Optimal Trace

Customizing Exports and Reports Using Velocity Script

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CHAPTER 1

Introduction

Optimal Trace can generate web-based reports and structured text exports of all Optimal Trace project data. This guide covers:

- Text exports
- Web reports
- Customizing exports and reports
- Optimal Trace Plug-in SDK Reference

Audience

Readers of this user guide will be:

- Those who would like to understand the mechanics of how the current web based reporting and project export facilities works.
- Those who would like to understand how to build custom web reports for publication.
- Those who would like to understand how to build general text exports for usage in Excel as CSV files etc.
- Those who would like to understand how to build text exports specifically to 3rd party environments that support imports such as text or XMI in the case of UML supporting tools.

NOTE

- It is highly recommended that readers interested in creating their own custom reports or exports should have a basic technical knowledge of scripting languages and specifically the Velocity Template Engine (`http://jakarta.apache.org/velocity/`) from the Apache Software Foundation (`http://www.apache.org/`).
- This version of the user guide has been updated to reflect Optimal Trace 5.0 or later (both Enterprise and Professional). Previous versions of Optimal Trace have differences in terms of the API and directory structure. You should upgrade to 5.0 or later prior to trying any of the examples in this paper.

Structure of Optimal Trace Exports (Export Profiles)

Optimal Trace exports project data to a variety of text formats. The following exports ship with Optimal Trace:

- Text Export
- MS Project Export
- Text Actor Usage Export
- Text As Is - To Be Export
- Optimal J XMI (UML)
- Enterprise Architect XMI (UML)

Optimal Trace uses an Export Profile for each export. Export Profiles dictate the make up of the export. Each Export Profile comprises the following components:

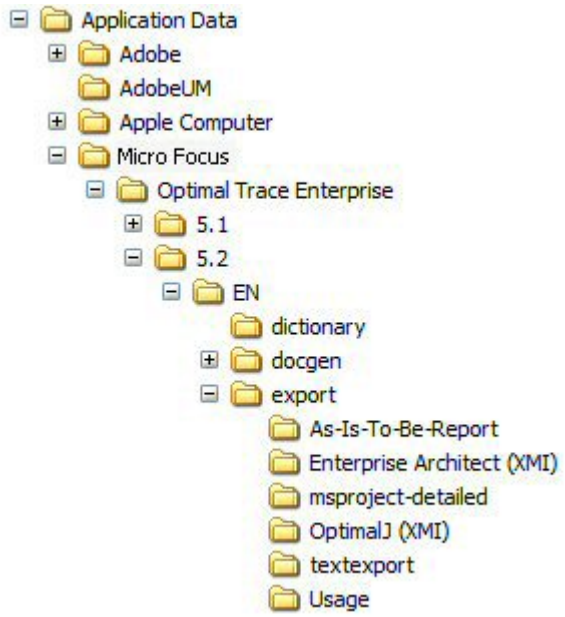
- A profile.xml file
- One or more script files (referred to also as a template)

The profile.xml contains the *directives* that define the export. It specifies aspects such as where the export will be generated to (i.e. the output directory), what name the export will have when showing within Optimal Trace and what script file(s) will be used for generation. For each export there will always be one profile.xml file and at least one script file. Each export is contained in a sub-directory under the location:

`<INSTALL_DIR>:\Documents and Settings\<USER_DIR>\Application Data\Micro Focus\Optimal Trace Enterprise\<RELEASE_NUM>\EN\export` - where X is the default user drive (Usually C:) and <user name> is the login name of the user.

Every user on a machine gets their own copy of the exports directory. Where relevant, this is called the personal exports directory in the remainder of this document.

Figure 1. Exports Path



Running Exports in Optimal Trace

1. Click **Project>Export Project**.
2. Select the profile to use for report generation.
3. Click **Export**.

Structure of Optimal Trace Web Reports (Report Profiles)

Similar to the export mechanism, Optimal Trace ships with an ability to generate web-based reports. Out of the box, the following reports are available:

- As Is - To Be Report (As-Is-To-Be-Report_HTML)
- Complexity and Completeness (Complexity)
- General Report (default_HTML)
- Actor Usage Report (ResourceUsage_HTML)
- Swimlane Report (swimlanes_HTML)
- Traceability Report (TraceabilityReport_HTML)
- Tree View Report v 1.8 (Tree_View_HTML)
- Requirement (AC) Report (Use-Case-Cockburn-Style_HTML)

Underlying each report is a Report Profile. Report Profiles dictate the makeup of the report. Each Report Profile comprises the following components:

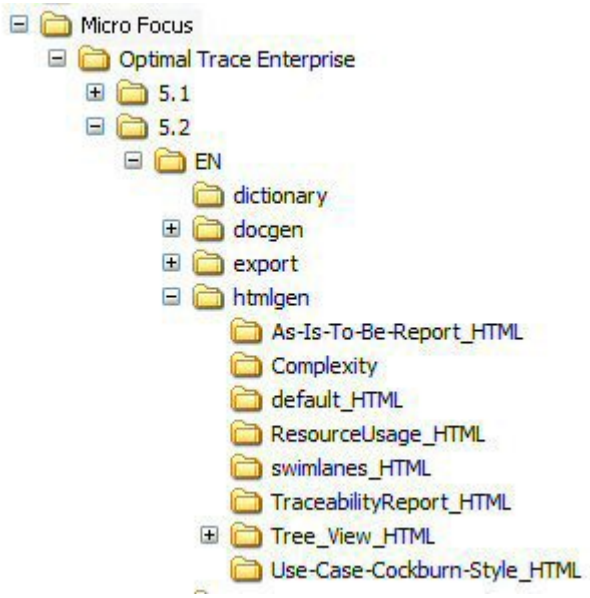
- A profile.xml file
- One or more script files (referred to as a template)

- Any additional files used in the HTML report (e.g.: stylesheets, *.css files, images etc.)

The profile.xml contains the directives that define the report. It specifies aspects such as where the report will be generated to (i.e. the output directory), what name the report will have when showing within Optimal Trace, what script file(s) will be used for generation and what additional files, if any, to copy to the output directory. For every report profile there will always be one profile.xml file, at least one script file and possibly a set of additional files (jpg etc.).

Each report profile is contained in a sub-directory under the location:
`<INSTALL_DIR>:\Documents and Settings\<USER_DIR>\Application Data\Micro Focus\Optimal Trace Enterprise\<RELEASE_NUM>\EN\htmlgen`.

Figure 2. Reports Path



NOTE

- Since Reports are HTML based, there is often a need to copy over additional files (such as CSS or graphic files) for the report. As exports are text based there is no need to copy over additional files to support the export process.
- Every user on a machine gets their own copy of the HTML gen directory. In the remainder of this document, this directory is referred to as the htmlgen directory.

To View Default Reports

1. Click **Generation>Generate Reports**.
2. Select the profile to use for report generation.
3. Click **Generate**.

About Generating Exports and Reports

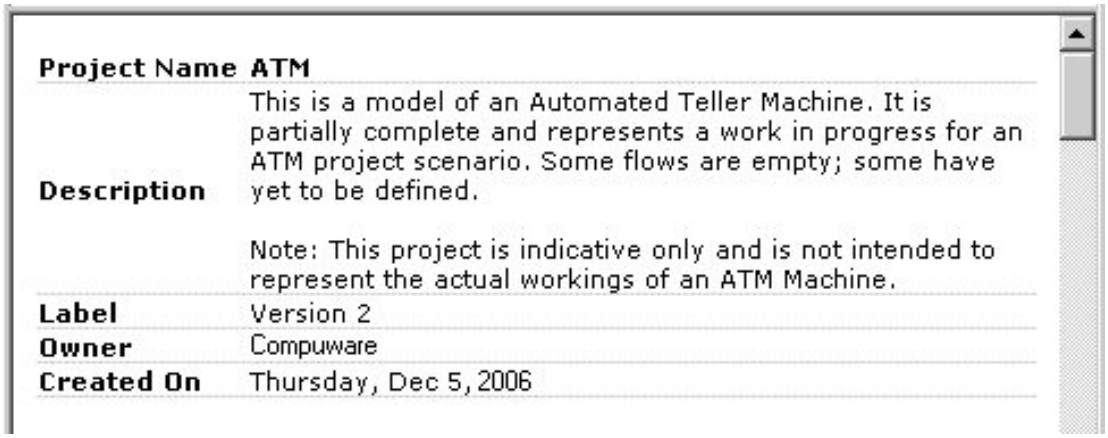
Let's now consider the script files that form the basis of what is generated for both reports and exports. Optimal Trace ships with a scripting language called Velocity that together with the Optimal Trace Plug-in SDK, forms the core of every Optimal Trace Report or Export script file. Optimal Trace Reports are in HTML format. The specific script files are actually HTML templates with embedded velocity script between HTML tags.

For example, a sample report snippit follows:

```
1. <table width="100%" border="0" cellspacing="1" class="containment-border">
2. <tr>
3. <td width="21%" ><b>Project Name</b></td>
4. <td width="79%" ><b>#escapeChars($project.Name)</b></td>
5. </tr>
6. <tr>
7. <td width="21%" ><b>Description</b></td>
8. <td width="79%" >#escapeChars($project.LongDescription)</td>
9. </tr>
10. <tr>
11. <td width="21%" ><b>Label</b></td>
12. <td width="79%" >#escapeChars($project.VersionLabelName)</td>
13. </tr>
14. <tr>
15. <td width="21%" ><b>Owner</b></td>
16. <td width="79%" >#escapeChars($project.Owner)</td>
17. </tr>
18. <tr>
19. <td width="21%" ><b>Created On</b></td>
20. <td width="79%" >#escapeChars($project.CreationDateAsString)</td>
21. </tr>
22. </table>
```

This extract is taken from the script file ProjectDetail.HTML that ships with the General Report, in Optimal Trace Enterprise and Professional. (See `..\HTMLgen\default_HTML\projectdetail.HTML`). As can be seen in this example, the HTML has embedded velocity script. Line 4 is an instance of a velocity macro being called with an argument `$project.Name` that is coming from the Optimal Trace Plug-in SDK. Lines 8, 12, 16 and 20 similarly show other attributes of the project passed as arguments to the velocity macro `#escapeChars`. This macro strips out any characters that would be illegal in the context of well formed HTML output and outputs the result. The web based HTML output created from this report appears as follows:

Figure 3. HTML Report



For exports, the mechanics are very similar, the only difference is that the velocity script does not sit within any HTML tags. Exports are just text files containing velocity script. Custom text exports can be used to generate just about any form of text file given the content of a Optimal Trace project. Similarly, an unlimited variety of web reports can be generated using Reports Profiles. For example, from a text export perspective, you could feasibly generate java test code directly from the content of each Requirement. From a report perspective you could generate an HTML report that filters the Requirements in a Project by the values contained within certain Custom Properties. This 'Delivery Report' displays all Requirements that are planned for a certain iteration (or release). The report filters by a custom property called *Increment*. Using the mechanism of Custom Report Profiles or Export Profiles, you can insert your own customized Reports or Exports into the Optimal Trace environment.

CHAPTER 2

Exports

Optimal Trace uses a generic mechanism for finding new Exports and Reports. On start up, it will search the personal export directory and if it sees a suitable Export Profile, it will dynamically populate the Export List in the tool. By simply adding to this folder a directory containing your Export files and starting Optimal Trace, the new Export will automatically be added to the list. Lets look at an example export.

Simple Text Export Example

As a simple example, lets suppose we want to generate an export (as a text file), containing the Project Name and a list of all the names of each Requirement in the Project. First, using any standard text editor (notepad etc.), create a new text file. Call this file 'Requirement-List.txt'. Now we'll add some velocity script that will drive the output created by the export.

NOTE

Optimal Trace speaks in terms of Requirements, with each Requirement comprised of a set of scenarios and steps. From the API perspective, each Requirement is termed a 'UseCase. This stems from early versions of Optimal Trace that spoke in terms of use cases. With later releases, this notion has been expanded to include other non-use case specific aspects.

Add the following lines to the script file:

```
Project: $project.getName()
List of Requirements:
#foreach ($usecase in $project.getUseCasePackage().getAllUseCasesInPackages())
Name - $usecase.getDisplayName()
#end
```

This will produce the following text output for the ATM demo:

```
Project: ATM
List of Requirements:
Name - SR1: Use ATM Machine
Name - SR2: Withdraw Cash
Name - SR3: Deposit Cash
Name - SR4: Transfer Funds
Name - SR5: Check Balance
```

Line by line breakdown:

- Line one: Project: **`$project.getName()`**

  Project: is free form text. **`$project`** refers to the Optimal Trace Plug-in SDK Project object and **`getName()`** is the operation to call on the Project.

- Line two: List of Requirements:

  This again is simply free form text. Since there are no velocity instructions it is output as it appears.

- Line three: **`#foreach ($usecase in $project.getUseCasePackage().getAllUseCasesInPackages())`**

  `project.getUseCasePackage().getAllUseCasesInPackages()` gets a list of all the use cases in this project. In short, this iterates through all the UseCase objects in the Project. **`#foreach`** is a Velocity keyword that creates a loop, **`$usecase`** establishes a Velocity variable called **`$usecase`** which is assigned the value of each successive element in the list as the loop progresses. We can use **`$usecase`** to refer to the Use Case object being iterated over, as shown in Line Four. See the Optimal Trace Plug-in SDK documentation for full details on how to access internal Optimal Trace objects.

- Line four: Name **- `$usecase.getDisplayName()`**

  Name – is free form text. **`$usecase`** is the Velocity variable for the Use Case that we are currently iterating over. **`getDisplayName()`** is the Optimal Trace Plug-in SDK call on a UseCase object to get its display name.

- Line five: **`#end`**

  `#end` is a Velocity keyword to close the corresponding **`#foreach`** iteration.

This script displays the project name then uses **`#foreach`** to cycle through each element of the list returned by **`project.getUseCasePackage()`**.**`getAllUseCasesInPackages()`**. On each cycle through it displays the String returned by **`$usecase.getDisplayName()`**. That is a very simple export, however the Optimal Trace Plug-in SDK is quite comprehensive and allows full access to any internal Optimal Trace object that Optimal Trace itself uses, therefore, any of these objects can be used with a velocity script allowing you to generate very customizable exports. Additionally, velocity scripts allow us to interrogate the state of the model and code decision logic based on the state. For detailed examples of Velocity templates using the Optimal Trace API, see the files that Optimal Trace itself uses, these will be located under the directory: `<Optimal Trace installation directory>\export directory`.

Adding Export Scripts

To add an existing script to Optimal Trace:

1. Create a new directory called *Basic Export* under the Optimal Trace *export* directory.
2. Place the template file (Requirement-List.txt) created in the example above in this directory.
3. From the `export\usage` directory, copy the file `profile.xml` to this new `Basic Export` directory. (We do this for convenience and we will modify that file. This export profile has only one script file and therefore will be quite similar to what we need)

Export Profile Example

As mentioned earlier, each export directory has a profile.xml file that contains configuration information for that export. Additionally, each profile can contain one or more templates with each template corresponding to a text generation file (script file).

NOTE

For Ids & Timestamps in the Profiles: Optimal Trace profiles contain an Id entry of type long. Although you must ensure the id is present the actual value simply needs to be unique within the scope of the profile. Timestamp entries are also present. This is legacy and is retained for backward compatibility. Copying and adjusting existing profile.xml files is the easiest way to start a new profile.

Take the profile.xml file and open it in your text editor. You will see the following (or similar):

```
1. <?xml version="1.0" encoding="UTF-8"?>
2. <TextGenProfile Id="ST282810241458958" TimeStamp="1014065346295">
3. <DynAttributes>
4. <DynAttribute Name="Position" TimeStamp="1014065346295" Type="java.lang.Integer"
Value="3"/>
5. <DynAttribute Name="Description" TimeStamp="1014065346275" Type="java.lang.String"
Value="Export to CSV format with Actor usage content."/>
6. <DynAttribute Name="Name" TimeStamp="1014065346275" Type="java.lang.String" Value="Text
 Actor Usage Export"/>
7. <DynAttribute Name="isReadOnly" TimeStamp="1014065346275" Type="java.lang.Boolean"
Value="false"/>
8. <DynAttribute Name="isLocked" TimeStamp="1014065346275" Type="java.lang.Boolean"
Value="false"/>
9. <DynAttribute Name="OutputDirectory" TimeStamp="1014065346295" Type="java.lang.String"
 Value=""/>
10. <DynAttribute Name="OutputFileName" TimeStamp="1014065346295" Type="java.lang.String"
 Value="ActorUsage.csv"/>
11. <DynAttribute Name="ExternalLinkName" TimeStamp="1014065346295"
Type="java.lang.String" Value="Actor Useage Report - TEXT"/>
12. </DynAttributes>
13. <TextGenTemplate Id="ST282810400007383" TimeStamp="1014065346285">
14. <DynAttributes>
  a. <DynAttribute Name="Name" TimeStamp="1014065346285" Type="java.lang.String"
Value="TextReport"/>
  b. <DynAttribute Name="IsActivityDiagramNeeded" TimeStamp="1014065346285"
Type="java.lang.Boolean" Value="false"/>
  c. <DynAttribute Name="IsUseCaseDiagramNeeded" TimeStamp="1014065346285"
Type="java.lang.Boolean" Value="false"/>
  d. <DynAttribute Name="Description" TimeStamp="1014065346285" Type="java.lang.String"
 Value="CSV file template for Project"/>
  e. <DynAttribute Name="OutputFileName" TimeStamp="1014065346285" Type="java.lang.String"
 Value="ActorUsage.csv"/>
  f. <DynAttribute Name="AdditionalFilesToCopy" TimeStamp="1014065346285"
Type="java.lang.String" Value=""/>
  g. <DynAttribute Name="isLocked" TimeStamp="1014065346285" Type="java.lang.Boolean"
Value="false"/>
  h. <DynAttribute Name="ContextObject" TimeStamp="1014065346285" Type="java.lang.String"
 Value="Project"/>
  i. <DynAttribute Name="TemplateFileName" TimeStamp="1014065346285"
Type="java.lang.String" Value="export/Usage/Usage.vm"/>
  j. <DynAttribute Name="ContextVariableName" TimeStamp="1014065346285"
Type="java.lang.String" Value="project"/>
  k. <DynAttribute Name="isReadOnly" TimeStamp="1014065346285" Type="java.lang.Boolean"
 Value="false"/>
15. </DynAttributes>
16. </TextGenTemplate>
17. </TextGenProfile>
```

Using the mechanism of Custom Report Profiles or Export Profiles, you can insert your own customized Reports or Exports into Optimal Trace. There are two core XML areas of this file, the first is the <*TextGenProfile*> node, the second the <*TextGenTemplate*> node.

<*TextGenProfile*> controls aspects such as how this report will surface in Optimal Trace, while <*TextGenTemplate*> points at the specific velocity template containing the script. Set the following attribute values for the <TextGenProfile> node:

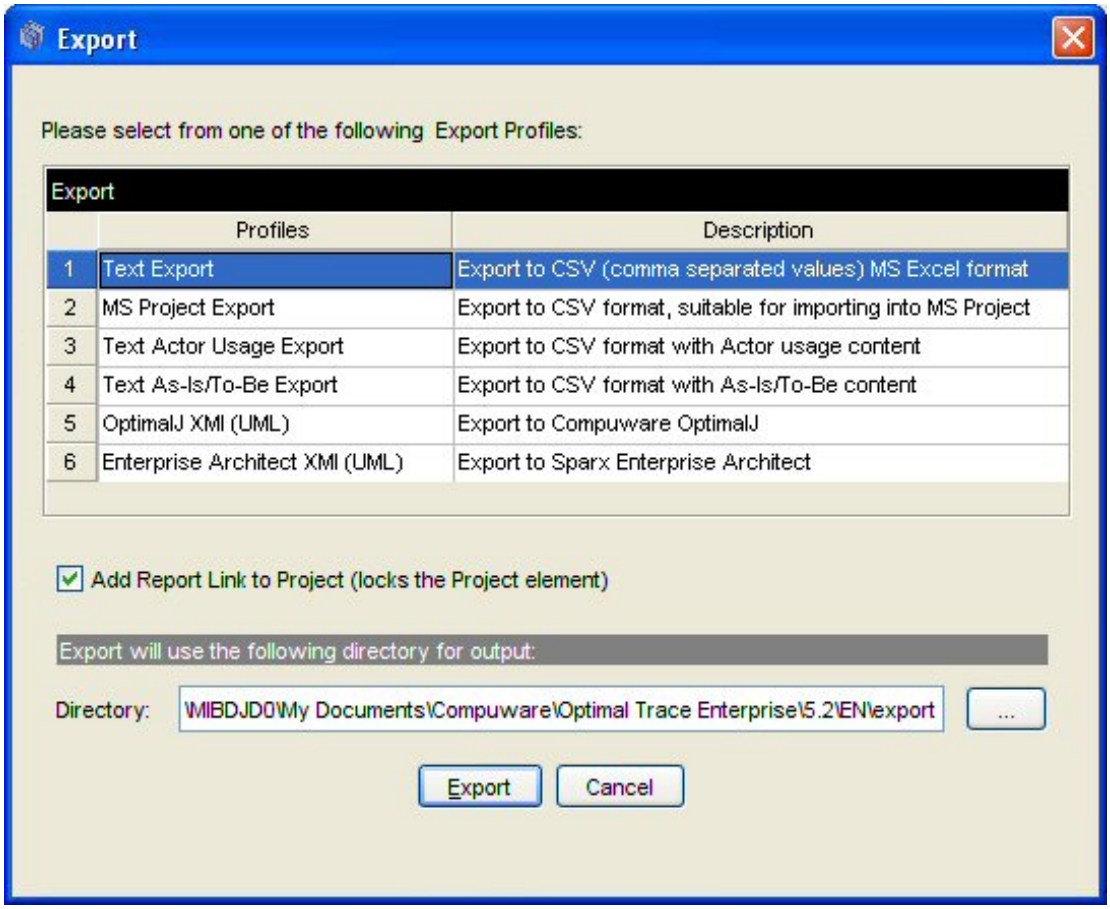
- Line 4 set *Position* = "7" (Position the export will appear in the list of available exports).
- Line 5 set *Description* = "This profile will generate a list of all Requirement Names in a Project." (Export description as it appears in Optimal Trace).
- Line 6 set *Name* = "Basic Export " (Export name as it appears in Optimal Trace).
- Line 10 set *OutputFileName* = "Requirement-List.txt " (Name of the generated file that will launch when hitting the **Open** button in Optimal Trace at the conclusion of the export).
- Line 11 set *ExternalLinkName* = "Requirements List " (Name of the link if you check the **Add Link to Project** option on export).

The attributes *IsReadOnly*, *IsLocked*, and *OutputFileName* are legacy entries and not relevant to our export so we leave them as is. Additionally the *OutputDirectory* attribute is left blank, meaning the output will default to the export directory under the Optimal Trace installation. In our example, we only have one Template file, `Requirement-List.txt`, so we just need one <TextGenTemplate> node in our XML file. We need to change the following attributes in our <TextGenTemplate> node:

- Line e. Set *OutputFileName* = **`Requirement-List.txt`**
- Line h. Set *ContextObject* = **`Project`**
- Line i. Set *TemplateFileName* = **`Requirement-List.txt`**
- Line j. Set *ContextVariableName* = **`project`**

Launch Optimal Trace, and bring up the **Export** dialog (via **Project>Export Project…**), and our new Profile should appear:

Figure 4. Text Generation Template



Clicking on **Export** should create a file called `Requirement-List.txt` in the `export` directory of Optimal Trace.

CHAPTER 3

Reports

Similar to Exports, Optimal Trace uses a generic mechanism for finding new Reports. On start up, it will search the user's personal `htmlgen` directory and if it sees a suitable Report Profile, it will dynamically populate the Report List in the tool. By adding to this folder a directory containing your Report files and starting Optimal Trace, the new Report will automatically be added to the list. When Optimal Trace generates a report it uses the `profile.xml` template to determine which Optimal Trace Element types are needed for the output (specifically the ContextObject and ContextVariableName variables).

NOTE

Optimal Trace speaks in terms of Requirements, with each Requirement comprised of a set of scenarios and steps. From the API perspective, each Requirement is termed a '*UseCase*. This stems from early versions of Optimal Trace that spoke in terms of use cases. With later releases, this notion has been expanded to include other non-use case specific aspects.

For each element type that it finds (Project, UseCase, Scenario etc.) it will apply the template to every instance of that Element type in the project. i.e. if the `profile.xml` contains references (in the ContextObject and ContextVariableName variables) to Project, UseCase and Step, then for each UseCase a report page will be generated and for each Step a report page will be generated. (There is only one Project to apply the Project template to.)

Create a new directory in your `HTMLgen` directory. For clarity, it is recommended that you use the same name for this directory as for the report you intend to create (this is not mandatory, however). The easiest way to create a new Report is to copy an existing report and modify it. Therefore, out of the pre-supplied reports choose the one closest to what you would like to do, then copy the contents of its directory into the directory you just created. Edit the profile.xml file in the same manner as exports, renaming the entries as you require (Name, ExternalLinkName, TemplateFileName and OutputFileName). Also please note that if the report you intend to create is to generate different pages for different Requirement types, you will need a template for each Requirement within the profile.xml file. (As shown in the default_html profile.) Next open the `index.html` file in an editor and modify it as you require. The rest of this section will focus on creating a report from scratch (it will also be of use to those modifying

a report). A blank `profile.xml` profile is available and can be altered and then saved into the desired directory to create a new report.

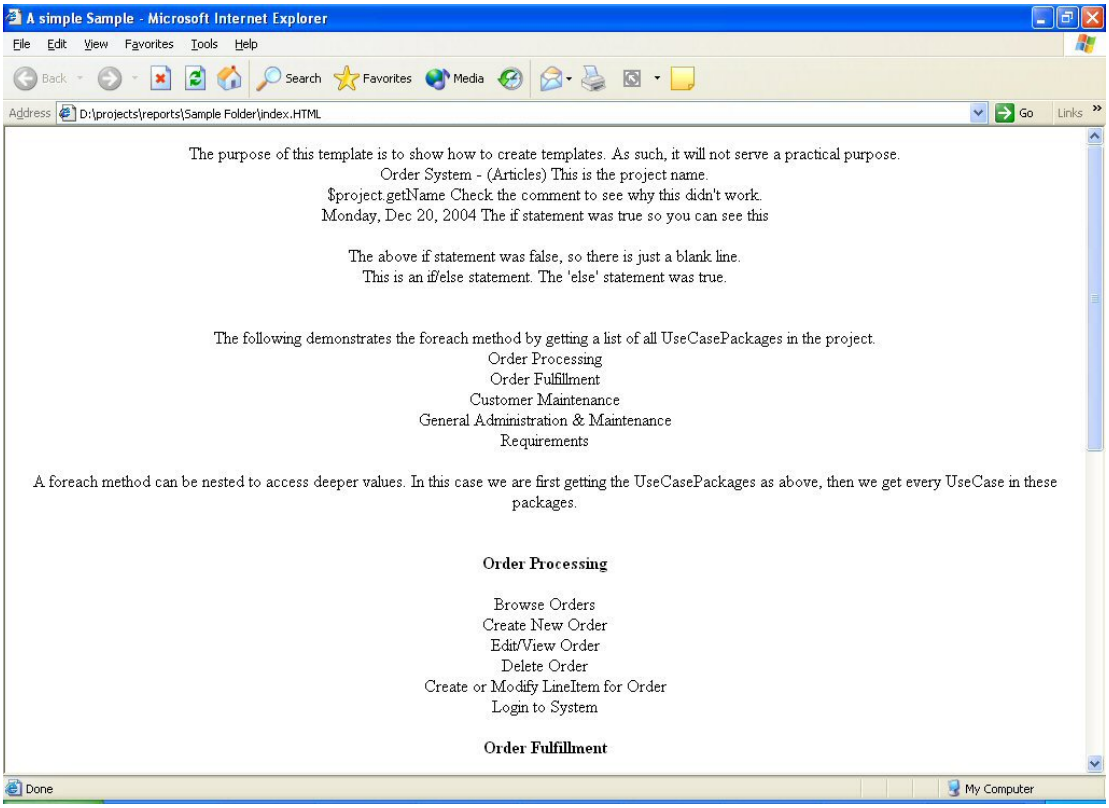
NOTE

If you edit the `profile.xml` file you must restart Optimal Trace for the changes to take affect, but changes can be made to the HTML file and implemented (by creating the relevant report) while it is running.

Simple Report

This report itemizes the full content of a project, iterating through all packages and in turn all requirements in this packages. This report uses **`get*`** API commands, **`if`** and **`if/else`** statements and **`foreach`** loops. A full list of these commands can be found in The Optimal Trace API. This report provides a basic introduction to the workings of Velocity & Reports. The result of generating this report appears below.

Figure 5. Simple Report Example



Profile for a Simple Report

The `profile.xml` file is shown below. Comments embedded in the file outline the intent of each entry.

```
1. <TextGenProfile Id="ST282810241458958" TimeStamp="1014065346295">
2. <DynAttributes>
3. <DynAttribute Name="Position" TimeStamp="1014065346295" Type="java.lang.Integer"
Value="7"/>
4. <!--This will place it at position 7 in the list of available reports. (If it is
free) -->
5. <DynAttribute Name="Description" TimeStamp="1014065346275" Type="java.lang.String"
Value="An introductory sample report."/>
6. <!--The description of the project that will appear in Optimal Trace -->
7. <DynAttribute Name="Name" TimeStamp="1014065346275" Type="java.lang.String"
Value="Example Report 1"/>
8. <!--The name that will appear in Optimal Trace.-->
9. <DynAttribute Name="isReadOnly" TimeStamp="1014065346275" Type="java.lang.Boolean"
Value="false"/>
10. <DynAttribute Name="isLocked" TimeStamp="1014065346275" Type="java.lang.Boolean"
Value="false"/>
11. <DynAttribute Name="OutputDirectory" TimeStamp="1014065346295" Type="java.lang.String"
 Value="projects\reports\Example Report 1"/>
12. <!--The folder that the generated report will be placed in. -->
13. <DynAttribute Name="OutputFileName" TimeStamp="1014065346295" Type="java.lang.String"
 Value="index.HTML"/>
14. <!--The name of the file that will be generated. -->
15. <DynAttribute Name="ExternalLinkName" TimeStamp="1014065346295"
Type="java.lang.String" Value="Simple Sample - HTML"/>
16. <!--A name for linking.-->
17. </DynAttributes>
18. <TextGenTemplate Id="ST282810400007383" TimeStamp="1014065346285">
19. <DynAttributes>
a. <DynAttribute Name="Name" TimeStamp="1014065346285" Type="java.lang.String"
Value="Index"/>
b. <!--The name. -->
c. <DynAttribute Name="IsActivityDiagramNeeded" TimeStamp="1014065346285"
Type="java.lang.Boolean" Value="false"/>
d. <DynAttribute Name="IsUseCaseDiagramNeeded" TimeStamp="1014065346285"
Type="java.lang.Boolean" Value="false"/>
e. <DynAttribute Name="Description" TimeStamp="1014065346285" Type="java.lang.String"
Value="An introductory sample report."/>
f. <!--Description. -->
g. <DynAttribute Name="OutputFileName" TimeStamp="1014065346285" Type="java.lang.String"
 Value="index.HTML"/>
h. <!--The name of the file that will be created. -->
i. <DynAttribute Name="AdditionalFilesToCopy" TimeStamp="1014065346285"
Type="java.lang.String" Value=""/>
j. <DynAttribute Name="isLocked" TimeStamp="1014065346285" Type="java.lang.Boolean"
Value="false"/>
k. <DynAttribute Name="ContextObject" TimeStamp="1014065346285" Type="java.lang.String"
 Value="Project"/>
l. <DynAttribute Name="TemplateFileName" TimeStamp="1014065346285" Type="java.lang.String"
 Value="HTMLgen\Example Report 1\index.HTML"/>
m. <!-- Where to find the template for this profile.-->
n. <DynAttribute Name="ContextVariableName" TimeStamp="1014065346285"
Type="java.lang.String" Value="project"/>
o. <DynAttribute Name="isReadOnly" TimeStamp="1014065346285" Type="java.lang.Boolean"
Value="false"/>
20. </DynAttributes>
21. </TextGenTemplate>
22. </TextGenProfile>
```

Lets look at some sections of the profile. The first section from Line 2 thru Line 17 set the report up in terms of how the report will be interpreted and used from Optimal Trace. We consider these in more detail:

- Line 5: This shows the description of the report as it shows in Optimal Trace.
- Line 7: This is the name of the report as it shows in Optimal Trace.
- Line 11: The output directory that the report will be generated to.
- Line 13: The output file name that is required in Optimal Trace to open the generated reported after generation. Note that this entry should be consistent with the first TextGenTemplate entry for the file name.

- Line 15: This controls the Name of the Link that is inserted into Optimal Trace.
- Line 18 thru 21: This section represents directives relating to the output of the main page.

Save this `profile.xml` in the `htmlgen\Example Report 1` directory. This will display a profile called `Example Report 1` with a description of *An Introductory Sample Report* at the seventh position in the **Reports Generation** dialogue. It will base the template off `index.html` which it will look for in the `htmlgen\Example Report 1` directory.

Simple Report Velocity Scripts

The `index.html` file controls what the report will contain. Below is the script file. Save this as `index.html` in the `htmlgen\Example Report 1` directory.

```
1. #macro (escapeChars $str)
2. #parse ("escapeChars.vm")
3. #end
4. <HTML>
5. <head>
6. <title>A simple Sample</title>
7. <meta http-equiv="Content-Type" content="text/HTML; charset=iso-8859-1">
8. <link rel="stylesheet" href="Optimal Trace.css" type="text/css">
9. </head>
10. <body bgcolor="#FFFFFF" text="#000000">
11. #*What is displayed here is a blend of HTML and velocity script. The HTML functions
 as normal, while velocity is used to
12. access core Optimal Trace objects. Please check the API for details on these objects.
 (The hash-star and star-hash are used to
13. mark comments in velocity.)*#
14. <div align="center">
15. The purpose of this template is to show how to create templates. As such, it will
not serve a practical purpose.
16. ##The above is HTML and is visible. This is a velocity comment and is not.
17. <br>
18. ##To get the project name do this:
19. $project.getName() This is the project name.
20. #*Any method that returns something will display it. getName returns a String, then
 velocity puts that String
21. in the document as HTML.*#
22. <br>
23. $project.getName Check the comment to see why this didn't work.
24. #*If velocity doesn't recognise something it will just display it as is. In this
case, it doesn't know that getName
25. is a method and doesn't recognise it as a variable.*#
26. <br>
27. ##An if statement
28. #if($project.getAllUseCasePackages().size()>0)
29. $project.getCreationDateAsString() The if statement was true so you can see this
30. #end ##Always close if statements.
31. <br>
32. #if($project.getAllUseCasePackages().size()<0)
33. $project.getCreationDateAsString()
34. #end ##Always close if statements.
35. <br>
36. The above if statement was false, so there is just a blank line.
37. <br>
38. #if($project.getAllUseCasePackages().size()<0)
39. $project.getCreationDateAsString()
40. #else
41. This is an if/else statement. The 'else' statement was true.
42. #end
43. <br><br><br>
44. The following demonstrates the foreach method by getting a list of all UseCasePackages
 in the project.
45. <br>
46. #foreach($element in $project.getAllUseCasePackages())
47. $element
48. <br>
49. #end
50. <br>
```

```
51. A foreach method can be nested to access deeper values. In this case we are first
getting the UseCasePackages as above, then we get every UseCase in these packages.
52. <br>
53. <br>
54. #foreach($element in $project.getAllUseCasePackages())
55. <br>
56. <h4>$element</h4>##Show which package it is with html header h4.
57. #foreach($element1 in $element.getAllUseCasesInPackages())
58. $element1##Show the UseCase.
59. <br>
60. #end
61. #end
62. <br>
63. </body>
64. </HTML>
```

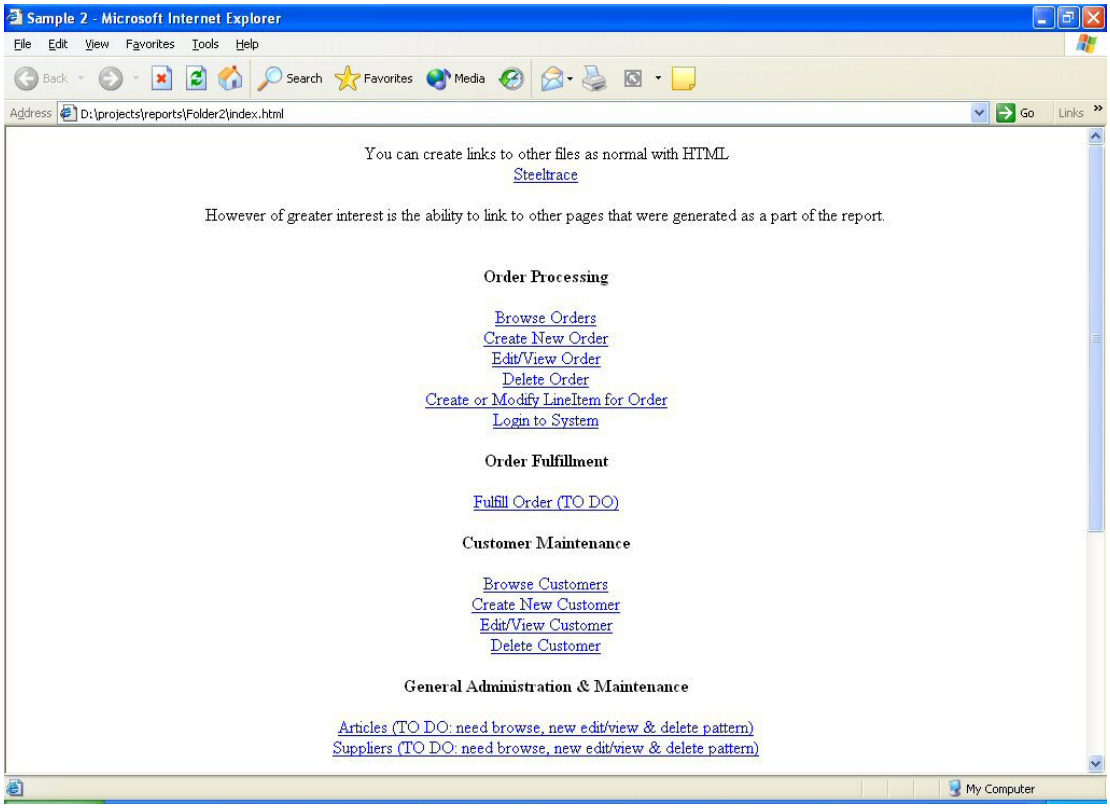
What is displayed here is a blend of HTML and velocity script. The HTML functions as normal, while velocity is used to access core Optimal Trace objects. Please check the API for details on these objects.

- Line 1 thru 3: This is a macro that escapes any characters in a given string.
- Line 4 thru 10: This is standard HTML and is visible when the report is generated.
- Line 11 thru 13: Hash-star (#*) and star-hash (*#) are used to open and close comments in Velocity. ## is also used to mark single line comments.
- Line 19: This will get and display the project name. Any method that returns something will display it. getName() returns a String, then velocity puts that String in the document as HTML.
- If velocity doesn't recognise a method call and cannot resolve it, it simply displays the text 'as is'. In this case the syntax is wrong (it should be used as **`getName()`**). As it is represented it expects a variable called **`getName`** which does not resolve.
- Line 28 thru 30: This is an **`if`** statement. If it evaluates as true it will get and display the creation date of the project.
- Line 31 thru 61: The remainder of the report demonstrates a mixture of velocity and html. It's primary aim is to list all Packages and the Requirements contained therein.

Multipage Report

Somewhat similar to the previous report, this report generates a page with the high level contents of the project. In this case however, the report also has a hyperlink to the Optimal Trace website followed by each Structured Requirement in the project sorted by package. Each Requirement is linked (using HTML hrefs) to the detail of the element which links to the specific detail. Whereas the first example outputted a single HTML page, this example outputs both the single 'master' page and one page (containing detail) for each itemized structured requirement within of the project. This covers each package and each Requirement. This is achieved by having an additional section in the `profile.xml` file. This third section references *UseCase* elements, so that when the report is generated all such elements have a separate page generated to match the requirements of the profile.xml file. Once you have created the directory and files, run Optimal Trace, open a project, and generate a report to see this report.

Figure 6. Multipage Report Example



Multipage Report Profile

The `profile.xml` file is shown below. Comments embedded in the file outline the intent of each entry. This report profile generates two file types, the basic *index* file which is responsible for generating the 'master' page and the Requirements (UseCases) that the index links to. As such, it has two TextGenTemplate sections.

```
1. <TextGenProfile Id="ST282810241458958" TimeStamp="1014065346295">
2. <DynAttributes>
3. <DynAttribute Name="Position" TimeStamp="1014065346295" Type="java.lang.Integer"
Value="10"/>
4. <DynAttribute Name="Description" TimeStamp="1014065346275" Type="java.lang.String"
Value="A more advanced sample report."/>
5. <DynAttribute Name="Name" TimeStamp="1014065346275" Type="java.lang.String"
Value="Example Report 2"/>
6. <DynAttribute Name="isReadOnly" TimeStamp="1014065346275" Type="java.lang.Boolean"
Value="false"/>
7. <DynAttribute Name="isLocked" TimeStamp="1014065346275" Type="java.lang.Boolean"
Value="false"/>
8. <DynAttribute Name="OutputDirectory" TimeStamp="1014065346295" Type="java.lang.String"
 Value="projects\reports\Example Report 2"/>
9. <DynAttribute Name="OutputFileName" TimeStamp="1014065346295" Type="java.lang.String"
 Value="index.html"/>
10. <DynAttribute Name="ExternalLinkName" TimeStamp="1014065346295"
Type="java.lang.String" Value="Links Sample - HTML"/>
11. </DynAttributes>
12. <TextGenTemplate Id="ST282810400007383" TimeStamp="1014065346285">
13. <DynAttributes>
a. <DynAttribute Name="Name" TimeStamp="1014065346285" Type="java.lang.String"
Value="Index"/>
b. <DynAttribute Name="IsActivityDiagramNeeded" TimeStamp="1014065346285"
Type="java.lang.Boolean" Value="false"/>
c. <DynAttribute Name="IsUseCaseDiagramNeeded" TimeStamp="1014065346285"
Type="java.lang.Boolean" Value="false"/>
```

```
d. <DynAttribute Name="Description" TimeStamp="1014065346285" Type="java.lang.String"
Value="A more advanced sample report."/>
e. <DynAttribute Name="OutputFileName" TimeStamp="1014065346285" Type="java.lang.String"
 Value="index.html"/>
f. <DynAttribute Name="AdditionalFilesToCopy" TimeStamp="1014065346285"
Type="java.lang.String" Value=""/>
g. <DynAttribute Name="isLocked" TimeStamp="1014065346285" Type="java.lang.Boolean"
Value="false"/>
h. <DynAttribute Name="ContextObject" TimeStamp="1014065346285" Type="java.lang.String"
 Value="Project"/>
i. <DynAttribute Name="TemplateFileName" TimeStamp="1014065346285" Type="java.lang.String"
 Value="htmlgen/Example Report 2/index.html"/>
j. <DynAttribute Name="ContextVariableName" TimeStamp="1014065346285"
Type="java.lang.String" Value="project"/>
k. <DynAttribute Name="isReadOnly" TimeStamp="1014065346285" Type="java.lang.Boolean"
Value="false"/>
14. </DynAttributes>
15. </TextGenTemplate>
16. <TextGenTemplate Id="ST282810400007233" TimeStamp="1014065346285">
17. <DynAttributes>
a. <DynAttribute Name="Name" TimeStamp="1014065346285" Type="java.lang.String" Value="Use
 Cases"/>
b. <DynAttribute Name="IsActivityDiagramNeeded" TimeStamp="1014065346285"
Type="java.lang.Boolean" Value="false"/>
c. <DynAttribute Name="IsUseCaseDiagramNeeded" TimeStamp="1014065346285"
Type="java.lang.Boolean" Value="false"/>
d. <DynAttribute Name="Description" TimeStamp="1014065346285" Type="java.lang.String"
Value="Sample 2-use cases."/>
e. <DynAttribute Name="OutputFileName" TimeStamp="1014065346285" Type="java.lang.String"
 Value="UseCase$unique.html"/>
f. <DynAttribute Name="AdditionalFilesToCopy" TimeStamp="1014065346285"
Type="java.lang.String" Value=""/>
g. <DynAttribute Name="isLocked" TimeStamp="1014065346285" Type="java.lang.Boolean"
Value="false"/>
h. <DynAttribute Name="ContextObject" TimeStamp="1014065346285" Type="java.lang.String"
 Value="UseCase"/>
i. <DynAttribute Name="TemplateFileName" TimeStamp="1014065346285" Type="java.lang.String"
 Value="htmlgen/Example Report 2/usecase.html"/>
j. <DynAttribute Name="ContextVariableName" TimeStamp="1014065346285"
Type="java.lang.String" Value="usecase"/>
k. <DynAttribute Name="isReadOnly" TimeStamp="1014065346285" Type="java.lang.Boolean"
Value="false"/>
18. </DynAttributes>
19. </TextGenTemplate>
20. </TextGenProfile>
```

- Line 1 thru 11: This is the normal set of attributes that specify where the outputs are to be generated to.
- Line 12 thru 15: This represents the directives for the resulting index.htm 'master' page.
- Line 16 thru 19: This section represents directives relating to the output of individual detail pages linked from the master page. As mentioned previously this section is used to dictate how individual . This is the first time we have seen this structure Two lines should be noted that are new in terms of what we have looked at thus far and it is of some use to explain these further.
- Line 17e is leveraging a reserved constant called `$unique`. The purpose of this is to guarantee that the generated individual files have a unique file name. Hence the result of this example is to generate a number of output files that have as prefix 'usecase' followed by a unique id followed by the suffix '.html'. The net effect of this is that the all output files will be unique. The best and most extensive example of this approach is the default report where many links are created to packages, steps etc in addition to the details associated with the individual requirements. In thie case of the default report there is one 'TextGen Template' required for each file type. In other words one entry in the profile for Step, Package etc.

- Line 17h should also be highlighted. This provides the context for the specific velocity script that will be used. You can think of 'context' as being equivalent to the scope. Hence we have an ability to reference in the corresponding Template file the specific scope set in this line.

Save this `profile.xml` in the `htmlgen\Example Report 2` directory. This will display a profile called *Example Report 2* with a description of 'A more advanced sample report' at the eight position in the **Reports Generation** dialogue. It will base the template off `index.html` which it will look for in the `htmlgen\ Example Report 2` directory.

Multipage Report Velocity Scripts

The `index.html` file controls what the *master* page in the report will display. Just as we had two logical sections in the `profile.xml` file, we have two velocity script files, one each for the 'index' and 'usecase'. Below are the script files. Save these respectively as index.HTML & usecase.HTML in the `htmlgen\Example Report 2` directory. Here is the first: `index.html`

```
1. #macro (escapeChars $str)
2. #parse ("escapeChars.vm")
3. #end
4. <HTML>
5. <head>
6. <title>Sample 2</title>
7. <meta http-equiv="Content-Type" content="text/HTML; charset=iso-8859-1">
8. <link rel="stylesheet" href="Optimal Trace.css" type="text/css">
9. </head>
10. <body bgcolor="#FFFFFF" text="#000000">
11. <div align="center">
12. You can create links to other files as normal with HTML
13. <br>
14. <a href="http://www.Optimal Trace.com">Optimal Trace</a>
15. <br>
16. <br>
17. However of greater interest is the ability to link to other pages that were generated
 as a part of the report.
18. <br>
19. <br>
20. ##Get all UseCasePackages in the project, and cycle through them.
21. #foreach($element in $project.getAllUseCasePackages())
22. <br><h4>$element</h4>
23. ##Get all UseCases in each UseCasePackage
24. #foreach($element1 in $element.getAllUseCasesInPackages() )
25. #*Create a link to a file of name: UseCase+IdNumber. The profile.xml file causes
all UseCase files to be named as UseCase+IdNumber, thus making each link unique*#
26. <a href="UseCase${element1.getId()}.HTML">$element1</a>
27. <br>
28. #end
29. #end
30. <br>
31. <br>
32. </body>
33. </html>
```

Line 26 is of specific interest and leverages the previously mentioned reserved constant called $unique. Since the id will be unique in the file name, we can use this as the href argument. This results in the HTML link resolving to the appropriately generated filename. The remainder of the script is standard HTML.

Now lets look at the 2nd script file.

```
1. #macro (escapeChars $str)
2. #parse ("escapeChars.vm")
3. #end
4. <HTML>
5. <head>
6. <title>Not quite so simple sample</title>
7. <meta http-equiv="Content-Type" content="text/HTML; charset=iso-8859-1">
```

```
8. <link rel="stylesheet" href="Optimal Trace.css" type="text/css">
9. </head>
10. <body bgcolor="#FFFFFF" text="#000000">
11. <div align="center">
12. $usecase.getDisplayName()
13. <br>
14. <br>
15. </body>
16. </HTML>
```

This is a very simple example of a detail output accompanying the link. For a comprehensive example of this approach refer to the General Report' that ships with Optimal Trace. Note, that since our context or scope is the 'use case' we have the ability to query directly on this.

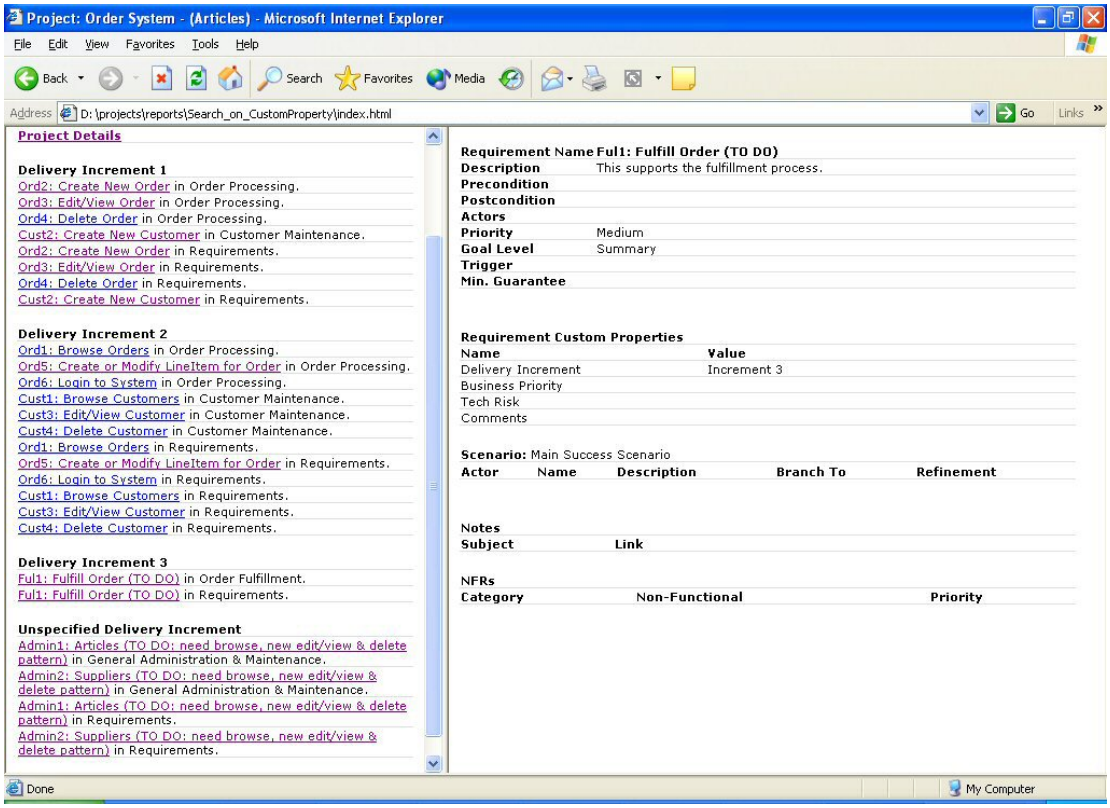
Line 12 is the only velocity call while the remainder is HTML. The method call **`getDisplayName`** resolves to the named requirement plus the number prefix (correlating to the package tag and number) as shown in the Tree in Optimal Trace. The method **`getName`** will not include the prefix. For example `SR2:Browse Orders` would be output from the above code versus `Browse Orders` if the **`getName`** call is used. See the full API section for full details.

Custom Property Report

This report demonstrates how you can filter a given project by Custom Properties. This is an extremely useful way of slicing the project in given ways and publishing to stakeholders. You could easily adapt this report to query on custom fields like **Risk** or **Business Priority**. In this instance the report in question is customized to expect a custom property called **Delivery Increment**. This property is contained by default in the **Standard Software Development Project Template** shipping with Optimal Trace. Our intent is to easily identify what is contained in which increments of delivery. If you have not created your project originally from that template, add a custom field at the requirement level to run this. Specifically, this report cycles through each requirement and adds it to the list in the left hand frame according to its delivery increment bound values of:

- Increment 1
- Increment 2
- Increment 3
- Unspecified

Figure 7. Custom Property Report Example



Custom Property Report Profiles

The profile.xml file is shown below. Comments embedded in the file outline the intent of each entry. In this example, since we have a frames based approach in the generated report there are many file types generated, in effect one per detail section that is required each having a TextGenTemplate section specified.

```
1. <TextGenProfile Id="ST282810241458958" TimeStamp="1014065346295">
2. <DynAttributes>
3. <DynAttribute Name="Position" TimeStamp="1014065346295" Type="java.lang.Integer"
Value="10"/>
4. <DynAttribute Name="Description" TimeStamp="1014065346275" Type="java.lang.String"
Value="Sort by custom property."/>
5. <DynAttribute Name="Name" TimeStamp="1014065346275" Type="java.lang.String"
Value="Example Report 3"/>
6. <DynAttribute Name="isReadOnly" TimeStamp="1014065346275" Type="java.lang.Boolean"
Value="false"/>
7. <DynAttribute Name="isLocked" TimeStamp="1014065346275" Type="java.lang.Boolean"
Value="false"/>
8. <DynAttribute Name="OutputDirectory" TimeStamp="1014065346295" Type="java.lang.String"
 Value="projects\reports\Example Report 3"/>
9. <DynAttribute Name="OutputFileName" TimeStamp="1014065346295" Type="java.lang.String"
 Value="index.html"/>
10. <DynAttribute Name="ExternalLinkName" TimeStamp="1014065346295"
Type="java.lang.String" Value="Links Sample - HTML"/>
11. </DynAttributes>
12. <TextGenTemplate Id="ST282810400007383" TimeStamp="1014065346285">
13. <DynAttributes>
a. <DynAttribute Name="Name" TimeStamp="1014065346285" Type="java.lang.String"
Value="Index"/>
b. <DynAttribute Name="IsActivityDiagramNeeded" TimeStamp="1014065346285"
Type="java.lang.Boolean" Value="false"/>
c. <DynAttribute Name="IsUseCaseDiagramNeeded" TimeStamp="1014065346285"
Type="java.lang.Boolean" Value="false"/>
```

```
d. <DynAttribute Name="Description" TimeStamp="1014065346285" Type="java.lang.String"
Value="UseCases by CustomProperty"/>
e. <DynAttribute Name="OutputFileName" TimeStamp="1014065346285" Type="java.lang.String"
 Value="index.html"/>
f. <DynAttribute Name="AdditionalFilesToCopy" TimeStamp="1014065346285"
Type="java.lang.String" Value="htmlgen/Optimal Trace.css, htmlgen/Optimal Tracelogo.gif"/>

g. <DynAttribute Name="isLocked" TimeStamp="1014065346285" Type="java.lang.Boolean"
Value="false"/>
h. <DynAttribute Name="ContextObject" TimeStamp="1014065346285" Type="java.lang.String"
 Value="Project"/>
i. <DynAttribute Name="TemplateFileName" TimeStamp="1014065346285" Type="java.lang.String"
 Value="htmlgen/Example Report 3/index.html"/>
j. <DynAttribute Name="ContextVariableName" TimeStamp="1014065346285"
Type="java.lang.String" Value="project"/>
k. <DynAttribute Name="isReadOnly" TimeStamp="1014065346285" Type="java.lang.Boolean"
Value="false"/>
14. </DynAttributes>
15. </TextGenTemplate>
16. <TextGenTemplate Id="ST282810564953195" TimeStamp="1014065346295">
17. <DynAttributes>
a. <DynAttribute Name="Name" TimeStamp="1014065346295" Type="java.lang.String"
Value="Index Frame"/>
b. <DynAttribute Name="IsActivityDiagramNeeded" TimeStamp="1014065346295"
Type="java.lang.Boolean" Value="false"/>
c. <DynAttribute Name="IsUseCaseDiagramNeeded" TimeStamp="1014065346295"
Type="java.lang.Boolean" Value="false"/>
d. <DynAttribute Name="Description" TimeStamp="1014065346295" Type="java.lang.String"
Value="Template for Index Frame"/>
e. <DynAttribute Name="OutputFileName" TimeStamp="1014065346295" Type="java.lang.String"
 Value="IndexFrame.html"/>
f. <DynAttribute Name="isLocked" TimeStamp="1014065346295" Type="java.lang.Boolean"
Value="false"/>
g. <DynAttribute Name="ContextObject" TimeStamp="1014065346295" Type="java.lang.String"
 Value="Project"/>
h. <DynAttribute Name="TemplateFileName" TimeStamp="1014065346295" Type="java.lang.String"
 Value="htmlgen/Example Report 3/IndexFrame.html"/>
i. <DynAttribute Name="ContextVariableName" TimeStamp="1014065346295"
Type="java.lang.String" Value="project"/>
j. <DynAttribute Name="isReadOnly" TimeStamp="1014065346295" Type="java.lang.Boolean"
Value="false"/>
18. </DynAttributes>
19. </TextGenTemplate>
20. <TextGenTemplate Id="ST282810568134765" TimeStamp="1014065346295">
21. <DynAttributes>
a. <DynAttribute Name="Name" TimeStamp="1014065346295" Type="java.lang.String"
Value="Project Detail Frame"/>
b. <DynAttribute Name="IsActivityDiagramNeeded" TimeStamp="1014065346295"
Type="java.lang.Boolean" Value="false"/>
c. <DynAttribute Name="IsUseCaseDiagramNeeded" TimeStamp="1014065346295"
Type="java.lang.Boolean" Value="false"/>
d. <DynAttribute Name="Description" TimeStamp="1014065346295" Type="java.lang.String"
Value="Template for Project Detail Frame"/>
e. <DynAttribute Name="OutputFileName" TimeStamp="1014065346295" Type="java.lang.String"
 Value="ProjectDetail.html"/>
f. <DynAttribute Name="isLocked" TimeStamp="1014065346295" Type="java.lang.Boolean"
Value="false"/>
g. <DynAttribute Name="ContextObject" TimeStamp="1014065346295" Type="java.lang.String"
 Value="Project"/>
h. <DynAttribute Name="TemplateFileName" TimeStamp="1014065346295" Type="java.lang.String"
 Value="htmlgen/Example Report 3/projectdetail.html"/>
i. <DynAttribute Name="ContextVariableName" TimeStamp="1014065346295"
Type="java.lang.String" Value="project"/>
j. <DynAttribute Name="isReadOnly" TimeStamp="1014065346295" Type="java.lang.Boolean"
Value="false"/>
22. </DynAttributes>
23. </TextGenTemplate>
24. <TextGenTemplate Id="ST282810400007233" TimeStamp="1014065346285">
25. <DynAttributes>
a. <DynAttribute Name="Name" TimeStamp="1014065346285" Type="java.lang.String" Value="Use
 Cases"/>
b. <DynAttribute Name="IsActivityDiagramNeeded" TimeStamp="1014065346285"
Type="java.lang.Boolean" Value="false"/>
c. <DynAttribute Name="IsUseCaseDiagramNeeded" TimeStamp="1014065346285"
Type="java.lang.Boolean" Value="false"/>
```

```
d. <DynAttribute Name="Description" TimeStamp="1014065346285" Type="java.lang.String"
Value="Sample UseCases."/>
e. <DynAttribute Name="OutputFileName" TimeStamp="1014065346285" Type="java.lang.String"
 Value="UseCase$unique.html"/>
f. <DynAttribute Name="AdditionalFilesToCopy" TimeStamp="1014065346285"
Type="java.lang.String" Value=""/>
g. <DynAttribute Name="isLocked" TimeStamp="1014065346285" Type="java.lang.Boolean"
Value="false"/>
h. <DynAttribute Name="ContextObject" TimeStamp="1014065346285" Type="java.lang.String"
 Value="UseCase"/>
i. <DynAttribute Name="TemplateFileName" TimeStamp="1014065346285" Type="java.lang.String"
 Value="htmlgen/Example Report 3/usecase.html"/>
j. <DynAttribute Name="ContextVariableName" TimeStamp="1014065346285"
Type="java.lang.String" Value="usecase"/>
k. <DynAttribute Name="isReadOnly" TimeStamp="1014065346285" Type="java.lang.Boolean"
Value="false"/>
26. </DynAttributes>
27. </TextGenTemplate>
28. </TextGenProfile >
```

Lets look at some sections of the profile.

- Line 12 thru 15: This section specifies the index file that sets up the frames.
- Line 13f: This line specifies additional files to copy into the destination report.
- Line 13h: This line specifies the context or scope of the report in this case it is the Project itself.
- Line 13i: The index.html script file is specified as being the relevant script file to be used.
- 13j: The variable name that will be used to access the context in the script file.
- Line Line 16 thru 19: This section controls the output in the left frame of the report. The specific field entries are similar to the previous section with the context and context variable being the same. Here however the script file is different as the HTML and velocity will be different .
- Line 20 thru 23: This section controls the output in the right frame that is displayed after selecting the project link in the left frame. The specific field entries are similar to the previous section with the context and context variable being the same. In this case however, the primary purpose is to display the details at the project only level.
- Line 24 thru 27: This section controls the output in the right frame that is displayed after selecting the a given requirement link in the left frame. The specific field entries are different in this case since our context is at the specific requirement (use case) level. The purpose is to display the full details associated with the clicked entity that appears in the left frame.

Custom Property Report Velocity Scripts

Since this is a frames based report there are a number of logical sections of script, one for each type of display area. In other words, just as we had a number of logical sections in the profile.xml file we now have a number of script files.

- `Index.html`
- `IndexFrame.html`
- `ProjectDetail.html`
- `UseCase.html`

`Index.html`:

```
1. <html>
2. <head>
3. <title>Project: $project.Name</title>
4. <meta http-equiv="Content-Type" content="text/html; charset=iso-8859-1">
5. </head>
6. ##Create the frames
7. <frameset cols="40%,60%" rows="*">
8. ##The left hand frame holds the Index
9. <frame name="projectFrame" src="IndexFrame.html">
10. ##The right hand frame defaults to the details of the project.
11. <frame name="detailFrame" src="ProjectDetail.html">
12. </frameset>
13. </html>
```

This is fully HTML with no velocity and the purpose is to house both the Index area as well as the detailed frames. Line 9 refers to the left side of the report while Line 11 denotes the right side of the report.

`IndexFrame.html`:

```
1. #macro (escapeChars $str)
2. #parse ("escapeChars.vm")
3. #end
4. <html>
5. <head>
6. <title>Project: #escapeChars($project.Name)</title>
7. <meta http-equiv="Content-Type" content="text/html; charset=iso-8859-1">
8. ##The Stylesheet is used to give a uniform appearance to the report.
9. <link rel="stylesheet" href="Optimal Trace.css" type="text/css">
10. </head>
11. <body bgcolor="#FFFFFF" text="#000000">
12. <FONT SIZE=-2>
13. <p><a href="http://www.Optimal Trace.com" target="_blank"><img src="Optimal
Tracelogo.gif" width="162" height="72" border="0"></a></p>
14. ##Tables are used for formatting.
15. <table width="100%" rows="3" border="0" cellpadding = "2">
16. <tr>
17. <td>
18. <table width="100%" border="0" cellspacing="1" class="containment-border">
19. <tr>
20. <td width="100%" ><b><a href="projectdetail.html" target="detailFrame">Project
Details</a></b></td>
21. </tr>
22. <tr></tr><tr></tr><tr></tr><tr></tr><tr></tr><tr></tr><tr></tr><tr></tr><tr></tr><tr></tr><tr></tr><tr></tr>
23. <tr>
24. <td width="100%" ><b>Delivery Increment 1</b></td>
25. </tr>
26. ##Cycle through each package in the project.
27. #foreach($element in $project.getAllUseCasePackages())
28. ##Cycle through each requirement in this package
29. #foreach($usecase in $element.getAllUseCasesInPackages())
30. ##If the custom property matches our requirements
31. #if($usecase.getCustomProperty('Delivery Increment').getValue()=='Increment 1')
32. <tr>
33. ##Insert a link to that requirement.
34. <td width="100%" ><a href="UseCase${usecase.getId()}.html"
target="detailFrame">$usecase.getDisplayName()</a> in $element.</td>
35. </tr>
36. #end
37. #end
38. #end
39. <tr></tr><tr></tr><tr></tr><tr></tr><tr></tr><tr></tr><tr></tr><tr></tr><tr></tr><tr></tr><tr></tr><tr></tr>
40. <tr>
41. <td width="100%" ><b>Delivery Increment 2</b></td>
42. </tr>
43. ##As above but for a different custom property value
44. #foreach($element in $project.getAllUseCasePackages())
45. #foreach($usecase in $element.getAllUseCasesInPackages())
46. #if($usecase.getCustomProperty('Delivery Increment').getValue()=='Increment 2')
47. <tr>
48. <td width="100%" ><a href="UseCase${usecase.getId()}.html"
target="detailFrame">$usecase.getDisplayName()</a> in $element.</td>
49. </tr>
50. #end
```

```
51. #end
52. #end
53. <tr></tr><tr></tr><tr></tr><tr></tr><tr></tr><tr></tr><tr></tr><tr></tr><tr></tr><tr></tr>
54. <tr>
55. <td width="100%" ><b>Delivery Increment 3</b></td>
56. </tr>
57. ##As above but for a different custom property
58. #foreach($element in $project.getAllUseCasePackages())
59. #foreach($usecase in $element.getAllUseCasesInPackages())
60. #if($usecase.getCustomProperty('Delivery Increment').getValue()=='Increment 3')
61. <tr>
62. <td width="100%" ><a href="UseCase${usecase.getId()}.html"
target="detailFrame">$usecase.getDisplayName()</a> in $element.</td>
63. </tr>
64. #end
65. #end
66. #end
67. <tr></tr><tr></tr><tr></tr><tr></tr><tr></tr><tr></tr><tr></tr><tr></tr><tr></tr><tr></tr>
68. <tr>
69. <td width="100%" ><b>Unspecified Delivery Increment</b></td>
70. </tr>
71. ##As above but for a different custom property value
72. #foreach($element in $project.getAllUseCasePackages())
73. #foreach($usecase in $element.getAllUseCasesInPackages())
74. #if($usecase.getCustomProperty('Delivery Increment').getValue()=='')
75. <tr>
76. <td width="100%" ><a href="UseCase${usecase.getId()}.html"
target="detailFrame">$usecase.getDisplayName()</a> in $element.</td>
77. </tr>
78. #end
79. #end
80. #end
81. <tr></tr><tr></tr><tr></tr><tr></tr><tr></tr><tr></tr><tr></tr><tr></tr><tr></tr><tr></tr>
82. </table>
83. </table>
84. </font>
85. </body>
86. </html>
```

`ProjectDetail.html`:

```
1. #macro (escapeChars $str)
2. #parse ("escapeChars.vm")
3. #end
4. <html>
5. <head>
6. <title>Project: #escapeChars($project.Name)</title>
7. <meta http-equiv="Content-Type" content="text/html; charset=iso-8859-1">
8. ##The Stylesheet is used to give a uniform appearance to the report.
9. <link rel="stylesheet" href="Optimal Trace.css" type="text/css">
10. </head>
11. <body bgcolor="#FFFFFF" text="#000000">
12. <FONT SIZE=-2>
13. <p><a href="http://www.Optimal Trace.com" target="_blank"><img src="Optimal
Tracelogo.gif" width="162" height="72" border="0"></a></p>
14. ##Tables are used for formatting.
15. <table width="100%" rows="3" border="0" cellpadding = "2">
16. <tr>
17. <td>
18. <table width="100%" border="0" cellspacing="1" class="containment-border">
19. <tr>
20. <td width="100%" ><b><a href="projectdetail.html" target="detailFrame">Project
Details</a></b></td>
21. </tr>
22. <tr></tr><tr></tr><tr></tr><tr></tr><tr></tr><tr></tr><tr></tr><tr></tr><tr></tr><tr></tr>
23. <tr>
24. <td width="100%" ><b>Delivery Increment 1</b></td>
25. </tr>
26. ##Cycle through each package in the project.
27. #foreach($element in $project.getAllUseCasePackages())
28. ##Cycle through each requirement in this package
29. #foreach($usecase in $element.getAllUseCasesInPackages())
30. ##If the custom property matches our requirements
31. #if($usecase.getCustomProperty('Delivery Increment').getValue()=='Increment 1')
32. <tr>
```

```
33. ##Insert a link to that requirement.
34. <td width="100%" ><a href="UseCase${usecase.getId()}.html"
target="detailFrame">$usecase.getDisplayName()</a> in $element.</td>
35. </tr>
36. #end
37. #end
38. #end
39. <tr></tr><tr></tr><tr></tr><tr></tr><tr></tr><tr></tr><tr></tr><tr></tr><tr></tr><tr></tr>
40. <tr>
41. <td width="100%" ><b>Delivery Increment 2</b></td>
42. </tr>
43. ##As above but for a different custom property value
44. #foreach($element in $project.getAllUseCasePackages())
45. #foreach($usecase in $element.getAllUseCasesInPackages())
46. #if($usecase.getCustomProperty('Delivery Increment').getValue()=='Increment 2')
47. <tr>
48. <td width="100%" ><a href="UseCase${usecase.getId()}.html"
target="detailFrame">$usecase.getDisplayName()</a> in $element.</td>
49. </tr>
50. #end
51. #end
52. #end
53. <tr></tr><tr></tr><tr></tr><tr></tr><tr></tr><tr></tr><tr></tr><tr></tr><tr></tr><tr></tr>
54. <tr>
55. <td width="100%" ><b>Delivery Increment 3</b></td>
56. </tr>
57. ##As above but for a different custom property value
58. #foreach($element in $project.getAllUseCasePackages())
59. #foreach($usecase in $element.getAllUseCasesInPackages())
60. #if($usecase.getCustomProperty('Delivery Increment').getValue()=='Increment 3')
61. <tr>
62. <td width="100%" ><a href="UseCase${usecase.getId()}.html"
target="detailFrame">$usecase.getDisplayName()</a> in $element.</td>
63. </tr>
64. #end
65. #end
66. #end
67. <tr></tr><tr></tr><tr></tr><tr></tr><tr></tr><tr></tr><tr></tr><tr></tr><tr></tr><tr></tr>
68. <tr>
69. <td width="100%" ><b>Unspecified Delivery Increment</b></td>
70. </tr>
71. #foreach($element in $project.getAllUseCasePackages())
72. #foreach($usecase in $element.getAllUseCasesInPackages())
73. #if($usecase.getCustomProperty('Delivery Increment').getValue()!='Increment 1' &&
$usecase.getCustomProperty('Delivery Increment').getValue()!='Increment 2' &&
$usecase.getCustomProperty('Delivery Increment').getValue()!='Increment 3' )
74. <tr>
75. <td width="100%" ><a href="UseCase${usecase.getId()}.html"
target="detailFrame">$usecase.getDisplayName()</a> in $element.</td>
76. </tr>
77. #end
78. #end
79. #end
80. <tr></tr><tr></tr><tr></tr><tr></tr><tr></tr><tr></tr><tr></tr><tr></tr><tr></tr><tr></tr>
81. </table>
82. </table>
83. </font>
84. </body>
85. </html>
```

`UseCase.html`:

```
1. #macro (escapeChars $str)
2. #parse ("escapeChars.vm")
3. #end
4. <html>
5. <head>
6. <title>Project: #escapeChars($project.Name)</title>
7. <meta http-equiv="Content-Type" content="text/html; charset=iso-8859-1">
8. <link rel="stylesheet" href="Optimal Trace.css" type="text/css">
9. </head>
10. <body bgcolor="#FFFFFF" text="#000000">
11. <div align="center">
12. <table width="100%" border="0" class="containment-border" cellspacing="1">
13. <tr>
```

```
14. <td width="22%"><b>${velocitySupport.getReadableName("Use Case")} Name</b></td>
15. <td width="78%"><b>#escapeChars($usecase.DisplayName)</b></td>
16. </tr>
17. <tr>
18. <td width="22%"><b>Description</b></td>
19. <td width="78%">#escapeChars($usecase.BusinessDescription)</td>
20. </tr>
21. <tr>
22. <td width="22%"><b>Precondition</b></td>
23. <td width="78%">#escapeChars($usecase.PreCondition)</td>
24. </tr>
25. <tr>
26. <td width="22%"><b>Postcondition</b></td>
27. <td width="78%">#escapeChars($usecase.PostCondition)</td>
28. </tr>
29. <tr>
30. <td width="22%"><b>${velocitySupport.getReadableName("Actors")}</b></td>
31. <td width="78%">#escapeChars($usecase.Actors)</td>
32. </tr>
33. <tr>
34. <td width="22%"><b>Priority</b></td>
35. <td width="78%">#escapeChars($usecase.Priority)</td>
36. </tr>
37. <tr>
38. <td width="22%"><b>Goal Level</b></td>
39. <td width="78%">#escapeChars($usecase.GoalLevel.Name)</td>
40. </tr>
41. <tr>
42. <td width="22%"><b>Trigger</b></td>
43. <td width="78%">#escapeChars($usecase.Trigger)</td>
44. </tr>
45. <tr>
46. <td width="22%"><b>Min. Guarantee</b></td>
47. <td width="78%">#escapeChars($usecase.MinimalGuarantee)</td>
48. </tr>
49. </table>
50. <br>
51. #if ($usecase.getCustomPropertyBucket())
52. #if ($usecase.getCustomPropertyBucket().getCustomProperties().size() >0)
53. <br>
54. <table width="100%" border="0" cellspacing="1" class="containment-border">
55. <tr>
56. <td colspan="3" ><b>${velocitySupport.getReadableName("Use Case")} Custom
Properties</b></td>
57. </tr>
58. <tr>
59. <td width="40%" ><b>Name</b></td>
60. <td width="60%" ><b>Value</b></td>
61. </tr>
62. #foreach ($cp in $usecase.getCustomPropertyBucket().getCustomProperties())
63. <tr>
64. <td width="40%" >#escapeChars($cp.Name)</td>
65. <td width="60%" >#escapeChars($cp.Value)</td>
66. </tr>
67. #end
68. </table>
69. #end
70. #end
71. <br>
72. #set($dot = ".")
73. #foreach ($scenario in $usecase.Scenarios)
74. <table cellpadding="2" width="100%" class="containment-border" border="0"
cellspacing="1">
75. <tr>
76. <td width="20%"><b>${velocitySupport.getReadableName("Scenario")}:
</b>#escapeChars($scenario.getName())</td>
77. </tr>
78. </table>
79. <table cellpadding="2" width="100%" class="containment-border" border="0"
cellspacing="1">
80. <th align="left">${velocitySupport.getReadableName("Actor")}</th>
81. <th align="left">Name</th>
82. <th align="left">Description</th>
83. <th align="left">${velocitySupport.getReadableName("Branch")} To</th>
84. <th align="left">${velocitySupport.getReadableName("Refinement")}</th>
```

```
#if ($scenario.getSteps().size() >0)
#set ($firstStep = $scenario.getSteps().get(0))
#if ($firstStep.getCustomPropertyBucket())
#if ($firstStep.getCustomPropertyBucket().getCustomProperties().size() >0)
#foreach ($cp in $firstStep.getCustomPropertyBucket().getCustomProperties())
<th align="left">#escapeChars($cp.Name)</th>
#end
#end
#end
#end
#foreach ($step in $scenario.Steps)
<tr>
#if ($step.Actor)
<td>#escapeChars($step.getActor().getName())</td>
#else
<td></td>
#end
<td>$step.Name</td>
<td>#escapeChars($step.Description)</td>
<td>#escapeChars($step.getBranchesAsString(", "))</td>
<td>#escapeChars($step.getRefinementsAsString(", "))</td>
#if ($step.getCustomPropertyBucket())
#if ($step.getCustomPropertyBucket().getCustomProperties().size() >0)
#foreach ($cp in $step.getCustomPropertyBucket().getCustomProperties())
<td align="left">#escapeChars($cp.Value)</td>
#end
#end
#end
</tr>
#end
</table>
<br>
#end
<br>
<table width="100%" border="0" class="containment-border" cellspacing="1">
<tr>
<td colspan="2"><b>${velocitySupport.getReadableName("NoteBucket")}</b></td>
</tr>
<tr>
<td width="25%"><b>Subject</b></td>
<td width="75%"><b>${velocitySupport.getReadableName("External Link")}</b></td>
</tr>
#foreach ($note in $usecase.Notes)
<tr>
<td width="25%">#escapeChars($note.Subject)</td>
<td width="75%">#escapeChars($note.Name)</td>
</tr>
#end
</table>
<br>
#set ($numCols = 3)
#if ($usecase.getNonFunctionalRequirements().size() > 0)
#set ($n = $usecase.getNonFunctionalRequirements().get(0))
#if ($n.getCustomPropertyBucket())
#set ($numCols = $numCols +
$n.getCustomPropertyBucket().getCustomProperties().size())
#end
#end
<table width="100%" border="0" class="containment-border" cellspacing="1">
<tr>
<td colspan="$numCols" ><b>${velocitySupport.getReadableName("NFRBucket")}</b></td>
</tr>
<tr>
<td><b>Category</b></td>
<td><b>${velocitySupport.getReadableName("Non-Functional Requirement")}</b></td>
<td><b>Priority</b></td>
#if ($usecase.getNonFunctionalRequirements().size() > 0)
#set ($n = $usecase.getNonFunctionalRequirements().get(0))
#if ($n.getCustomPropertyBucket())
#foreach ($cp in $n.getCustomPropertyBucket().getCustomProperties())
<td><b>#escapeChars($cp.getName())</b></td>
#end
#end
#end
</tr>
```

```
159. #foreach ($nfr in $usecase.NonFunctionalRequirements)
160. <tr>
161. <td>#escapeChars($nfr.Category)</td>
162. <td>#escapeChars($nfr.Name)</td>
163. <td>#escapeChars($nfr.Priority)</td>
164. #if ($nfr.getCustomPropertyBucket())
165. #foreach ($cp in $nfr.getCustomPropertyBucket().getCustomProperties())
166. <td>#escapeChars($cp.getValue())</td>
167. #end
168. #end
169. </tr>
170. #end
171. </table>
172. </div>
173. </body>
174. </html>
```

By running the report and seeing what the output yields you should be able to correlate each area of script with the relevant lines. Of note in this script is how custom properties are enumerated for each Optimal Trace element. Additionally, the use of the call **`getReadableName()`** in order to resolve *readable* names of core Optimal Trace elements. For example, from the Optimal Trace metamodel perspective, the type of a structure requirement is codified as a class called *UseCase* however it's actual readable name is called *Requirement*. Lets consider some specifics:

- Line 14: This is an example of the **`getReadableName()`** call. In this instance it returns the word `Requirement` hence the heading text becomes **Requirement Name**. Additional examples of this call being made can be found in Line(s): 30, 56, 76, 80, 83, 84, 121, 125, 144 & 148.
- Line 51 thru 70: This section of script is responsible for outputting the custom fields for the Structured Requirement (Use Case). Lines 56 thru 60 sets up the heading area while the remaining lines iterate through each custom property outputting the values of each in turn.

Figure 8. Custom Properties Example

- Line 80 thru 94: This section sets up the headings of the steps such that step name, description etc. are output as the first row of a table. Additionally since steps also have custom properties, we iterate through the custom properties to output each name.
- Line 95 thru 112: This section now outputs the values for each step including a loop that outputs each custom property value. Save these in the `htmlgen\Example Report 3` directory.

Profile.xml Structure

The structure of the `profile.xml` file is common to both reports and exports. For the purposes of this section, an export profile has been used, but all of this is relevant to the report profile.

Table 1. Profile.xml Structure

Syntax	Description
`<TextGenProfile Id="ST282810241458958" TimeStamp="1014065346295">`	**`<TextGenProfile>`** controls aspects such as how this report will surface in Optimal Trace. (All profile data must be between the **`< TextGenProfile >`** and **`</ TextGenProfile >`** tags.)
`<DynAttributes> <DynAttribute Name="Position" TimeStamp="1014065346295" Type="java.lang.Integer" Value="3"/>`	This sets position that this export will appear in the list of available exports. If this position is occupied the export will be placed in the closest location available.
`<DynAttribute Name="Description" TimeStamp="1014065346275" Type="java.lang.String" Value="Export to CSV format with Actor usage content."/>`	The export description as seen in Optimal Trace.
`<DynAttribute Name="Name" TimeStamp="1014065346275" Type="java.lang.String" Value="Text Actor Usage Export"/>`	The export name as seen in Optimal Trace.
`<DynAttribute Name="isReadOnly" TimeStamp="1014065346275" Type="java.lang.Boolean" Value="false"/>`	Deprecated - (but required entry).
`<DynAttribute Name="isLocked" TimeStamp="1014065346275" Type="java.lang.Boolean" Value="false"/>`	Deprecated - (but required entry).
`<DynAttribute Name="OutputDirectory" TimeStamp="1014065346295" Type="java.lang.String" Value=""/>`	This sets the output directory for the export or report. Leaving this blank will output to the default directory: `<Optimal Trace Install Directory>\projects\exports`. Specifying a folder will (if the folder listed does not exist) create the folder in the `<Optimal Trace Installation Directory>\projects\exports` folder.
`<DynAttribute Name="OutputFileName" TimeStamp="1014065346295" Type="java.lang.String" Value="ActorUsage.csv"/>`	This sets the file name for the generated export (reports are commonly called `index.html`). This is also the name of the file that will be opened when **Open** is clicked after export/report generation.
`<DynAttribute Name="ExternalLinkName" TimeStamp="1014065346295" Type="java.lang.String" Value="Actor Useage Report - TEXT"/>`	This sets the name of the link if you check the **Add Link to Project** option on export/report.

Syntax	Description
`</DynAttributes>`	Close DynAttributes.
`<TextGenTemplate Id="ST282810400007383" TimeStamp="1014065346285">`	The <TextGenTemplate> points at the specific velocity template containing the script. This is what will be used to generate the body of the export.
`<DynAttributes>`	Start DynAttributes.
`<DynAttribute Name="Name" TimeStamp="1014065346285" Type="java.lang.String" Value="TextReport"/>`	This sets the name of the export when it is shown in Optimal Trace.
`<DynAttribute Name="IsActivityDiagramNeeded" TimeStamp="1014065346285" Type="java.lang.Boolean" Value="false"/>`	Reports only and reserved for future usage
`<DynAttribute Name="IsUseCaseDiagramNeeded" TimeStamp="1014065346285" Type="java.lang.Boolean" Value="false"/>`	This setting is used only for Reports. For exports it should always be set to **`off`**. It specifies whether the generation process creates a hot-spotted graphic representing the Requirements Map. **NOTE** Setting this to 'on' for reports may result in a long duration generation process especially for more complex projects.
`<DynAttribute Name="Description" TimeStamp="1014065346285" Type="java.lang.String" Value="CSV file template for Project"/>`	This gives a description of this file.
`<DynAttribute Name="OutputFileName" TimeStamp="1014065346285" Type="java.lang.String" Value="ActorUsage.csv"/>`	This sets the file name for this template. In the case of a report that contains multiple templates they must all have different names.
`<DynAttribute Name="AdditionalFilesToCopy" TimeStamp="1014065346285" Type="java.lang.String" Value=""/>`	This is only applicable to Reports. In the case of reports, css, graphics and other additional files may be required in the destination directory. Use this setting to specify these files. Company Logos are common examples which are specified when customizing reports.
`<DynAttribute Name="isLocked" TimeStamp="1014065346285" Type="java.lang.Boolean" Value="false"/>`	Deprecated - (but required entry)
`<DynAttribute Name="ContextObject" TimeStamp="1014065346285" Type="java.lang.String" Value="Project"/>`	This specifies the Context (or Object Type) for the Velocity script. The effect of this is that the ContextVariableName below exposes that object

Syntax	Description
	type. Only adjust this value for subsidiary outputs. E.g. creating a list of detailed Requirements that will be linked to from the main report page. For more information, see Custom Property Report [p. 25].
`<DynAttribute Name="TemplateFileName" TimeStamp="1014065346285" Type="java.lang.String" Value="export/Usage/Usage.vm"/>`	This points to the template to be used with this profile.
`<DynAttribute Name="ContextVariableName" TimeStamp="1014065346285" Type="java.lang.String" Value="project"/>`	This is the initial variable that Velocity script files will use to access the ContextObject. This setting and the `ContextObject` setting must be synchronized. For more information, see Custom Property Report [p. 25].
`<DynAttribute Name="isReadOnly" TimeStamp="1014065346285" Type="java.lang.Boolean" Value="false"/>`	Deprecated - (but required entry)
`</DynAttributes> </TextGenTemplate> </TextGenProfile>`	Close all open tags.

Microsoft Word Generation

The Velocity text generation mechanism is quite different to the mechanism that Optimal Trace uses to generate MS Word documents. Although similar in concept, in that they use 'Document Profiles', they both use very different architectures internally. The reason for this is primarily that the MS Word generation is XML based using hidden embedded text in the generated document as it is necessary for users to be able to round-trip Word documents using this mechanism. The Report and Export mechanism outlined is *one-way*, i.e. a user cannot reverse any content generated. For more information on developing custom MS Word document profiles, see *The Optimal Trace Online Help*.

CHAPTER 4

Optimal Trace API

The Optimal Trace API uses the naming convention of appending *Ifc* onto each class that represents an interface, so for example `ProjectIfc` is the name of the Project interface class.

AbstractRequirementIfc

An abstract requirement is not a concrete object itself, instead it can be viewed as a base class of both UseCaseIfc (i.e. Structured Requirement) and SimpleRequirementIfc.

Velocity Sample:

```
$ar.getAllAbstractSteps()
$ar.getRefinements()
```

Table 2. AbstractRequirementIfc Members

Name	Type	Description
`getAllAbstractSteps()`	`List`	Get all the AbstractSteps in this requirement. If a structured requirement, returns the steps in the main scenario and all other scenarios.
`getBusinessDescription()`	`String`	Get the BusinessDescription.
`getDisplayName()`	`String`	Get the AbstractRequirement's display name.

AbstractStepIfc

An abstract step is the common ancestor of both a step and an item. Concrete instances of this class do not exist, instead they are instances of StepIfc or ItemIfc.

Velocity sample:

```
$absstep.getDescription()
#if($absstep.getRefinements().size()>0)
```

```
$absstep.getRefinementsAsString()
#end
```

Table 3. AbstractStepIfc Members

Name	Type	Description
`getDescription()`	`String`	Get the Step/Item description.
`getName()`	`String`	Get the name.
`getParentUseCase()`	AbstractRequirementIfc [p. 39]	Gets the parent requirement. Note this may be either a simple or structured requirement.
`getRefinements()`	`List`	Get a list of `RefinementIfcs` for this Step/Item.
`getRefinementsAsString()`	`String`	Get the Refinements for this Step/Item as a String
`isCircularRefinement(RefinementIfc Refinement)`	`Boolean`	This checks for a circular refinement as specified in the Requirements.
`isRefiningToSelf(AbstractRequirementIfc req)`	`Boolean`	This checks if a refinement is being made to the requirement that contains this Step/Item.
`getCustomProperty(java.lang.String customPropertyName)`	CustomPropertyIfc [p. 42]	Get the CustomPropertyIfc [p. 42] with name `customPropertyName`. e.g. **`$step.getCustomProperty('Business Validation').getValue()`**
`getCustomPropertyBucket()`	CustomPropertyBucketIfc [p. 43]	Get the Custom Property holder object for this Project.
`isAlreadyRefinedToUseCase (AbstractRequirementIfc req)`	`Boolean`	Checks if a refinement to the passed requirement already exists in the Step/Item.

ActorIfc

Velocity example:

```
#foreach($step in $usecase.getAllSteps())
$step.getActor().getDefinition()
<br>
#end
```

Table 4. ActorIfc Members

Name	Type	Description
`getCustomProperty(java.lang.String customPropertyName)`	CustomPropertyIfc [p. 42]	Get the CustomPropertyIfc [p. 42] with name `customPropertyName`. e.g.

Name	Type	Description
		`$actor.getCustomProperty('Custom Property').getValue()`
`getCustomPropertyBucket()`	CustomPropertyBucketIfc [p. 43]	Get the Custom Property holder object for this Project.
`getDefinition()`	`String`	Gets the definition for this ActorIfc
`getName()`	`String`	Gets the name.

ActorListIfc

Table 5. ActorListIfc Members

Name	Type	Description
`getActors()`	`List`	Returns the list of ActorIfc [p. 40] objects in the list.

AlternativeScenarioIfc

Velocity example:

```
#foreach($scenario in $usecase.getScenarios())
#if($scenario.getTypeId()=='AlternativeScenario')
$scenario.getDisplayName()
<br>
#end
#end
```

Table 6. AlternativeScenarioIfc Members

Name	Type	Description
`getAlternativeScenarioNumber()`	`Int`	Gets the Scenario number.
`getDisplayName()`	`String`	Gets the Scenario name to display.
`getDisplayNumber()`	`String`	Gets the Scenario number to display.
`getName()`	`String`	Gets the name.

BoundPropertyValueBucketIfc

Velocity example:

```
$BoundPropertyValueBucket.getBoundPropertyValues()
$BoundPropertyValueBucket.getTypeId()
```

Table 7. BoundPropertyValueBucketIfc Members

Name	Type	Description
getBoundPropertyValues()	List	Get a list of BoundPropertyValues.

BoundPropertyValueIfc

Table 8. BoundPropertyValueIfc Members

Name	Type	Description
getName()	String	Get the name.
getValue()	String	Get the value of this BoundPropertyValue.

BranchIfc

Velocity example:

```
#foreach ($Branch in $Step.getBranches())
$Branch.getCondition()<br>
#end
```

Table 9. BranchIfc Members

Name	Type	Description
getBizObjectIfc()	BizObjectIfc	Get the BizObject that is the target of this branch (either a StepIfc [p. 49], or a UseCaseIfc [p. 50])
getCondition()	String	Get the Condition for this branch.
getStep()	StepIfc [p. 49]	Get the StepIfc [p. 49] that is the source of this branch.
isOptional()	Boolean	Return whether this is an optional branch.

CustomPropertyIfc

Velocity example:

```
#foreach($customproperty in $usecase.getCustomPropertyBucket().getCustomProperties())
$customproperty.getValue()
<br>
#end
```

Table 10. CustomPropertyIfc Members

Name	Type	Description
`getAllowedBoundPropertyValues()`	`List`	Returns the list of allowed values for this custom property.
`getBoundPropertyValue()`	BoundPropertyValueIfc [p. 42]	This returns what the BoundValue is.
`getFreeformValue()`	`String`	
`getName()`	`String`	Gets the name.
`getValue()`	`String`	Gets the value of this CustomProperty
`getValueType()`	`String`	Gets what type of value this Custom Property has: `BOUND_VALUE` or `FREEFORM_VALUE`.
`isBound()`	`Boolean`	Returns whether or not this Custom Property is bound.

CustomPropertyBucketIfc

Velocity example:

```
$usecase.getCustomPropertyBucket().getCustomProperties()
#end
```

Table 11. CustomPropertyBucketIfc Members

Name	Type	Description
`getCustomProperties()`	`List`	Get a List of the CustomProperties in this CustomPropertyBucket.
`getCustomPropertyForTemplate (CustomPropertyTemplateIfc template)`	CustomPropertyIfc [p. 42]	Get the Custom Property for the Custom Property Template.
`hasCustomProperties()`	`Boolean`	Returns whether or not there are any CustomProperties in this CustomPropertyBucket.

CustomPropertyTemplateIfc

Velocity example:

```
#foreach($template in $project.getCustomPropertyTemplatesForType('UseCase'))
$template.getDefinition()
<br>
#end
```

Table 12. CustomPropertyTemplateIfc Members

Name	Type	Description
getAllowedBoundPropertyValues()	List	Get a list of the allowed bound property values.
getBoundPropertyValueBucket()	BoundPropertyValueBucketIfc [p. 41]	Get the list of bound custom properties.
getDefaultBoundPropertyValue()	BoundPropertyValueIfc [p. 42]	Get the default bound property value.
getDefaultFreeformValue()	String	Get the default Freeform value.
getDefaultValue()	String	Get the default value.
getDefinition()	String	Get the definition.
getName()	String	Get the name.
isBound()	Boolean	Get whether or not this is bound.

CustomPropertyTemplatesMapIfc

Velocity example:

```
$CustomPropertyTemplatesMap.getCustomPropertyHolderTypes()
$CustomPropertyTemplatesMap.getCustomPropertyTemplateLists()
```

Table 13. CustomPropertyTemplatesMapIfc Members

Name	Type	Description
getCustomPropertyHolderTypes()	Set	A custom property holder is an object that can contain custom (read only) CustomPropertyHolder properties. These objects are currently UseCase, Step, Package, Project, NFR.
getCustomPropertyTemplateListForType (String type)	CustomPropertyTemplatesListIfc	Get the CustomPropertyTemplateList associated with a Type.
getCustomPropertyTemplateLists()	List	Get all the CustomPropertyLists.
getTypeIdForTemplateList (CustomPropertyTemplateListIfc child)	String	Given a descriptive name return the typeid for the type this custom attribute list is used for.

DictionaryDefIfc

Velocity example:

```
#foreach ($Def in $project.getGlossary().getDictionaryDefs())
$Def.getDefinition()<br>## Displays each definition in the glossary on a new line.
#end
```

Table 14. DictionaryDefIfc Members

Name	Type	Description
`getReadableName()`	`String`	Get the name of the Glossary item
`getDefinition()`	`String`	Gets the Glossary Item definition

GlossaryIfc

Velocity example:

```
$project.getGlossary().getDictionaryDefs()
```

Table 15. GlossaryIfc Members

Name	Type	Type
`getDictionaryDefs()`	`List`	Get a list of all Glossary Items in the glossary (as DictionaryDefIfc [p. 45] objects).

GoalLevelIfc

Velocity example:

```
$usecase.getGoalLevel().getName()
```

Table 16. GoalLevelIfc Members

Name	Type	Description
`getDescription()`	`String`	Gets the description.

ItemIfc

`ItemIfc` also inherits all the methods of AbstractStepIfc [p. 39].

```
$item.getName()
```

Table 17. ItemIfc Members

Name	Type	Description
`getDisplayNumber()`	`String`	Returns the number of the item as displayed in the Optimal Trace tool.

ItemListIfc

`ItemListIfc` is a list holder which is used to retrieve items from a simple requirement.

Velocity example:

```
$iList.getItems()
```

Table 18. ItemListIfc Members

Name	Type	Description
`getItems()`	`List`	Returns a regular list of the ItemIfc [p. 45] in the item list.

NFRBucketIfc

Velocity example:

```
$usecase.getNFRBucket().getNonFunctionalRequirements()
```

Table 19. NFRBucketIfc Members

Name	Type	Description
`getNonFunctionalRequirements()`	`List`	Get a list of all NonFunctionalRequirements in this NFRBucket.

NoteBucketIfc

Velocity example:

```
$project.getNoteBucket().getNotes()
```

Table 20. NoteBucketIfc Members

Name	Type	Description
`getNotes()`	`List`	Get a list of all notes in this NoteBucket.

ProjectIfc

Velocity sample:

```
$project.getName()
#if($project.getAllUseCasePackages().size()>0)
$project.getCreationDateAsString()
#end
```

Table 21. ProjectIfc Members

Name	Type	Description
`getActorList()`	ActorListIfc [p. 41]	Get the list of Actors participating in this Project.

Name	Type	Description
`getAllUseCasePackages()`	`List`	Get all of the UseCasePackageIfc [p. 53] in a Project.
`getCreationDate()`	`Long`	Get the date on which the Project was created.
`getCreationDateAsString()`	`String`	Get the date on which the Project was created as a String.
`getCustomPropertyTemplatesForType()`	`List`	none
`getCustomPropertyTemplatesMap()`	CustomPropertyTemplatesMapIfc [p. 44]	Get the CustomPropertyTemplatesMapIfc [p. 44] for the Project.
`getDisplayName()`	`String`	Get the name to display.
`getGlossary()`	GlossaryIfc [p. 45]	Get the Glossary associated with this Project.
`getGoalLevels()`	GoalLevelIfc [p. 45]	Get the GoalLevels object.
`getLocation()`	`String`	Get location of this Project.
`getLongDescription()`	`String`	Get the value of scopeGoal.
`getName()`	`String`	Get the name.
`getOwner()`	`String`	Get the owner/creator of this Project.
`getTableHolderList()`	`TableHolderListIfc`	Get the `TableHolderListIfc` for this Project.
`getTruncatedLocation()`	`String`	Get the truncated location of this Project.
`getUseCasePackage()`	UseCasePackageIfc [p. 53]	Get the root UseCase Package. (All other packages and UseCases are children of this Package.)
`getVersionLabelCreationDate()`	`Long`	Returns the date at which the version label was applied.
`getVersionLabelDescription()`	`String`	none
`getVersionLabelName()`	`String`	none
`isTemplate()`	`Boolean`	Returns whether or not this is a template.
`getCustomProperty(String customPropertyName)`	CustomPropertyIfc [p. 42]	Get the CustomPropertyIfc [p. 42] with name `customPropertyName`. e.g. **`$project.getCustomProperty('Project Scope').getValue()`**.

Name	Type	Description
getCustomPropertyBucket()	CustomPropertyBucketIfc [p. 43]	Get the Custom Property holder object for this Project.
getLinkBucket()	LinkBucketIfc	Gets the Link holder object for this Project.
getNFRBucket()	NFRBucketIfc [p. 46]	Gets the NFR holder object for this Project.
getNoteBucket()	NoteBucketIfc [p. 46]	Gets the note holder object for this Project.

RefinementIfc

Velocity example:

```
#foreach($step in $usecase.getAllSteps())
#foreach($refinement in $step.getRefinements())
$refinement.getRefinedToUseCase()
<br>
#end
#end
```

Table 22. RefinementIfc Members

Name	Type	Description
getJustification()	String	Get the Justification for this Refinement.
getRefinedFromStep()	StepIfc [p. 49]	Get the Step that this is refined from.
getRefinedToUseCase()	UseCaseIfc [p. 50]	Get the UseCase that this refines to.
isCircularRefinement()	Boolean	This checks for a circular refinement as specified in the Requirements doc.
isFirstCircular()	Boolean	Get the First circular property for this Refinement.
isRefiningToSelf()	Boolean	This checks if a refinement is being made to the use case that contains the refined Step.

ScenarioIfc

Velocity example:

```
#foreach($scenario in $usecase.getScenarios())
$scenario.getSteps()
#end
```

Table 23. ScenarioIfc Members

Name	Type	Description
getName()	String	Gets the name.

Name	Type	Description
`getStep(Integer stepNumber)`	StepIfc [p. 49]	Get Step number `stepNumber`.
`getStepRefinements()`	`List`	Get the list of refinements in the Steps associated with this Scenario.
`getSteps()`	`List`	Get the list of Steps associated with this Scenario.
`appearsInFlowDiagram()`	`Boolean`	Returns whether or not this Scenario appears in the Flow Diagram.

SimpleRequirementIfc

`SimpleRequirementIfc` inherits all of the methods of AbstractRequirementIfc [p. 39].

Velocity example:

```
$simpleReq.getItemList()
```

Table 24. SimpleRequirementIfc Members

Name	Type	Description
`getItemList()`	ItemListIfc [p. 46]	Returns a list object from which the list of ItemIfc objects can be retrieved.
`getTagAndNumber()`	`String`	Returns the tag and simple requirement number for this Simple Requirement as displayed in the Optimal Trace Enterprise application.

StepIfc

StepIfc also inherits all the methods of AbstractStepIfc [p. 39].

Velocity example:

```
$step.getDescription()
#if($step.getBranches().size()>0)
$step.getBranchesAsString()
#end
```

Table 25. StepIfc Members

Name	Type	Description
`getActor()`	ActorIfc [p. 40]	Get the Actor associated with this Step.
`getBranches()`	`List`	Get the branches associated with this Step.
`getBranchesAsString(String separator)`	`String`	Get the branches associated with this Step as a String.

Name	Type	Description
`getPositionNumber()`	`int`	Get the Step number.
`getRefinementToUseCase (UseCaseIfc useCase)`	RefinementIfc [p. 48]	Returns the Refinement that this Step has to a particular use case.
`getStepNumber()`	`Int`	Get the Step number.
`isAlreadyBranched(BizObectIfc bizObject)`	`Boolean`	This checks if a branch already exists to this business object in a Step.
`isCircularBranch(BranchIfc branch)`	`Boolean`	Returns true if the branch points to the Step it came from.
`isCircularRelationship(UseCaseIfc toUseCase)`	`Boolean`	Returns true if the Step branches to its parent use case.
`isSiblingRefinement(UseCaseIfc useCase)`	`Boolean`	Checks for a sibling refinement as specified in the Requirements.

TraceTreeRequirementIfc

Table 26. TraceTreeRequirementIfc Members

Name	Type	Description
`getNumberOfBranches()`	`Int`	Get the number of Branches, zero for TraceTreeRequirements which have been retrieved from simple requirements.
`getNumberOfRefinements()`	`Int`	Get the number of Refinements.
`getRequirement()`	AbstractRequirementIfc [p. 39]	Returns the associated requirement passed to **`VelocitySupport.getTraceTree()`**.

UseCaseIfc

In addition, `UseCaseIfc` also inherits all methods in AbstractRequirementIfc [p. 39].

Velocity example:

```
$usecase.getDisplayName()
$usecase.getBranches()
```

Table 27. UseCaseIfc Members

Name	Type	Description
`getActors()`	`String`	Utility method to get all the Actors associated with a UseCase as a String.
`getAllActors()`	`List`	Utility method to get all the Actors associated with a UseCase as a List.
`getAllSteps()`	`List`	Get all the Steps in all the scenarios for this usecase.
`getAlternativeScenarios()`	`List`	Get a list of AlternativeScenarios.
`getBranches()`	`List`	Gets the list of Branches pointing to this UseCaseIfc.
`getBranchesToUseCases()`	`List`	getBranchesToUseCases()
`getExtendsUseCases()`		Gets a List of UseCases that are extended from this UseCase.
`getFullyQualifiedName()`	`String`	Get the fullied qualified name of the UseCase, i.e. considering all its parent packages.
`getGoalLevel()`	GoalLevelIfc [p. 45]	Get the use case process view level
`getGraphDisplayOption()`	`String`	Utility method to return the UseCase's graph display option. Can be one of: • `SHOW_ALL` • `SHOW_NONE` • `SHOW_MAIN_SUCCESS`
`getIncludesUseCases()`	`List`	Get a List of UseCases that are included from this UseCase.
`getMainSuccessScenario()`	`MainSuccessScenarioIfc`	Get the MainSuccessScenario.
`getMainSuccessScenarioRefinements()`	`List`	Get a list of refinements contained in the main success Scenario of this use case.

Name	Type	Description
getMinimalGuarantee()	String	Gets the notes category
getName()	Int	Get the name.
getNameLength()		NameLength() utility method primarily for use by Velocity reflection as String.length doesn't work well.
getOrigin()	Point2D.Double	Get the Point2D value of the UseCase's origin
getOriginAsString()	String	Get the Point2D value of the UseCase's origin
getOriginX()	Int	OriginX utility method used by Velocity reflection
getOriginY()	Int	OriginY utility method used by Velocity reflection
getPostCondition()	String	Get the post condition for this Use Case
getPreCondition()	String	Get the pre condition for this Use Case
getPriority()	String	Get the use case priority
getRefinements()	List	Get the refinements, if there are any.
getRefinementUseCases()	List	Get a List of UseCases that are refined from this UseCase.
getScenarios()	List	Get the MainSuccess and Alternate scenarios.
getTag()	String	Get the parent package tag.
getTrigger()		Get the trigger for this usecase.
getUseCaseNumber()	String	Get the number associated with the usecase.
getUseCasePackage()	UseCasePackageIfc [p. 53]	Get the use case package that this Use Case belongs to
isLeafUsecase()	Boolean	A leaf use case is a use case that has no more refinements.

Name	Type	Description
isRootUseCase	Boolean	A root use case is a top level use case that is not refined from any other use case
getCustomProperty(java.lang.String customPropertyName)	CustomPropertyIfc [p. 42]	Get the CustomPropertyIfc [p. 42] with name customPropertyName. e.g. $usecase.getCustomProperty('Technical Risk').getValue()
getCustomPropertyBucket()	CustomPropertyBucketIfc [p. 43]	Get the Custom Property holder object for this Project.
getLinkBucket()	LinkBucketIfc	Gets the Link holder object for this Project.
getNFRBucket()	NFRBucketIfc [p. 46]	Gets the NFR holder object for this Project.
getNoteBucket()	NoteBucketIfc [p. 46]	Gets the Note holder object for this Project.
getPositionNumber()	Int	Gets the position number of this Use Case in relation to a RepositionalChildIfc.

UseCasePackageIfc

For historical reasons, the term *UseCase* is still in use in the API. In general, a UseCase is 100% equivalent to a Structured Requirement. The exception to this is UseCasePackage, which is a Requirement Package which may contain both Structured Requirements and Simple Requirements.

Velocity Example

```
#foreach ($req in $Project.getUseCasePackage.getAllRequirementsPackages())
$req<br>
#end
```

Table 28. UseCasePackageIfc Members

Name	Type	Description
getRequirements()	List	Returns a list of AbstractRequirementIfc objects which may be structured or simple requirements.
getAllRequirementsInPackages()	List	Returns all the AbstractRequirementIfc objects in this package and all sub-packages.

Name	Type	Description
`getUseCases()`	`List`	Get all `UseCases` (structured requirements) in this package as a list of `UseCaseIfc` objects.
`getAllUseCasesInPackages()`	`List`	Get all `UseCases` in this package and all sub-packages.
`getUseCase(String name)`	UseCaseIfc [p. 50]	Get the `UseCase` named `name`.
`getSimpleRequirements()`	`List`	Gets all the `SimpleRequirementIfc` objects in this package as a list.
`getAllSimpleRequirementsInPackages()`	`List`	Gets all the `SimpleRequirementIfc` objects in this package and all sub-packages.
`getSimpleRequirement(String name)`	SimpleRequirementIfc [p. 49]	Returns the `SimpleRequirementIfc` named `name`..
`getUseCasePackages()`	`List`	Get all `UseCasePackages` in this package.
`getAllUseCasePackages()`	`List`	Get all the `UseCasePackages` in this Package and all sub-packages.
`getUseCasePackage(String name)`	UseCasePackageIfc	Get the UseCasePackage named `name`.
`getLongDescription()`	`String`	Get the description for this UseCasePackage.

VelocitySupport

This is a convenience class that allows normal parsing and other actions that would require substantial velocity coding (or would not be possible in velocity) to be called directly from velocity script. Additionally this provides specific methods such as 'getTraceTree' that traverse the Optimal Trace metamodel returning more complex results not possible in standard velocity.

Velocity example:

```
$velocitySupport.copyAndReverseList($usecase.getAllSteps())
$velocitySupport.getEnumeration($usecase.getAllSteps())
```

Table 29. VelocitySupport Members

Name	Type	Description
copyAndReverseList	List	This is just a utility method to take a list, make a copy of it and reverse it.
copyList(List src)	List	Just returns a copy of a list. (You cannot instantiate a new list in velocity).
createNewDate()	Date	Returns the current date and time as a java date object.
createNewList()	List	Creates a new empty list object.
createNewMap()	Map	Creates a new map.
createNewRandom()	Random	Creates a random number.
createNewStringTokenizer(String String, String delim)	StringTokenizer	Creates a new java String tokenizer to tokenize the given String with the given delimiter.
getOptimal TraceURL(long bizObjectId)	String	Returns the URL for the object.
getEnumeration(Collection c)	Enumeration	Creates an enumeration from a collection.
getIconFileNameForLink(String link)	String	Returns the filename of the icon used for the specific link. Used for HTML reports where a href needs to reference a specific image based on the type of link.
getInstance()	Static VelocitySupport	Returns an instance of the velocity support class.
getLinkDisplayName(String link)	String	Returns the name of the link.
getReadableName(String type)	String	Returns the actual name of a given core Optimal Trace element. The following is a list of valid strings that can be passed as parameters returning the right-hand value: • Actor=Actor • Actor List=Actor List • Actors=Actors • Alternative Scenario=Alternative Scenario

Name	Type	Description
		• Alternative Scenarios=Alternative Scenario • Branch=Branch • Branches=Branches • DictionaryDefinition=Entry • DictionaryDefinitions=Entries • External Link=Link • Glossaries=Glossaries • Glossary=Glossary • LinkBucket=Links • Main Success Scenario=Main Success Scenario • NFRBucket=NFRs • Non-Functional Requirement=Non-Functional • Note=Note • NoteBucket=Notes • Refinement=Refinement • Refinements=Refinements • Scenario=Scenario • Scenarios=Scenarios • Step=Step • Steps=Steps • Use Case=Requirement • Use Cases=Requirements
`getTraceTree (AbstractRequirementIfc req)`	`TraceTreeRequirementIfc`	Returns the Traceability Tree for a specific requirement.
`isLinkValid(String link)`	`Boolean`	For file based links, this returns whether the link can be resolved to a valid filename.
`reverseList(List l)`	`Void`	Reverses the given list.

APPENDIX A

Blank Profile.xml

This is a blank profile.xml selection. Copy and paste this into a text file and save as "profile.xml". Then edit to create the desired template.

```
<TextGenProfile Id="ST282810241458958" TimeStamp="1014065346295">
<DynAttributes>
<DynAttribute Name="Position" TimeStamp="1014065346295" Type="java.lang.Integer"
Value=""/>
<DynAttribute Name="Description" TimeStamp="1014065346275" Type="java.lang.String"
Value=""/>
<DynAttribute Name="Name" TimeStamp="1014065346275" Type="java.lang.String" Value=""/>

<DynAttribute Name="isReadOnly" TimeStamp="1014065346275" Type="java.lang.Boolean"
Value="false"/>
<DynAttribute Name="isLocked" TimeStamp="1014065346275" Type="java.lang.Boolean"
Value="false"/>
<DynAttribute Name="OutputDirectory" TimeStamp="1014065346295" Type="java.lang.String"
 Value=""/>
<DynAttribute Name="OutputFileName" TimeStamp="1014065346295" Type="java.lang.String"
Value=""/>
<DynAttribute Name="ExternalLinkName" TimeStamp="1014065346295" Type="java.lang.String"
 Value=""/>
</DynAttributes>
<TextGenTemplate Id="ST282810400007383" TimeStamp="1014065346285">
<DynAttributes>
<DynAttribute Name="Name" TimeStamp="1014065346285" Type="java.lang.String" Value=""/>

<DynAttribute Name="IsActivityDiagramNeeded" TimeStamp="1014065346285"
Type="java.lang.Boolean" Value="false"/>
<DynAttribute Name="IsUseCaseDiagramNeeded" TimeStamp="1014065346285"
Type="java.lang.Boolean" Value="false"/>
<DynAttribute Name="Description" TimeStamp="1014065346285" Type="java.lang.String"
Value=""/>
<DynAttribute Name="OutputFileName" TimeStamp="1014065346285" Type="java.lang.String"
Value=""/>
<DynAttribute Name="AdditionalFilesToCopy" TimeStamp="1014065346285"
Type="java.lang.String" Value=""/>
<DynAttribute Name="isLocked" TimeStamp="1014065346285" Type="java.lang.Boolean"
Value="false"/>
<DynAttribute Name="ContextObject" TimeStamp="1014065346285" Type="java.lang.String"
Value="Project"/>
<DynAttribute Name="TemplateFileName" TimeStamp="1014065346285" Type="java.lang.String"
 Value="export/Usage/Usage.vm"/>
<DynAttribute Name="ContextVariableName" TimeStamp="1014065346285" Type="java.lang.String"
 Value="project"/>
<DynAttribute Name="isReadOnly" TimeStamp="1014065346285" Type="java.lang.Boolean"
Value="false"/>
</DynAttributes>
```

```
</TextGenTemplate>
</TextGenProfile>
```

APPENDIX B

Blank html Starter

This is a selection of HTML that can be used to start a HTML report template from scratch.

```
#macro (escapeChars $str)
#parse ("escapeChars.vm")
#end
<HTML>
<head>
<title></title>
<meta http-equiv="Content-Type" content="text/HTML; charset=iso-8859-1">
<link rel="stylesheet" href="Optimal Trace.css" type="text/css">
</head>
<body bgcolor="#FFFFFF" text="#000000">
</body>
</HTML>
```

APPENDIX C

Report and Export List

Table 30. Default Reports

Profile	Directory	Description
General Report	`...\projects\reports\default_HTML`	Generates a frames based Requirements document in HTML format, complete with hyperlinks to all elements of the project.
Tree View Report v1.8	`...\projects\reports\Tree_View_HTML`	Generates a tree view reports used for web publishing.
Swimlane Report	`...\projects\reports\swimlanes_HTML`	This report outputs your project with each Scenario displayed with actors/resources on the vertical axis and the steps correlating with actors on the horizontal. This report is extremely useful for identifying steps with no associated resource and resource oriented gap analysis.
Requirement Template (AC) Report	`...\projects\reports\Use-Case-Cockburn-Style_HTML`	This report outputs any Optimal Trace project with style and terminology from Alistair Cockburn applied. It is also a very useful report to show a very compact HTML-based view of the project.
Actor Usage Report	`...\projects\reports\ResourceUsage_HTML`	Generates an actor oriented report with each actor and the steps it participates in. The intent of the report is to show what actors/resources interact with given steps within the Requirements

Profile	Directory	Description
		and which steps have no actor currently defined. This is very useful for gap analysis and redundant actor identification.
Traceability	`...\projects\reports\TraceabilityReport_HTML`	Generates a report showing all Trace Relationships across the project. The Trace relationships include all refinement, branch and link references. When clicking a given reference the specific element is selected within the Optimal Trace environment.
As Is – To Be Report	`...\projects\reports\As-Is-To-Be-Report_HTML`	Generates a report in HTML format with e.g. current details for administrators (As-Is processes), and projected details for system developers (To-Be processes). The Goal-levels 'As-Is' and 'To-Be' that ship with Optimal Trace are used as discriminators for this report.
Complexity and Completeness Report	`...\projects\reports\Complexity`	Generates a Complexity and Completeness analysis report.

Table 31. Default Export Profiles

Profile	Directory	Description
Text Export	`...\projects\exports`	Export to CSV (Comma-separated) Text File. Generates a report with all the Project details in CSV format. This report is especially good if you wish to output the content of Optimal Trace projects into text editing tools such as notepad or Excel spreadsheets. Since the output is delimited by commas, an Excel worksheet can open the output for manipulation.
MS Project Export	`...\projects\exports`	Generates a report with all the Project details in CSV format (comma delimited text). Using Optimal Trace supplied Mapping Rules this file may then be opened in MS Project.
Text Actor Usage Export	`...\projects\exports`	This report generates CSV based text files (comma delimited text). Generates an actor oriented text output with each actor and the steps it participates in. The intent of the report is to show what actors/resources interact with given steps within the Requirements and which steps have no actor currently defined. This is very useful for gap analysis and redundant actor

Profile	Directory	Description
		identification. An HTML version of this export is available under the **Generation>Generate Reports…** menu option.
Text As Is/To Be Export	`...\projects\exports`	This report generates CSV based text files (comma delimited text). Generates a text output with e.g. current details for administrators (As-Is processes), and projected details for system developers (To-Be processes). The Goal-levels 'As-Is' and 'To-Be' that ship with Optimal Trace are used as discriminators for this export. An HTML version of this export is available under the **Generation>Generate Reports…** menu option.
OptimalJ XMI (UML)	`...\projects\exports`	This report generates an XML file, suitable for use with Compuware Optimal J. The output generated includes: a full listing of Requirements and each object's steps.
Enterprise Architect XMI (UML)	`...\projects\exports`	This report generates an XML file, suitable for use with Sparx Enterprise Architect. The output generated includes: a full listing of Requirements and each object's steps.

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