An approach to improve User Acceptance Testing with Generative AI and RSL – Results, review and validation

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A - Basic scenario

For the basic scenario, generated results that require tool validation (RSL requirements and Robotframework automation script) are presented, with respective correction if necessary.
The corrections were based on the AI assistant's response after including the error as input in the prompt.

1. RSL requirements generation

Below are the sections of the RSL file before and after review. Errors are marked in red and corrections in green.

- System Definitions - Before and after review

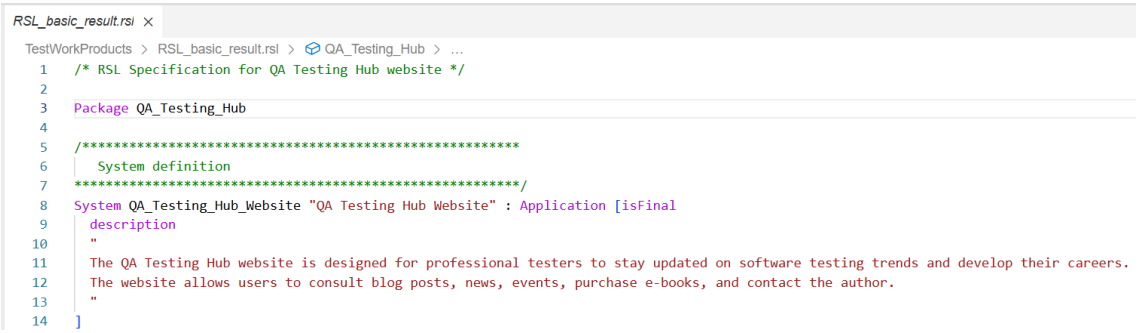


Figure 1. System Definitions section validated.

- Actors – Before and after review

```
15
16  /*********************************************************
17     Actors definition
18  *********************************************************/
19  Actor a_User "User" : User [description "A professional tester navigating the website"]
20  Actor a_Admin "Administrator" : ExternalSystem [description "System Administrator"]
21
```

Figure 2. Actors section validated.

- Events – Before and after review

```
21
22    /*********************************************************
23       Events definition
24    *********************************************************/
25    Event ev_MenuNavigation "Menu Navigation" : Signal [isCatch]
26
```

Figure 3. Events section validated.

- Actions definition – Before and after review

```
26
27    /*******************************************************
28       Actions definition
29    *******************************************************/
30    ActionType a_OpenPage "Open Page" [description "User clicks on a menu link to open a page"]
31    ActionType a_VerifyText "Verify Text" [description "Verify that the correct text is displayed on the opened page"]
32
```

Figure 4. Actions definition section validated.

- Use Cases – Before review

```
32
33    /*******************************************************
34       Use Cases definition
35    *******************************************************/
36    UseCase uc_NavigatePages "Navigate Website Pages" : EntitiesBrowse [
37      primaryActor a_User
38      dataEntity WebsitePages
39      actions a_OpenPage a_VerifyText
40      description "The user navigates through Home, News, E-books, Blog, Events, and Contact pages, confirming that the correct text is displayed."
41    ]
42
```

Figure 5. Actions definition before review.

- Use Cases – After review

```
32
33    /*******************************************************
34       Use Cases definition
35    *******************************************************/
36    UseCase uc_NavigatePages "Navigate Website Pages" : EntitiesBrowse [
37      primaryActor a_User
38      dataEntity WebsitePages
39      actions a_OpenPage, a_VerifyText
40      description "The user navigates through Home, News, E-books, Blog, Events, and Contact pages, confirming that the correct text is displayed."
41    ]
42
```

Figure 6. Actions definition after review.

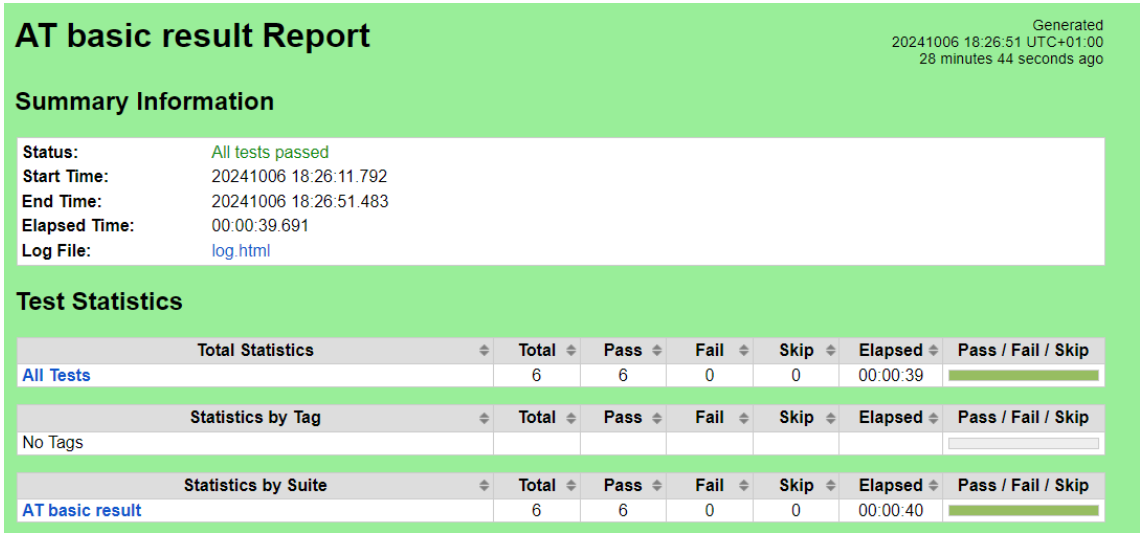
- Data Entities – Before and after review

```
42
43    /*******************************************************
44       Data Entities definition
45    *******************************************************/
46    DataEntity WebsitePages "Website Pages" : Master [
47      attribute PageID : Integer [constraints (PrimaryKey)]
48      attribute PageName : String [constraints (NotNull)]
49      attribute ExpectedText : Text [constraints (NotNull)]
50      description "Represents the website pages, each associated with expected content to validate."
51    ]
52
```

Figure 7. Data Entities validated.

2. Automation script generation – Basic scenario

Below is the evidence of the successful execution of the automation script provided by the AI assistant (**Figure 8** to **Figure 11**).



AT basic result Report

Generated
20241006 18:26:51 UTC+01:00
28 minutes 44 seconds ago

Summary Information

Status:	All tests passed
Start Time:	20241006 18:26:11.792
End Time:	20241006 18:26:51.483
Elapsed Time:	00:00:39.691
Log File:	log.html

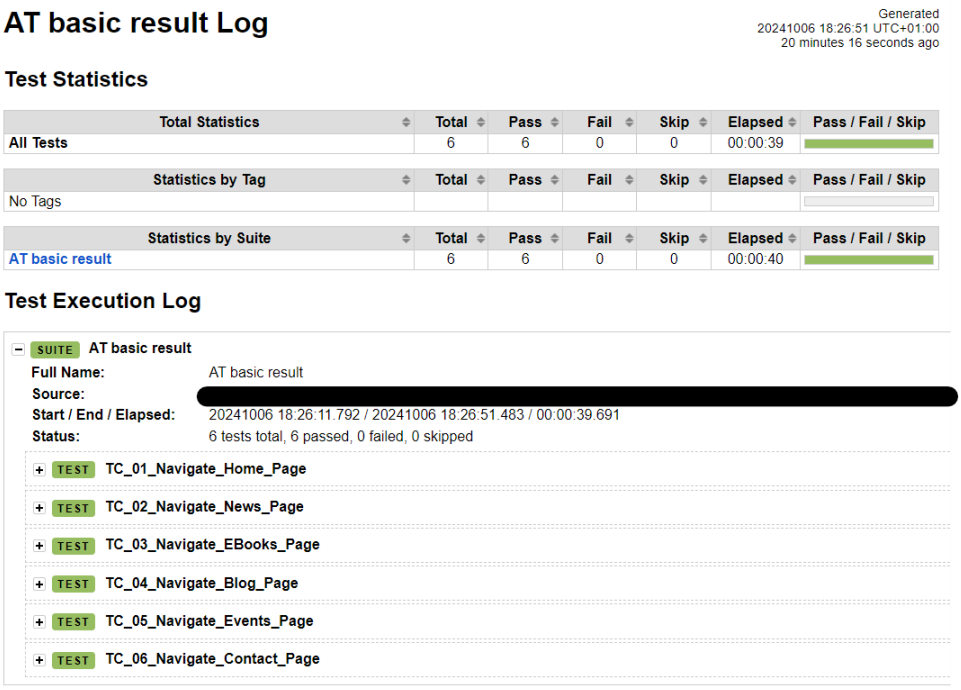
Test Statistics

Total Statistics	Total	Pass	Fail	Skip	Elapsed	Pass / Fail / Skip
All Tests	6	6	0	0	00:00:39	

Statistics by Tag	Total	Pass	Fail	Skip	Elapsed	Pass / Fail / Skip
No Tags						

Statistics by Suite	Total	Pass	Fail	Skip	Elapsed	Pass / Fail / Skip
AT basic result	6	6	0	0	00:00:40	

Figure 8. Successful automation Report.



AT basic result Log

Generated
20241006 18:26:51 UTC+01:00
20 minutes 16 seconds ago

Test Statistics

Total Statistics	Total	Pass	Fail	Skip	Elapsed	Pass / Fail / Skip
All Tests	6	6	0	0	00:00:39	

Statistics by Tag	Total	Pass	Fail	Skip	Elapsed	Pass / Fail / Skip
No Tags						

Statistics by Suite	Total	Pass	Fail	Skip	Elapsed	Pass / Fail / Skip
AT basic result	6	6	0	0	00:00:40	

Test Execution Log

SUITE **AT basic result**

Full Name:	AT basic result
Source:	[redacted]
Start / End / Elapsed:	20241006 18:26:11.792 / 20241006 18:26:51.483 / 00:00:39.691
Status:	6 tests total, 6 passed, 0 failed, 0 skipped

- TEST **TC_01_Navigate_Home_Page**
- TEST **TC_02_Navigate_News_Page**
- TEST **TC_03_Navigate_EBooks_Page**
- TEST **TC_04_Navigate_Blog_Page**
- TEST **TC_05_Navigate_Events_Page**
- TEST **TC_06_Navigate_Contact_Page**

Figure 9. Successful automation Log.

AT_basic_result.robot U

QATestingHub > public > AT_basic_result.robot

```
*** Settings ***
Library    SeleniumLibrary

*** Variables ***
${URL}    https://www.qatesthub.info/
${BROWSER}    edge

*** Test Cases ***
TC_01_Navigate_Home_Page
    Open Browser    ${URL}    ${BROWSER}
    Maximize Browser Window
    Title Should Be    QA Testing Hub
    Page Should Contain    QA Testing Hub
    Close Browser

TC_02_Navigate_News_Page
    Open Browser    ${URL}    ${BROWSER}
    Maximize Browser Window
    Click Link    News
    Page Should Contain    QA News
    Close Browser

TC_03_Navigate_EBooks_Page
    Open Browser    ${URL}    ${BROWSER}
    Maximize Browser Window
    Click Link    E-books
    Page Should Contain    E-books
    Close Browser

TC_04_Navigate_Blog_Page
    Open Browser    ${URL}    ${BROWSER}
    Maximize Browser Window
    Click Link    Blog
    Page Should Contain    Blog
    Close Browser

```

Figure 10. First part of the automation file generated and validated.

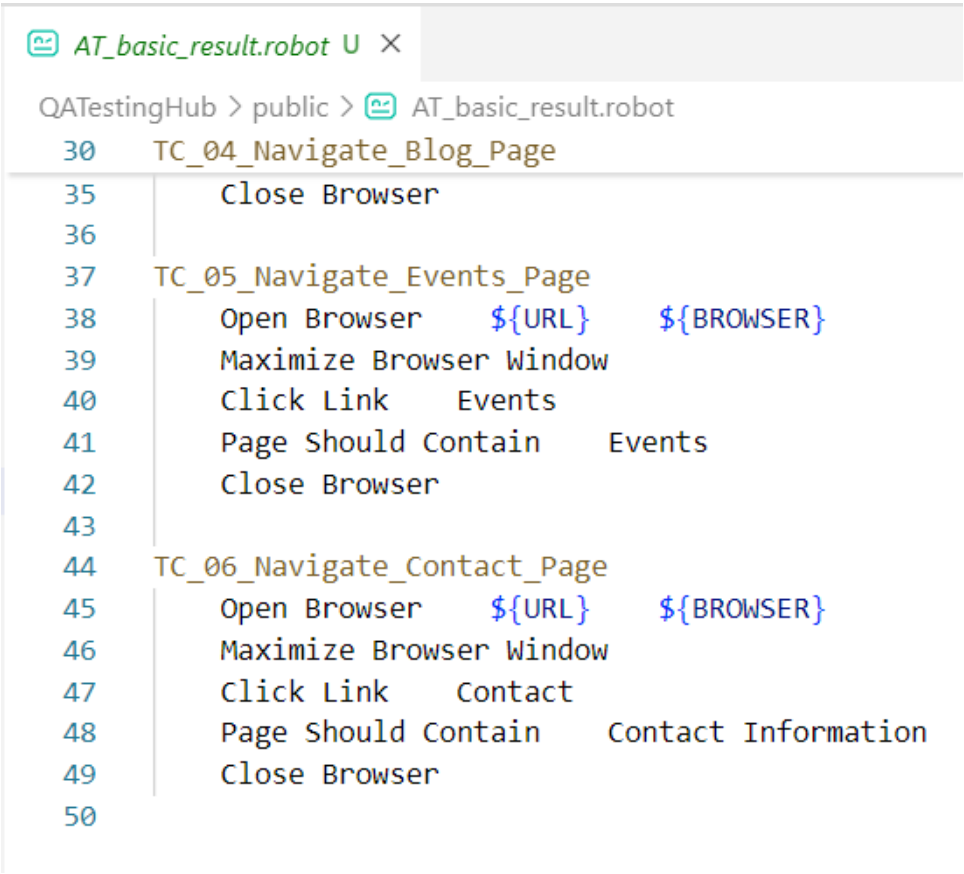


Figure 11. Second part of the automation file generated and validated.