in a shared location to be reused by other report developers.

### 3.1 Create library

- Create a new library file. The library file is created with a .rptlibrary extension.
- Add new ReportElements to the library file; this includes all the visual and non-visual ReportElements listed in section 3.4.
- Define the properties and structure of the ReportElement.
- A library file cannot include another library file.

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### 3.2 Update Library

If a library element is modified all the report designs that include the library will be affected; all the report elements (in the report design) that refer to the library element, will get the updated properties.

### 3.3 Library Outline

User will be able to browse different components in the library by using the library outline. This will allow the library developer to view all the elements already defined in the library file.



*Note: Deployment of the Library will be covered as part of BIRT deployment project.*

## 4. Using a Library file

A library could be used in multiple report designs. Following are the operations supported which are related to using a library in a report design.

### 4.1 Include a library into a report design.

- User can include multiple libraries into to a report design
- User can specify relative or absolute path while including the library
- Validation is done, if there any serious errors the library is not included. Some of the errors are listed below
  - Invalid Library file, which causes parsing errors.
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- On including the library, the report design behaves as if the library was loaded on report design load.
- The design may have had unresolved references before including the library. If the library contains elements that will resolve these references, they are automatically resolved as soon as the library is included.
- When a library is included, user can specify the namespace associated with the library. A unique namespace is associated with each library included.

### 4.2 Remove library from a report design file.

If the report design references an element from the library, the unresolved references is flagged as error in the report design.

### 4.3 Library Browser

Library Browser supports the following:

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- Viewing the **libraries** included a report design.
  - Viewing the different ReportElements in a library

#### 4.4 Defining a name space

When a library is included, user can specify the namespace associated with the library. A unique namespace is associated with each included library. When a report design references the items in the library, the items are referenced by the namespace prefix. The namespace prefix is supported for ReportItems, DataSources, DataSets, Parameters, MasterPage, and Embedded Images. Note: Namespace prefix is not supported for styles.

Example if a baseLibrary defines a namespace “base”, and defines a dataSet “CustomerDS”. If a report design uses a table, which binds to the above dataset, the dataSet is referred as “base.CustomerDS”

#### 4.5 Add a library component into the report design.

The following Report Elements can be added into a report design.

##### 4.5.1 ReportItems (Visual items like Label, Table, Text, Data, Grid, List etc.)

- When a library is included in a report design, all the ReportItems defined in the library are available
- To use Report Item from a library, user needs to explicitly add the ReportItem from the library in to the report design. Adding a ReportItem to a report design creates a new ReportItem instance that inherits the ReportItem from the library.
- Properties of the ReportItem in the report design can be overridden. The ReportItem structure cannot be changed. If the ReportItem is a container like Table, List then properties of the contained ReportItems can also be overridden.

##### 4.5.2 DataSources

When a library is included in a report design all the data sources defined in the library are available in the report design.

- The ReportElement in the report design can directly reference the DataSources defined in the library.
- Library and report design use different name space for the DataSource. In the report design, the Items in the library are reference by namespace prefix.

##### 4.5.3 DataSets

When a library is included in a report design all the datasets defined in the library are available in the report design.

- Report Elements in a report design can directly reference the DataSets defined in the library

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- Library and report design share different name space for dataSet name. i.e the same dataset name can exist in the report design and the library.

#### **4.5.4 Embedded Images**

When a library is included in a report design all the images defined in the library are available in the report design.

- ReportElements in a report design can directly reference the embedded images defined in the library
- Library and report design share different name space i.e the same report element name can exist in the report design and the library.

#### **4.5.5 Master Page**

Master pages are reusable components available to report designs, when a library is included all the master pages are available in a report design.

- ReportElements can directly reference the master pages defined in the library.
- Master page defined in library and the report design occupy different name space, i.e the same report element name can exist in the report design and the library.

#### **4.5.6 Parameters**

When a library is included in a report design, all the parameters defined in the library are available

- ReportElements and expressions can directly reference the parameters in the library.
- Parameters defined in the report design and the libraries occupy different namespace, i.e the same parameter name can exist in the report design and the library.

#### **4.5.7 Styles**

When a library is included in a report design all the styles defined in the library are available in the report design.

- ReportElements in a report design can directly reference the styles defined in the library.
- Design can define a style with the same name as the one defined in the library, in this case the report style takes precedence
- Two libraries can define the same style, in this case the second style takes precedence over the first.

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## 5. Accessing the Library through ROM API

ROM will enhance the public API's to perform library related operations. The report designer will use the ROM API to perform all the library related tasks. The API will support the following operations.

- Create a new report library file.
- Add/Edit ReportElements to the library file.
- Include a library to a report design file
- Remove a library from a report design file.
- Add ReportElements to a report design, that reference library components