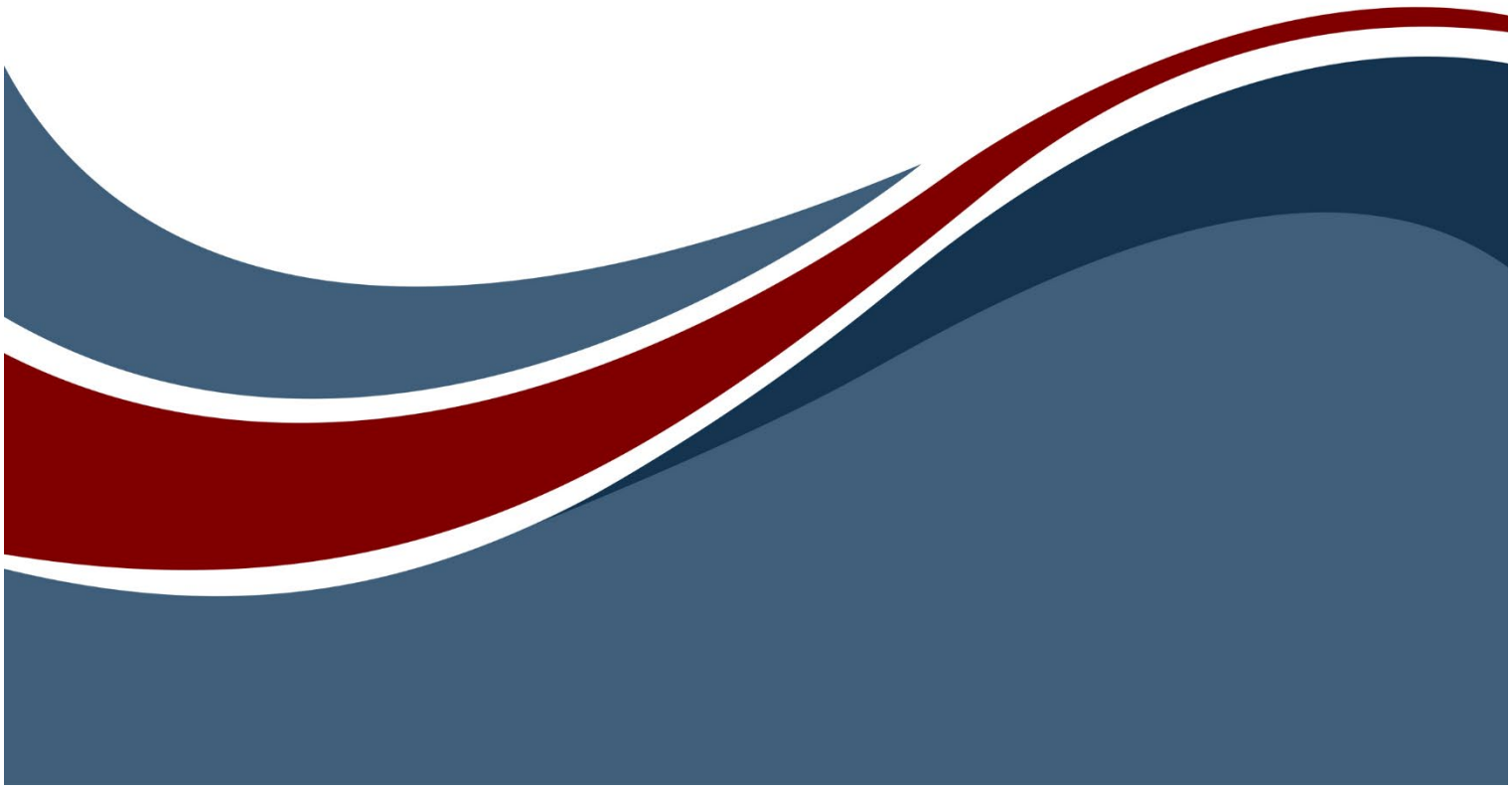
GENESYS™2026

Introduction to Writing Reports



Copyright © 2018-2026 Zuken Vitech Inc. All rights reserved.

No part of this document may be reproduced in any form, including, but not limited to, photocopying, language translation, or storage in a data retrieval system, without Vitech's prior written consent.

Restricted Rights Legend

Use, duplication, or disclosure by the U.S. Government is subject to restrictions as set forth in the applicable GENESYS End-User License Agreement and in subparagraph (c)(1)(ii) of the Rights in Technical Data and Computer Software clause at DFARS 252.227-7013 or subparagraphs (c)(1) and (2) of the Commercial Computer Software - Restricted Rights at 48 CFR 52.227-19, as applicable, or their equivalents, as may be amended from time to time.

Zuken Vitech Inc.
2270 Kraft Drive, Suite 1600
Blacksburg, Virginia 24060
+1 540 951 3322 | Fax: +1 540 951 8222
www.vitechcorp.com

Customer Support:
+1 540 951 3999 | support@vitechcorp.com

GENESYS™ is a trademark of Zuken Vitech Inc. and refers to all products in the GENESYS software product family.

The license and/or entitlement management portions of GENESYS are based upon one or more of the following copyrights: Sentinel® EMS, Sentinel® LDK. Copyright © 2024 Thales. All rights reserved.

Sentinel® is a registered trademark of Thales. DevExpress® and XtraReports™ are trademarks of Developer Express Inc. Other product names mentioned herein are used for identification purposes only and are trademarks of their respective companies.

Publication Date: March 2026

TABLE OF CONTENTS

Introduction 1
Managing Reports 1
Constructing Reports 6
Locating the Data – Detail Report Bands 6
Displaying the Data – Controls and Data Binding 8
List of Concerns Report 8
Stage 1 – Display the Project Name 8
Stage 2 – List the Project Classes 12
Stage 3 – Restrict the Folder Iteration 17
Stage 4 – Display the Class Entities 19
Stage 5 – Incorporate Entity Attributes 24
Stage 6 - Sort the Entities 28
Stage 7 – Filter the Entities 30
Requirements with Concerns report 32
Stage 1 – Create the report 32
Stage 2 – Add Requirements with Concerns matrix. 33
Stage 3 – Add Hierarchy diagrams. 40
Finishing Touches 45
Page Numbering 45
Cover Page 53
GENESYS 2026 Report Writer Upgrade Notes 58
Parameter names are now exposed as global properties in the script. 58
Handling of GENESYS custom parameter types is stricter 58
Table of Contents (TOC) Migration 59
Additional Resources 59

LIST OF FIGURES

Figure 1: Common Subreports Folder 1
Figure 2: New Folder 2
Figure 3: Create the *Hello World* Report 3
Figure 4: Inserting a *Label* Control 4
Figure 5: Default Report Description 5
Figure 6: *Hello World* Report with updated Description 6
Figure 7: Detail Report Bands and GENESYS Project Explorer and Browser Panes 7
Figure 8: Report Band Iteration 8
Figure 9: Inserting a *Projects* Band 9
Figure 10: Inserting a *Label* Control into the *Projects* Band 9
Figure 11: Binding a *Label* Control to the *Project* Object 10
Figure 12: *List of Concerns* Output – Stage 1 11
Figure 13: *Projects* Band Smart Tag 12
Figure 14: Inserting a *Data* Band 13
Figure 15: Inserting a *Folders* Band 14
Figure 16: Binding a *Label* Control to the *Folder* Object 15
Figure 17: *List of Concerns* Output – Stage 2 16
Figure 18: Adjusting the Size of a Control 17
Figure 19: Restricting the *Folders* Band Iteration 17
Figure 20: *List of Concerns* Output – Stage 3 18
Figure 21: Inserting an *Entities* Band 19
Figure 22: Binding a *Label* Control to the *Entity* Object 20
Figure 23: *List of Concerns* Output – Stage 4 21
Figure 24: Compressing Vertical Spacing of Report Output 22
Figure 25: *List of Concerns* Output – Condensed Spacing 23
Figure 26: Augmenting Report to Include Description, Importance, and Status 24
Figure 27: Entity Representation Definition 25
Figure 28: Entity Representation - Description Attribute 25
Figure 29: Entity Representation - Importance Attribute 26
Figure 30: *List of Concerns* Output – Stage 5 27
Figure 31: Sorting the Entities Band Output 28
Figure 32: List of Concerns Output – Sorted by Importance 29
Figure 33: Filtering the Entities Band Output 30
Figure 34: *List of Concerns* Output – Filtered for Open Concerns 31
Figure 35: Foundational Bands for the *Requirements with Concerns* Report 32
Figure 36: Restricting the *Relationships* Band Iteration 33
Figure 37: Binding *Label* Controls to Entity and Relationship Target Objects 34
Figure 38: *Requirements with Concerns* Output – All Requirements 35
Figure 39: Relationships Band Property - Print When Data Source is Empty 36
Figure 40: *Requirements with Concerns* Output – Concern Producing Requirements Only 37
Figure 41: Label Control Property - *Process Duplicates Mode* 38
Figure 42: *Requirements with Concerns* Output – Sans Repeated Requirement Entity Names 39
Figure 43: Adding a Hierarchy Diagram 40
Figure 44: *Relationship* Band's Page Break Property 41
Figure 45: *Requirements with Concerns* Output – Page 1 42
Figure 46: *Requirements with Concerns* Output – Page 2 43
Figure 47: *Requirements with Concerns* Output – Page 3 44
Figure 48: Collapsing Report Bands 45
Figure 49: Inserting a *GroupHeader* Band 46
Figure 50: Horizontal Centering 46
Figure 51: Setting the format of the *Page Info* Control 47
Figure 52: Establishing the *Running Band* for the *Page Info* Control 48
Figure 53: Repeat Every Page and Print at Bottom Properties 49
Figure 54: Decreasing the Size of the Bottom Margin 49

Figure 55: Report Output with Page Numbering - Page 1 50
Figure 56: Report Output with Page Numbering - Page 2 51
Figure 57: Report Output with Page Numbering - Page 3 52
Figure 58: Collapsing Projects Band on Cover Page 53
Figure 59: Inserting an *Unbound* Band 53
Figure 60: Repositioning and Renaming a Band 54
Figure 61: Setting a Band's *Page Break* Property 54
Figure 62: Requirements with Concerns Cover Page 55
Figure 63: *Requirements with Concerns* – Completed Cover Page 56
Figure 64: Cover Page Output 57

CUSTOMER RESOURCE OPTIONS

Supporting users throughout their entire journey of learning model-based systems engineering (MBSE) is central to Vitech's mission. For users looking for additional resources outside of this document, please refer to the links below. Alternatively, all links may be found at www.vitechcorp.com/online-resources/.

Webinars

Immense, on-demand library of webinar recordings, including systems engineering industry and tool-specific content.

Screencasts

Short videos to guide users through installation and usage of GENESYS.

A Primer for Model-Based Systems Engineering

Our free eBook and our most popular resource for new and experienced practitioners alike.

Help Files

Searchable online access to GENESYS help files.

Technical Papers

Library of technical and white papers for download, authored by Vitech systems engineers.

Technical Support

Frequently Asked Questions (FAQ), support-ticket web form, and information regarding email, phone, and chat support options.

INTRODUCTION

This document is an introductory guide for writing GENESYS™ reports. To facilitate the explanation of the concepts, the following example reports are produced:

- *Hello World* – a trivial report that displays the string "Hello World!"
- *List of Concerns* – a report that displays project concerns, and
- *Requirements with Concerns* – a report that displays concerns identified during requirements analysis.

The sample project, Geospatial Library, is the data source for the report outputs exhibited in this document. **To achieve results consistent with the instructions herein, the reader should Import and Open the Geospatial Library sample project.**

MANAGING REPORTS

The GENESYS reports are partitioned and stored in an arrangement of folders that are representative of those partitions. Expanding the *Reports* branch in the *Project Explorer* pane reveals the arrangement of GENESYS report folders. Clicking on a report folder will reveal its contents in the *Browser* window. For example, click on the *Common Subreports* folder and the *Browser* window displays the list of reports residing in *Common Subreports* folder.

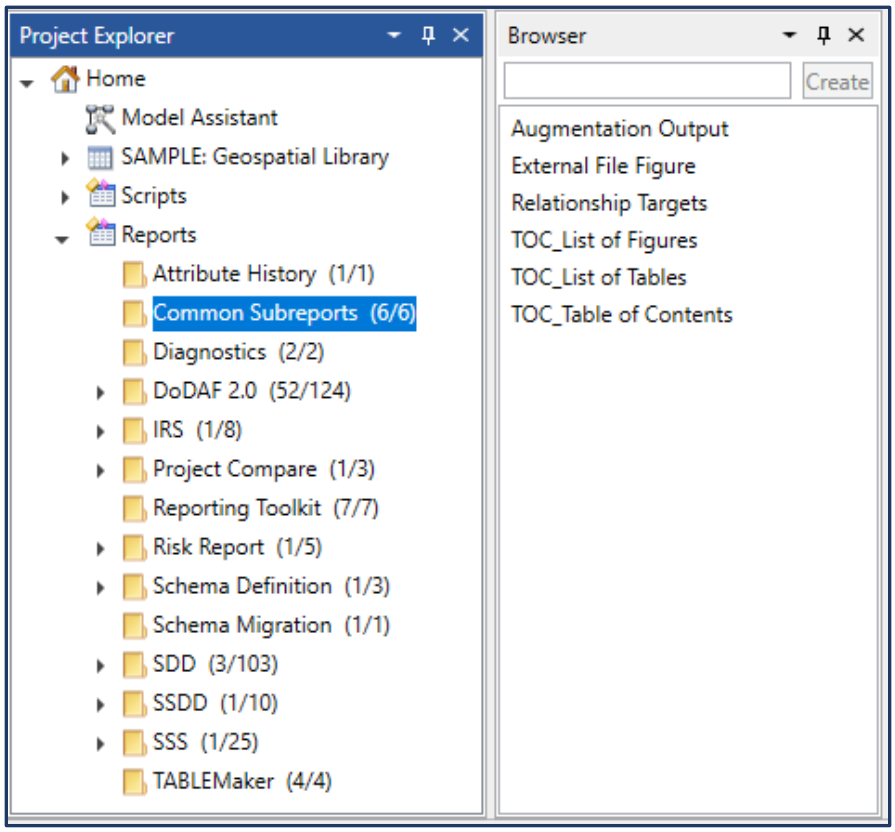


Figure 1: Common Subreports Folder

Before adding a new report, it is helpful to consider in which folder the report will reside. The recommended practice is to establish a new folder or folders to isolate user generated reports from the GENESYS base reports. Accordingly, for the reports generated in this document, a new folder has been created.

- In the *Project Explorer* pane, right-click on the *Reports* branch.
- Click on the *New Folder* command.
- Enter the folder name: “Toolkit”.
- Click OK.

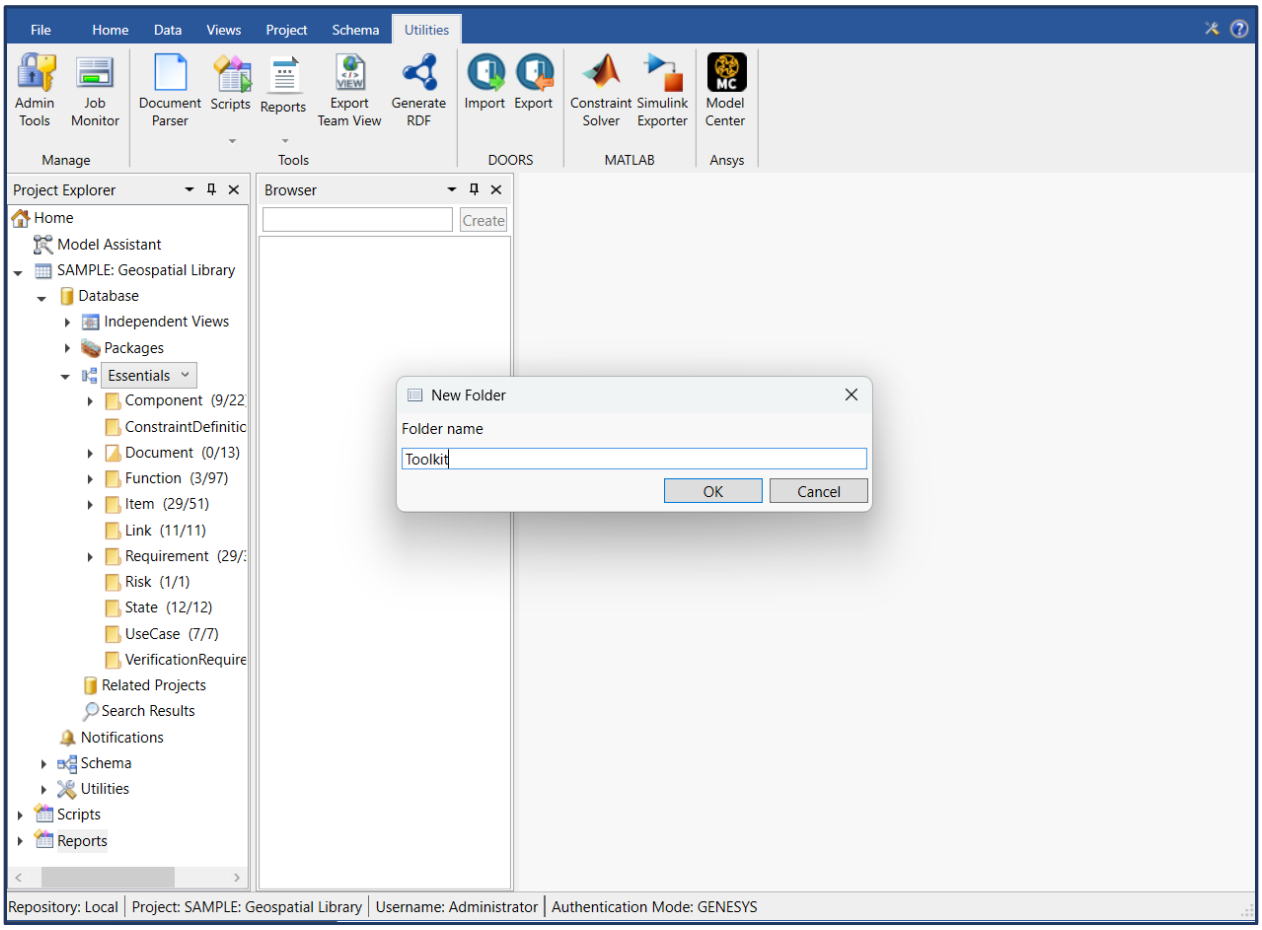


Figure 2: New Folder

The first report will simply display the static text string: “Hello World!” Add this report to the *Toolkit* folder.

- In the *Project Explorer* pane, right-click on the *Toolkit* folder.
- Click on the *New Report Definition* command.
- Enter the report name: “Hello World”.
- Click OK.

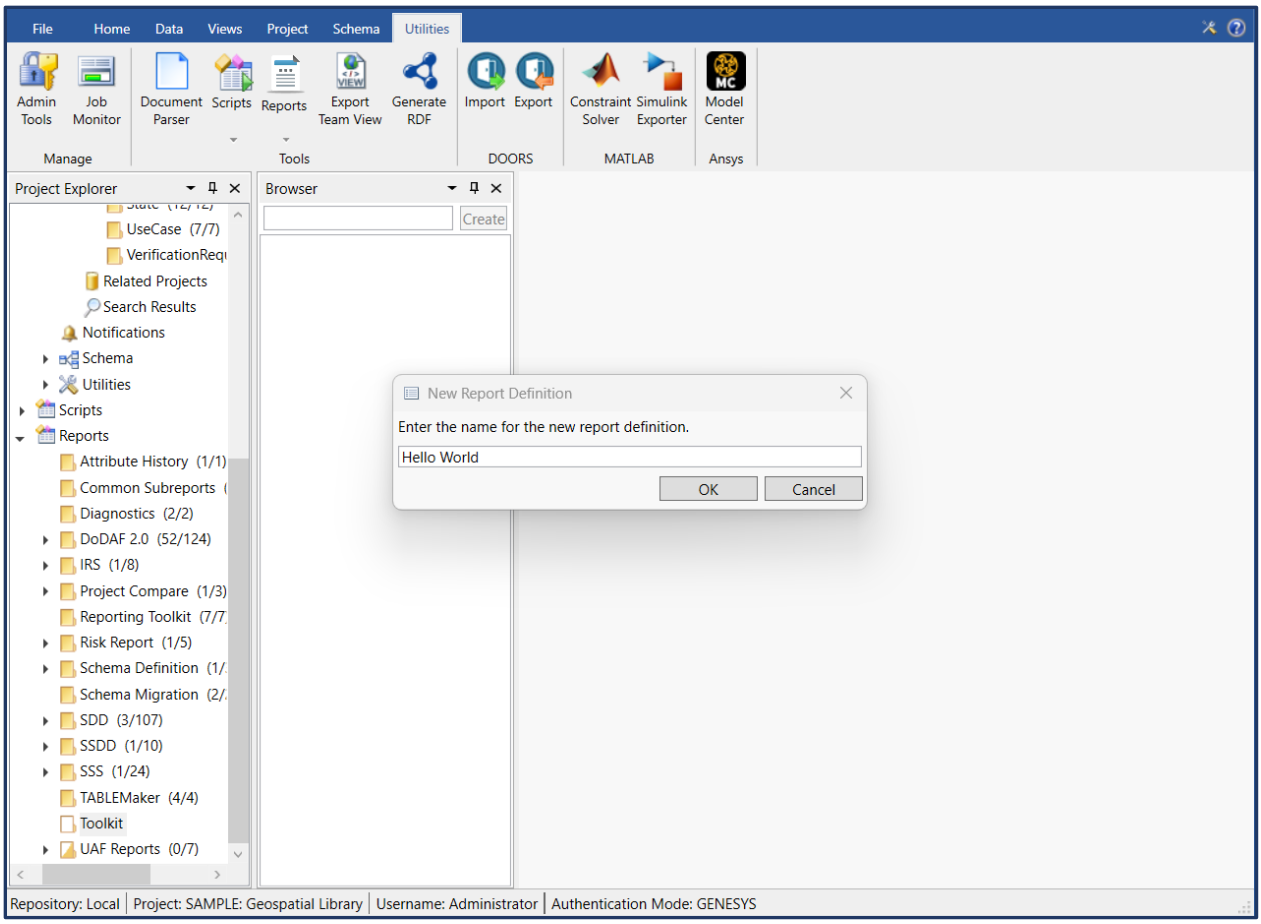


Figure 3: Create the *Hello World* Report

The GENESYS Report Editor opens and presents an empty design surface. The design surface resembles a sheet of graph paper and resides in the center of the Report Editor window. *Controls* are used to display data. The available *Controls* are in the Report Designer's *Toolbox* window. A *Label* control is used to display plain text and is chosen to add the "Hello World!" string to the report.

1. This report will only display a single line of text. Therefore, the design surface will easily accommodate a larger font size. Prior to adding *Controls*, set the default font size (located in the Font section of the Report Editor's ribbon) to 12.
2. Drag the *Label* control from the *Toolbox* window and drop it on the Detail section of the design surface.
3. Double-click inside the *Label* control box and type "Hello World!"
4. Click on the design surface (outside of the *Label* control box).

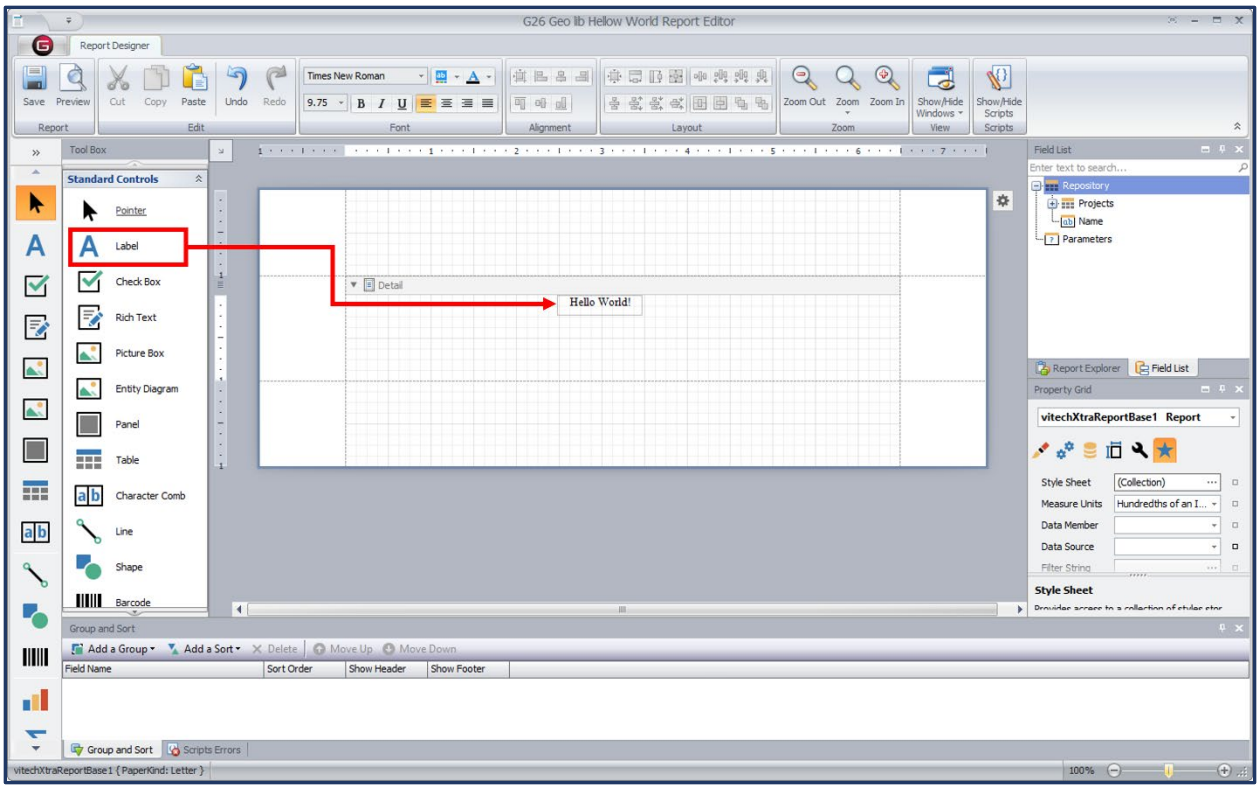


Figure 4: Inserting a *Label* Control

5. Click on the *Save* command in the Report Editor ribbon to save the effected changes.
6. Click on the *Preview* command in the Report Editor ribbon to view the report's output. (*The output should consist of a single page containing the string "Hello World!"*)
7. Close the Preview window.
8. Exit the Report Editor.

At this point, the *Hello World* report exists in the *Toolkit* folder of the repository. In the browser window, select the *Hello World* report to open its Property Sheet. Notice that GENESYS initialized the report's *Description* attribute with a default text string.

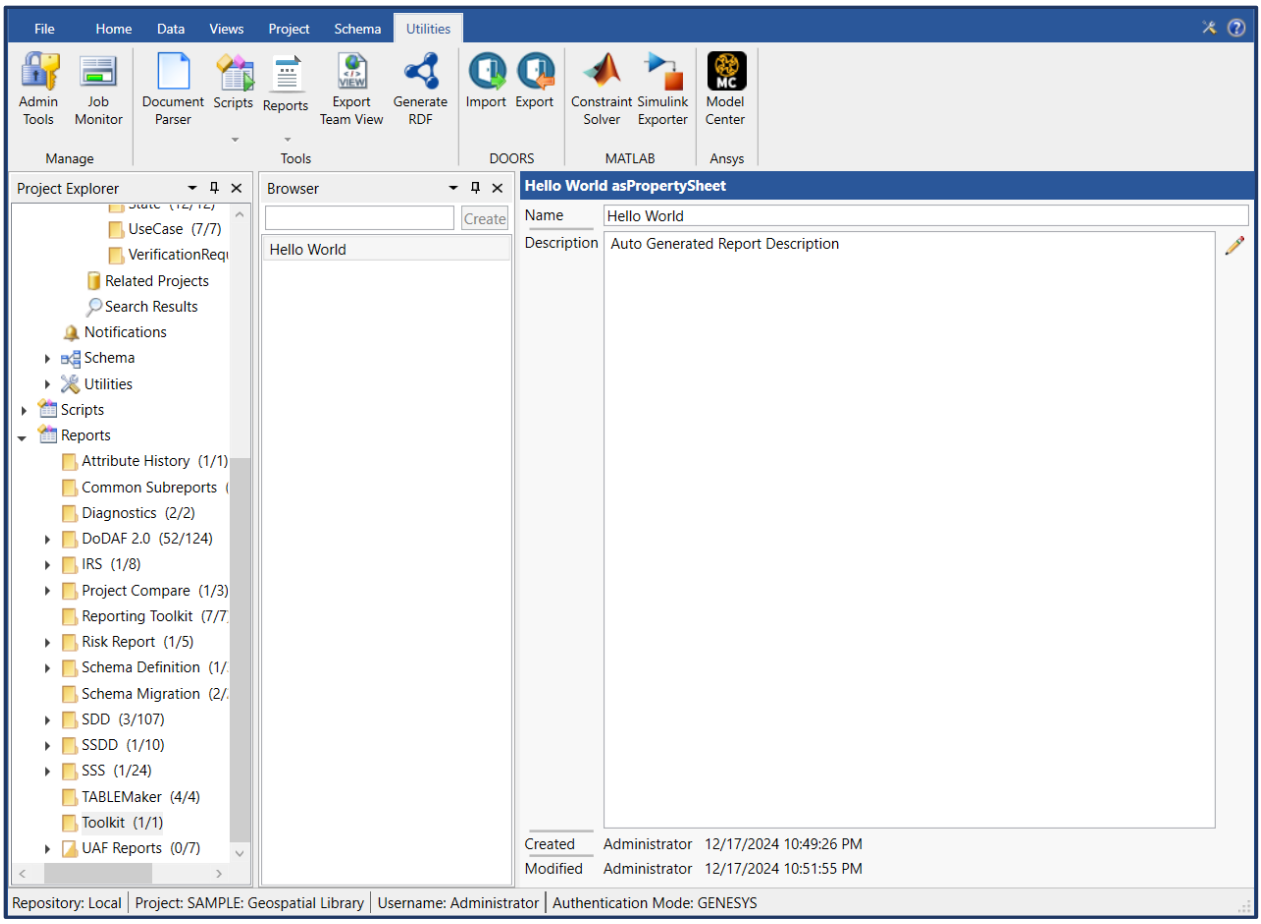


Figure 5: Default Report Description

A report's description is editable. Open the GENESYS text editor by clicking on the pencil icon adjacent to the *Description* attribute text box. Use the text editor to replace the default description with a more representative explanation of the report. The updated report description is shown below.

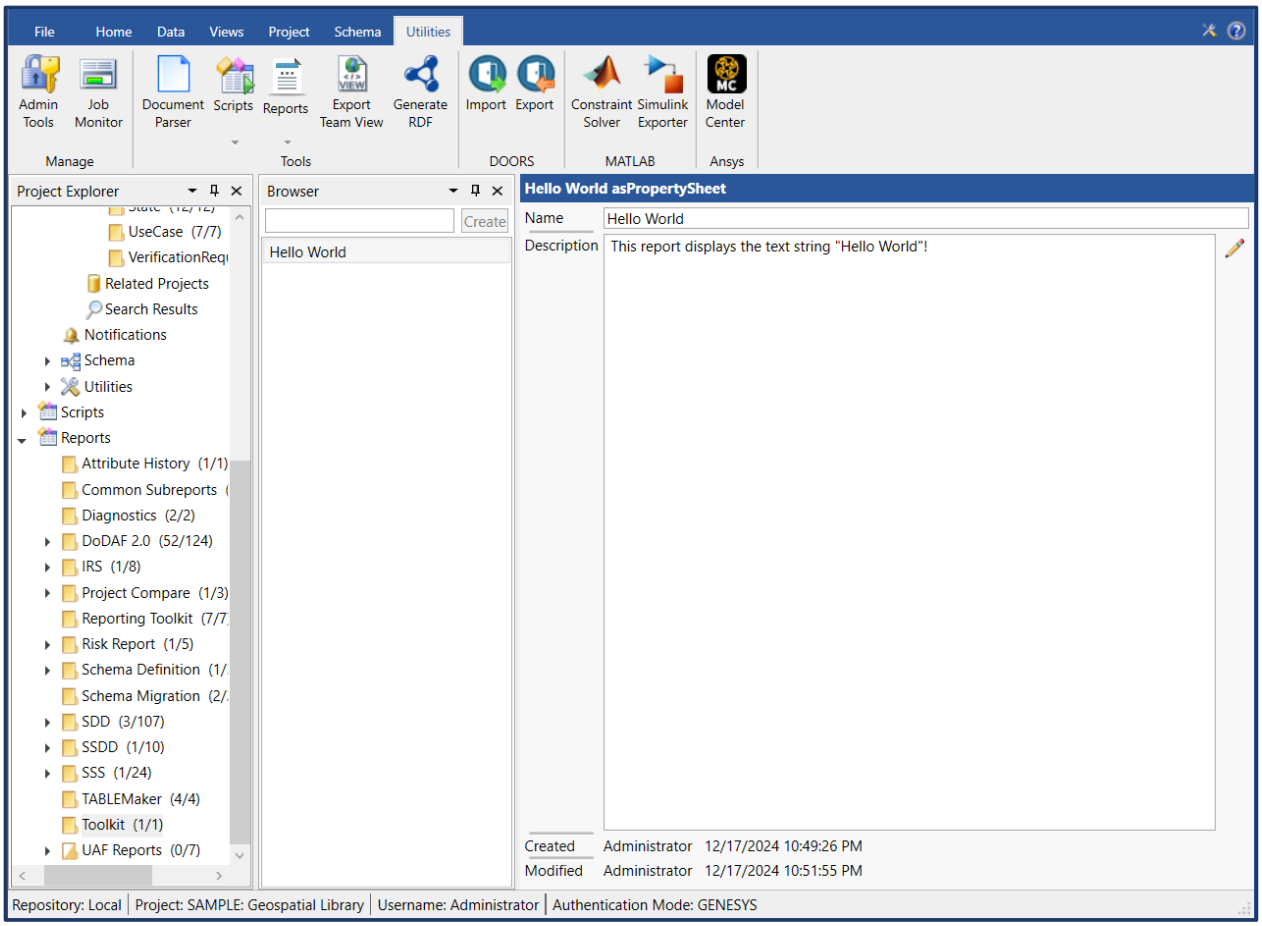


Figure 6: *Hello World* Report with updated Description

The GENESYS *Export* and *Import* commands provide the means for backing up and restoring report folders. The *Export* produces a *gnsx* file that is external to the GENESYS repository. The gnsx file is selected during an *Import* to restore the report folder and its contents.

CONSTRUCTING REPORTS

This section presents guidance for incorporating GENESYS repository data into reports. The instruction emphasizes how to locate and display the GENESYS data objects of interest. In general, *Bands* are used to retrieve data and *Controls* are used to display data. Binding is the technique that connects a *Control* to the data captured in a *Band*.

Locating the Data – Detail Report Bands

The GENESYS Report Designer utilizes *Detail Report Bands* to traverse and iterate over the structure and hierarchy of the GENESYS™ repository data. Assembling an organized sequence of *Detail Report Bands* enables the reporting tool logic to navigate the repository to the data of interest. As depicted in the following diagram, similarities can be visualized between *Detail Report Bands* and the GENESYS *Project Explorer* and *Browser* panes.

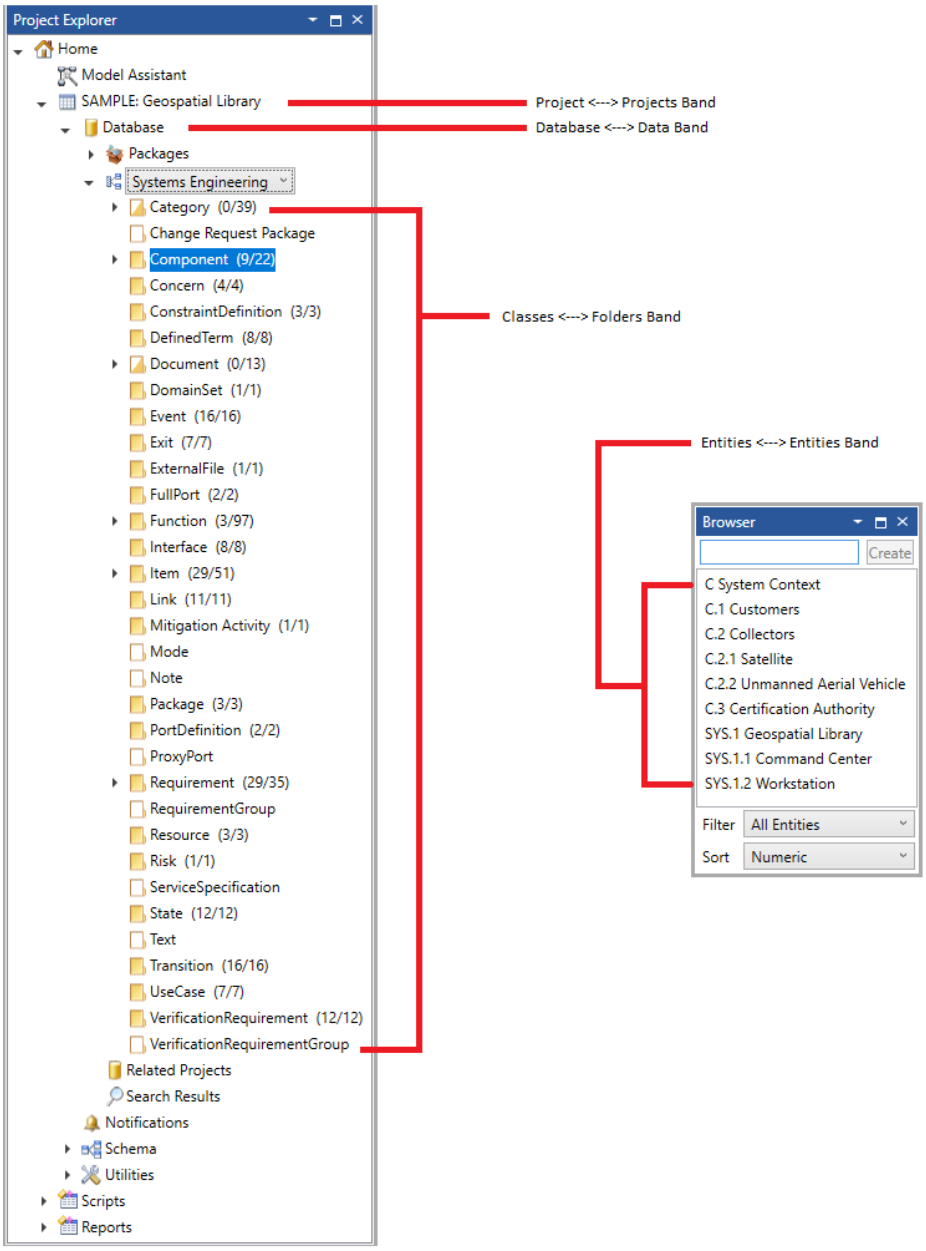


Figure 7: Detail Report Bands and GENESYS Project Explorer and Browser Panes

The iterative capability of *Detail Report Bands* enables the reporting tool logic to process all, or a subset of, the objects contained in the repository structure associated with the particular band. (For example, the *Folders* band iterates over a project's folders.)

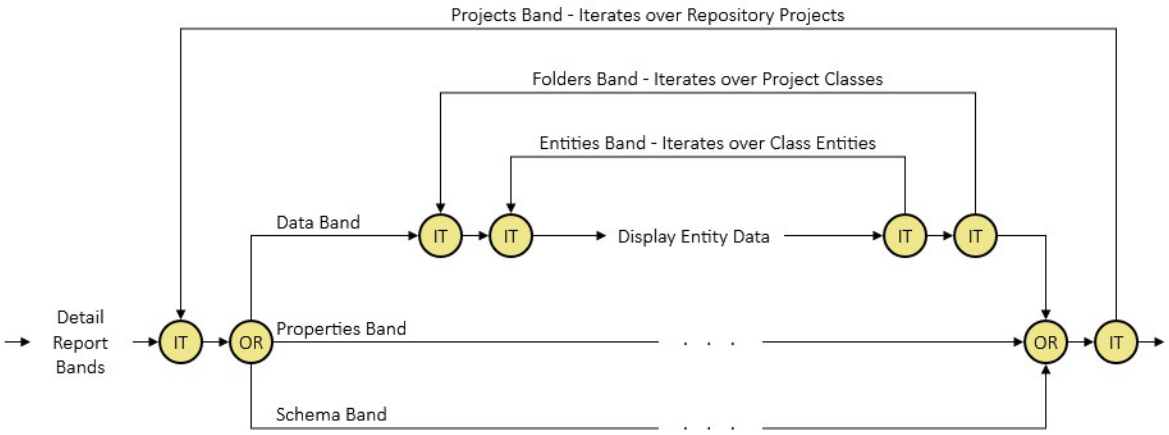


Figure 8: Report Band Iteration

Displaying the Data – Controls and Data Binding

Introduced in section 1, *Controls* are used to display data. While the *Hello World* report introduced static content, the reports that follow will feature dynamic content derived from the GENESYS repository data.

For a *Control* to represent GENESYS repository data, the *Control* must be associated with a specific type of repository object (e.g., folder, entity, attribute, etc.) The technique of Data Binding defines the link between a *Control* and a repository object retrieved in a *Band*.

List of Concerns Report

The *List of Concerns* report will evolve using a staged approach. At each stage, content is added or revised and subsequently, the report's output is generated and verified. The conclusion of this process will yield a report that displays the project's open concerns together with selected attributes defined for those concerns.

Stage 1 – Display the Project Name

Start simply by displaying the Project name.

1. In the *Toolkit* folder, create a report named "List of Concerns".
2. Verify that the report is open for editing.
3. This report does not display a large amount of text. Therefore, the design surface will easily accommodate a larger font size. Prior to adding *Controls*, set the default font size (located in the Font section of the Report Editor's ribbon) to 12.
4. Insert a *Projects* band within the *Detail* band.
   - Right-click in the *Detail* band's design surface space,
   - Expand the *Insert Detail Report* sub-menu, and
   - Click on the *"Projects"* identifier.

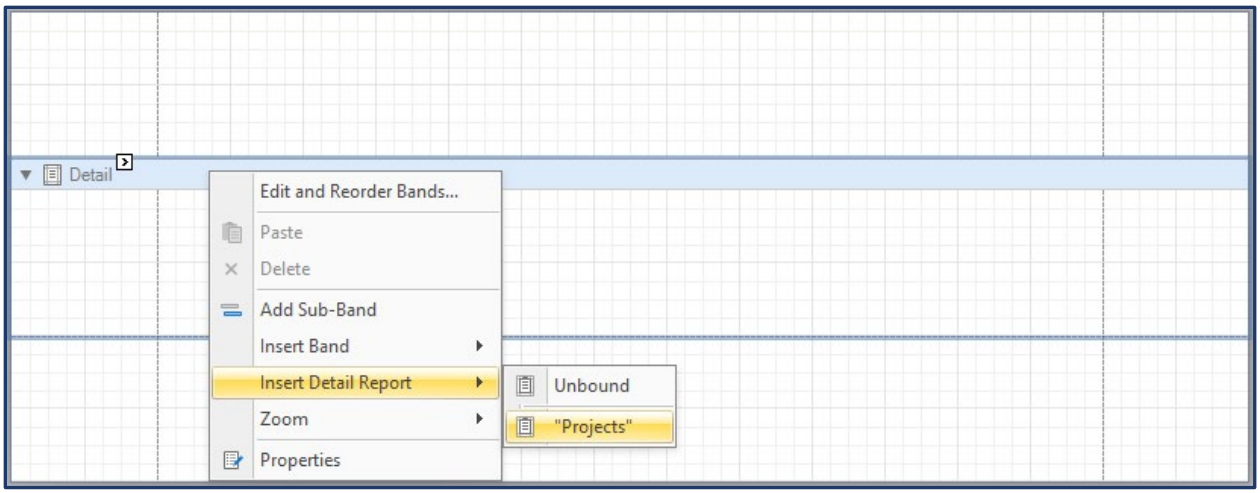


Figure 9: Inserting a *Projects* Band

5. The Project name is simple text, so drop a *Label* control within the *Projects* band space on the design surface.

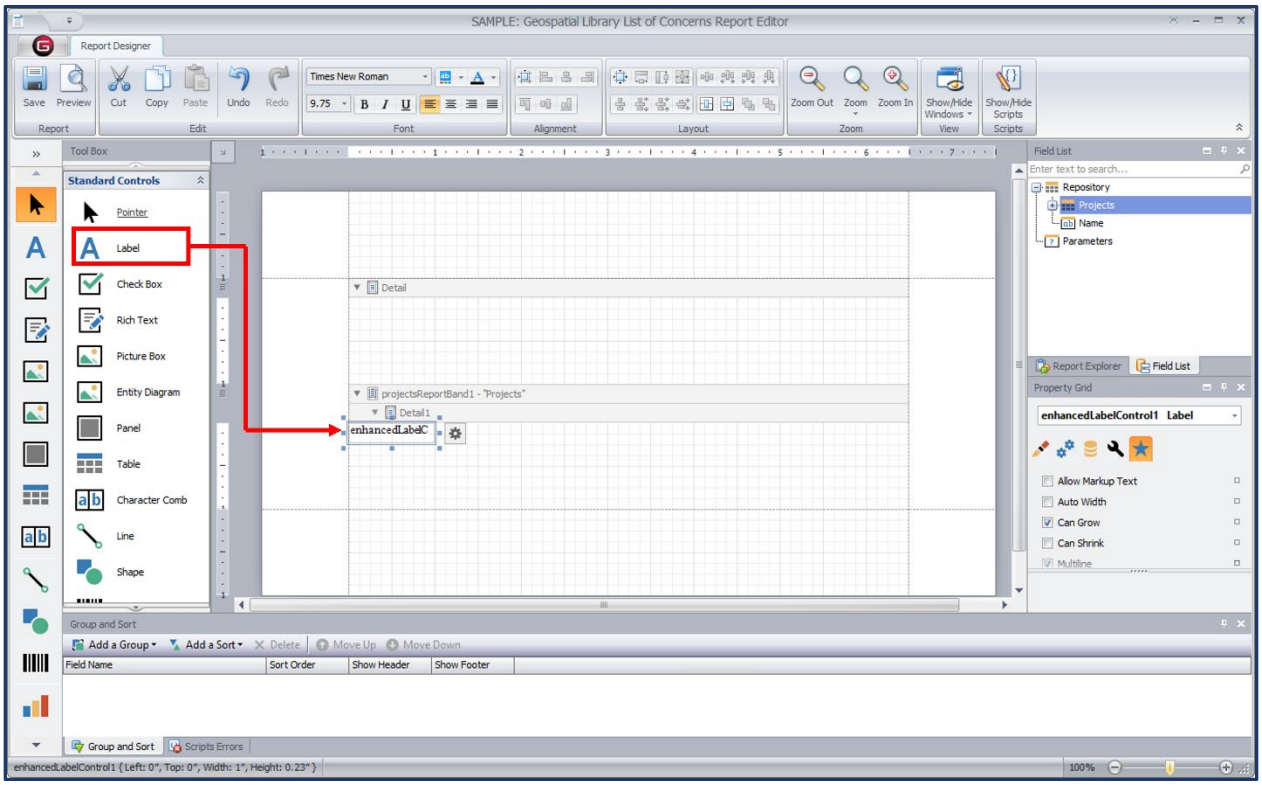


Figure 10: Inserting a *Label* Control into the *Projects* Band

Vitech
A Zuken Company

6. Bind the *Label* control to the *Project* object.
   - Expand the *Projects* band in the *Field List* window.
   - Drag the *Project* item from the *Field List* and drop it onto the *Label*.
   - Observe that the text inside the *Label* changes to “[Project]”.

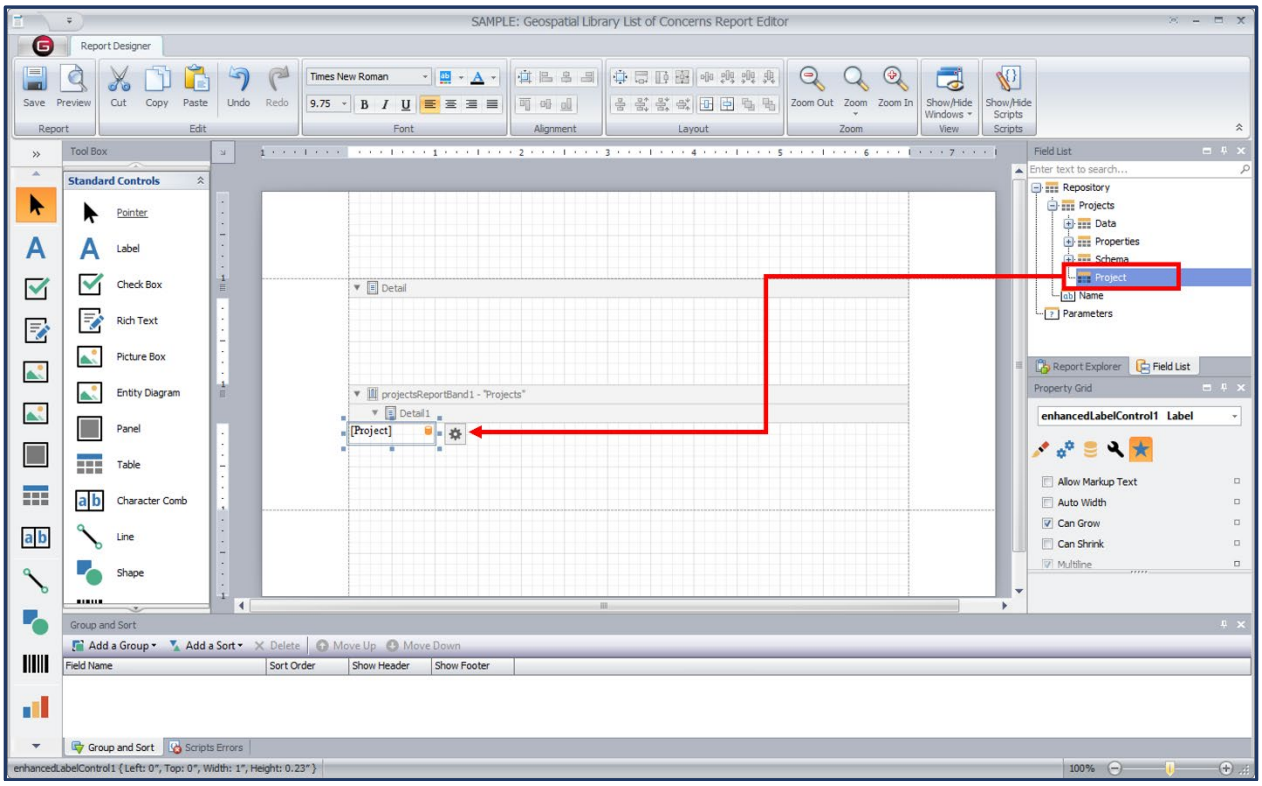


Figure 11: Binding a *Label* Control to the *Project* Object

7. Save and then Preview the report.

The report output (shown below) consists of a single page with the Project name appearing in the upper left corner of the page.

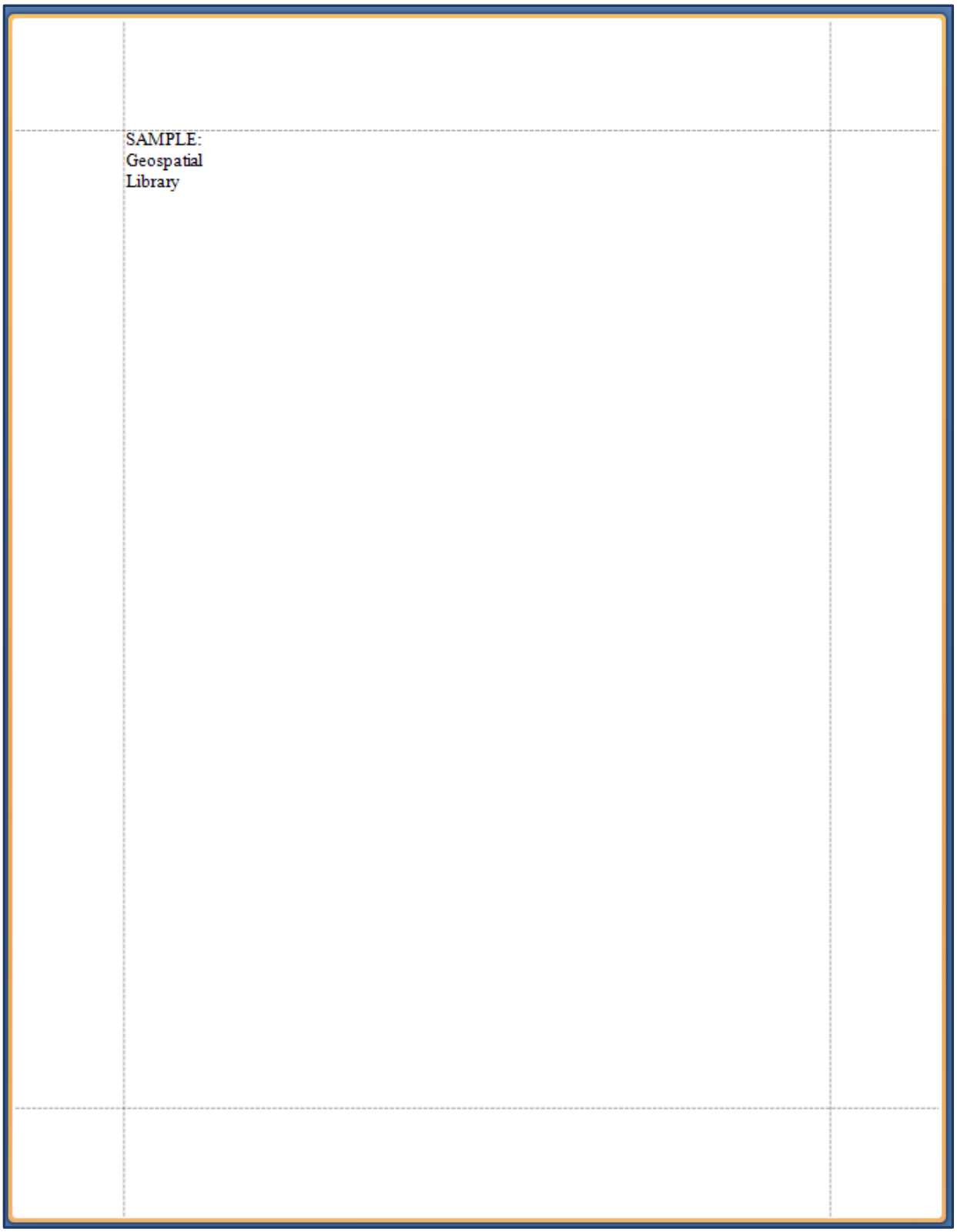


Figure 12: *List of Concerns* Output – Stage 1

Why didn't the Projects band iterate over all projects in the repository?

(Note*: If repository being used does not contain additional projects, import the Fast Food Sample project and preview the report again.*)

The *Projects* collection associated with the *Projects* band identifies the repository projects over which the *Projects* band will iterate. The default value of the *Projects* collection is "Current"—meaning that the *Projects* band will only iterate over the active project. The *Projects* collection can be viewed via the Smart Tag associated with the *Projects* band.

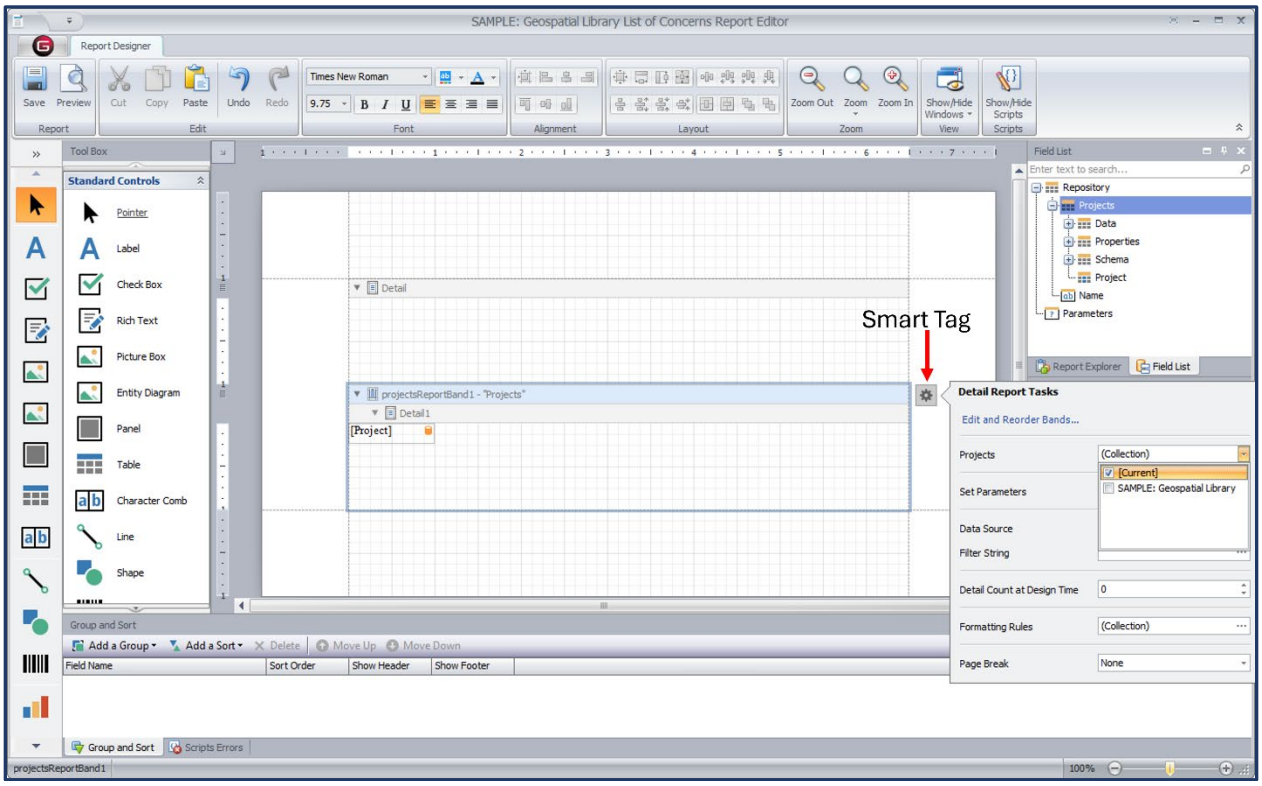


Figure 13: *Projects* Band Smart Tag

When *no* projects are selected (i.e., checked) in the *Projects* collection, the *Projects* band will iterate over all repository projects.

Stage 2 – List the Project Classes

Extend the report to the list the names of the project's *Classes*.

1. Add the *Data* band.
   - Right-click in the detail section of the *Projects* band,
   - Expand the *Insert Detail Report* sub-menu, and
   - Click on the *"Data"* identifier.

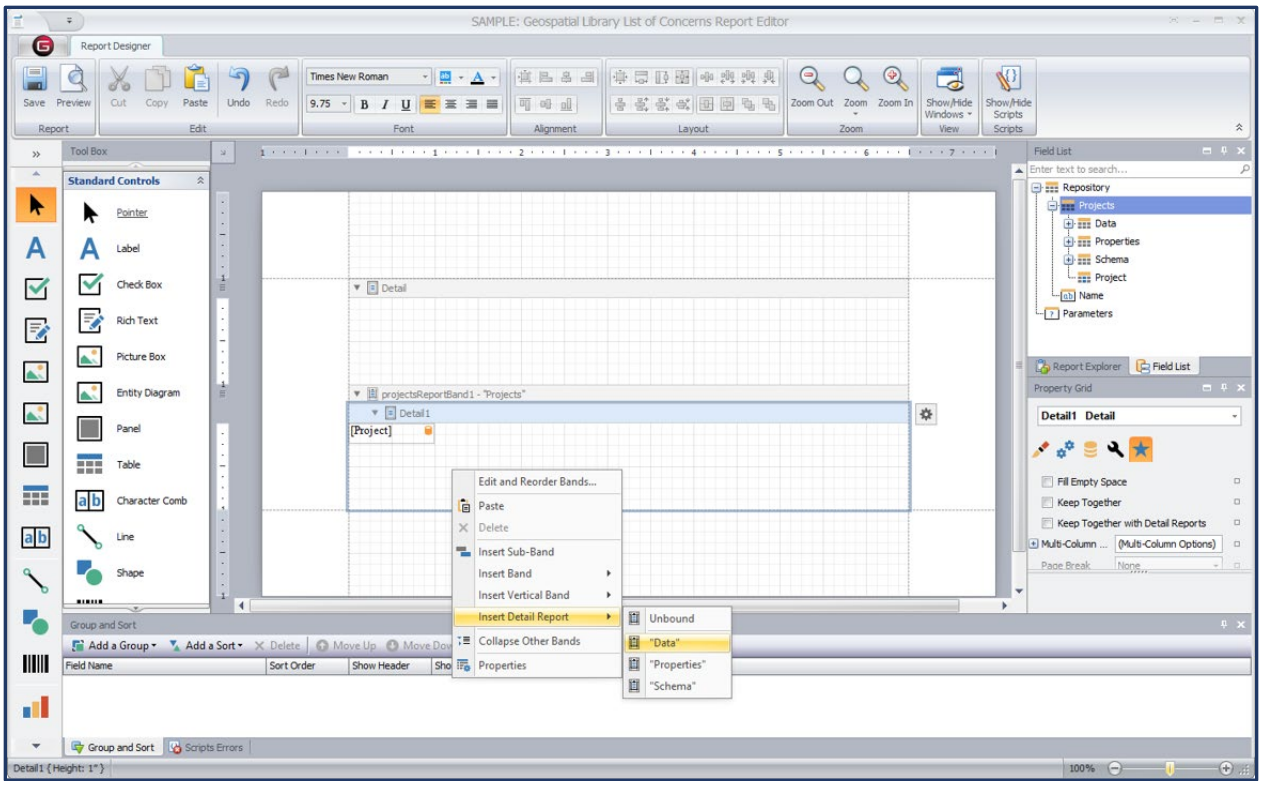


Figure 14: Inserting a *Data* Band

2. Add the *Folders* band.
   - Right-click in the detail section of the *Data* band (i.e., “Projects.Data”),
   - Expand the *Insert Detail Report* sub-menu, and
   - Click on the *“Folders”* identifier.

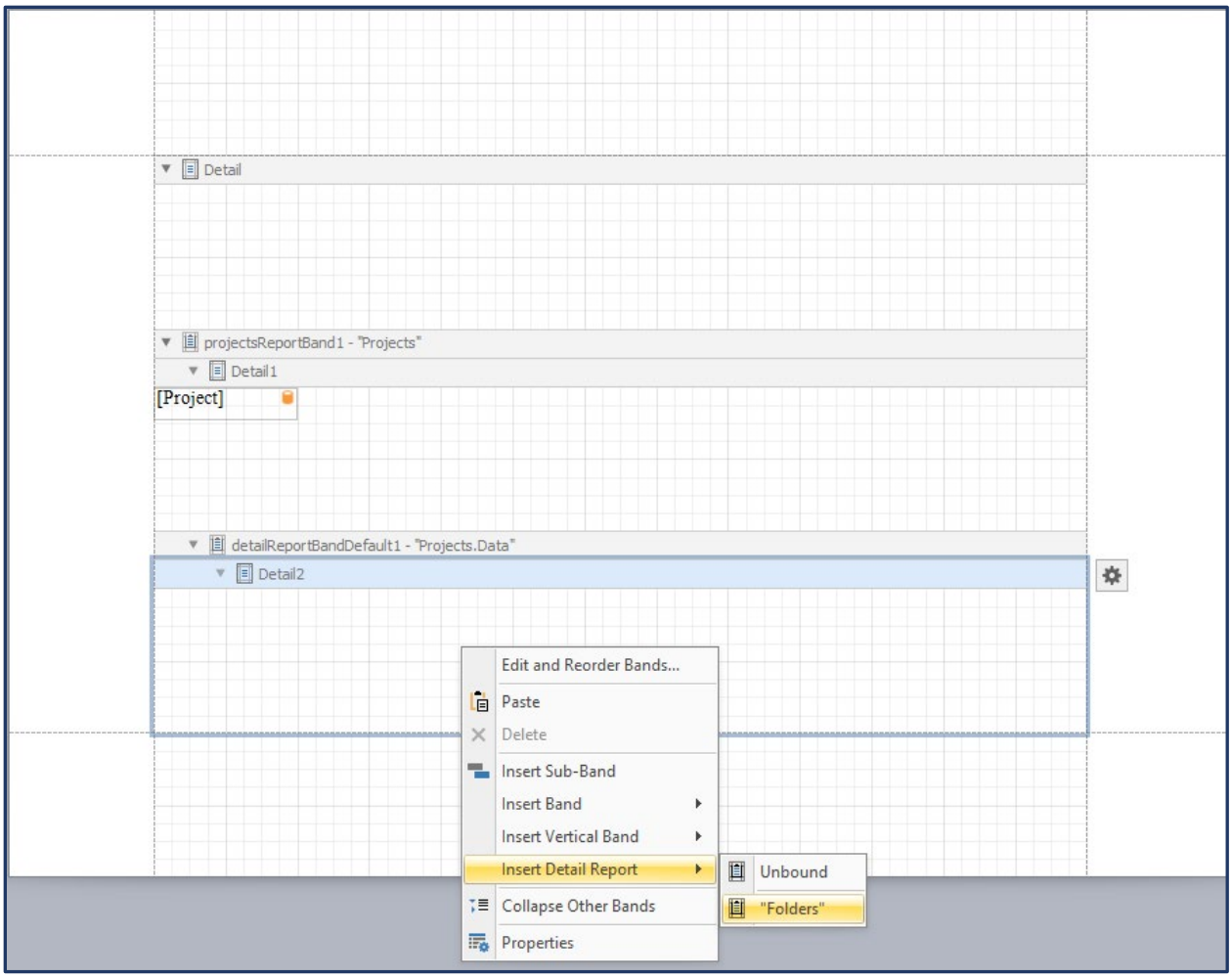


Figure 15: Inserting a *Folders* Band

3. The Folder name is simple text, so drop a *Label* control within the *Folders* band space on the design surface.
4. Bind the *Label* control to the *Folder* object.
   - Expand the *Data* band in the *Field List* window.
   - Expand the *Folders* band in the *Field List* window.
   - Drag the *Folder* item from the *Field List* and drop it onto the *Label*.
   - Observe that the text inside the *Label* changes to “[Folder]”.

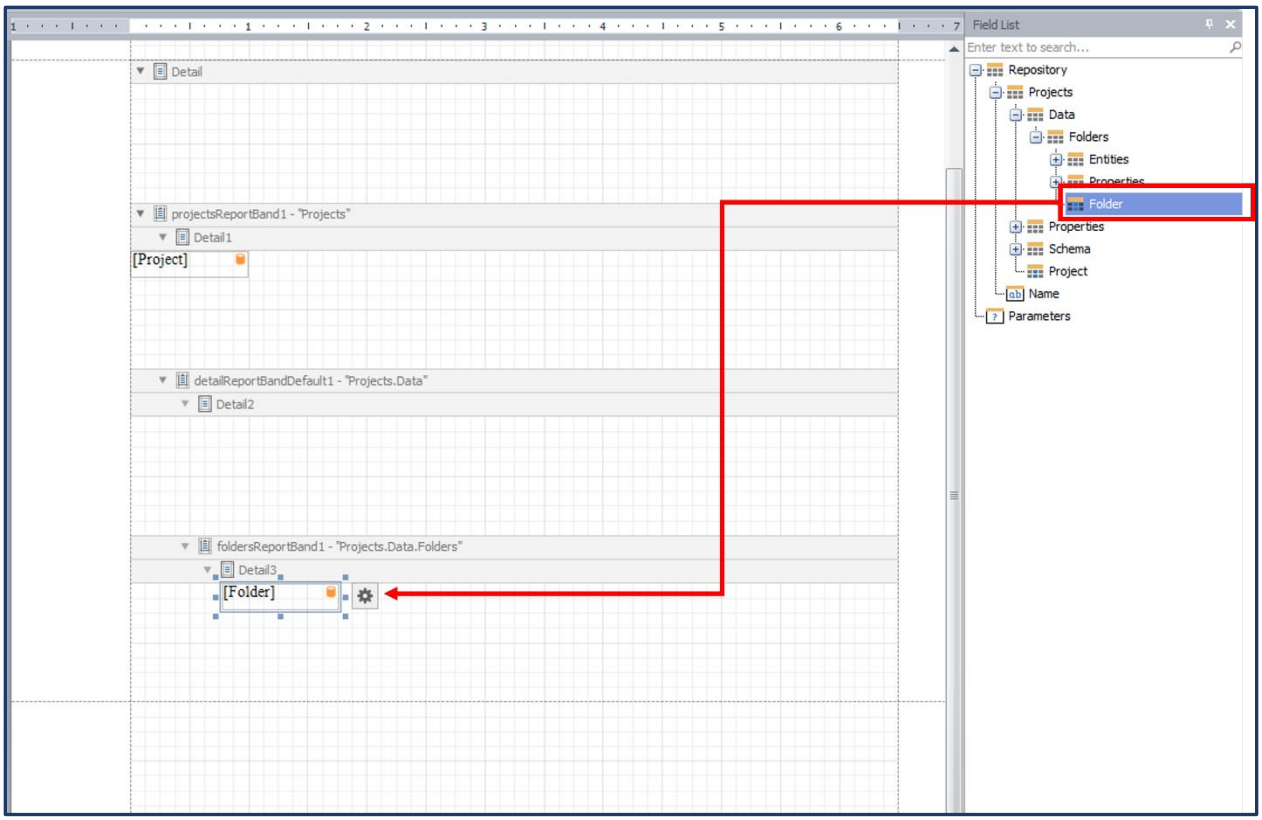


Figure 16: Binding a *Label* Control to the *Folder* Object

5. Save and then Preview the report.

The report output (first page shown below) consists of five pages containing the Project name followed by a complete list of the project's *Class* names.

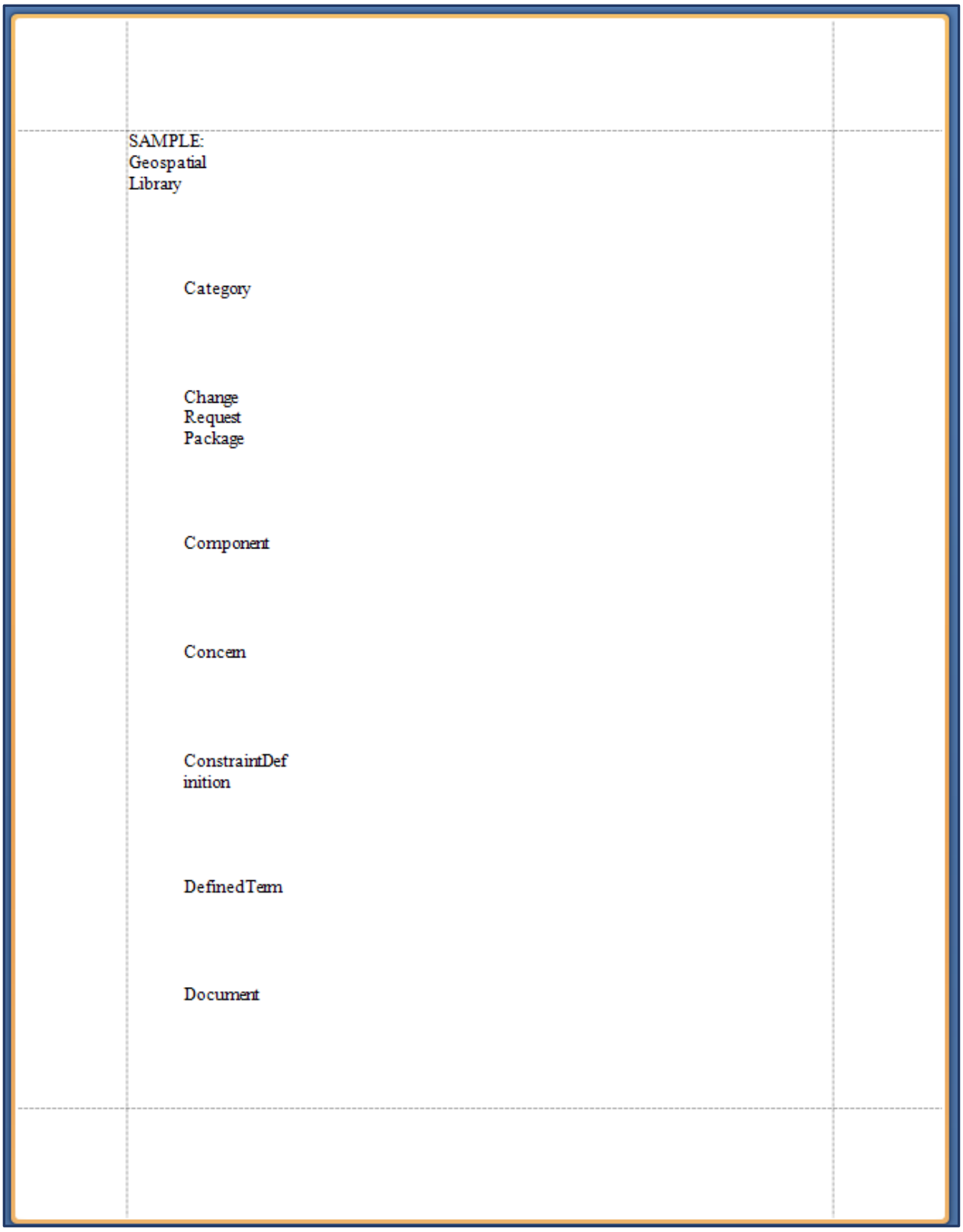


Figure 17: *List of Concerns* Output – Stage 2

Is there a way to avoid the word wrapping on the Project and Folder names?

Yes. The size of a *Control* is adjustable via its handles. Eliminate the word wrapping applied to the Project and Folder names by increasing the width of those *Label* controls. (For example, click on the Project name Label and drag its right-side, middle handle to the right.)

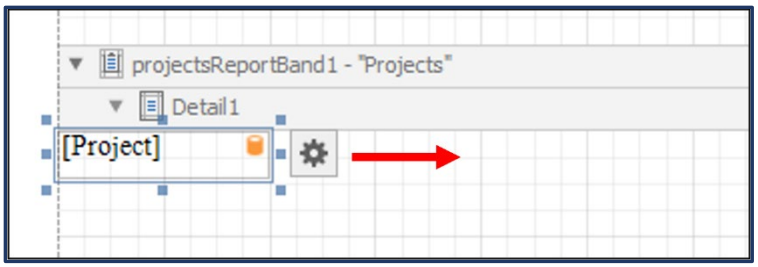


Figure 18: Adjusting the Size of a Control

Stage 3 – Restrict the Folder Iteration

Since the *List of Concerns* report is exclusively interested in the **Concern** class entities, it is unnecessary to iterate over the entire collection of Project classes. Limit the iteration of the *Folders* band to the **Concern** class.

- Click on the Smart Tag of the *Folders* band (i.e., “Projects.Data.Folders”).
- Open the *Folders* collection and check the *Concern* box.
- Click on the *Folders* band grid space.

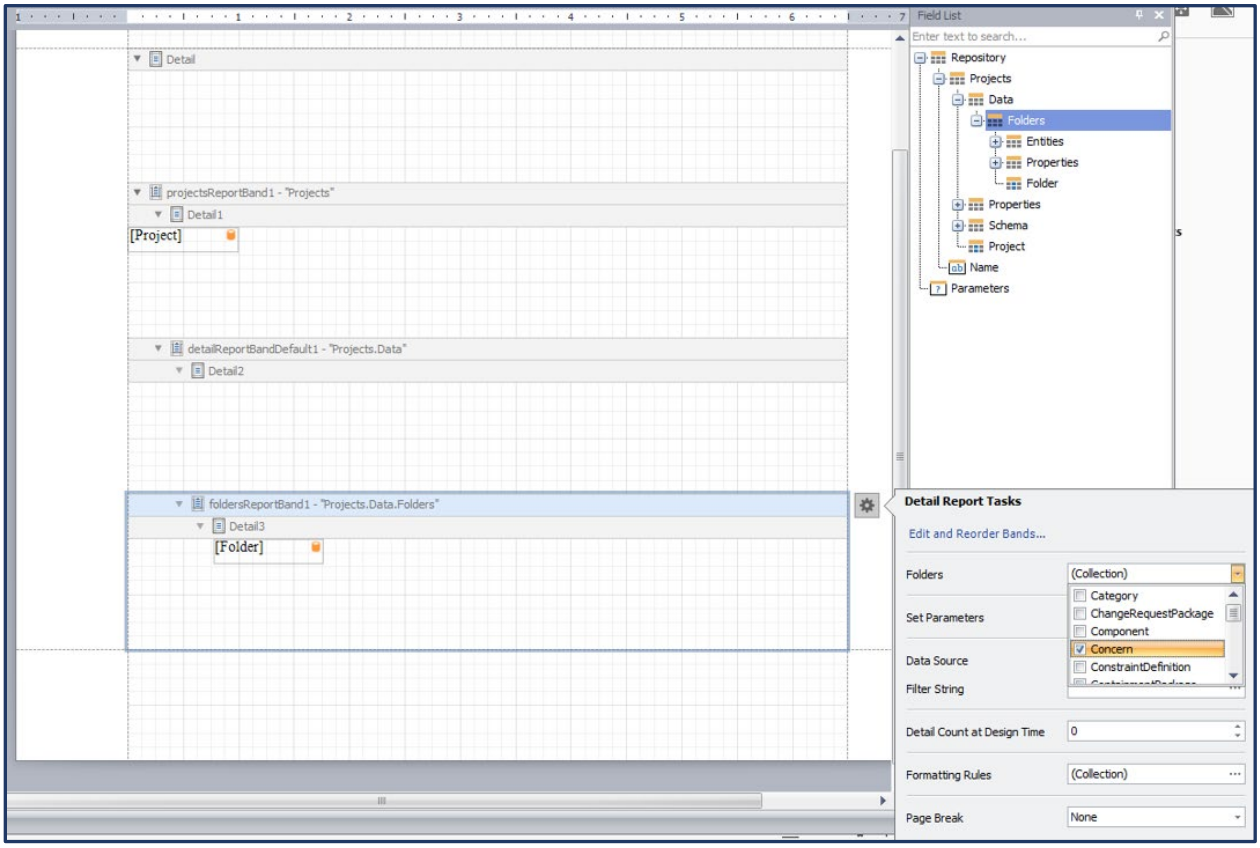


Figure 19: Restricting the *Folders* Band Iteration

Save and the Preview the report. Notice the change in the report's output (shown below); the class list is comprised of a single class name: **Concern**.

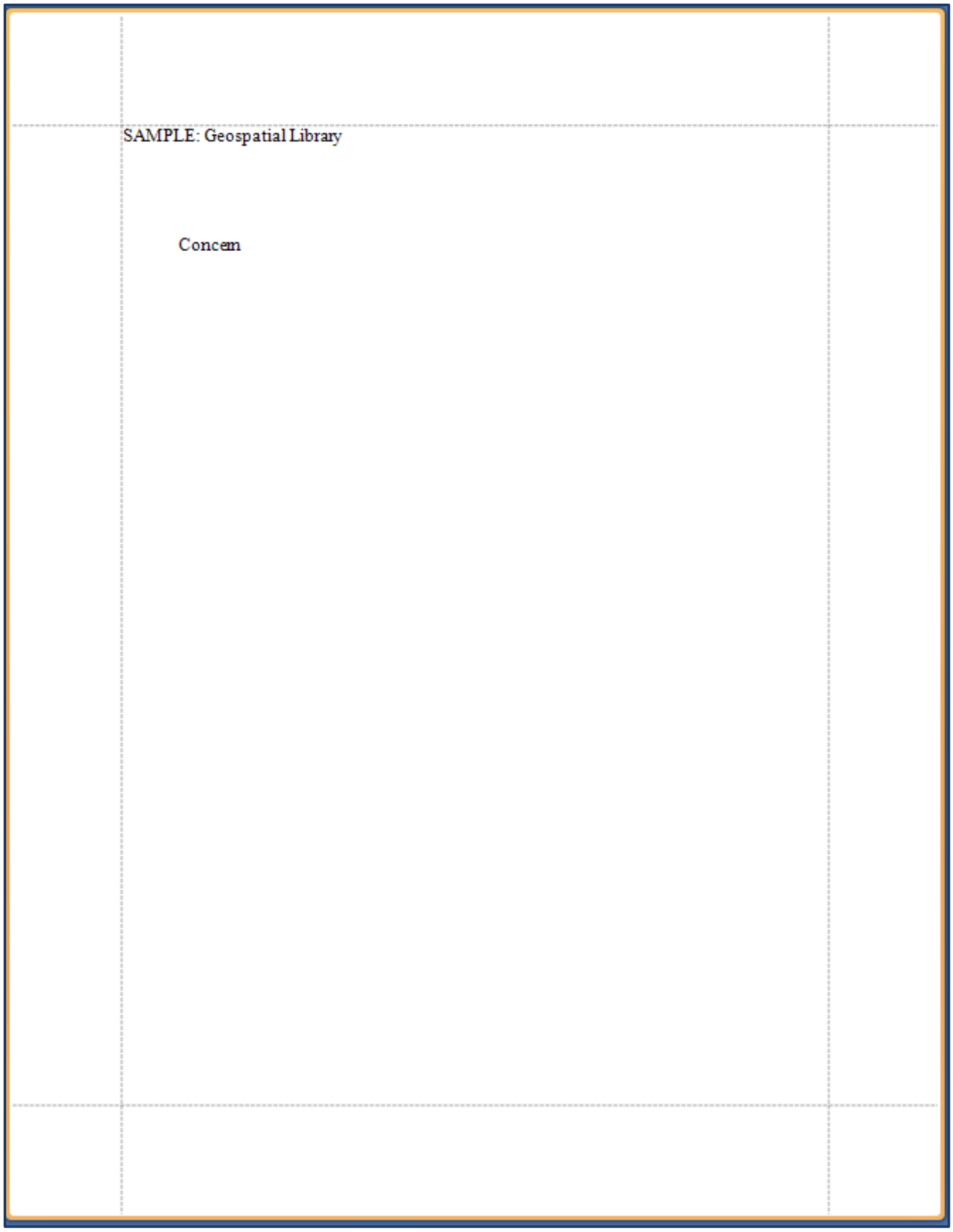


Figure 20: *List of Concerns* Output – Stage 3

Stage 4 – Display the Class Entities

Expand the report to include the names of the entities within the **Concern** class.

1. Add the *Entities* band.
   - Right-click in the detail section of the *Folders* band (i.e., “Projects.Data.Folders”),
   - Expand the *Insert Detail Report* sub-menu, and
   - Click on the *“Entities”* identifier.

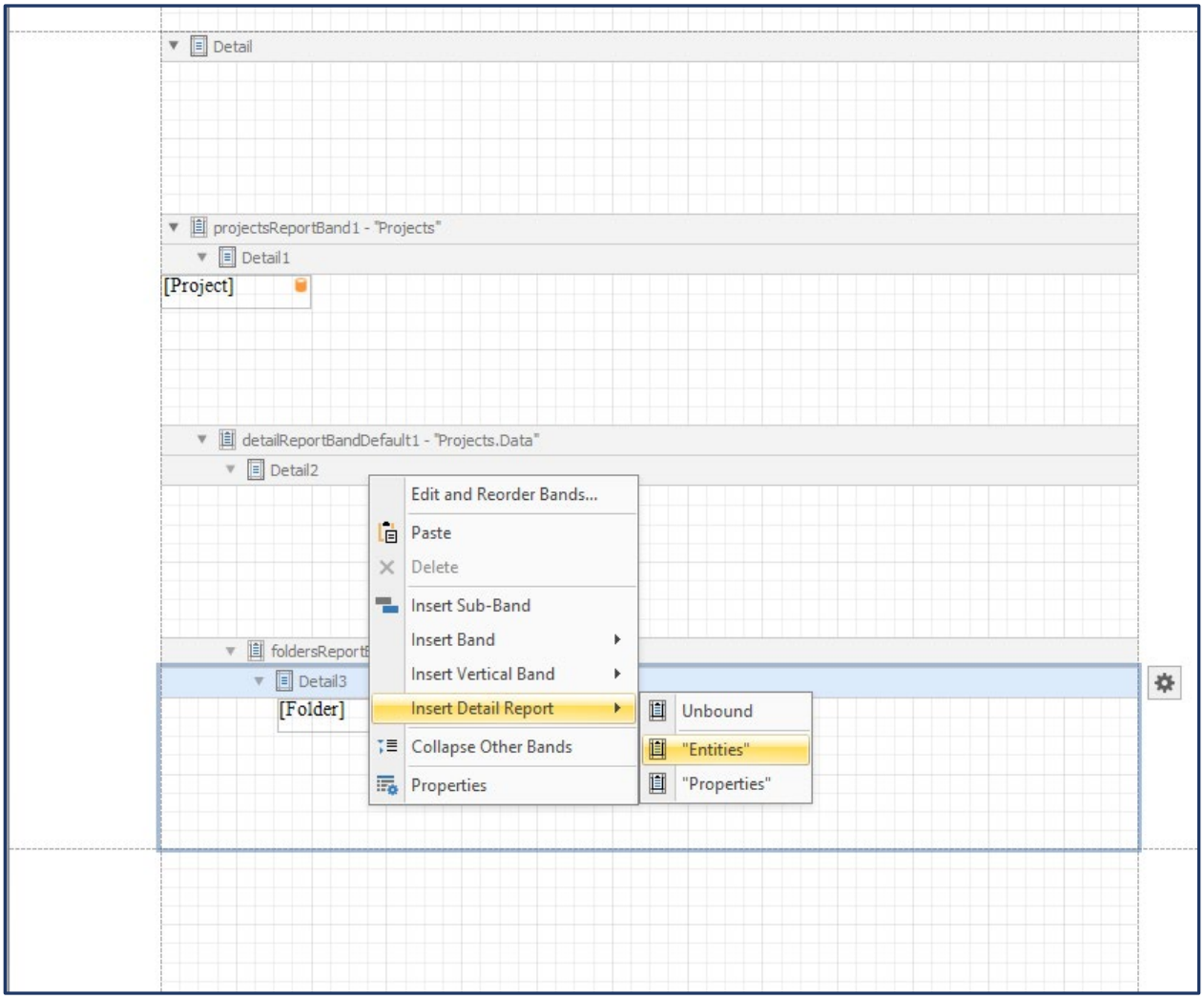


Figure 21: Inserting an *Entities* Band

2. The Entity name is simple text, so drop a *Label* control within the *Entities* band space on the design surface.
3. Bind the *Label* control to the *Entity* object.
   - Expand the *Entities* band in the *Field List* window.
   - Drag the *Entity* item from the *Field List* and drop it onto the *Label*.
   - Observe that the text inside the *Label* changes to “[Entity]”.

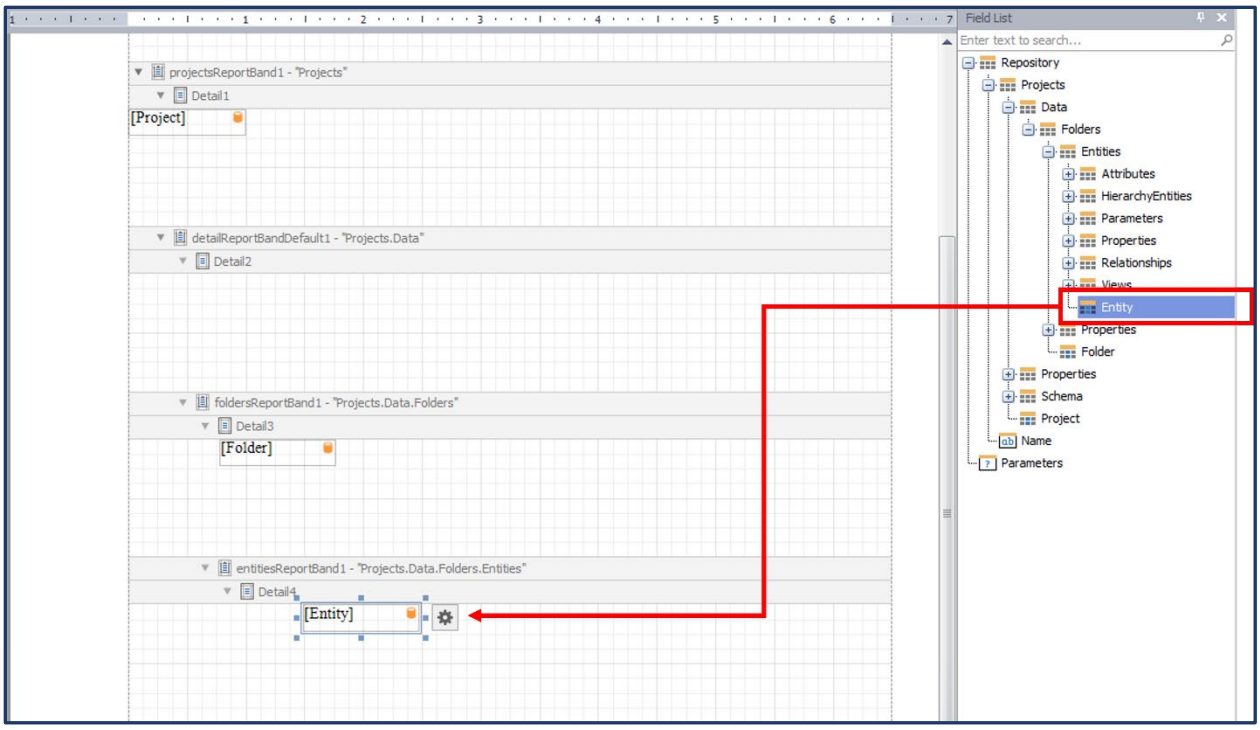


Figure 22: Binding a *Label* Control to the *Entity* Object

4. Save and then Preview the report.

The report output (shown below) consists of a single page that includes the Project name, **Concern** class name, and the names of the four **Concern** entities in the Geospatial Library project.

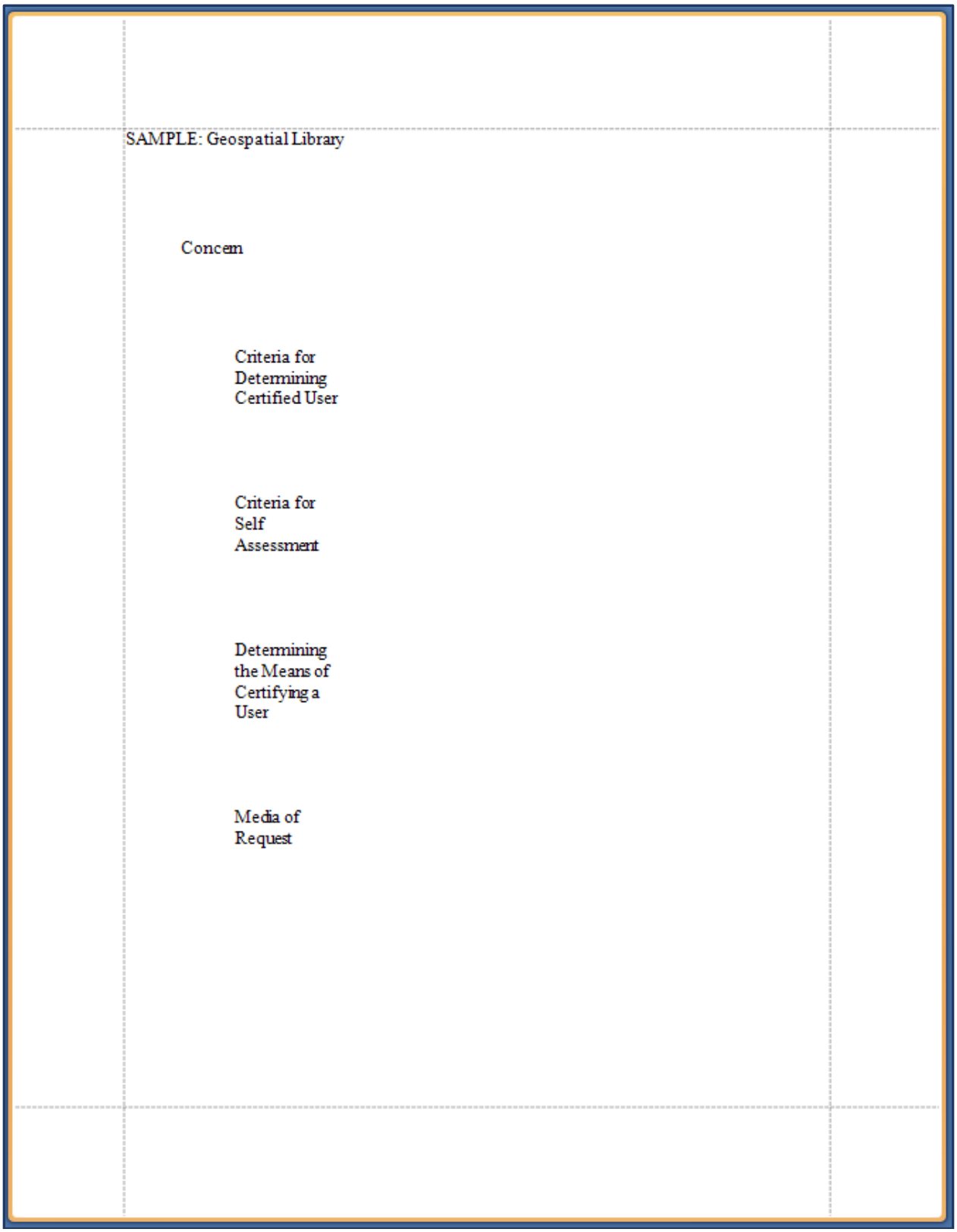


Figure 23: *List of Concerns* Output – Stage 4

Is there a way to compress the vertical spacing of the report output?

Yes. The appearance of the design surface is significant as it reflects the report's output. When the report output is generated, each iteration of a band consumes space equivalent to that which is allocated to that band on the design surface. Minimizing the unused space on the design surface will condense a report's output.

The vertical spacing associated with a band is adjusted by dragging the band's bottom border. Eliminate the unused space in the top four bands by dragging their bottom borders upward. (Additionally, remove the word wrapping applied to the **Concern** entity names by widening the associated *Label*.)

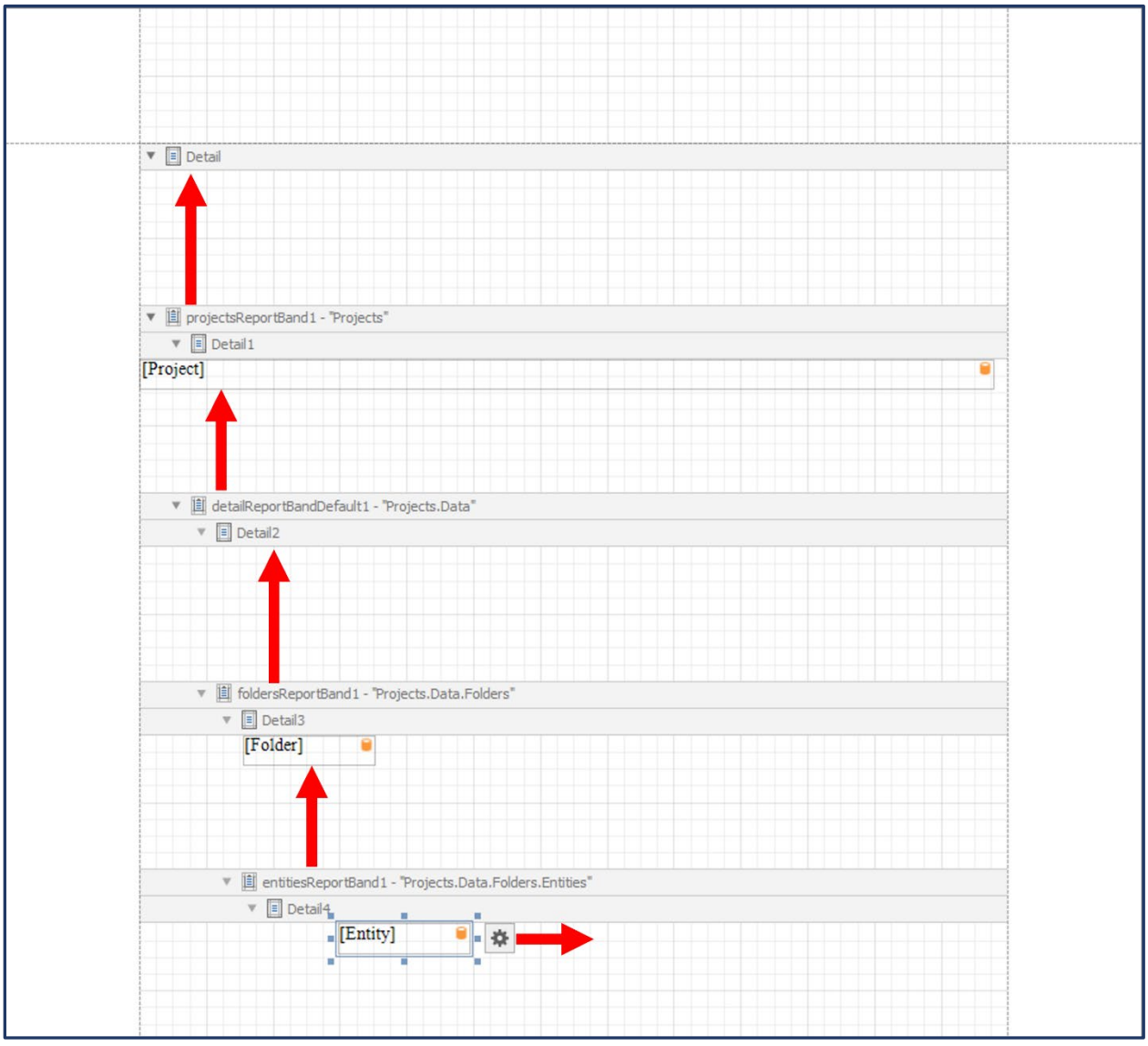


Figure 24: Compressing Vertical Spacing of Report Output

Save and preview the report. Note the condensed report output (shown below).

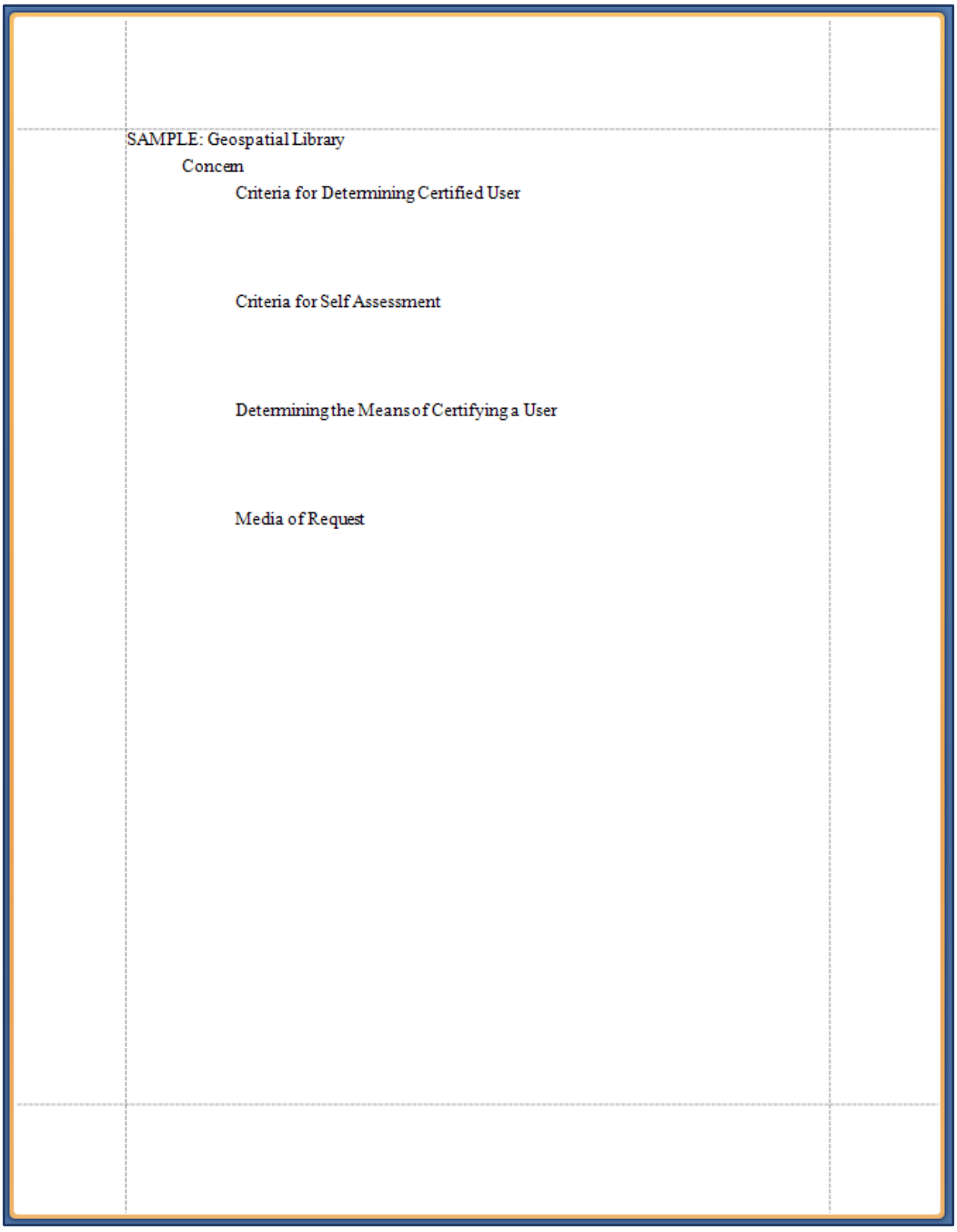


Figure 25: *List of Concerns* Output – Condensed Spacing

Stage 5 – Incorporate Entity Attributes

Augment the report to include each entity's *Description*, *Importance* and *Status* attributes.

Within the *Entities* band space on the design surface, insert three additional *Label* controls (all bound to the Entity object).

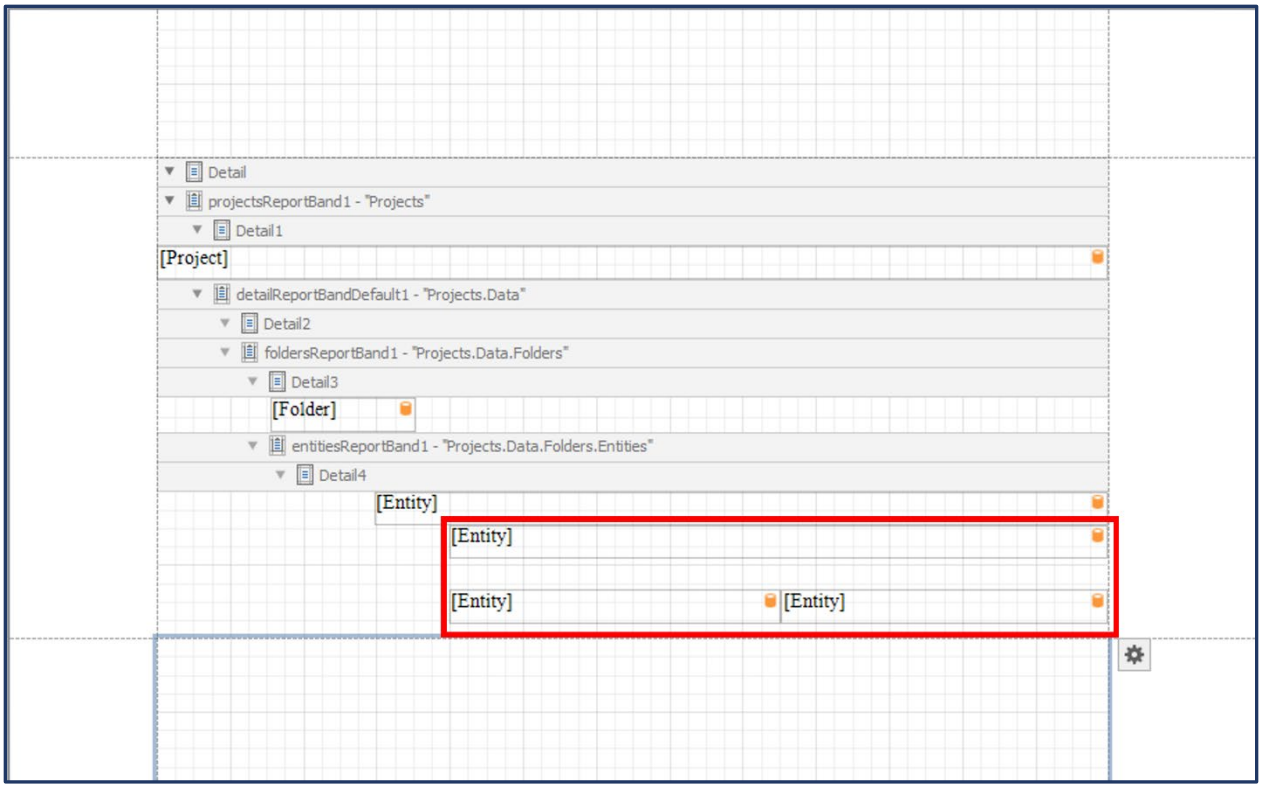


Figure 26: Augmenting Report to Include Description, Importance, and Status

The four *Label* controls in the *Entities* band have identical binding and appear to be the same. In fact, a preview of the report displays each **Concern** entity name four times.

The process of binding a data object to a *Label* control establishes the object's name as the *Label's* default representation of that object. Differentiate the *Label* controls by changing their representation of the bound object.

- Select the *Label* control in the middle row of the *Entities* band.
- Click on its Smart Tag.
- Click on the ellipses to open the *Entity Representation* definition.

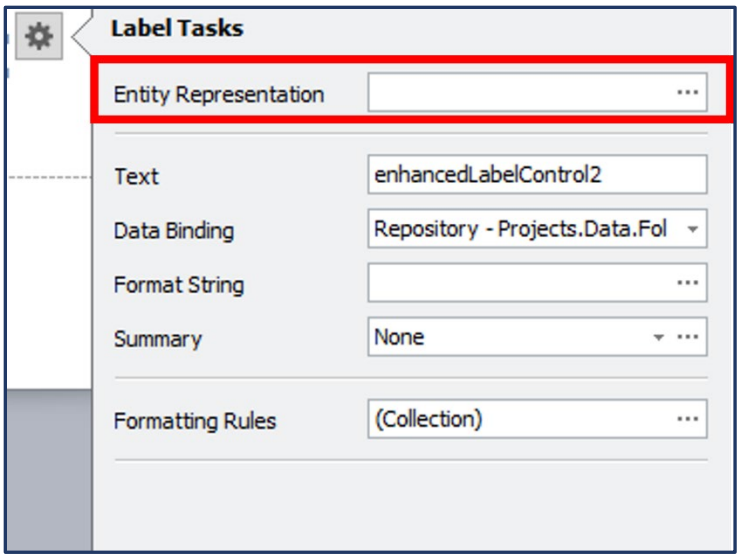


Figure 27: Entity Representation Definition

- In the *Field* column, change the selected attribute from “name” to “description”.
- Click “OK” to complete the change.

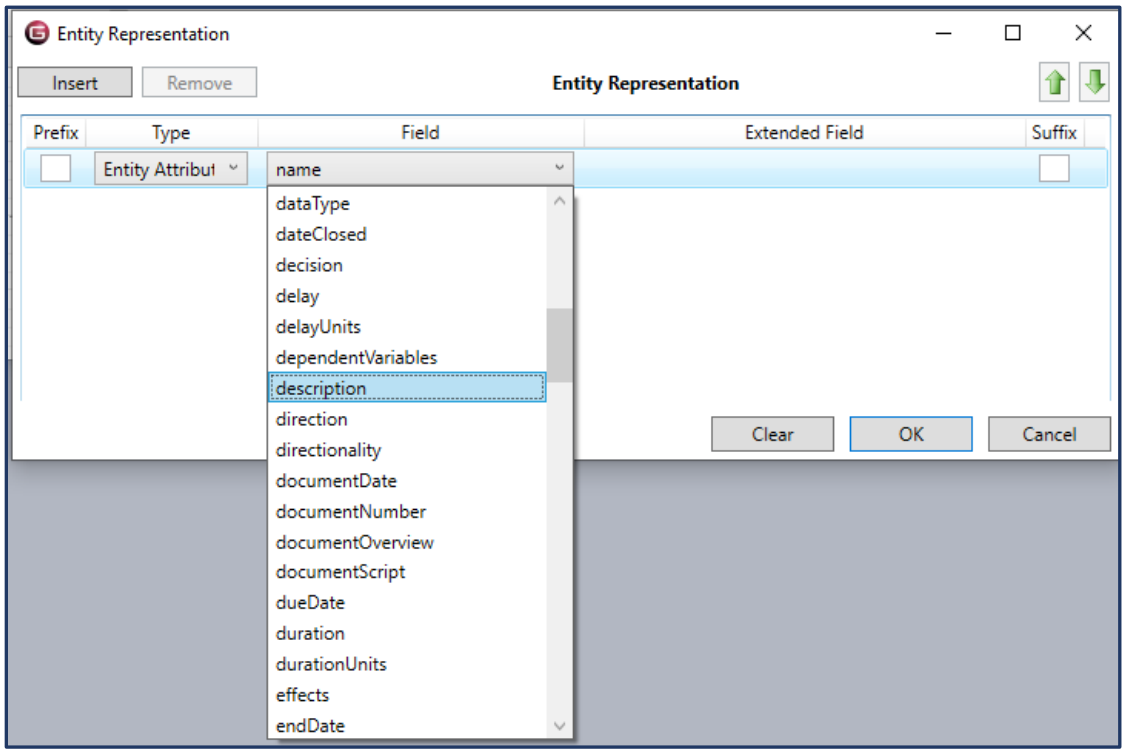


Figure 28: Entity Representation - Description Attribute

- Open the Entity Representation for the left *Label* control in the bottom row of the *Entities* band.
- In the *Prefix* column, add the string “Importance: ”.
- In the *Field* column, change the selected attribute from “name” to “importance”.
- Click “OK” to complete the change.

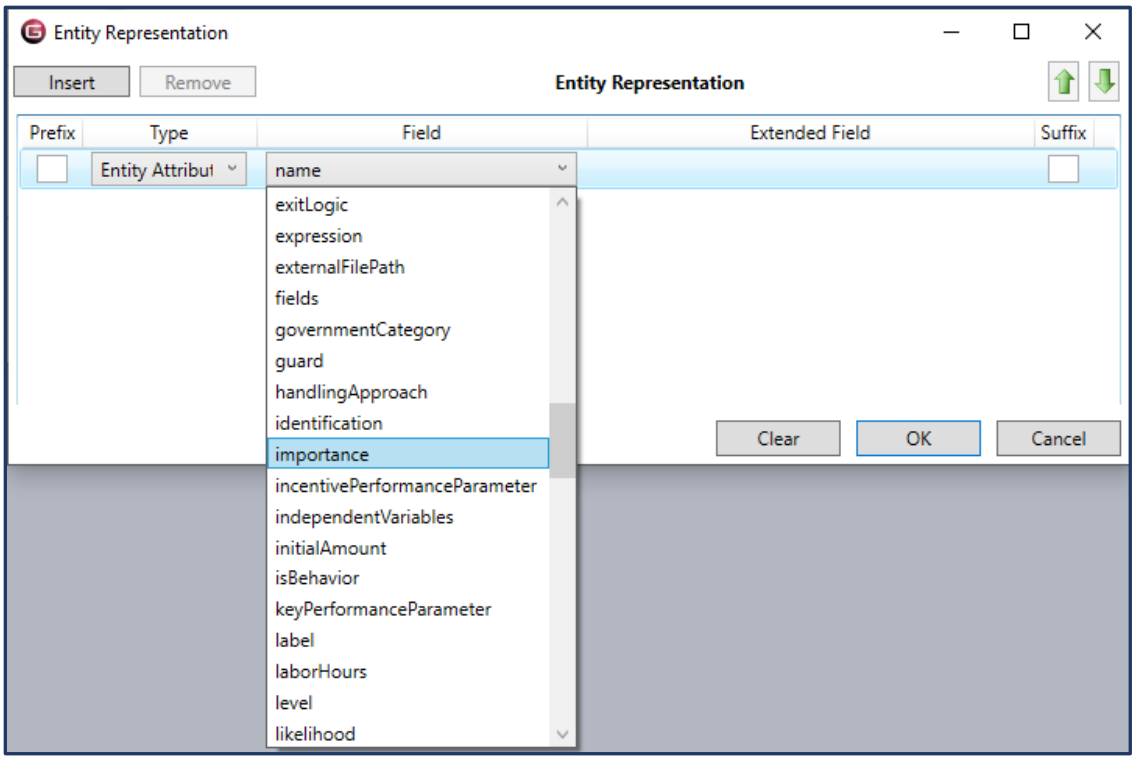
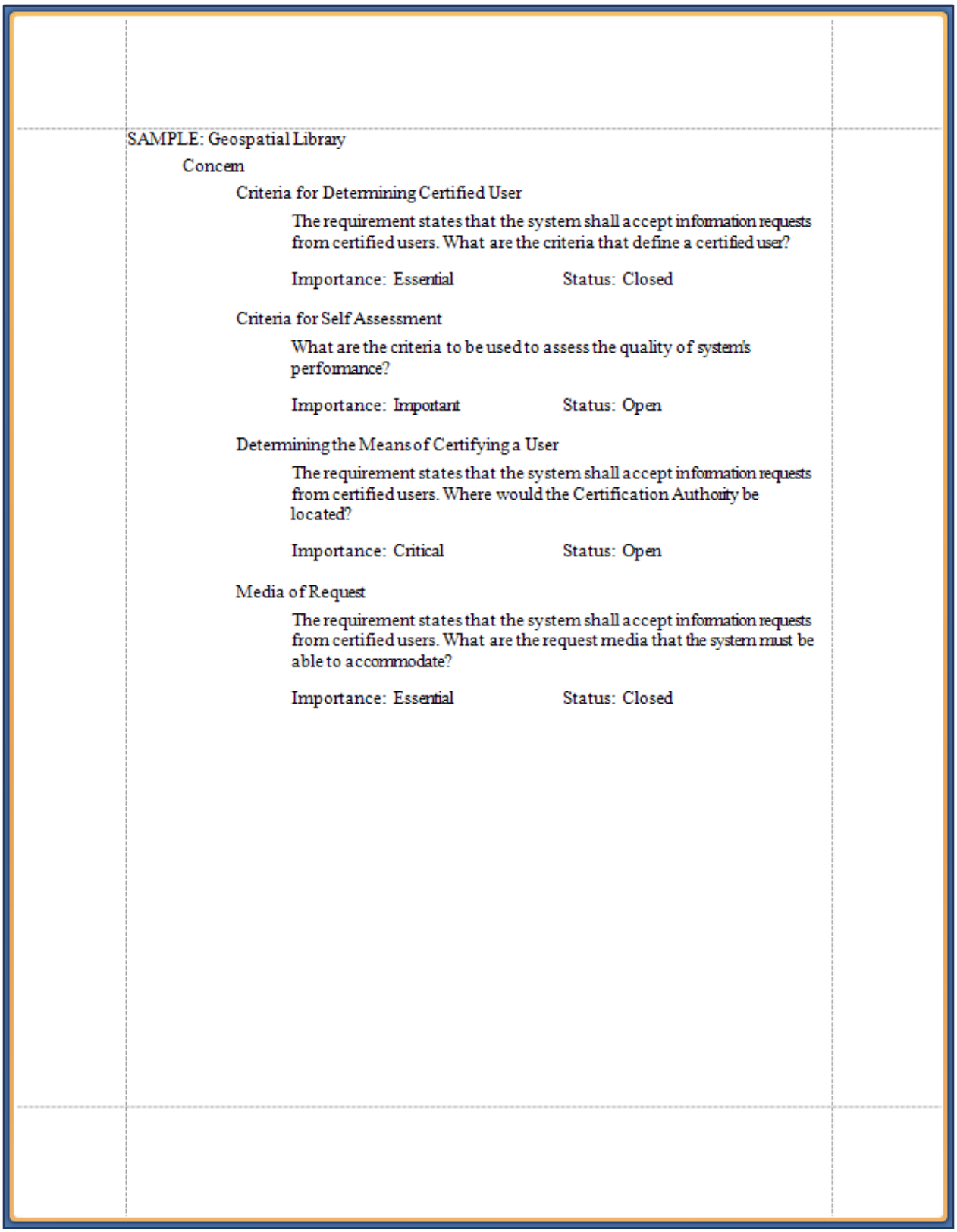


Figure 29: Entity Representation - Importance Attribute

In similar fashion, change the representation of the right *Label* control in the bottom row of the *Entities* band to display the "status" *Field* with a *Prefix* of "Status: ".

Save and then Preview the report. The report output is a single page that contains an alphabetic listing of the four **Concern** entities with their *Description*, *Importance*, and *Status* attributes.



SAMPLE: Geospatial Library

Concern

Criteria for Determining Certified User

The requirement states that the system shall accept information requests from certified users. What are the criteria that define a certified user?

Importance: Essential Status: Closed

Criteria for Self Assessment

What are the criteria to be used to assess the quality of system's performance?

Importance: Important Status: Open

Determining the Means of Certifying a User

The requirement states that the system shall accept information requests from certified users. Where would the Certification Authority be located?

Importance: Critical Status: Open

Media of Request

The requirement states that the system shall accept information requests from certified users. What are the request media that the system must be able to accommodate?

Importance: Essential Status: Closed

Figure 30: *List of Concerns* Output – Stage 5

Stage 6 - Sort the Entities

The *Sort Block* assigned to the *Entities* band determines the order in which its entities are displayed. By default, the entities are sorted alphabetically by name. For this report, a different *Sort Block* is required as the preferred ordering of the **Concern** entities is by the value of their *Importance* attribute. The *Sort Block* is accessible through the band's Smart Tag.

- Open the Smart Tag of the *Entities* band.
- Expand the *Sortblock* drop-down list and choose the *Concern Importance* sort block.

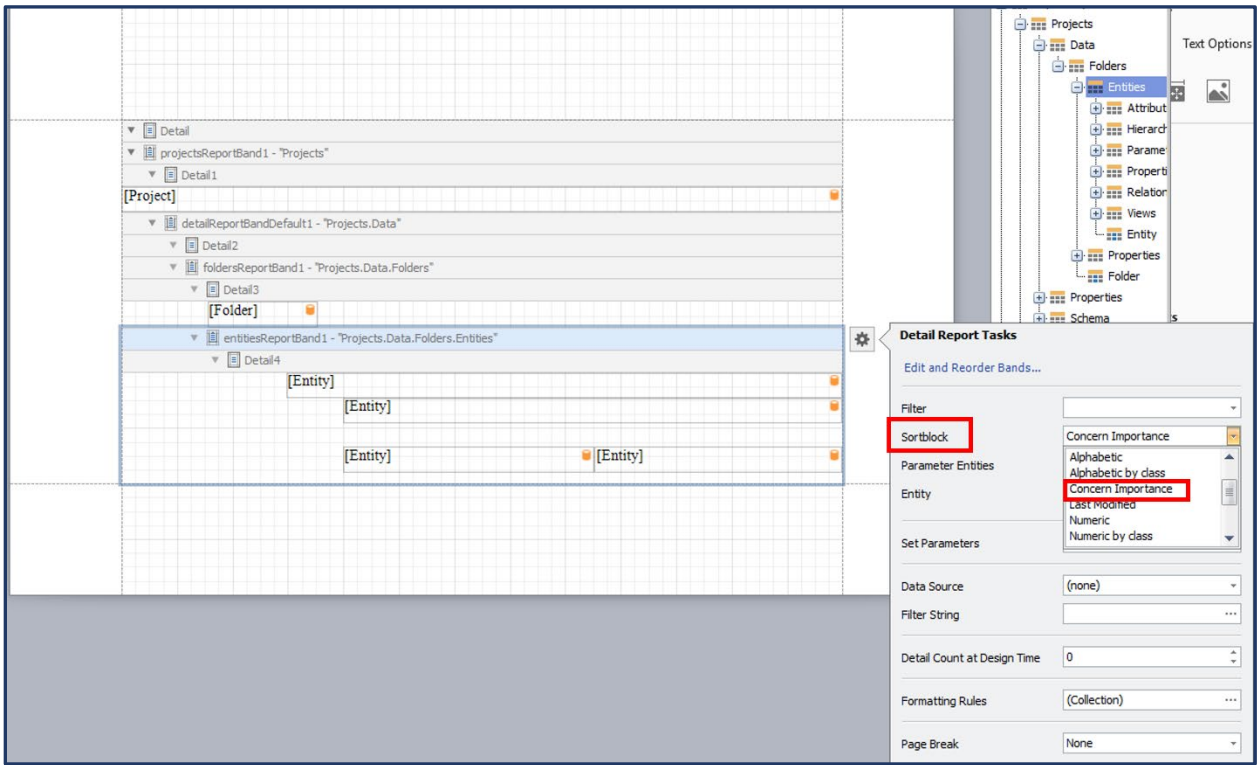
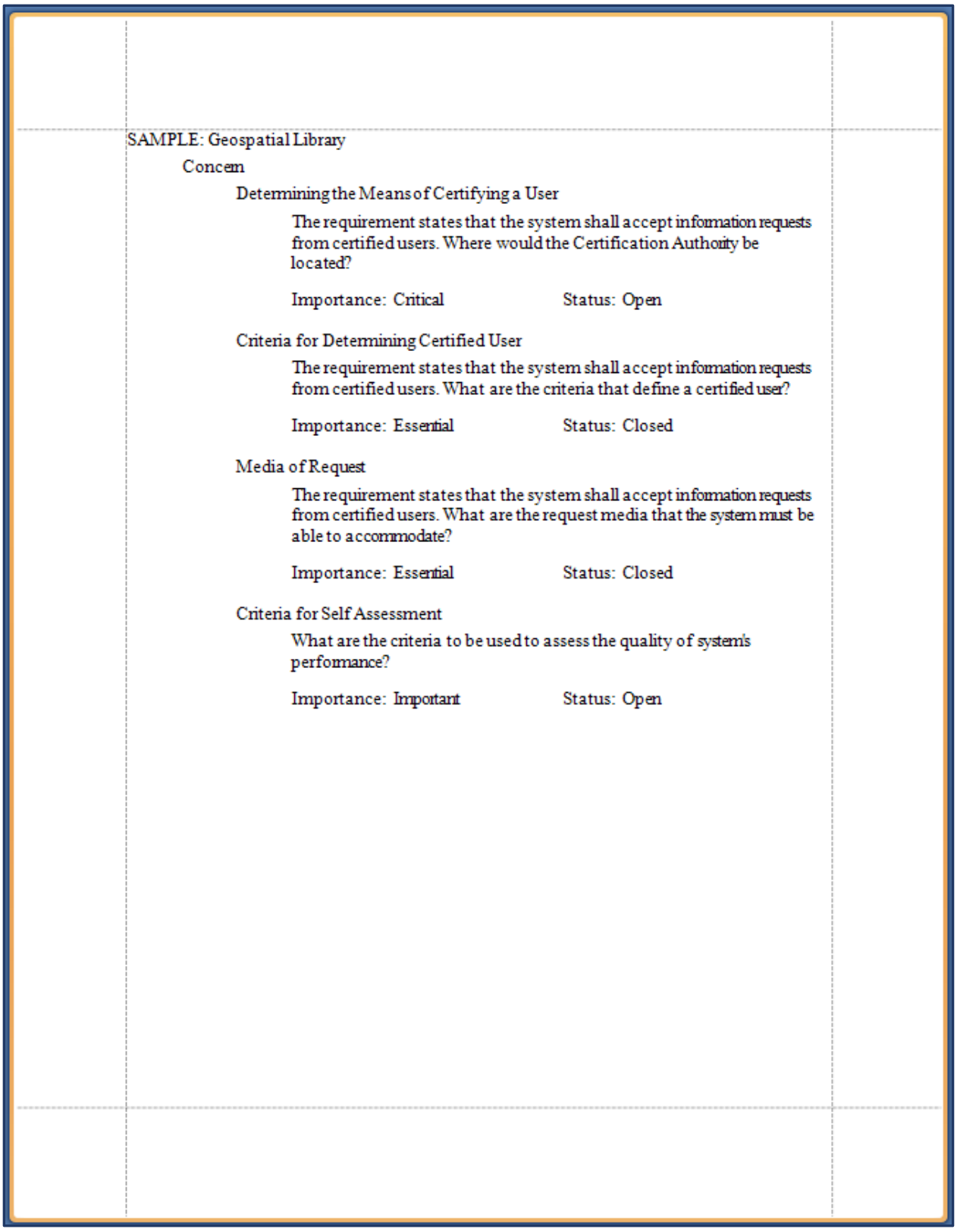


Figure 31: Sorting the Entities Band Output

Save and preview the report. Observe that the **Concern** entities are listed in order by their *Importance* attribute.



SAMPLE: Geospatial Library

Concern

Determining the Means of Certifying a User

The requirement states that the system shall accept information requests from certified users. Where would the Certification Authority be located?

Importance: Critical Status: Open

Criteria for Determining Certified User

The requirement states that the system shall accept information requests from certified users. What are the criteria that define a certified user?

Importance: Essential Status: Closed

Media of Request

The requirement states that the system shall accept information requests from certified users. What are the request media that the system must be able to accommodate?

Importance: Essential Status: Closed

Criteria for Self Assessment

What are the criteria to be used to assess the quality of system's performance?

Importance: Important Status: Open

Figure 32: List of Concerns Output – Sorted by Importance

Stage 7 – Filter the Entities

The *Filter* assigned to the *Entities* band determines which entities are displayed. All entities are displayed when no *Filter* is assigned. For this report, a *Filter* is needed as only the open concerns are to be displayed. The *Filter* is accessible through the band's Smart Tag.

- Open the Smart Tag of the *Entities* band.
- Expand the *Filter* drop-down list and choose the "Open Concerns" filter.

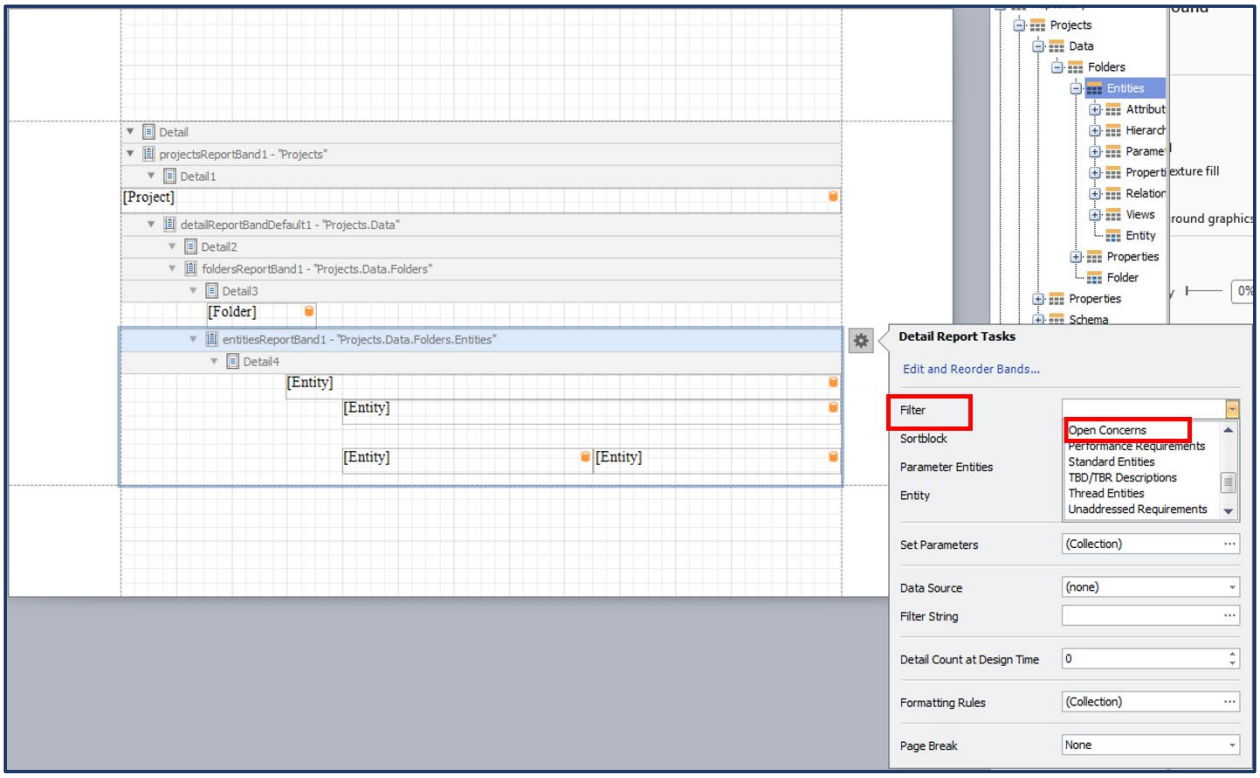
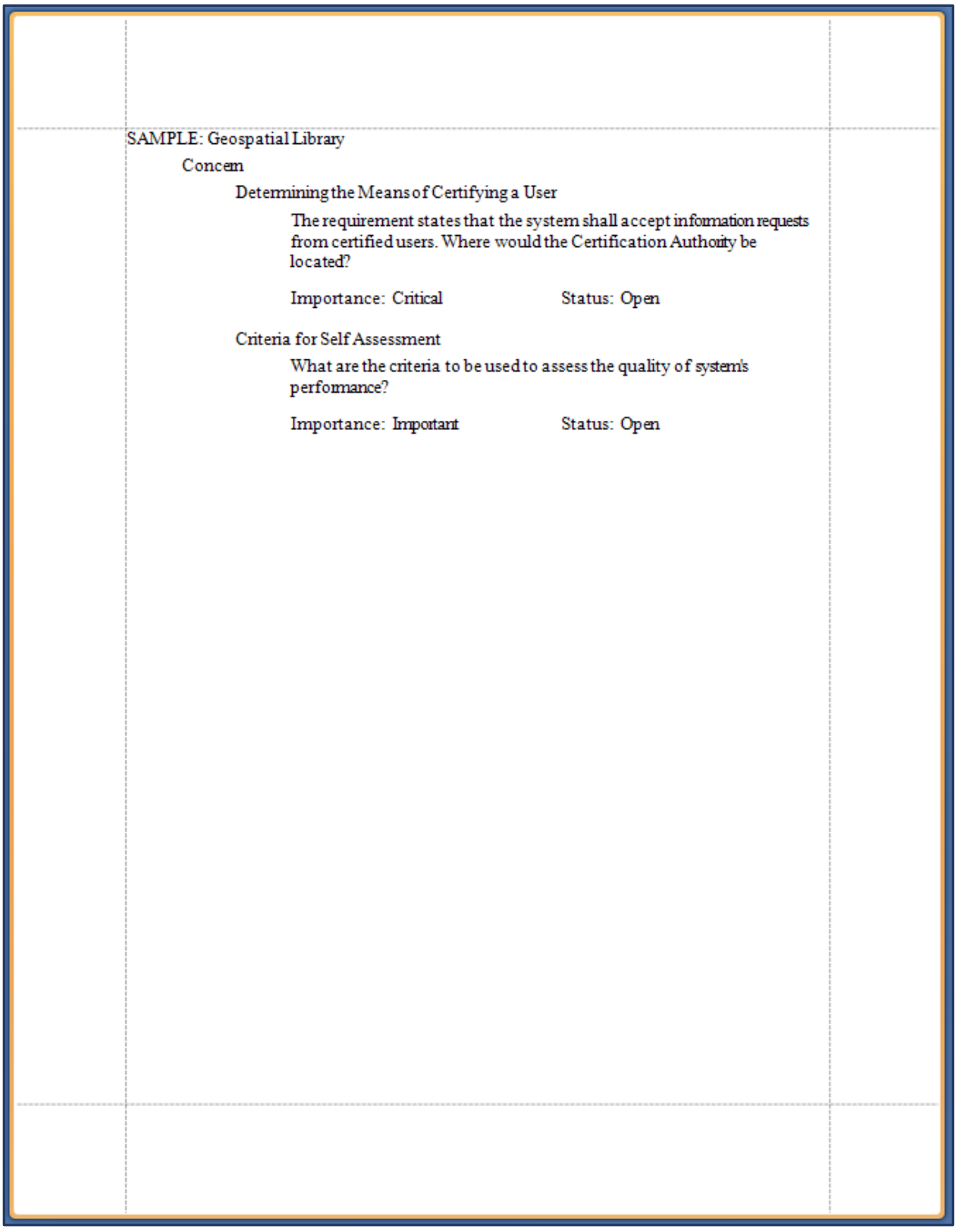


Figure 33: Filtering the Entities Band Output

Save and preview the report. Observe that only open **Concern** entities are displayed.



SAMPLE: Geospatial Library

Concern

Determining the Means of Certifying a User

The requirement states that the system shall accept information requests from certified users. Where would the Certification Authority be located?

Importance: Critical Status: Open

Criteria for Self Assessment

What are the criteria to be used to assess the quality of system's performance?

Importance: Important Status: Open

Figure 34: *List of Concerns* Output – Filtered for Open Concerns

Requirements with Concerns report

The *Requirements with Concerns* report introduces several new features of the Report Editor. These include the *Relationships* band, the *Entity Diagram* control, and the *Property Grid*. Once again, the report is developed in stages. The culmination of this process will yield a report that identifies the project requirements that generate concerns and include the hierarchy diagrams of those requirements.

Stage 1 – Create the report.

Create the report and lay the foundational bands.

1. In the *Toolkit* folder, create a report file named “Requirements with Concerns”.
2. Verify that the report is open for editing.
3. Insert a *Projects* band within the *Detail* band.
4. Insert a *Data* band within the *Projects* band.
5. Insert a *Folders* band within the *Data* band.
6. Insert an *Entities* band within the *Folders* band.
7. Insert a *Relationships* band within the *Entities* band.
8. For all bands, except the *Relationships* band, eliminate the allocated design surface space.

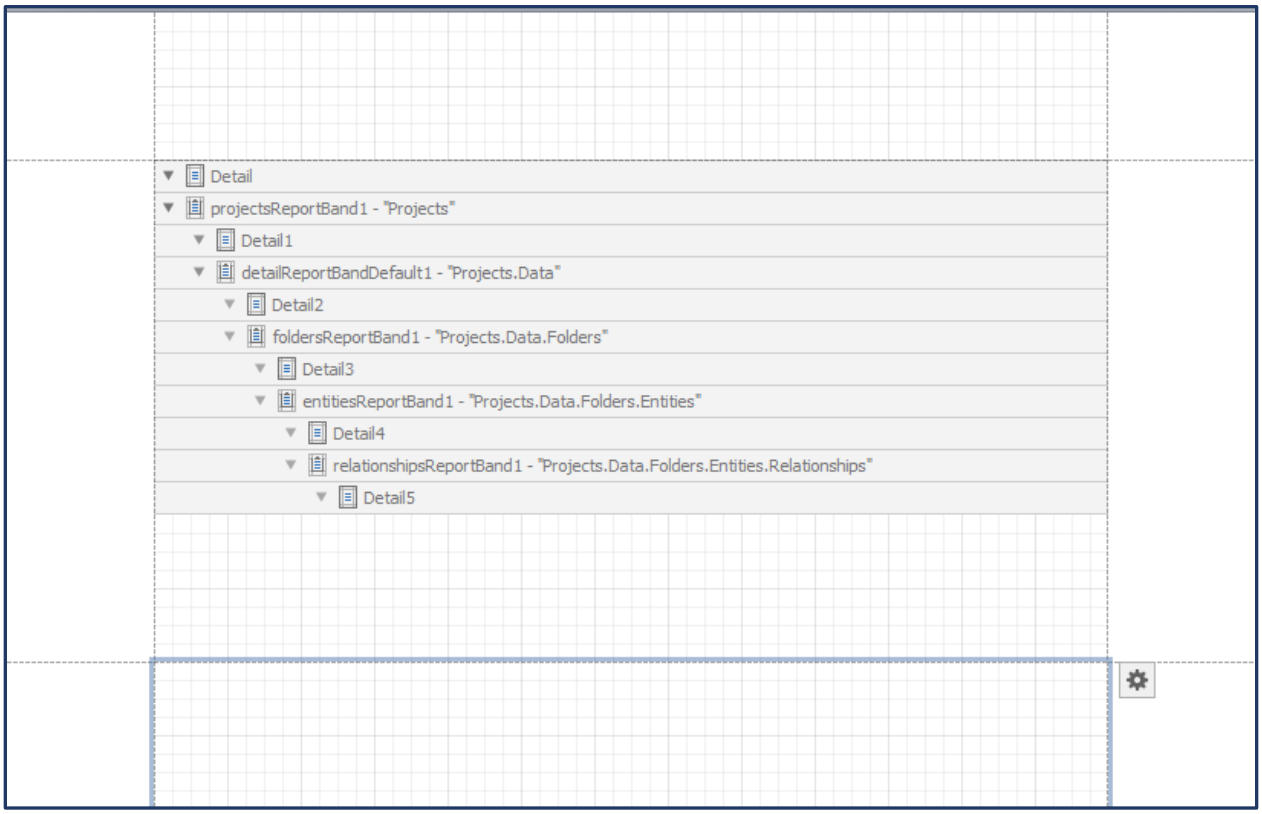


Figure 35: Foundational Bands for the *Requirements with Concerns* Report

This report is tracing the *generates* relationship of **Requirement** entities to determine which, if any, produce concerns. As such, the *Folders* band only needs to examine the **Requirement** class folder, and the *Relationships* band only needs to consider the *generates* relation.

9. Confine the *Folders* band iteration to the **Requirement** class. Open the Smart Tag of the *Folders* band and check the *Requirement* box.

10. Constrain the *Relationships* band iteration to the *generates* relation.
    - Click on the Smart Tag of the *Relationships* band (i.e., “Projects.Data.Folders.Entities.Relationships”).
    - Open the *Relationships* collection and check the *generates* box.
    - Click in the *Relationships* band grid space.

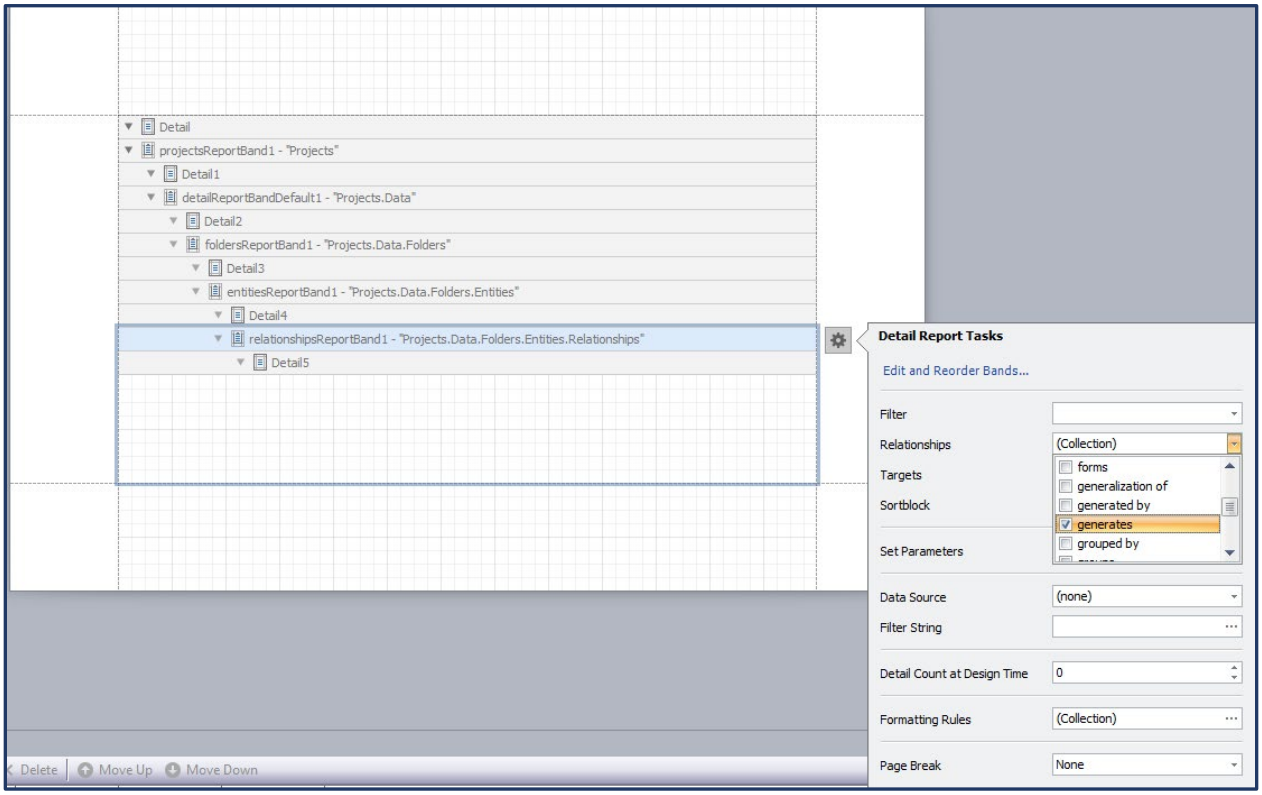


Figure 36: Restricting the *Relationships* Band Iteration

Stage 2 – Add Requirements with Concerns matrix.

This report does not display a large amount of text. Therefore, the design surface will easily accommodate a larger font size. Prior to adding *Controls*, set the default font size (located in the Font section of the Report Editor’s ribbon) to 12.

In the *Relationships* band detail space, drop and resize four *Label* controls in a pattern that forms a two-column by two-row matrix. The top row of the matrix serves as its header. Set the text in the left *Label* to “**Requirement**” and the text in the right *Label* to “**Concern**”.

Dynamic text is rendered by the *Label* controls of the second row. Specifically, the *Label* controls are used to display the name of a **Requirement** entity and the name(s) of any **Concern** entities that are generated by the **Requirement** entity. Bind the *Label* control in the left column to the *Entity* object and the *Label* control in the right column to the *Relationship Target* object.

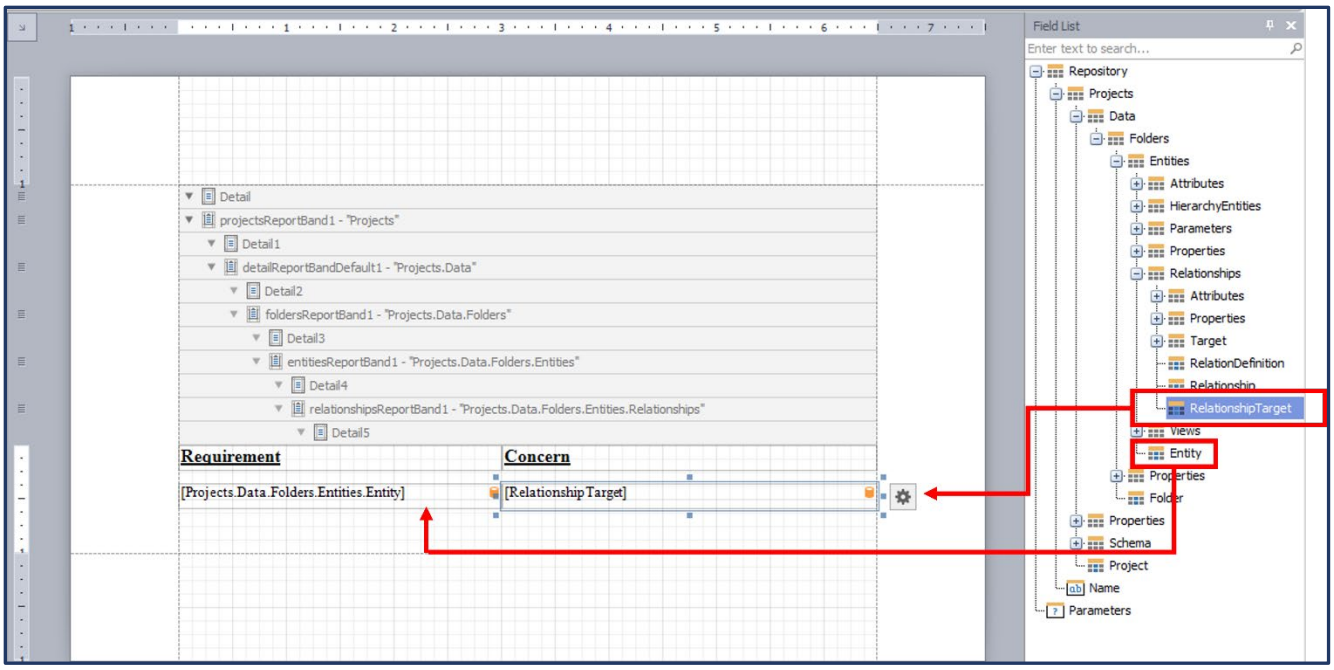


Figure 37: Binding *Label* Controls to Entity and Relationship Target Objects

Save and Preview the report. The first page of the report output (shown below) discloses some issues with the report. One issue is that the requirements that do not generate concerns are being displayed.

Requirement	Concern
Accept Media of Requests	
Requirement	**Concern**
Accept Requests	Media of Request
Requirement	**Concern**
Accept Requests from Certified Customers	Criteria for Determining Certified User
Requirement	**Concern**
Accept Requests from Certified Customers	Determining the Means of Certifying a User
Requirement	**Concern**
Adding Imagery Products to Inventory	
Requirement	**Concern**
Assess Self Performance	Criteria for Self Assessment
Requirement	**Concern**
Availability	
Requirement	**Concern**
Certify Customers	
Requirement	**Concern**
Continuous Support	

Figure 38: *Requirements with Concerns* Output – All Requirements

Vitech
A Zuken Company

To remove such requirements from the report, the *Print when Data Source is Empty* option of the *Relationships* band needs to be disabled. This print option is accessible through the Report Designer's *Property Grid*.

- Select the *Relationships* Band.
- In the *Property Grid*, expand the *Report Print Options* property in the behavior submenu (two blue gear icon).
- Uncheck the *Print when Data Source is Empty* checkbox.

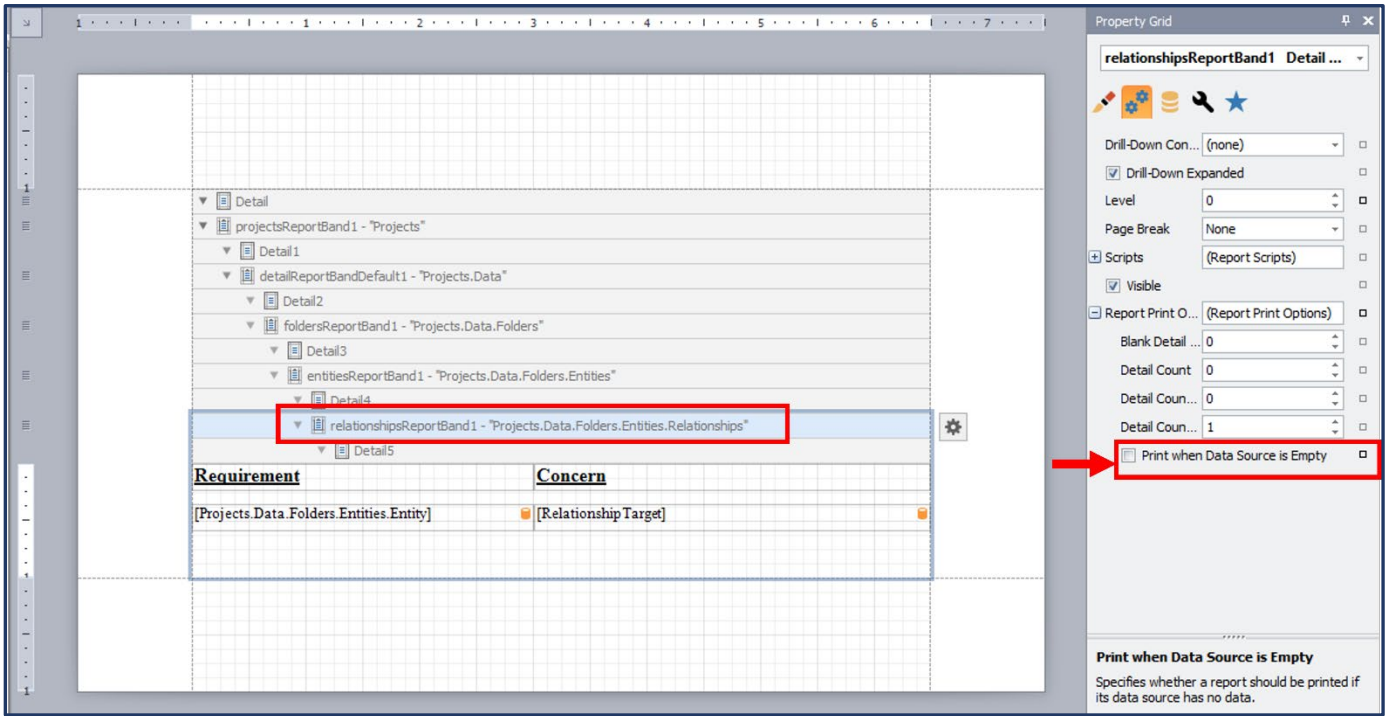
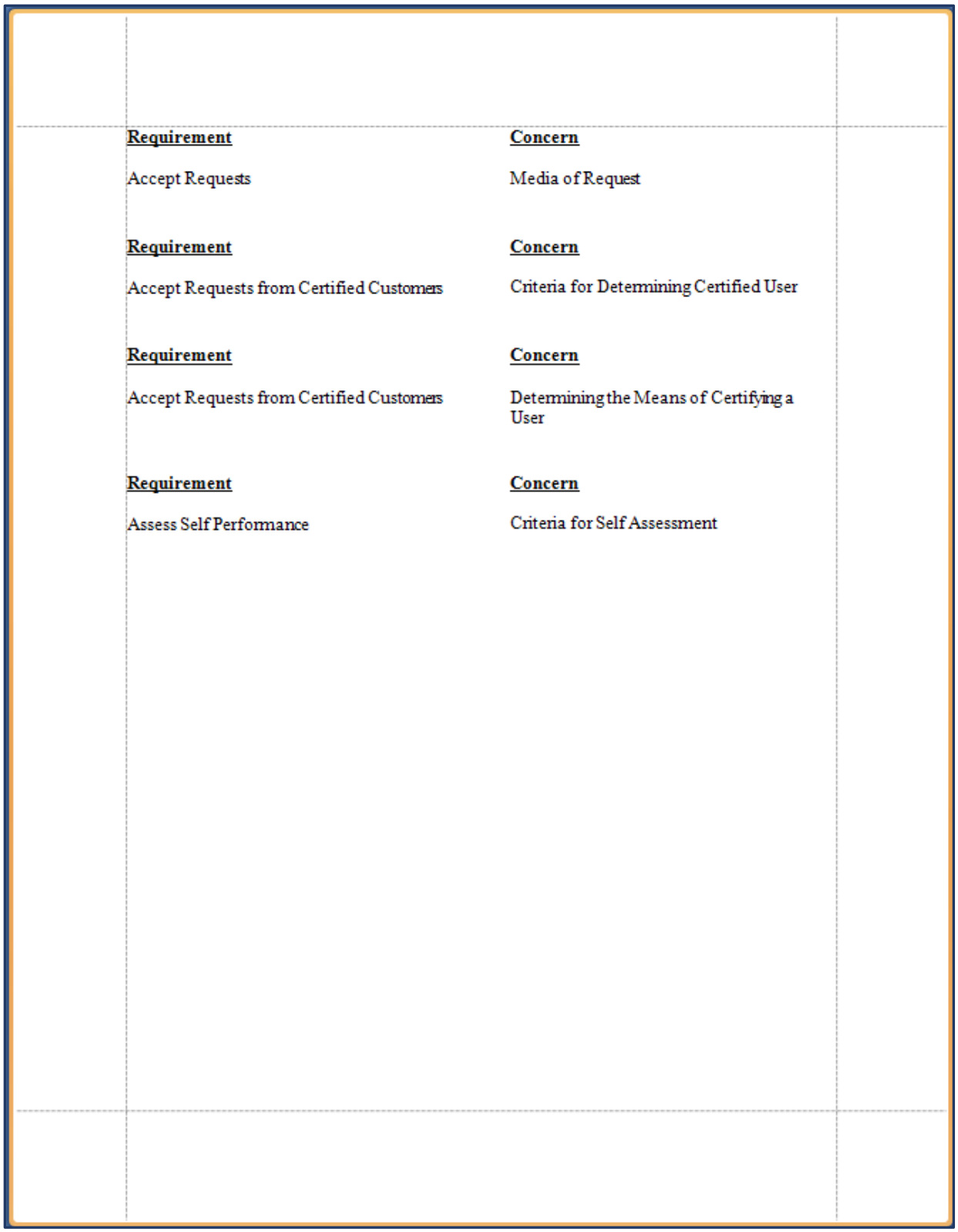


Figure 39: Relationships Band Property - Print When Data Source is Empty

Save and preview the report. The report output (shown below) has been reduced to a single page containing only the requirements that generate concerns.



Requirement	Concern
Accept Requests	Media of Request
Requirement	**Concern**
Accept Requests from Certified Customers	Criteria for Determining Certified User
Requirement	**Concern**
Accept Requests from Certified Customers	Determining the Means of Certifying a User
Requirement	**Concern**
Assess Self Performance	Criteria for Self Assessment

Figure 40: *Requirements with Concerns* Output – Concern Producing Requirements Only

The “Requirement” and “Concern” titles are repeating for each entity, which may not be desired. To correct this, simply move the labels out of the relationship band and into the detail band of another non-repeating band such as the Folder band. This will leave the repeating information alone and not repeat the header text.

Further simplification of this report can be achieved by excluding repetitive **Requirement** entity names. (*Accept Requests from Certified Customers*, in this case.) The *Label* property—*Process Duplicates Mode*—defines the processing for repeated values of the *Label*. This behavior property is accessible through the Report Designer’s *Property Grid*.

- Select the *Label* bound to the *Entity* object.
- In the *Property Grid*, set the *Process Duplicates Mode* property value to “Suppress and Shrink”.

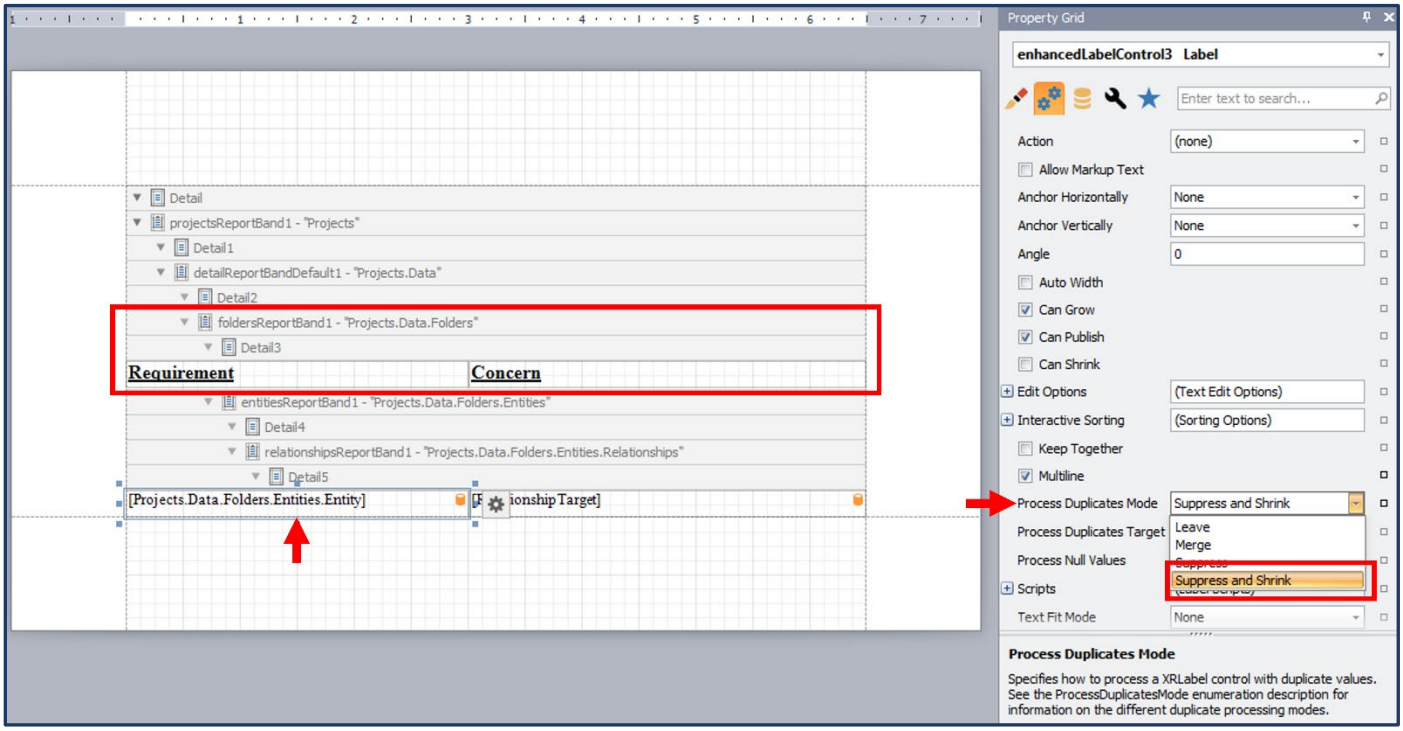
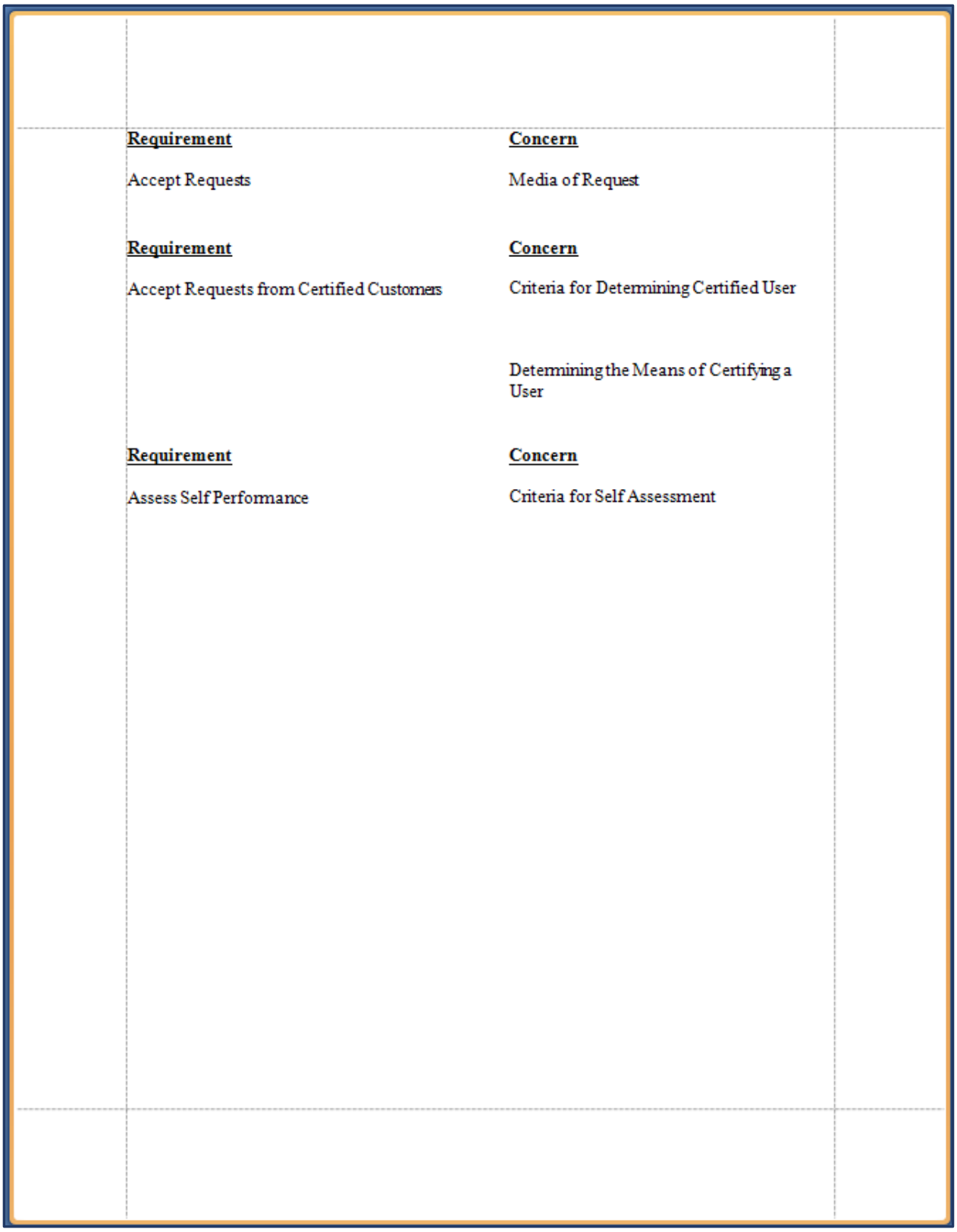


Figure 41: Label Control Property - *Process Duplicates Mode*

The display of the matrix header is also replicated for repetitive **Requirement** entity names. Correct this by setting the *Process Duplicates Mode* property of the matrix header *Label* controls to the “Suppress and Shrink” value.

Save and preview the report. The report output (shown below) no longer repeats the *Accept Requests from Certified Customers* **Requirement** entity.



Requirement	Concern
Accept Requests	Media of Request
Requirement	**Concern**
Accept Requests from Certified Customers	Criteria for Determining Certified User
	Determining the Means of Certifying a User
Requirement	**Concern**
Assess Self Performance	Criteria for Self Assessment

Figure 42: *Requirements with Concerns* Output – Sans Repeated Requirement Entity Names

Stage 3 – Add Hierarchy diagrams.

Supplement this report by incorporating the Hierarchy diagrams for each **Requirement** entity displayed in the matrix.

To prevent these diagrams from disrupting the matrix of a requirement that generates multiple concerns, another *Relationships* band is inserted within the existing *Entities* band. **(Don't forget to constrain this *Relationships* band iteration to the "generates" relation.)**

The *Entity Diagram* control is used to display GENESYS diagrams. Drop an *Entity Diagram* control into the **relationshipsReportBand2** band. Bind the control to the *Entity* object. Finally, the diagram type needs to be assigned to the *Control*. Open the Smart Tag for the *Entity Diagram* control and set the *Diagram Type* to "Hierarchy".

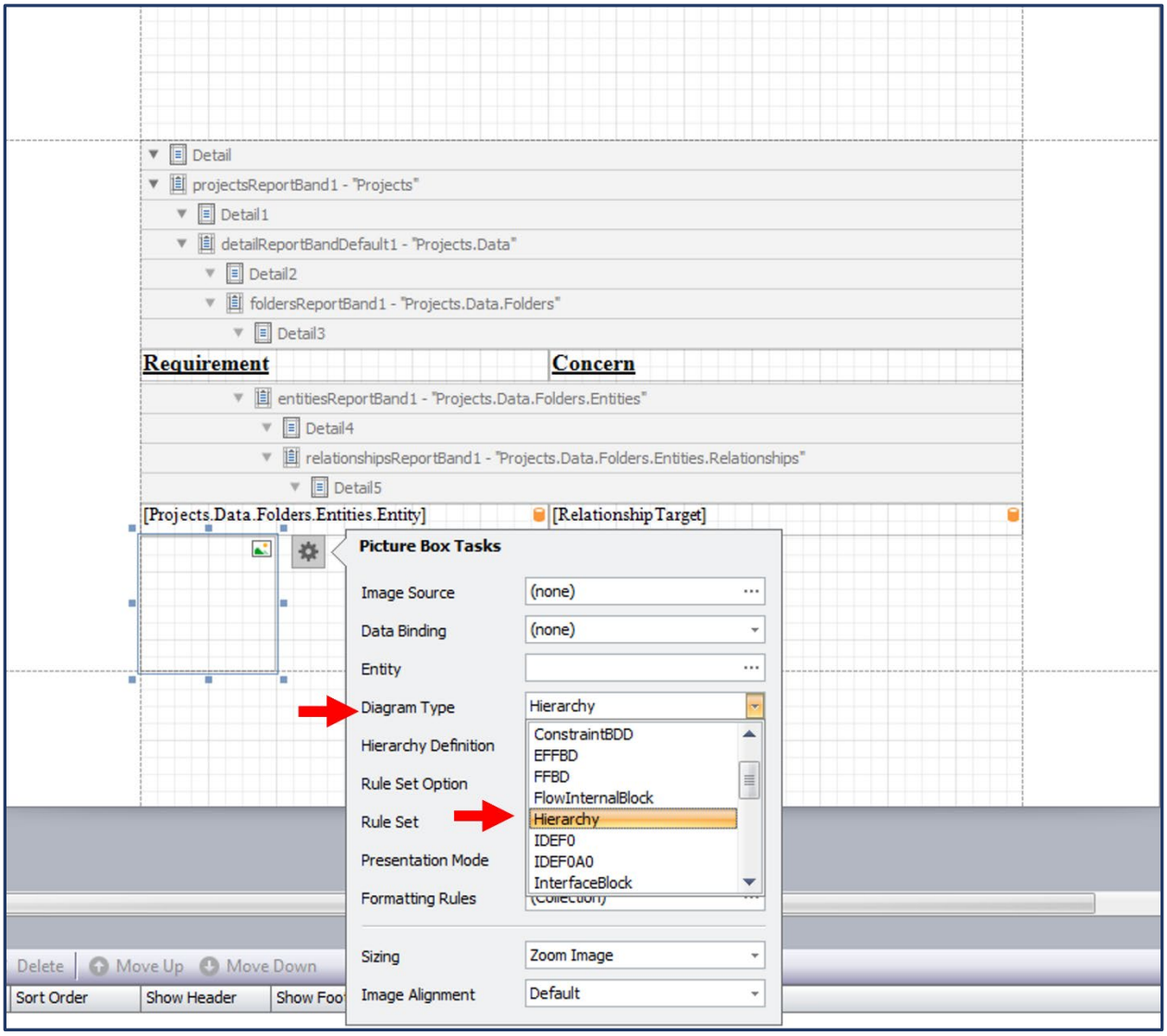


Figure 43: Adding a Hierarchy Diagram

Note: best practice is to stretch the entity diagram control across the entire usable space.

Include a caption for the Hierarchy diagram by dropping a *Label* control under the *Entity Diagram* control. Bind the *Label* control to the *Entity* object and set the *Suffix* field of the *Label* control's *Entity Representation* to the string "Hierarchy Diagram". Be sure to associate the entity field with the *Entity Diagram* control

Ensure adequate sizing of the rendered diagrams by horizontally stretching the *Entity Diagram* control so that it occupies the entire space between the design surface margins. Accordingly, the diagram's caption will be centered under the diagram. Therefore, horizontally stretch the *Label* control so that it occupies the entire space between the design surface margins and use the Font controls in the Report Editor ribbon to center the text of the *Label* control.

Avoid the problems discovered in the previous development stage. First, disable the *Print when Data Source is Empty* option of the **relationshipsReportBand2** band to prevent display of Hierarchy diagrams for **Requirement** entities that don't generate concerns. Second, exclude repetitive display of the Hierarchy diagram for **Requirement** entities that generate multiple concerns (e.g., *Accept Requests from Certified Customers*). For both the *Entity Diagram* control and the *Label* control, set the *Process Duplicates Mode* property value to "Suppress and Shrink".

To improve the data segregation of the report output, set the *Page Break* property of the **Detail5** band associated with the **relationshipsReportBand1** to the value "After the Band".

- Click on the Smart Tag of the **Detail5** band.
- Open the *Page Break* collection and select the "After the Band" value.
- Click in the **Detail5** band grid space.

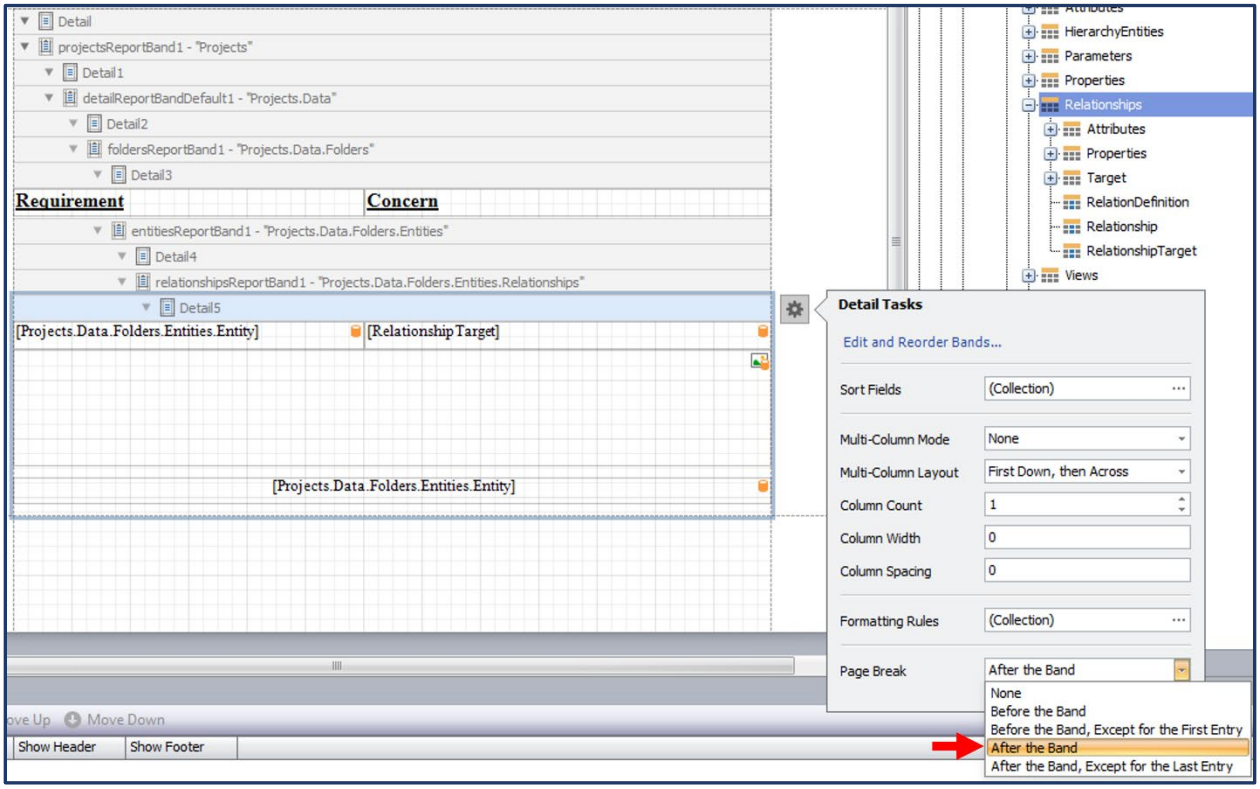
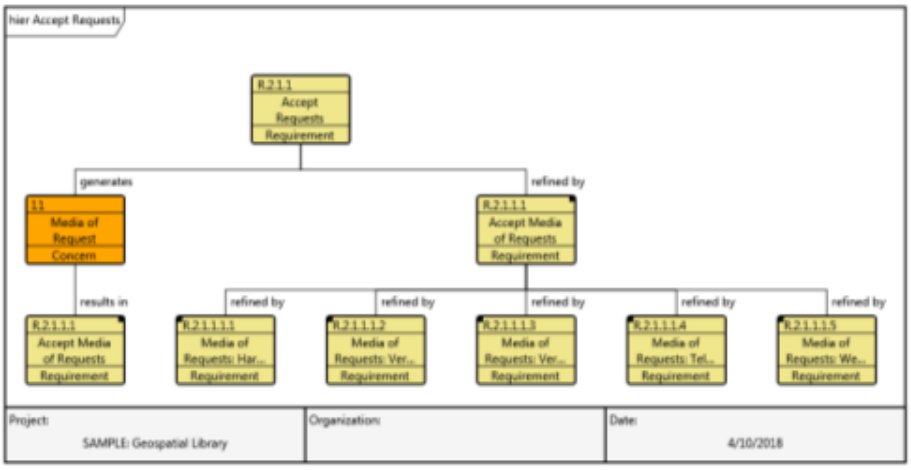


Figure 44: *Relationship* Band's Page Break Property

Save and preview the report. The report output (shown below) is three pages and includes the Hierarchy diagrams for each **Requirement** entity.

Requirement
Accept Requests

Concern
Media of Request



Accept Requests Hierarchy Diagram

Figure 45: *Requirements with Concerns* Output – Page 1

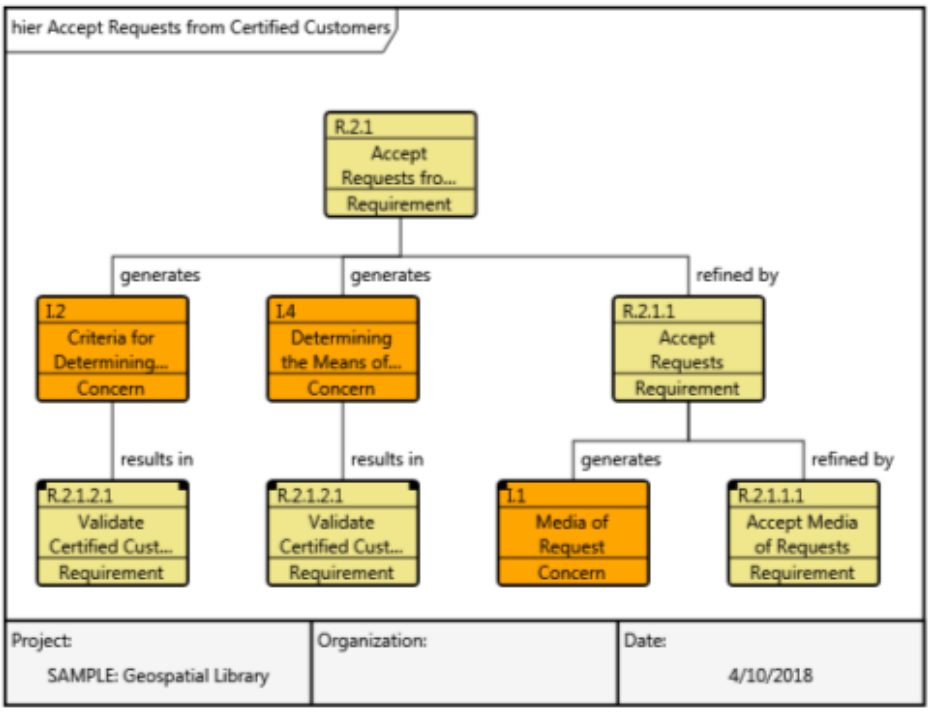
Requirement

Accept Requests from Certified Customers

Concern

Criteria for Determining Certified User

Determining the Means of Certifying a User

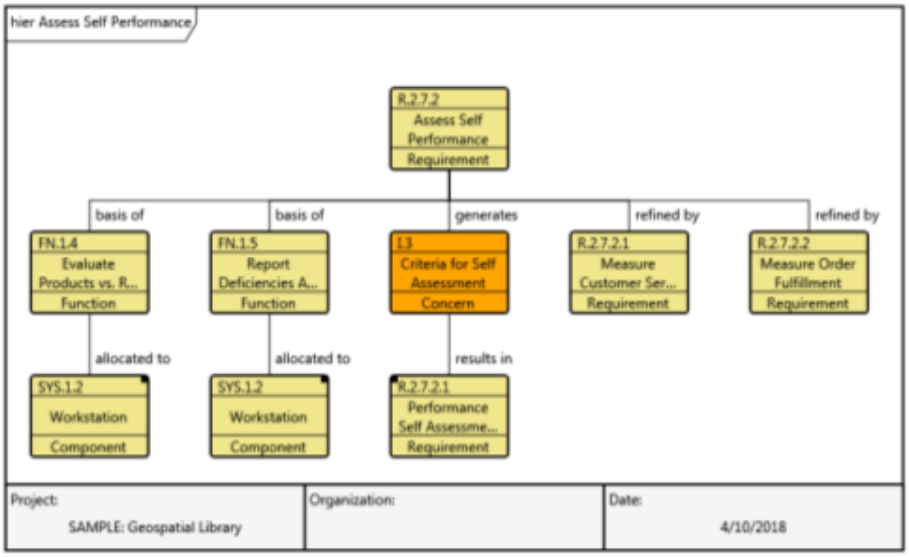


Accept Requests from Certified Customers Hierarchy Diagram

Figure 46: *Requirements with Concerns* Output – Page 2

Requirement
Assess Self Performance

Concern
Criteria for Self Assessment



Assess Self Performance Hierarchy Diagram

Figure 47: *Requirements with Concerns* Output – Page 3

FINISHING TOUCHES

This section demonstrates ways to apply some structure to the *Requirements with Concerns* by integrating page numbering and a Cover Page into the report.

Page Numbering

To highlight the inclusion of page numbers, it is helpful to simplify the design surface by collapsing the bands used to produce the report data. Collapsing and expanding a band is accomplished by clicking on the *arrowhead* associated with the band.

Click on the arrowhead of the *Projects.Data* band to collapse it. (Notice that the arrowhead points to the right to indicate that the band is collapsed.)

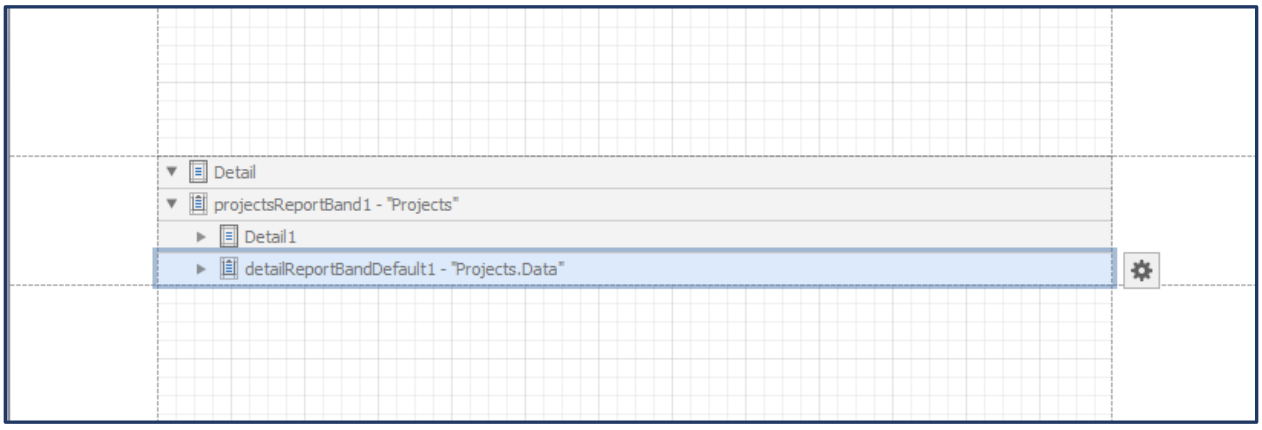


Figure 48: Collapsing Report Bands

GroupHeader and *GroupFooter* bands are used to delineate a grouping of the report's data bands. Page numbering can be incremented over the output produced by such a grouping.

Insert the GroupHeader band.

- Right-click on the *Projects* band,
- Expand the *Insert Band* sub-menu, and
- Click on the *GroupHeader* identifier.

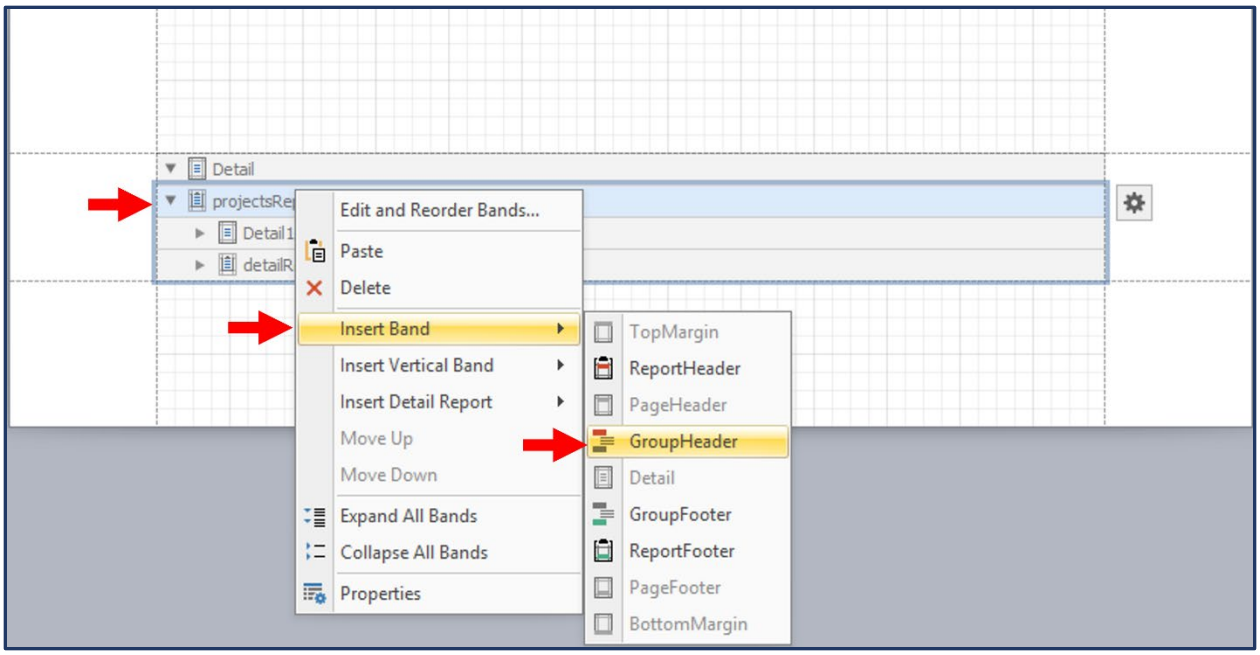


Figure 49: Inserting a *GroupHeader* Band

Using a similar approach, insert the GroupFooter band.

Drop a *Page Info* control into the *GroupFooter* band. In the Report Editor's ribbon, use the horizontal centering button to position the control in the top-center of the band. Establish the control's font size (e.g., 10) and text alignment (center).

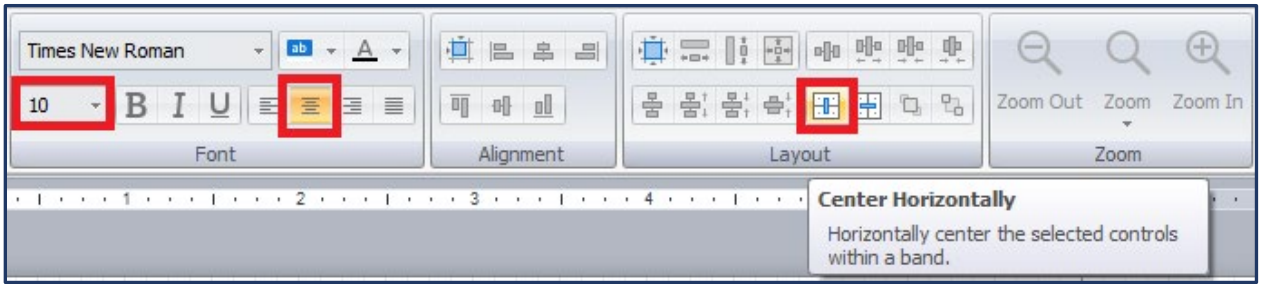


Figure 50: Horizontal Centering

The information rendered by a *Page Info* control is defined by its *Page Information* property. The default value is set for displaying the current of total pages. The *Page Information* property is accessible through the Smart Tag associated with the control. Set this property to the value "Page Number".

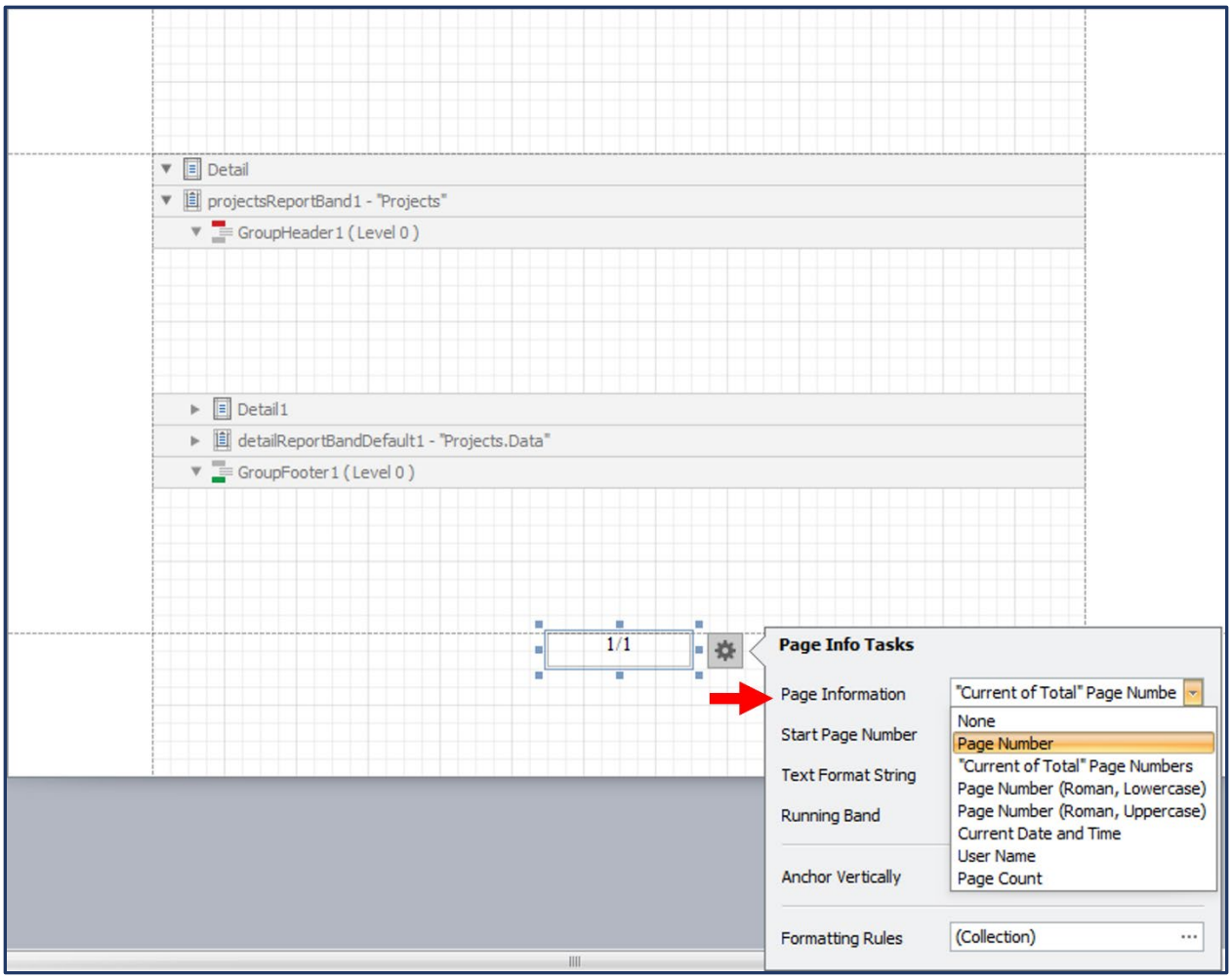


Figure 51: Setting the format of the *Page Info* Control

Before proceeding, resize the *GroupHeader* and *GroupFooter* bands to remove unused design surface space.

The *Running Band* property of the *Page Info* control defines the band over which the control is executed. Click on the control's Smart Tag and set the *Running Band* property to the value "GroupHeader1".

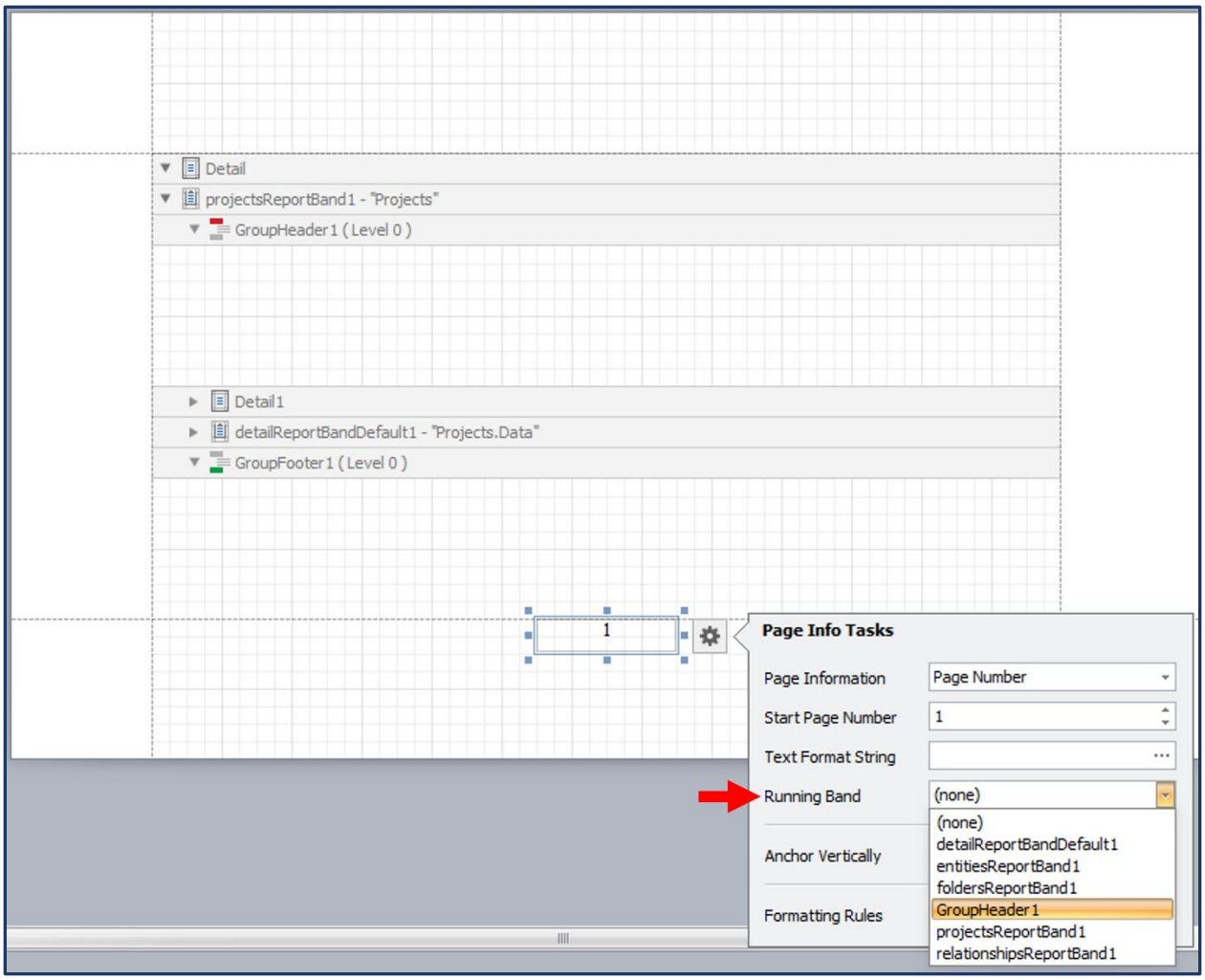


Figure 52: Establishing the *Running Band* for the *Page Info* Control

Save and preview the report. Observe that only the final page of the report displays a page number and that it is in the vicinity of the center of that page. To show page numbers on all pages, enable the *Repeat Every Page* property of the *GroupFooter* band, and to position the page number at the bottom of each page, enable the *Print at Bottom* property of the *GroupFooter* band. Access to these properties is available via the band's properties under the Star tab.

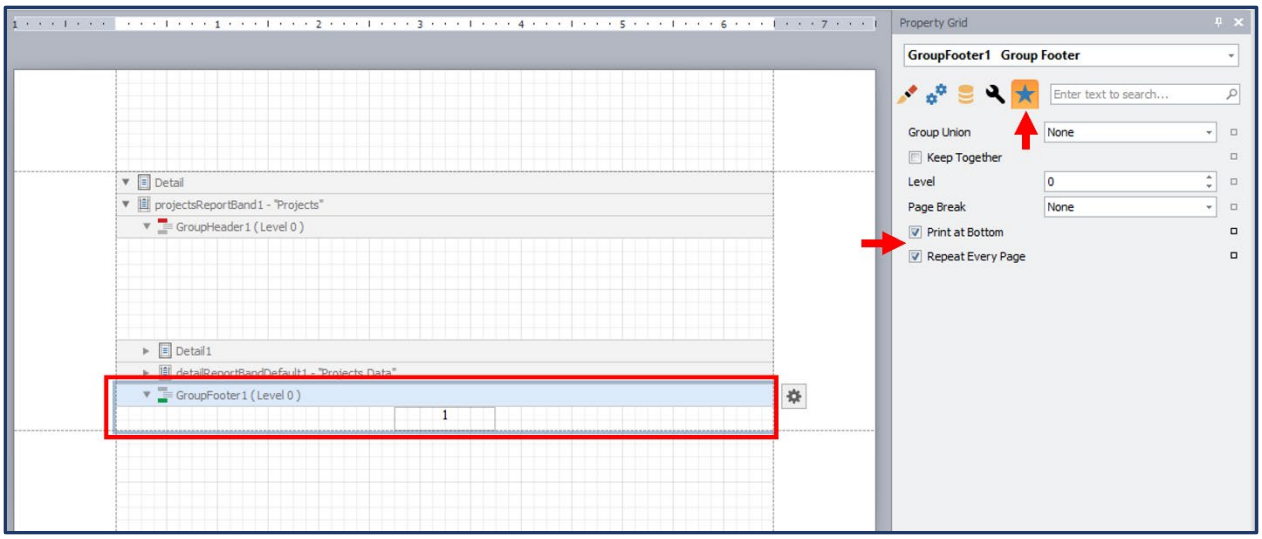


Figure 53: Repeat Every Page and Print at Bottom Properties

Save and preview the report. Now, the page number appears at the bottom of all pages. Another refinement that will move the page number closer to the bottom of the page is to decrease the size of the bottom margin. Drag the bottom margin upward to reduce the vertical space by half.

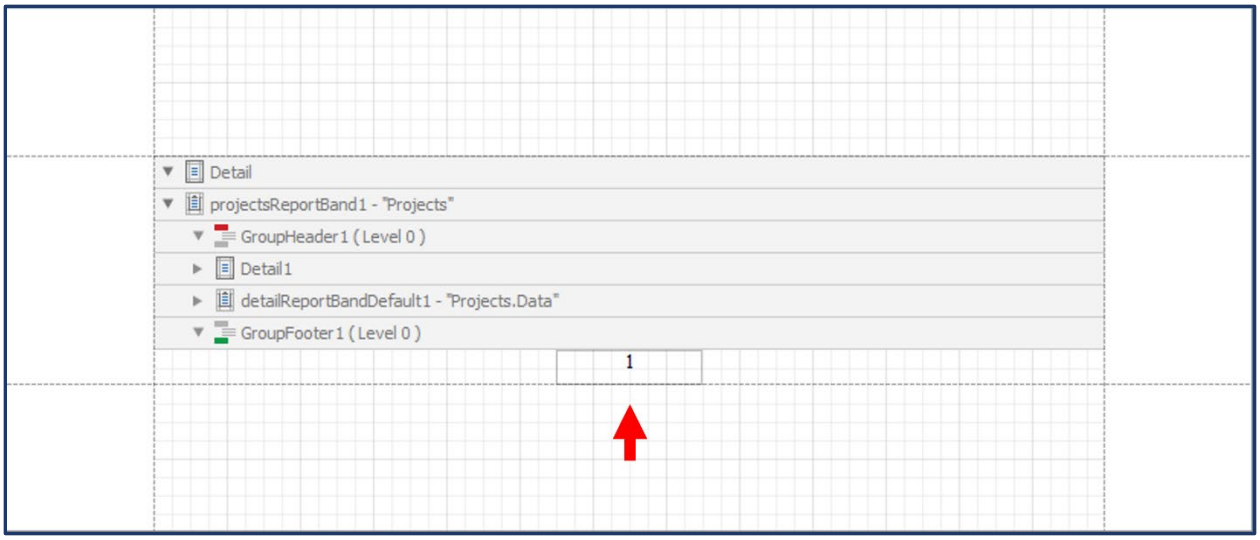


Figure 54: Decreasing the Size of the Bottom Margin

Save and preview the report. The report output is shown below.

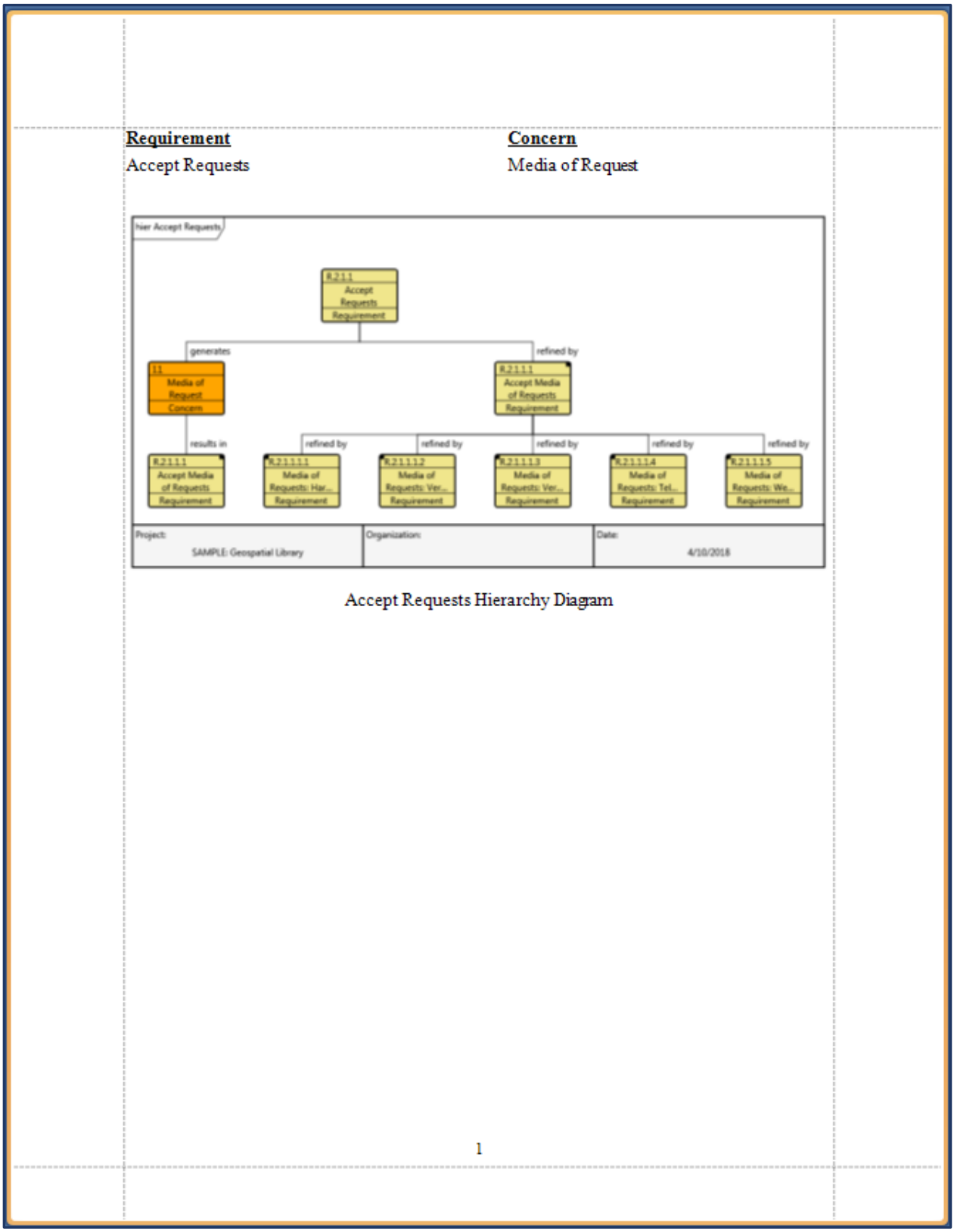


Figure 55: Report Output with Page Numbering - Page 1

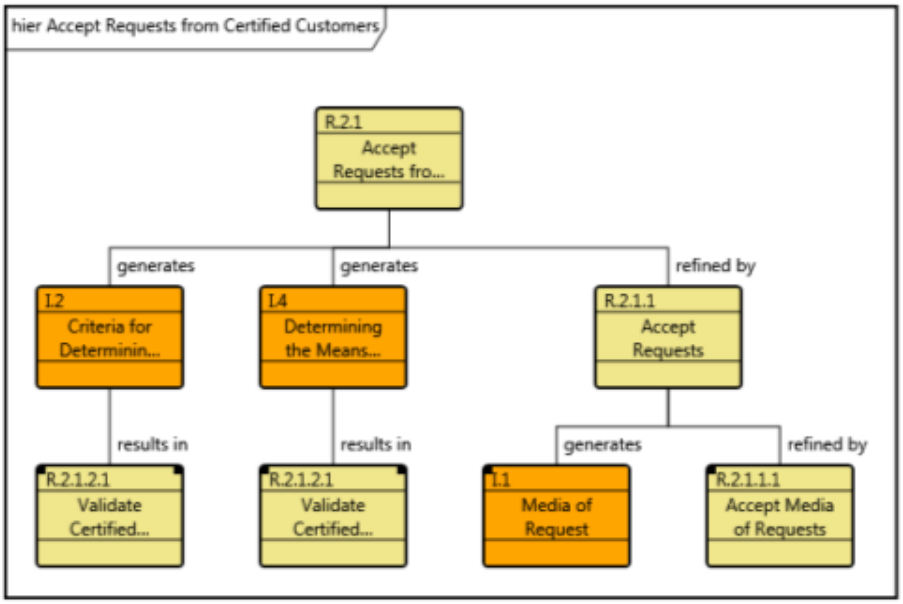
Requirement

Accept Requests from Certified Customers

Concern

Criteria for Determining Certified User

Determining the Means of Certifying a User



Accept Requests from Certified Customers Hierarchy Diagram

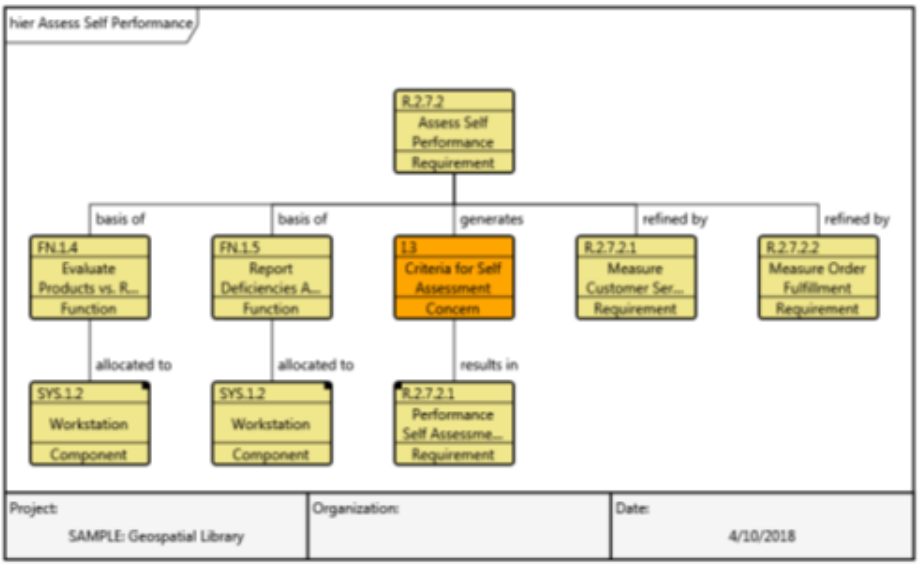
2

Figure 56: Report Output with Page Numbering - Page 2

Vitech
A Zuken Company

Requirement
Assess Self Performance

Concern
Criteria for Self Assessment



Assess Self Performance Hierarchy Diagram

3

Figure 57: Report Output with Page Numbering - Page 3

Cover Page

To sharpen the focus on the cover page development, it is helpful to simplify the design surface by collapsing the *Projects* band. Click on the arrowhead of the Projects band to collapse it.

Figure 58: Collapsing Projects Band on Cover Page

For this report, create a simple cover page containing:

- a title,
- the current date and time, and
- the name of the GENESYS project.

Insert an *Unbound* band within the *Detail* band.

- Right-click in the *Detail* band,
- Expand the *Insert Detail Report* sub-menu, and
- Click on the *"Unbound"* identifier.

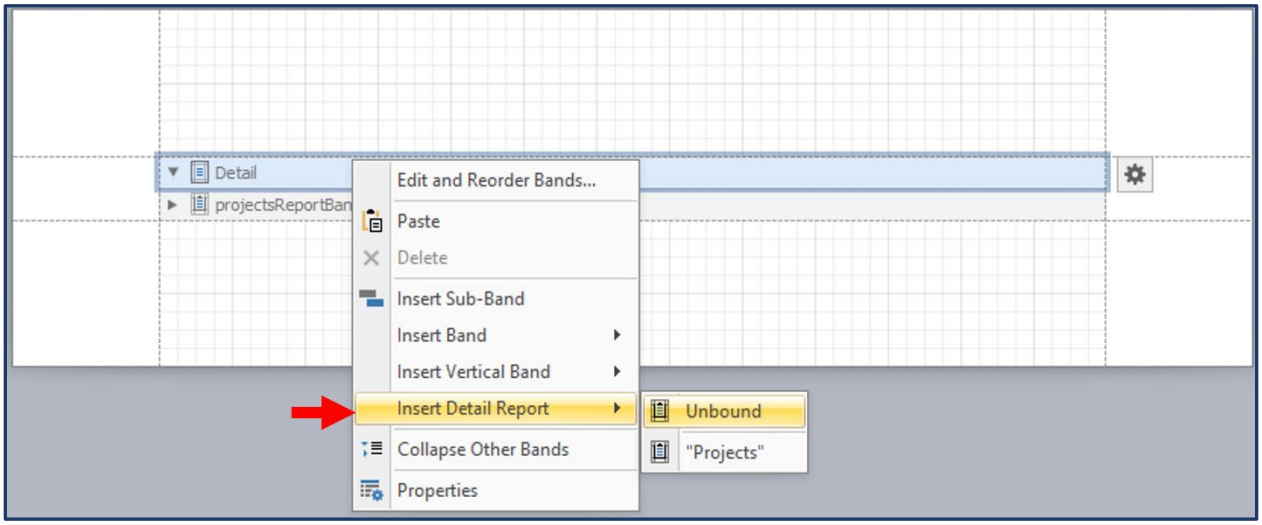


Figure 59: Inserting an *Unbound* Band

The *Unbound* band is added with the default name "detailReportBandDefault2". Rename and reposition the band.

- Right-click on the *detailReportBandDefault2* band.
- Click on the *Edit and Reorder Bands …* command to open the *Report Editor* window.
- In the left side of the *Report Editor* window, select the "*detailReportBandDefault2*" band and click on the up arrow.
- In the right side of the *Report Editor* window, change the band's name to "coverPageBand".

- Close the *Report Editor* window.

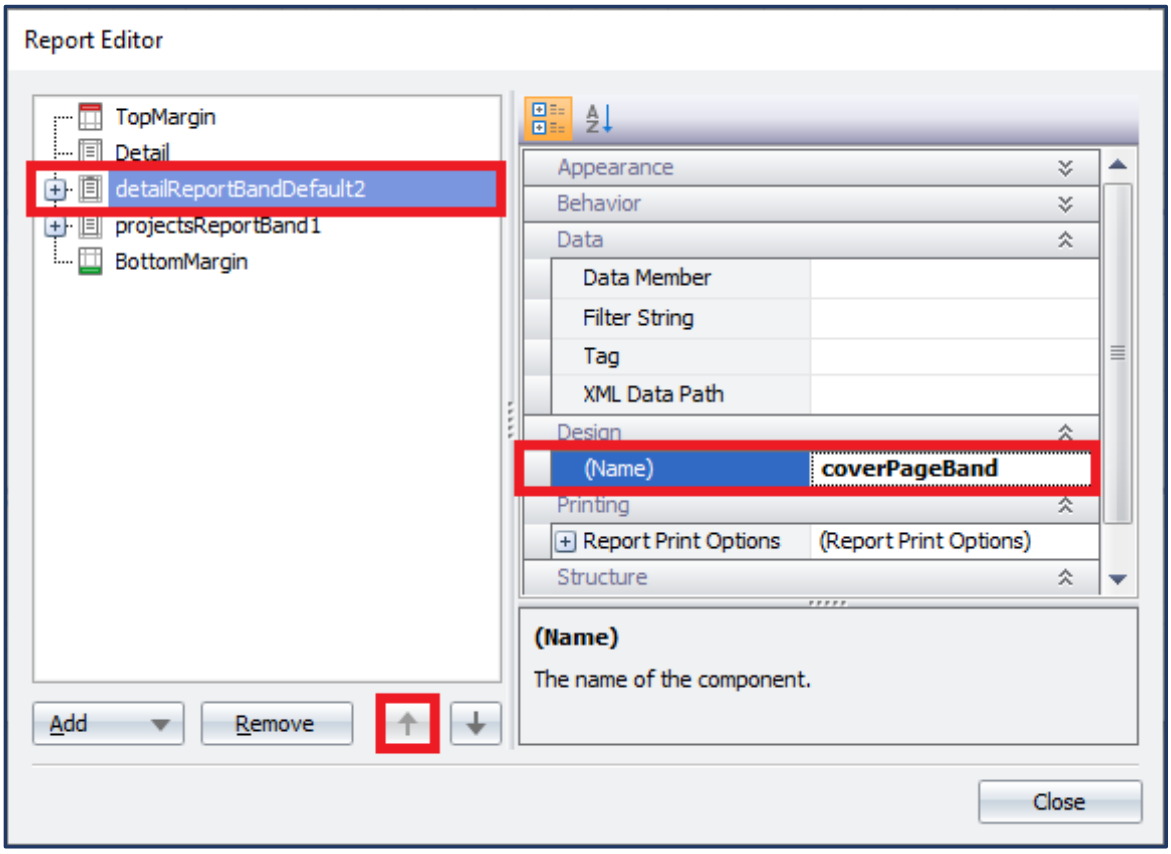


Figure 60: Repositioning and Renaming a Band

Before adding content, double the vertical space allocated to the *coverPageBand*, and establish a page break to separate the cover page from the rest of the report.

- Click on the *coverPageBand* Smart Tag.
- Open the *Page Break* property drop-down box and select the value “After the Band”.

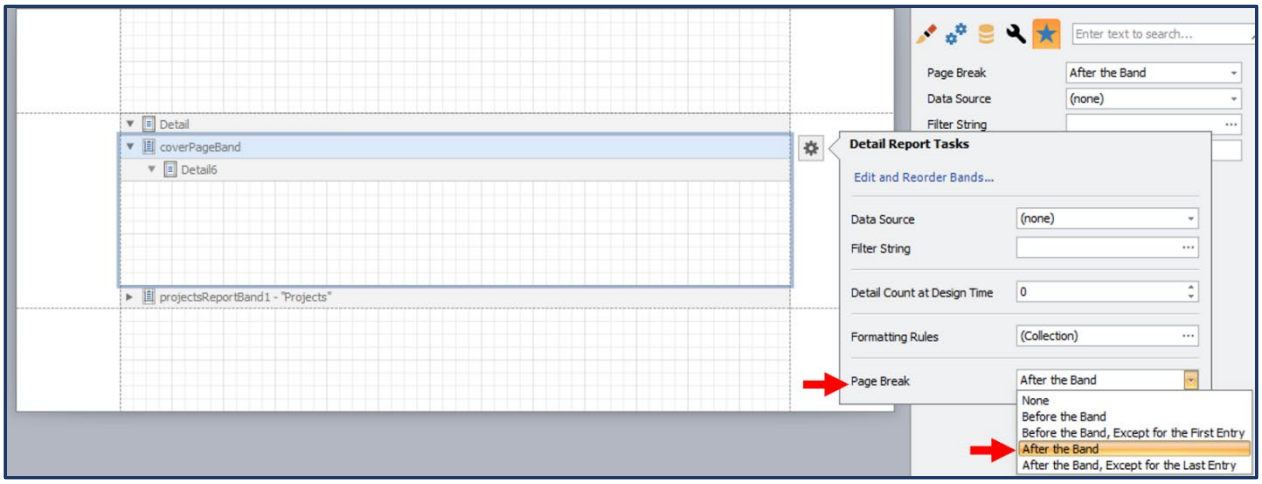


Figure 61: Setting a Band’s *Page Break* Property

Add cover page content.

- Drop a *Label* control into the *coverPageBand* design surface.
- Extend the *Label* control horizontally to utilize the entire space between the design surface margins.
- Set the *Label* control's font size to 16 and text alignment to center.
- Set the *Label* control's *Text* property to the string "Requirements with Concerns Report".
- Drop a *Label* control into the *coverPageBand* design surface and below the previous *Label* control.
- Extend the *Label* control horizontally to utilize the entire space between the design surface margins.
- Set the *Label* control's font size to 12 and text alignment to center.
- Set the *Label* control's *Text* property to the string "created on".
- Drop a *Page Info* control into the *coverPageBand* design surface and below the previous *Label* control.
- Extend the *Page Info* control horizontally to utilize the entire space between the design surface margins.
- Set the *Page Info* control's font size to 12 and text alignment to center.
- Set the *Page Info* control's *Page Information* property to the value "Current Date and Time". (Hint: Use the control's Smart Tag.)
- Drop another *Label* control into the *coverPageBand* design surface and below the *Page Info* control.
- Extend the *Label* control horizontally to utilize the entire space between the design surface margins.
- Set the *Label* control's font size to 12 and text alignment to center.
- Set the *Label* control's *Text* property to the string "for the project".

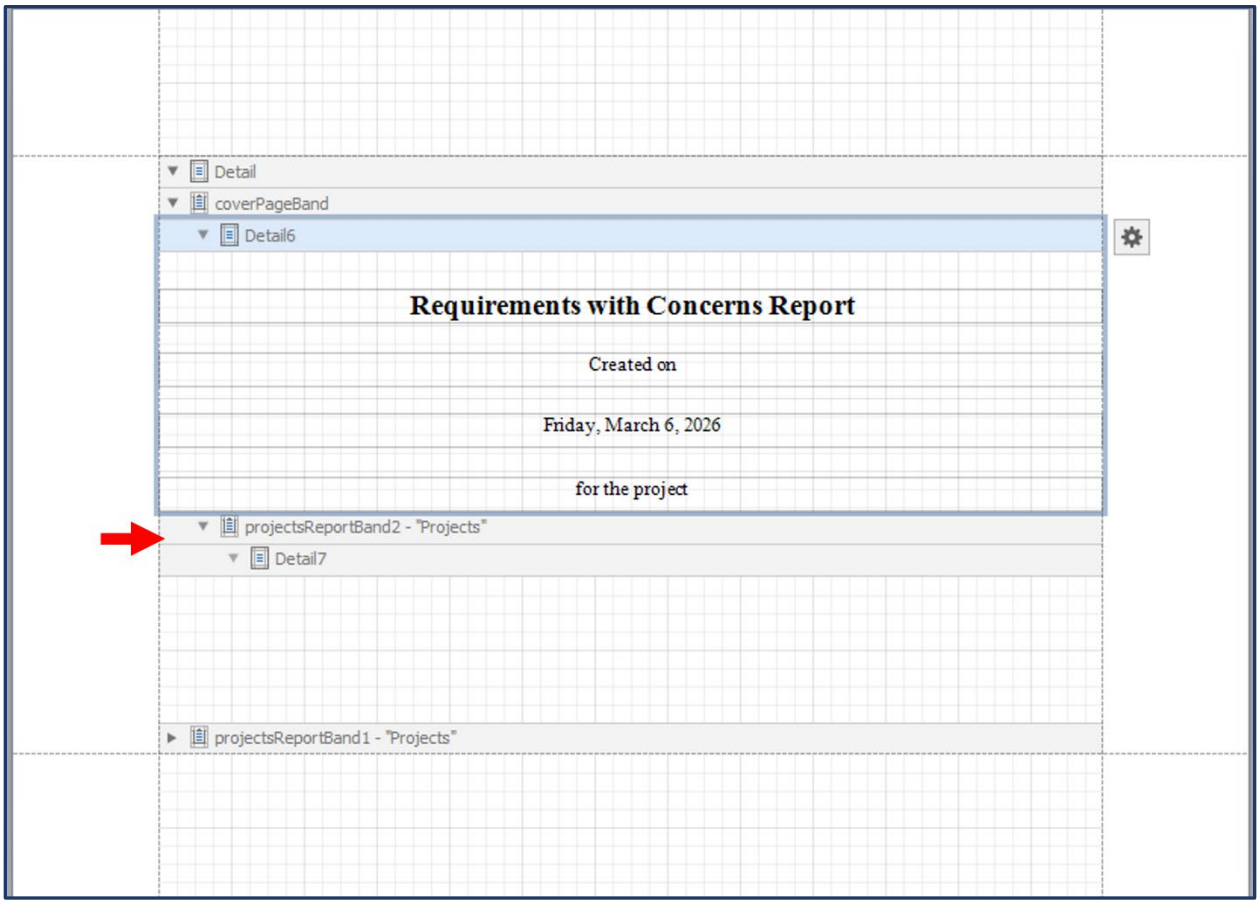


Figure 62: Requirements with Concerns Cover Page

Vitech
A Zuken Company

Include the project name to complete the cover page.

- Insert a *Projects* band within the detail section of the *coverPageBand*.
- Rename the band to “coverPageProjectsBand”.
- Drop a *Label* control into the *coverPageProjectsBand* design surface.
- Extend the *Label* control horizontally to utilize the entire space between the design surface margins.
- Set the *Label* control’s font size to 12 and text alignment to center.
- Bind the *Label* control to the *Project* object.
- Eliminate the unused space at the bottom of the *coverPageProjectsBand*.

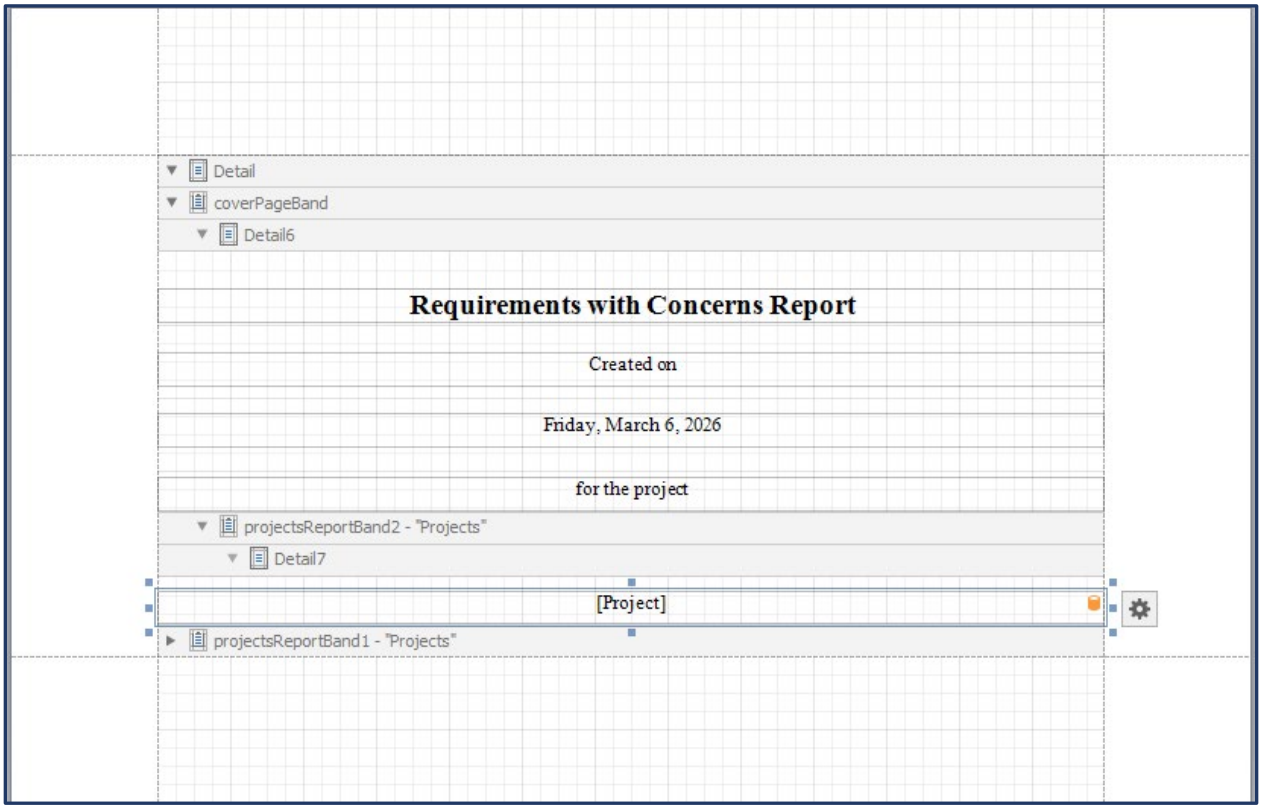


Figure 63: *Requirements with Concerns* – Completed Cover Page

Save and preview the report. The cover page (shown below) is the first page of the report output.

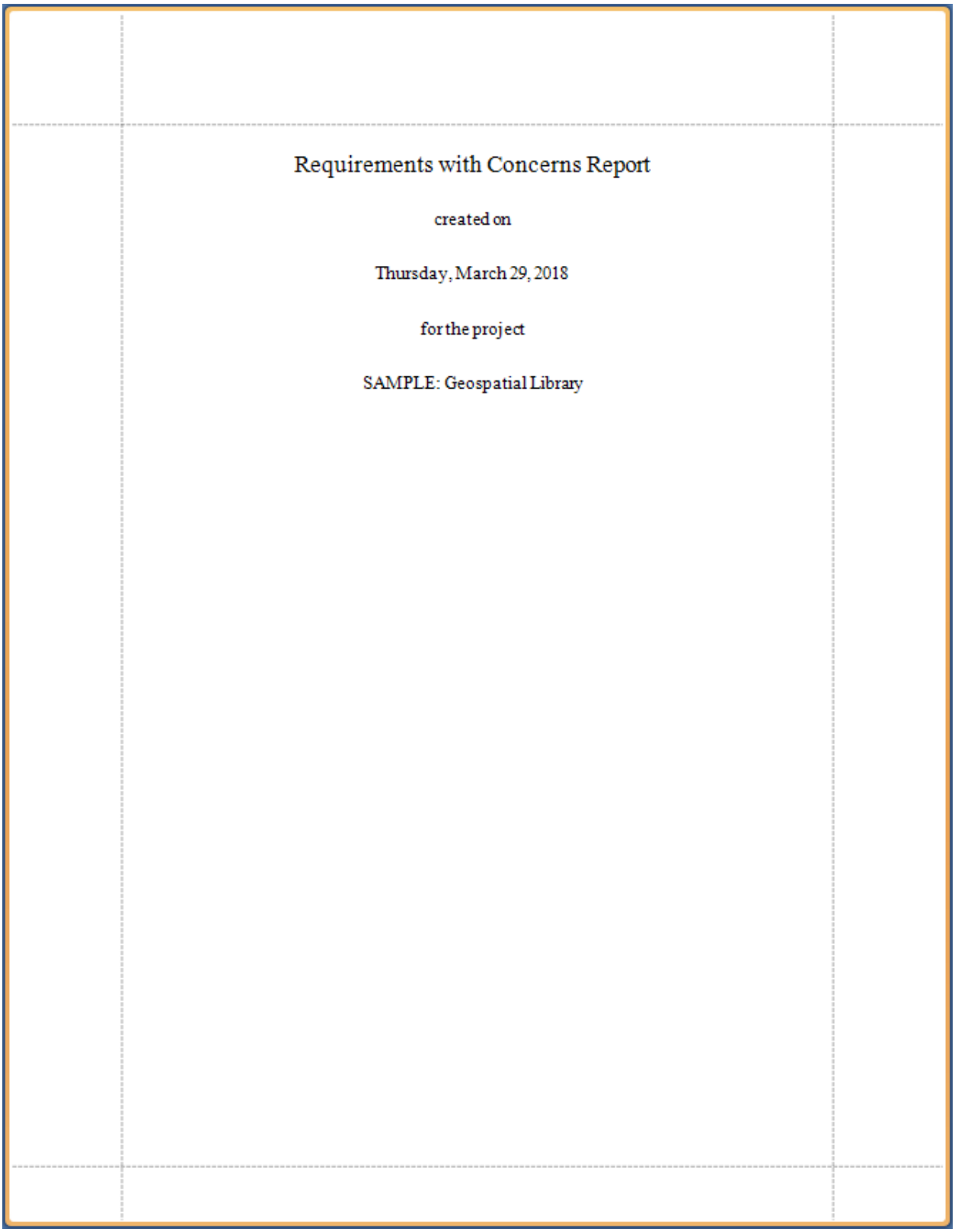


Figure 64: Cover Page Output

GENESYS 2026 REPORT WRITER UPGRADE NOTES

The DevExpress® ReportWriter framework has been updated to the latest release in GENESYS 2026. Previous releases of GENESYS included a much older version of the ReportWriter. Due to this change certain updates must be performed to any custom reports created by users. All included reports in GENESYS 2026 have been updated already. The following section describes all the changes that may be required in any custom report.

Parameter names are now exposed as global properties in the script.

A script may directly reference a parameter by property name, rather than needing to use

```
Me.Parameters(paramName).
```

However, this does mean that scripts which define global variables or methods of the same name as a parameter will require editing to avoid a naming clash. This will result in a script compile error BC30260: "*varName* is already declared as..." (this may also cause some cascading additional errors).
In a VB script, this will happen even if the parameter and var/method names have differing case (i.e., "Hello", "hello" and "HeLlO" are considered the same).

The simplest approach to fixing this is to rename any variables or methods which cause the BC30260 error. If the errors are encountered prior to the parameter selection dialog opening, the report which was run is likely to have script errors. If the error occurs after parameters are selected and the report is being run, the script needing updated is likely to be in a sub-report's script. The report will be cut off at the point of error, which may assist in identifying which subreport failed.

Handling of GENESYS custom parameter types is stricter

The handling of parameters with complex GENESYS types (Entity, Folder, etc.) has changed in newer versions of the DevExpress reporting framework.

This impacts parameters which are dynamically populated by the script at runtime. Packaged examples include the Component Hierarchy report which has a parameter that can be either a folder or a package and has another parameter which is a list of entities populated based on the scope settings.

In previous versions, these parameters are defined as string type, but with v24 of DevExpress Reporting that causes issues with the selected item not being displayed properly and not being passed to the report correctly. The issue will appear as a parameter which can be selected, but upon selecting a value, the displayed value is not set, and the value does not pass through correctly to the report. This results in an error message such as "an invalid entity was chosen" when running the report, or a warning that the parameter data does not match the parameter type.

Such parameters will need to be set explicitly. For example, in the **Component Hierarchy** report, the inputEntity parameter type needs to be set to IEntity, as it can contain an Entity, while the inputContainer parameter must be a generic object type (it may be an IFolder or an IEntity).

```
' Set input entity and container types explicitly for DevExpress v24
inputEntity.Type = GetType(IEntity)
inputContainer.Type = GetType(object)
```

Table of Contents (TOC) Migration

As part of the update the old method of creating a TOC will no longer work correctly. This is the largest single change needed to any existing report that contains a TOC, List of Figures (LOF), or List of Tables (LOT). Migration steps are as follows:

- Delete old TOC controls in reports.
- Double-click on Table Of Contents from the toolbox.
  - Alternatively, drag and drop the TOC control from the toolbox onto a Report Header Band.
- Page count starts *after* the TOC; everything before will be considered "front matter".
- Bookmarks in the front matter will ***not*** be included in the TOC (but will be included in the Document Map).
- Any page headers/footers that need to exist in the TOC section must be added in the top / bottom margin, respectively.

ADDITIONAL RESOURCES

1. GENESYS Report Writer Course
2. DevExpress XtraReports™ documentation: https://devexpress.com/Support/Documentation (Click on the Reporting link.)

2270 Kraft Drive, Suite 1600
Blacksburg, Virginia 24060
+1 540 951 3322 | Fax: +1 540 951 8222
www.vitechcorp.com

Customer Support:
+1 540 951 3999 | support@vitechcorp.com