Project Context

The high level idea of **Q-checker** is to provide a means to perform automated checks on Component Requirement Specifications in DOORS Next Generation so that, these Component Specifications can be checked for their quality.

Q-Checker is an application that allows to implement various pre-checks (will be called **scanner(s)** hereafter in this document) that helps in identifying various issues in a Component Specification or a System Specification DNG project areas.

The Q-Checker supports scans for below mentioned solutions.

- **RPE (Rational Publishing Engine)** - The idea here is to have issues identified before starting the publishing of a KLH, so that those issues can be fixed prior to executing RPE so that it goes through smoothly without any problems.

Architecture Overview

Q-Checker is an application that supports implementation of various scanners (pre-checks).

Q-Checker exposes API end point that can be used to trigger all the scanners which will find issues.

Scanner: From the application point of view, a scanner is an individual entity that identifies issues based on some criterion or criteria.

From user's perspective there is only one scan, in other word, user will only be able to scan the Component Specification to find if there are any issues.

Internally in the application, various scanners will be executed to find various types of issues.

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## Detailed steps of Q-Checker configuration and working

Step 1: Open any project area in RM/DNG , expand the "Mini Dashboard" icon at the top left corner and follow the order mentioned in below screenshot to add the "Q-Checker" widget onto your mini dashboard.
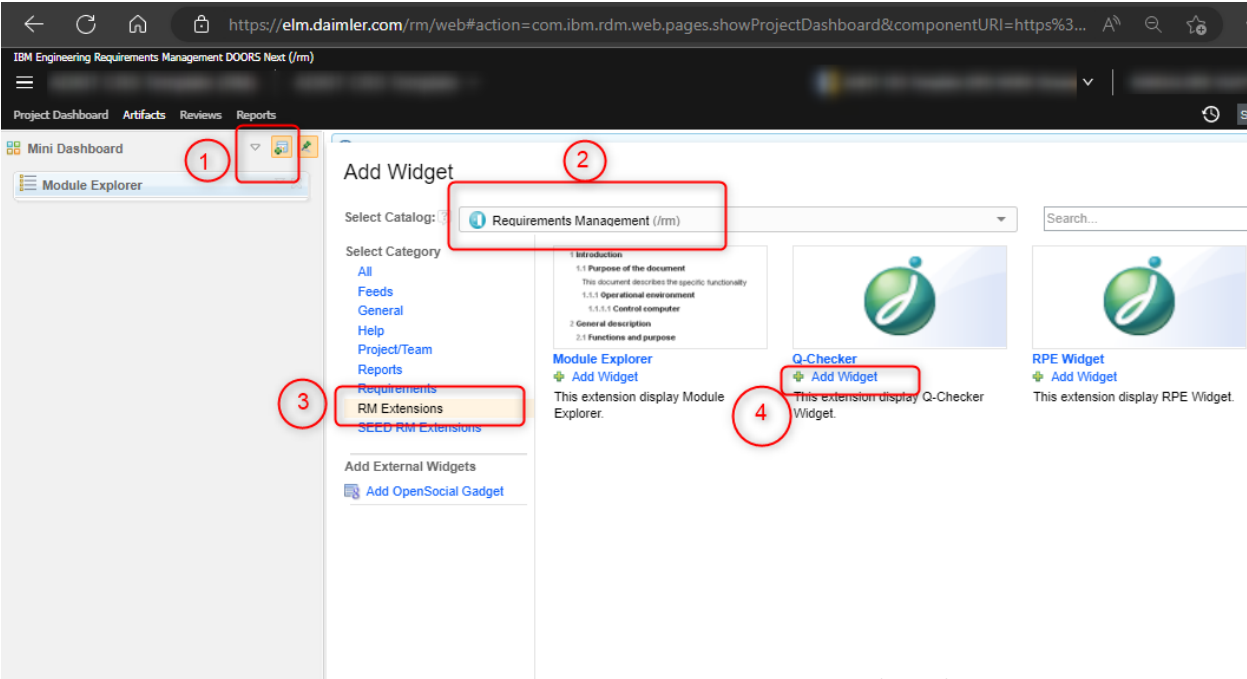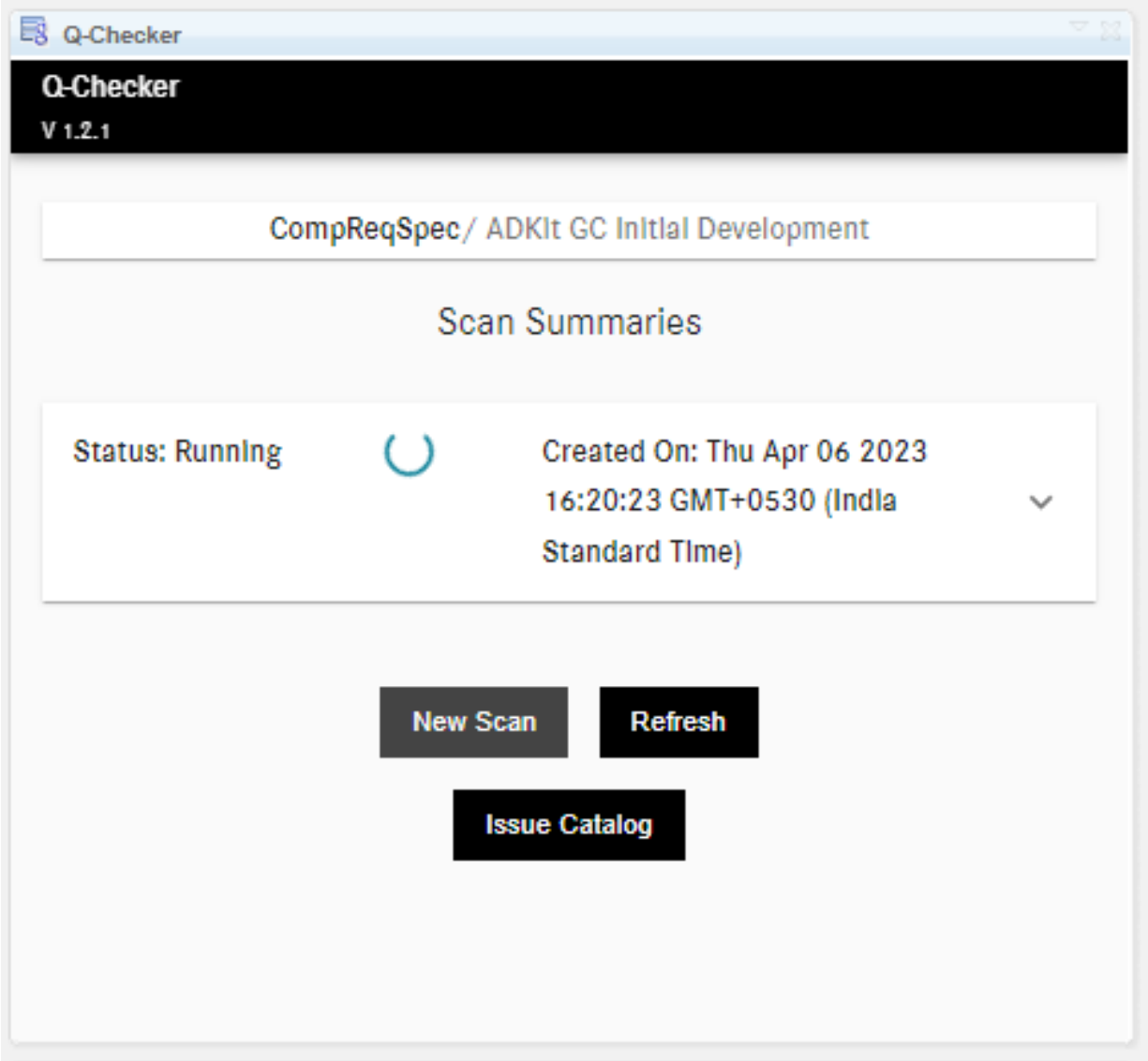
Step 2: Once the widget is added succcessfully, ensure to switch to "GC mode" for the widget to work.

And click on "New Scan" button to start the scanning process of CompReqSpec module from the respective component.
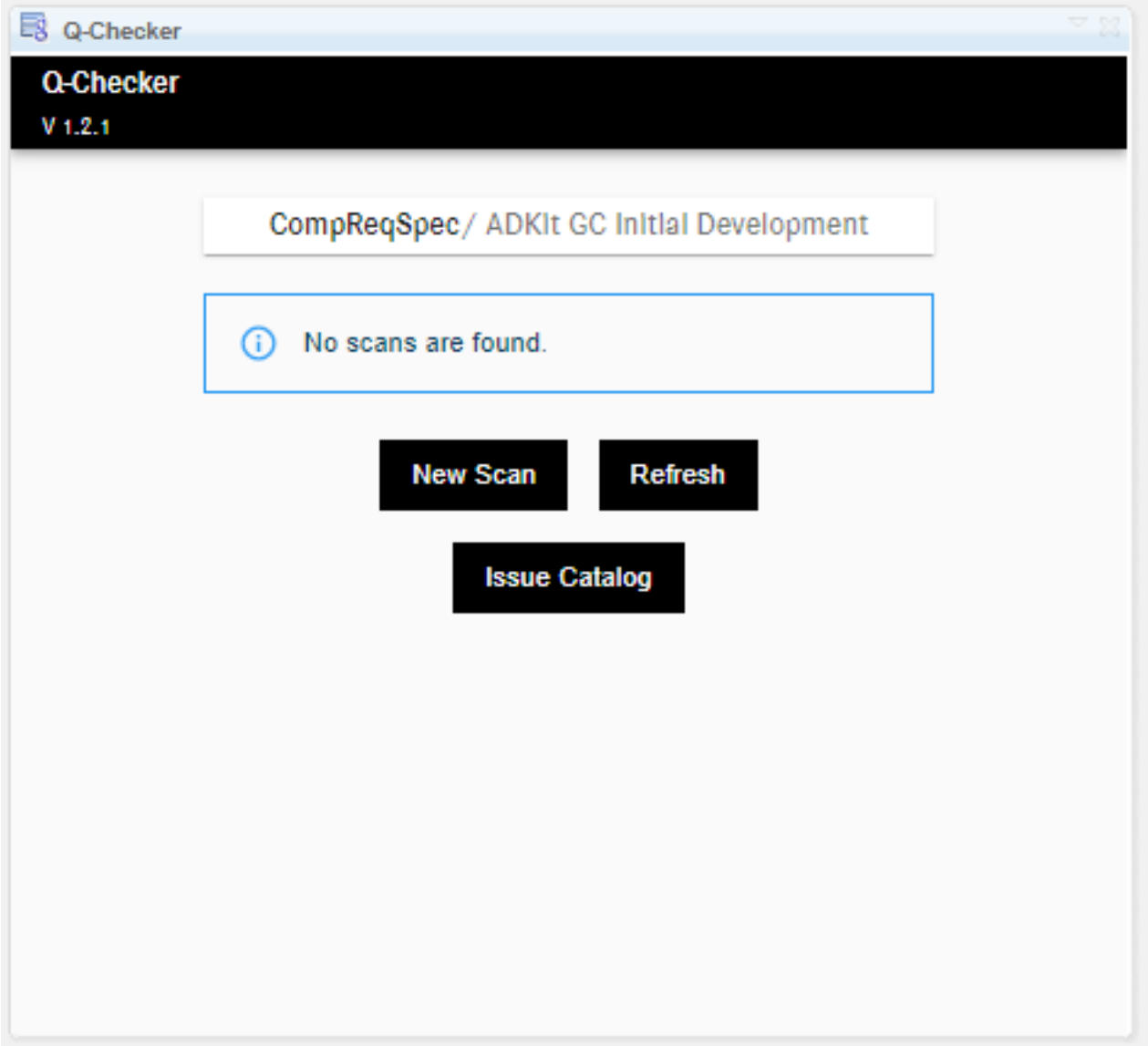
Step 3: Once the scanning starts, the below screen should be visible as in-progress indication of the scanning process.

Step 4: Once the scan is completed successfully, the screen with "FINISHED" status will appear and the process completes. Click on the down arrow as shown below to view scan details.

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Step 5: Click on "Scan Details" to view the list of issues identified by the scanner.
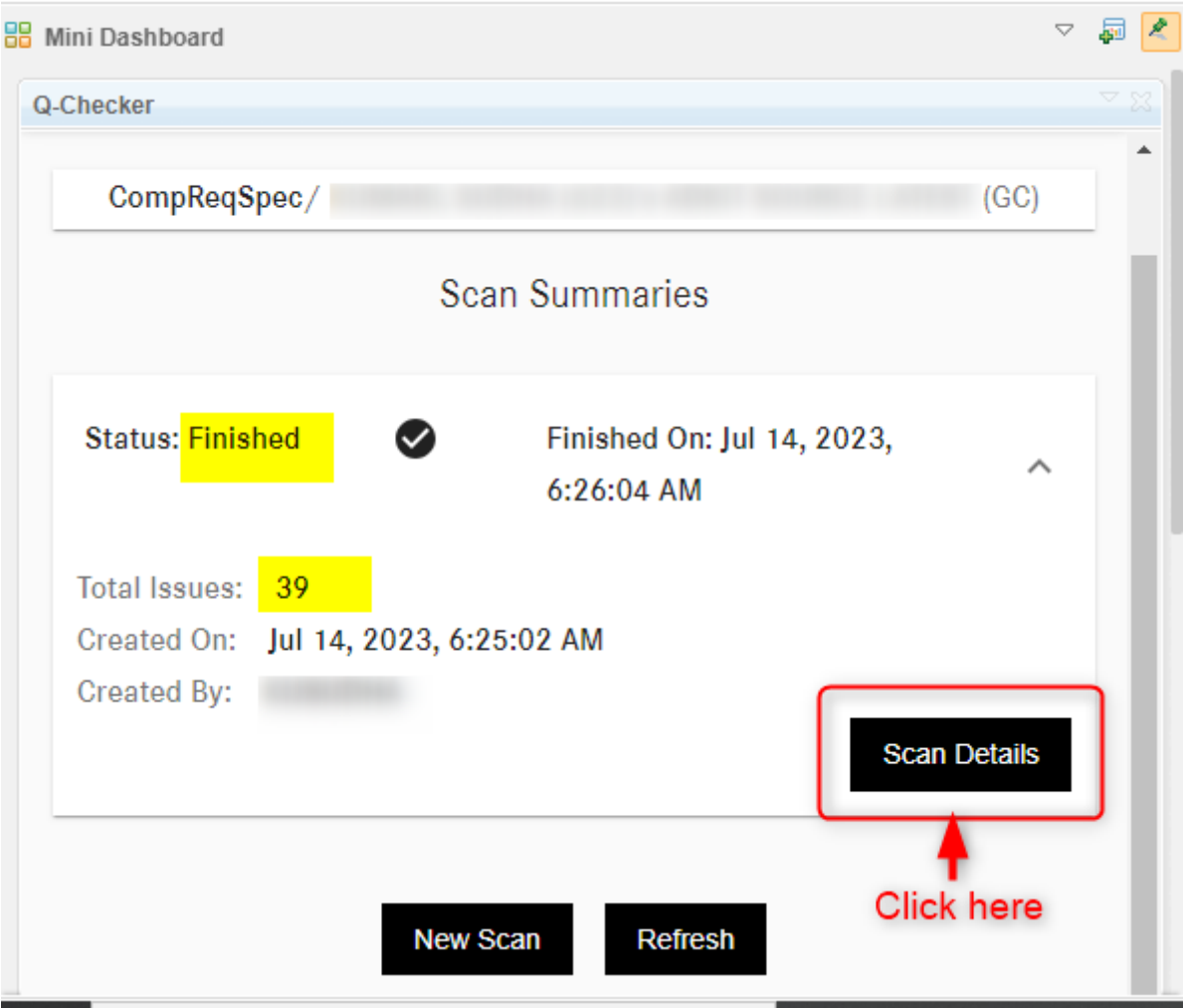
Step 6: Once the list is displayed, click on the below highlighted icon to open the respective artifact containing the mentioned issue.

Parameter empty content issue
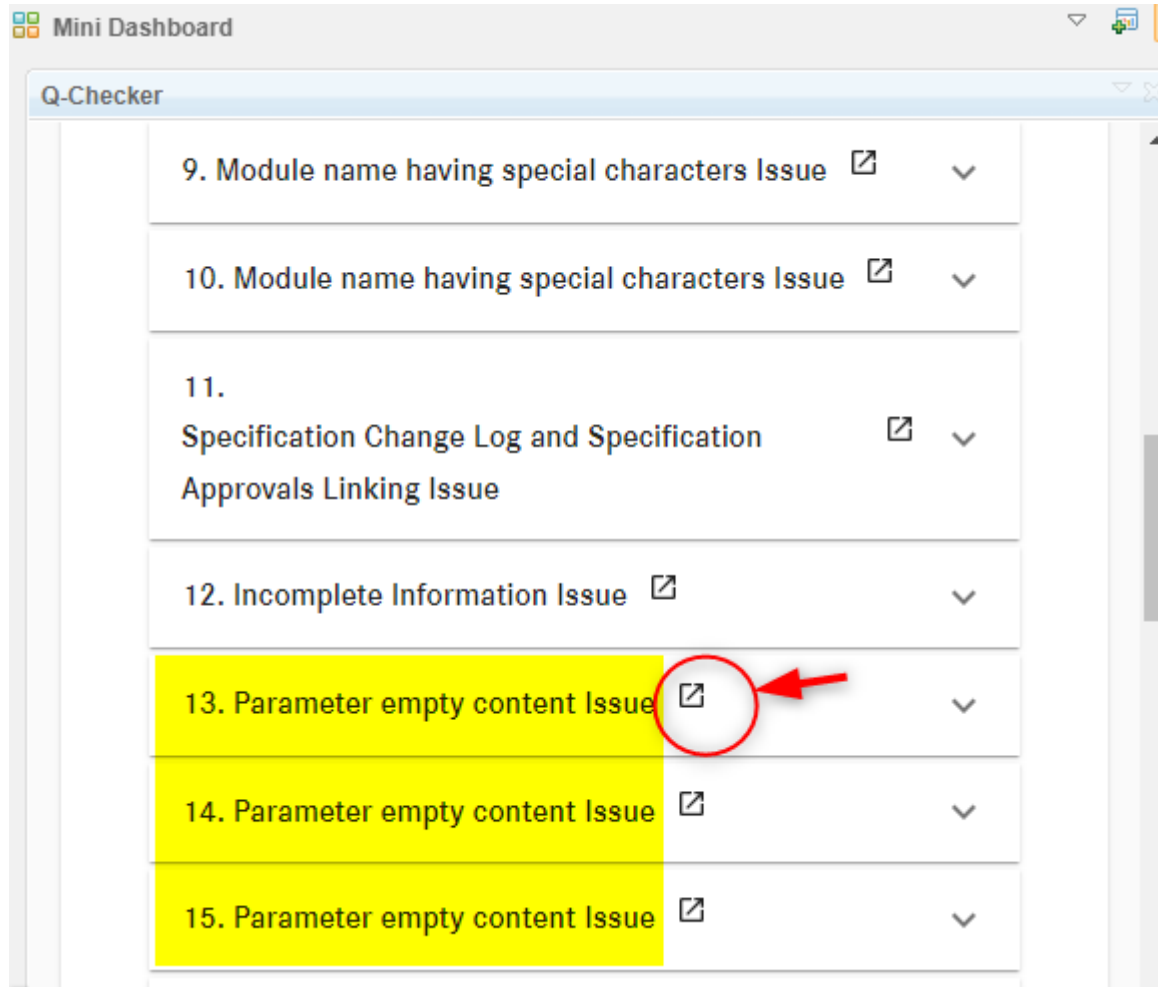
Newly added scanner:

1) **Parameter empty content issue:**

   This scanner scans through the artifacts and identifies all the parameter having ">>…<<" (empty) content and lists them as part of the scan details.

List of existing validation check

1)Invalid Glue Link Source Issue :

A Glue Link must always start from a Heading artifact.

2) Invalid Glue Link Target Issue :

Glue Link's target must be a Module or a Heading artifact inside a module.

3) Unreachable Glue Link Target Issue :

Target of the Glue Link is not reachable. The link is broken.

4) Incomplete Information Issue :

Information in the CompReqSpec module is not complete. Values for the attributes 'Title', 'Author', 'OriginID', 'Template Version' , 'Department' and 'Component Name' must be filled and shouldn't be empty.

5) Unexpected Artifact Format Issue :

Artifacts of format "Diagram", "FILE" or "Collection" is found. Artifact format other than "Text" will be skipped in the report.

6) Specification Change Log and Specification Approvals Linking Issue :

Check that both "Specification Approvals" and "Specification Change Log" artifacts are linked properly to the CompReqSpec module. If the artifacts are linked using the Link Type "Link From" check that, one of the artifacts that are linked is of Artifact Type "Specification Approvals" and the other is of Artifact Type "Specification Change Log" and both the artifacts are having the Artifact Format as "Module". If these artifacts are not linked properly or they are not having expected Artifact Type or Artifact Format then, the generated document will not have proper information printed on the cover page.

7) Unexpected Artifact Format of "Specification Change Log" or "Specification Approvals" Issue :

Both "Specification Change Log" and "Specification Approvals" artifacts must be present and their Artifact Format must be "Module".

8) Improper References Term Link Issue :

Improper References Term Link found. For any DocRef or Term, there should be a References Term link and the corresponding hyperlink in the primary text.

9) Multiple "Specification Change Log" or "Specification Approvals" artifacts are linked :

Only one "Specification Change Log" and one "Specification Approvals" artifact must be linked to the CompReqSpec module.

10) Unexpected Table Format Issue :

A table with incorrect format is found in the artifact. During document generation RPE cannot handle improper table format. As a fix, please copy the table in the word document and then copy and paste it back to the artifact from word document.

11) Module name having special characters Issue :

Special characters 'Ä', 'ä', 'Ö', 'ö', 'Ü', 'ü' should not be present in a module's name.

12) Glue link Parameter Module Issue :

There should be no incoming or outgoing Glue links on a Parameter module.

13) Parameter empty content Issue :

There should not be a parameter with empty content in it.