

APPLICATION NOTE

**Setup MaTeLo models in order to automatically
create test cases name**

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<u>Abstract</u>	This Application Note explains how to name a test case using attributes
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1. Why to use attributes for naming a test case?

In MaTeLo, a test case corresponds to a path of the usage model. To be able to name a test case generated by MaTeLo, the path covered must be known. For that, MaTeLo tool suggests the attributes notion.

During the system modeling, attributes are added to transitions as tags. When generating the test cases, MaTeLo associates attributes of the path in their respective order. After that, the user can now give a preferred name to the test cases basing on their attributes association.

In this application note, the procedure for test case naming based on attributes is presented.

2. Attributes Library Manager Exploration

To create attributes, the attribute library manager must be opened by clicking on the “Project” menu and then “Attributes Library”.

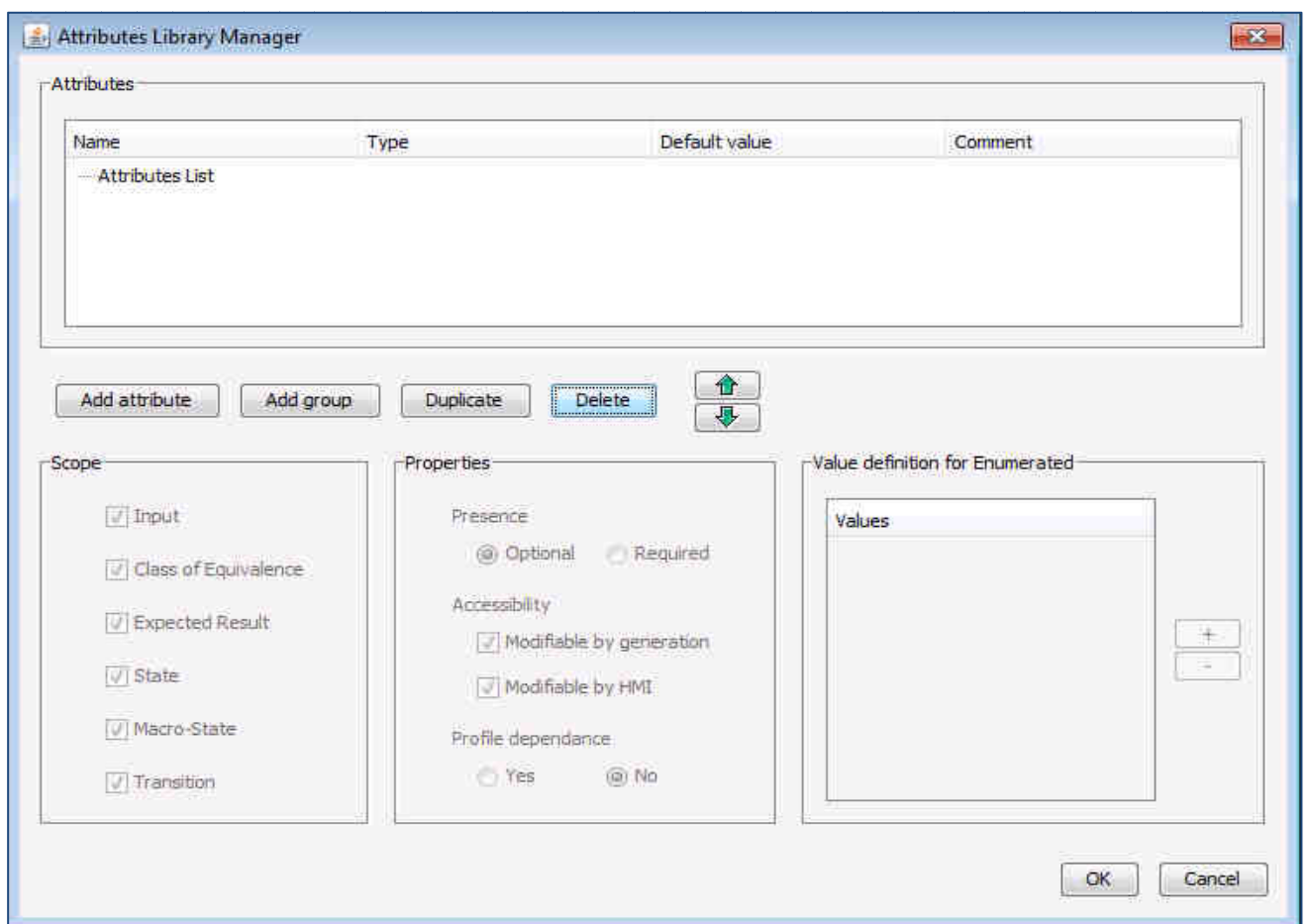


Figure 1: Attributes Library Manager

- **Attributes List:** list of attributes which can be organized by groups.
 - Name: name of an attribute or a group
 - Type: type of an attribute (boolean, charstring, enumerated, integer, float)
 - Default value: the value which is displayed by default on an association
 - Comment: a description of an attribute or a group
- **Scope** : displays the elements of the model on which an attribute can be associated (Input, Class of Equivalence, Expected Result, State, Macro-State and Transition)
- **Properties:** allow to define the properties of an attribute. An attribute has three properties:
 - Presence: the association of an attribute can be required or optional
 - Accessibility: attributes can be changed by MaTeLo HMI or by generation
 - Profile dependency : values configured in association can be dependent of a profile

3. Test case naming

To illustrate the test case naming, a simple example of MaTeLo Model is showed below:

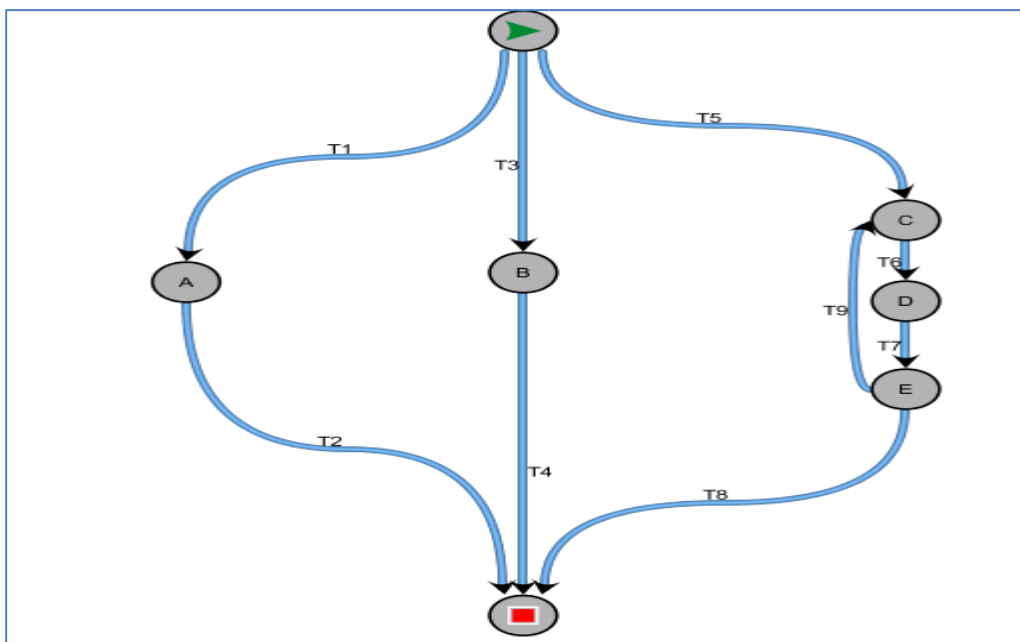


Figure 2: MaTeLo model

The Model has four possible paths from the invoke state to the terminate state:

Path 1: T1-T2

Path 2: T3-T4

Path 3: T5-T6-T7-T8


Path 4 : T5-T6-T7-T9-T6-T7-T8

3.1 Creation of attributes

MaTeLo suggests two kinds of attributes for naming a test case:

- **TestCaseName**: used to name transition from state A to state B. In the example above, the attribute " TestCaseName " can be used for transitions [T1;T2;T3;T4;T5;T6;T7;T8]
- **TestCaseNameLoop**: used to name a loop transition from state B to state A. In the example, it can be used only for the transition T9.

Three attributes (2 TestCaseName and 1 TestCaseNameLoop) can be created for the example presented above:

- Open Attributes library window and click three times on 
- By double clicking on "New attribute" ,rename respectively the three attributes : TestCaseName1, TestCaseName2, TestCaseNameLoop
- Choose charstring as type for the three attributes
- Comments or default value can be created for each attribute

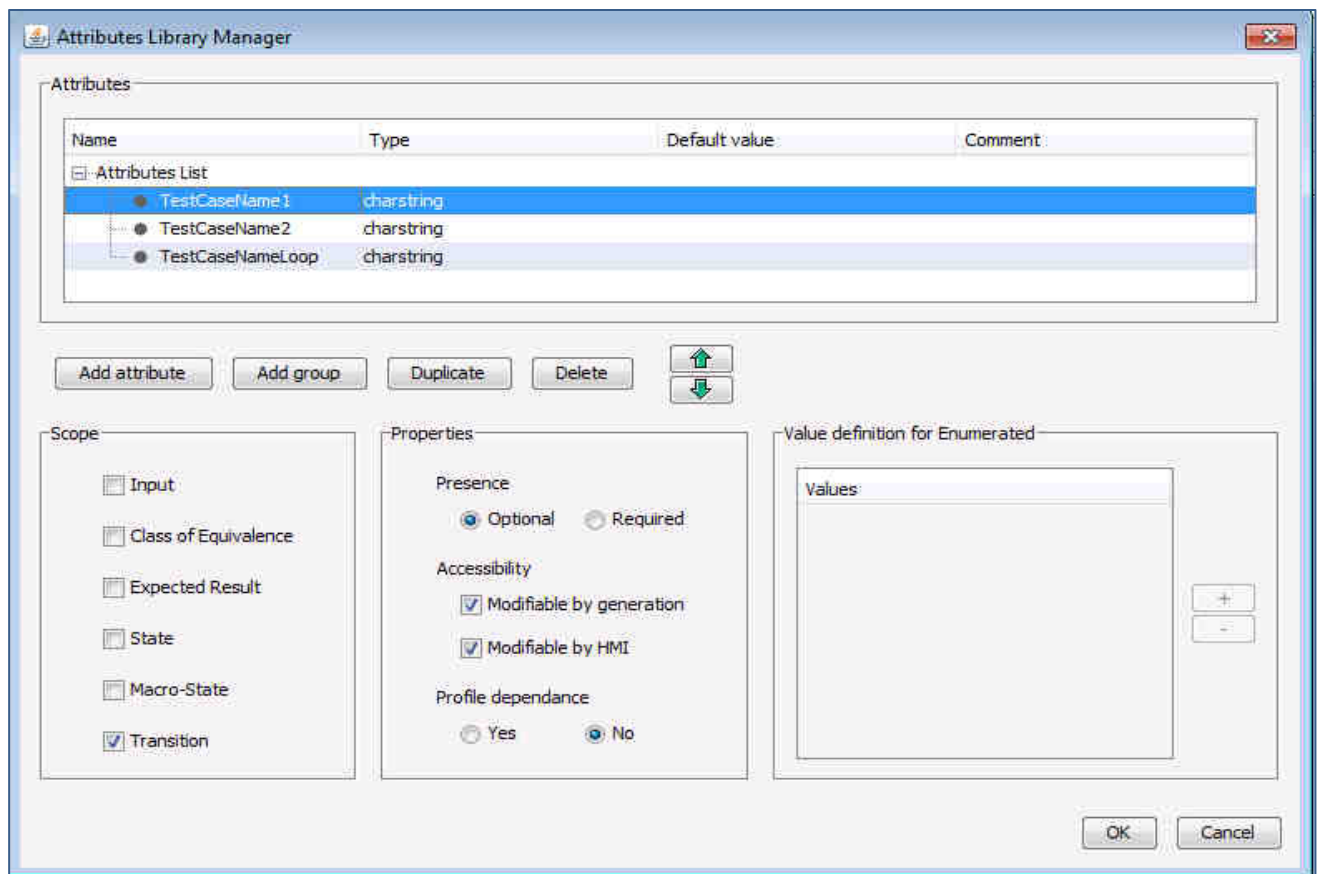


Figure 3: Attributes definition

NB: the number at the end of the attribute name indicates the attribute rank. In a path of the model, an attribute with 1 as rank must be placed more above than the attribute of rank 2.

3.2 Association of attributes on transitions

In the MaTeLo model example, TestCaseName1 will be added on transitions T1, T3 and T5.

To add an attribute on a transition:

- Double click on the transition and displays attribute window:

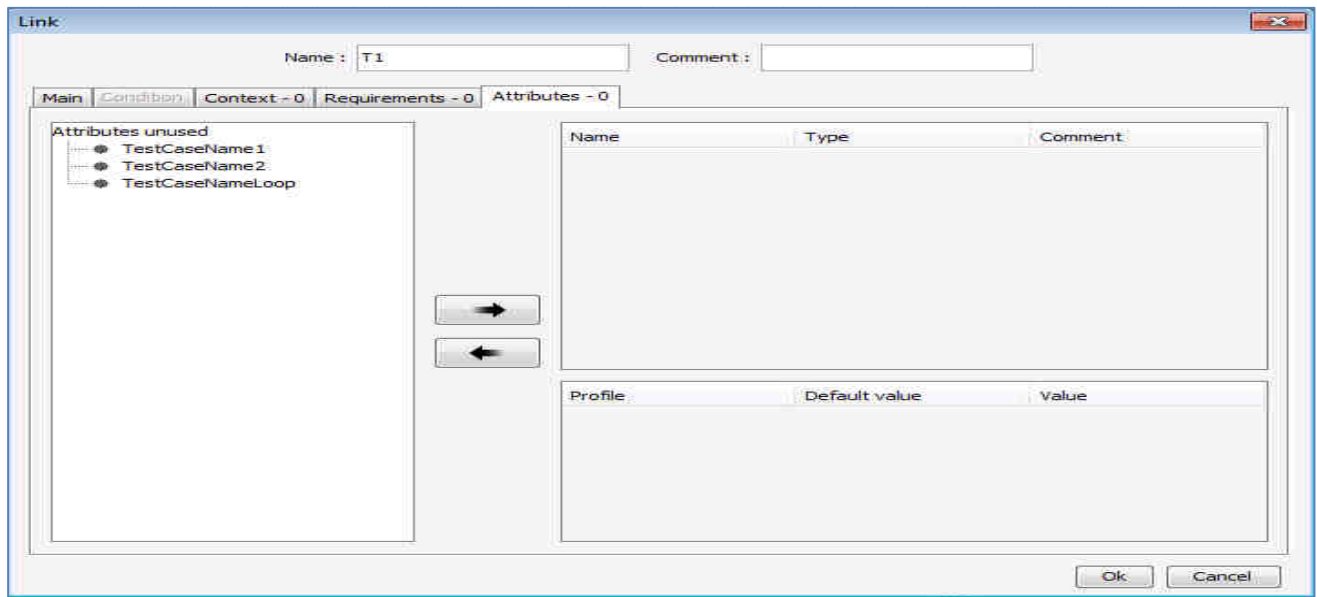



Figure 4: Attributes window

- Use  button or double click on the attribute name "TestCaseName1" to choose it
- Select the TestCaseName chosen and deselect the check box "Default value" and put "T1_" as value for the attribute :

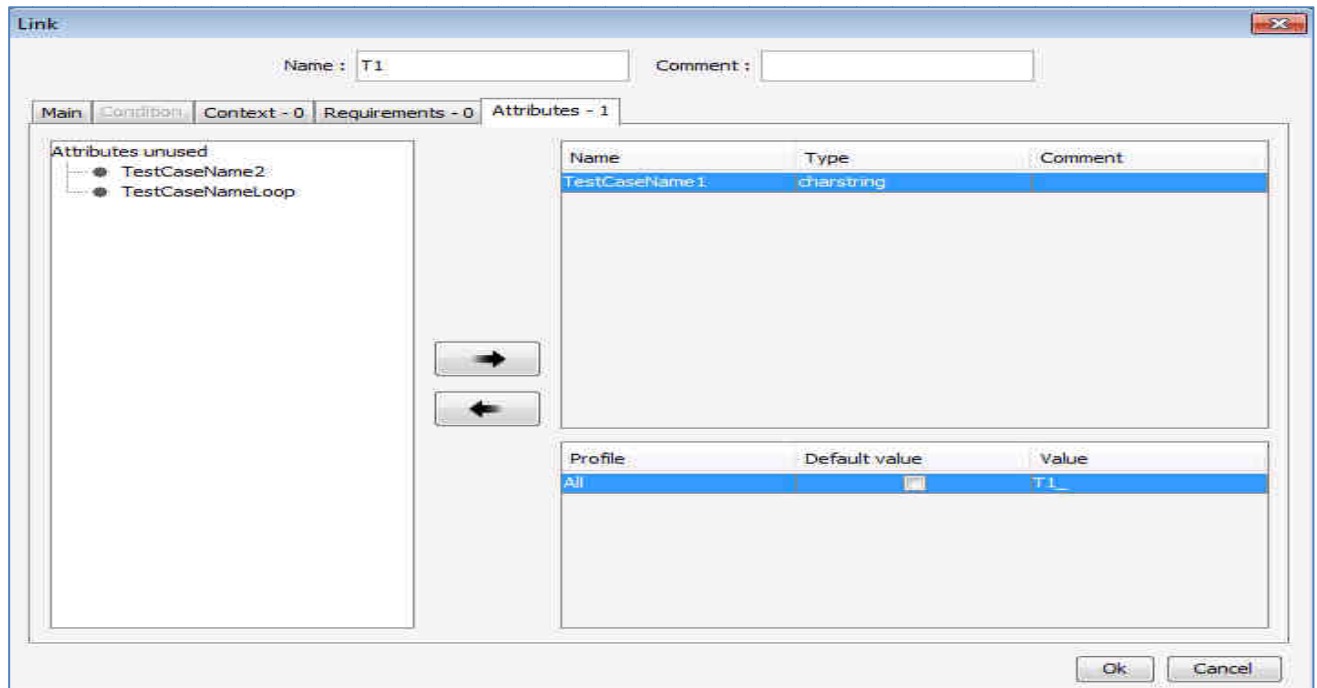


Figure 5: Attribute selection

- Repeat these precedent operations for the transitions T3 and T5.
- For the transition T9, “TestCaseNameLoop” can be added with T9_ as name.
- Then for transitions T2, T4 and T8, “TestCaseName2” can be added with “End” as name.

3.3 Test case generation

In Testor, before test cases generation, TestCaseNaming options can be defined by clicking on “Management” like this:

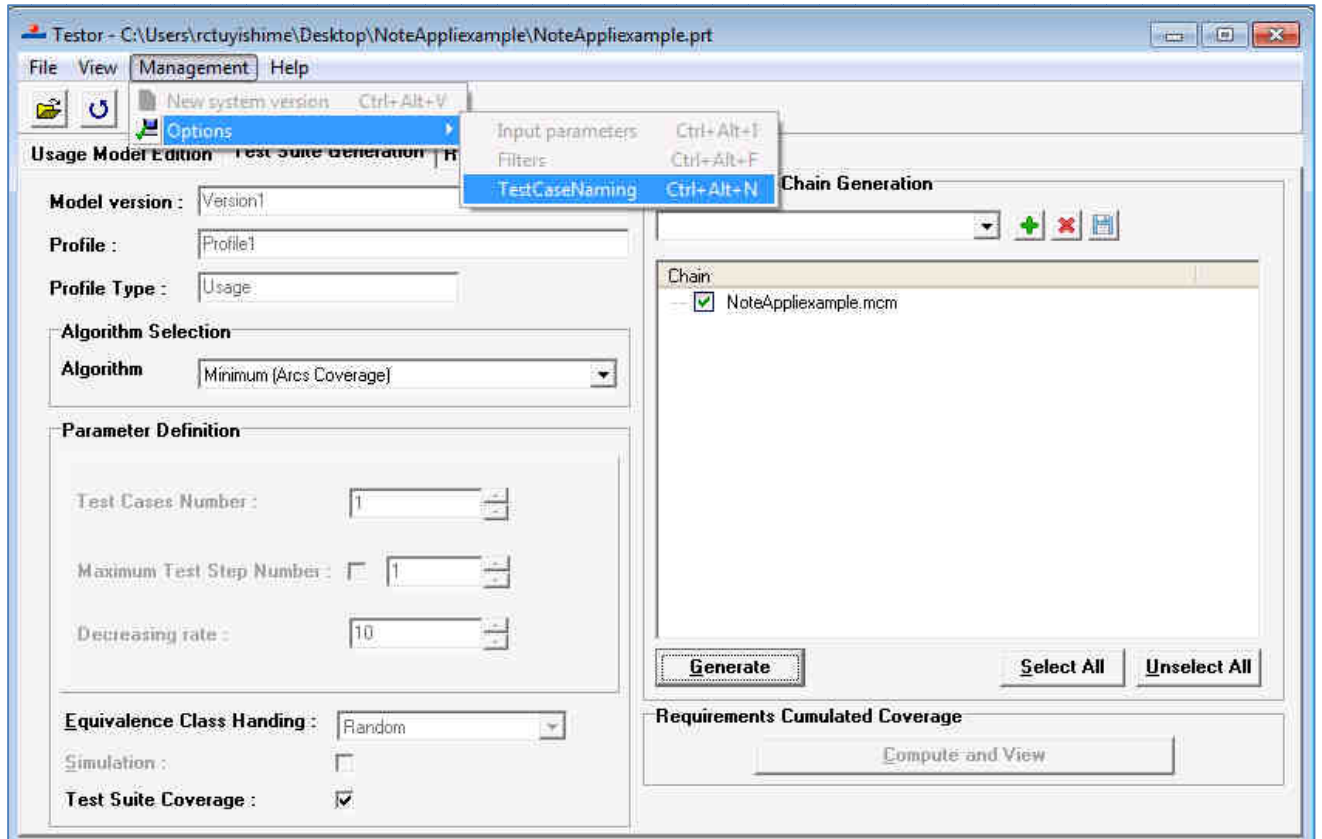


Figure 6: Opening of the Test case naming window

A new window is opened by clicking on “Test Case Naming”:

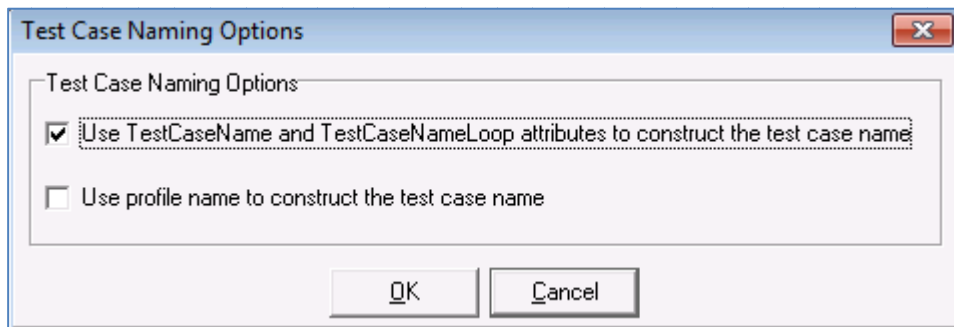


Figure 7: Test case naming options window

- Select “Use TestCaseName and TestCaseNameLoop to construct the test case name” option

When MaTeLo model has different profiles, “Use profile name to construct the test case name” option can be used to construct the test case name

- Now, test cases can be generated with chosen algorithm

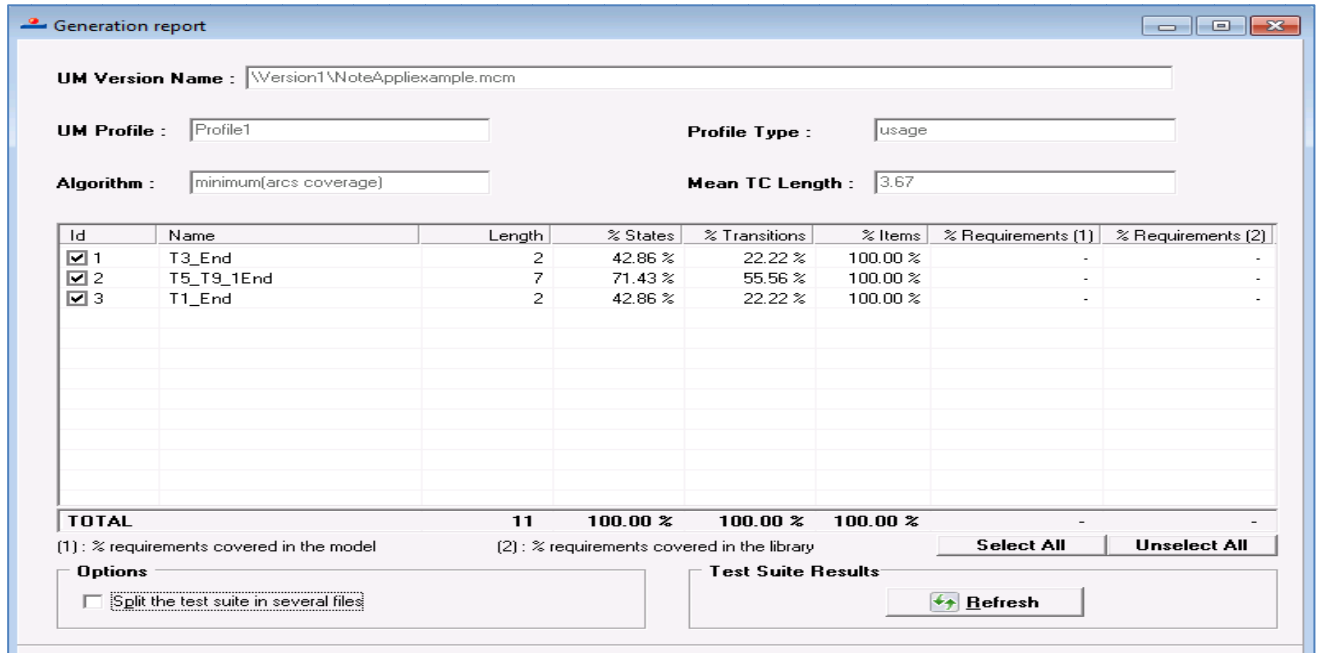


Figure 8: MaTeLo generation report

On this screen shot, path covered by the test case is recognized basing on attributes association displayed in the place of the test case name.

For the Loop transition, number of times that MaTeLo passed on it during the test suite generation is added. In the example presented in this application note, for the second test case generated, MaTeLo passed one time on the transition T9. That is the reason for why figure "1" is added to "T9_" attribute after generation.

The test case name is modifiable in Testor by double clicking on it.

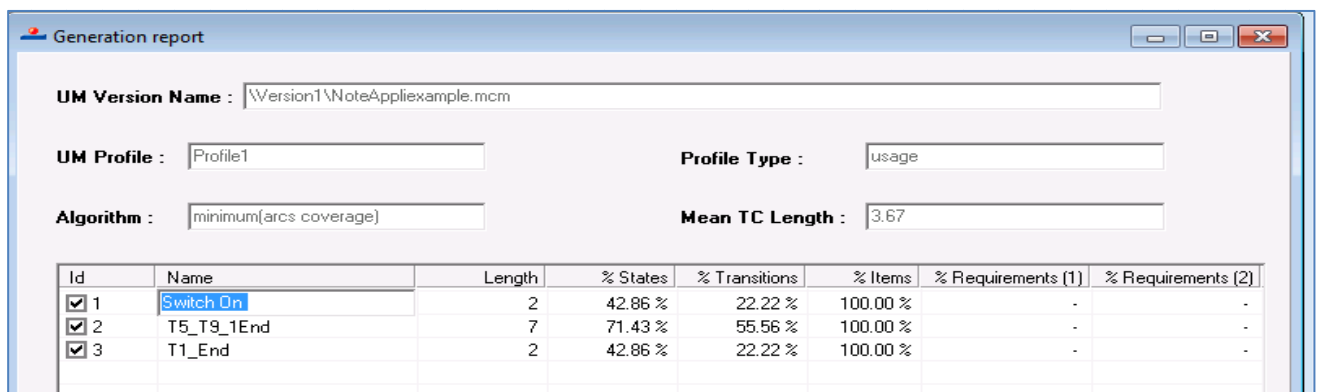


Figure 9: Test case edition

4. Conclusion

As presented in this application note, the test case naming is possible in MaTeLo. For that, Attributes must be defined and affected on the transitions in their respective order. MaTeLo also offers the possibility to modify/edit the test cases generated.

5. Contact and references

If you need more information or need more on this context, feel free to contact ALL4TEC at:

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Wiki MaTeLo:

- Attributes : <http://www.all4tec.net/wiki/index.php?title=Attributes>
- Test Suite Generation tab :
http://www.all4tec.net/wiki/index.php?title=%E2%80%9CTest_Suite_Generation%E2%80%9D_Tab