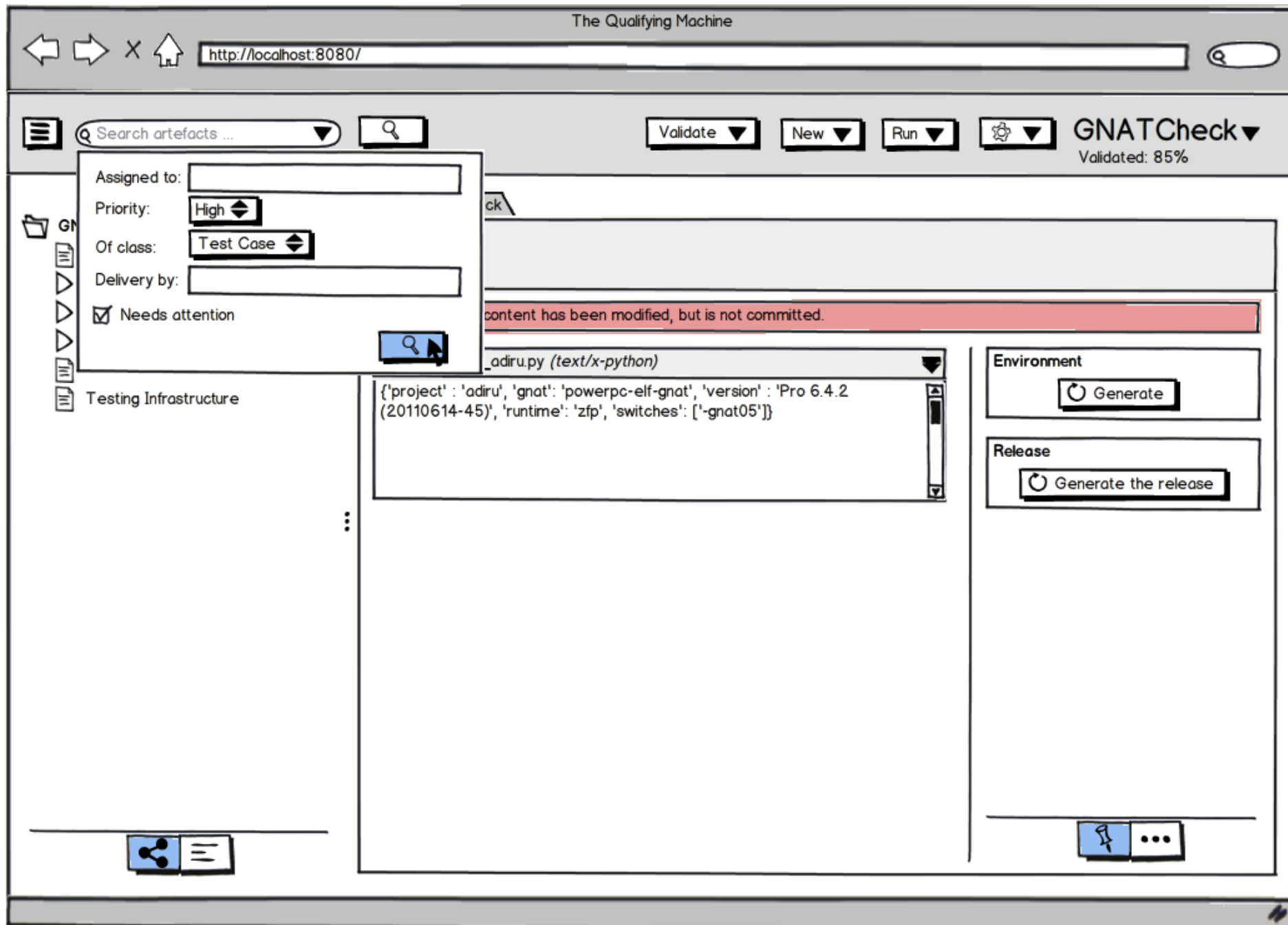


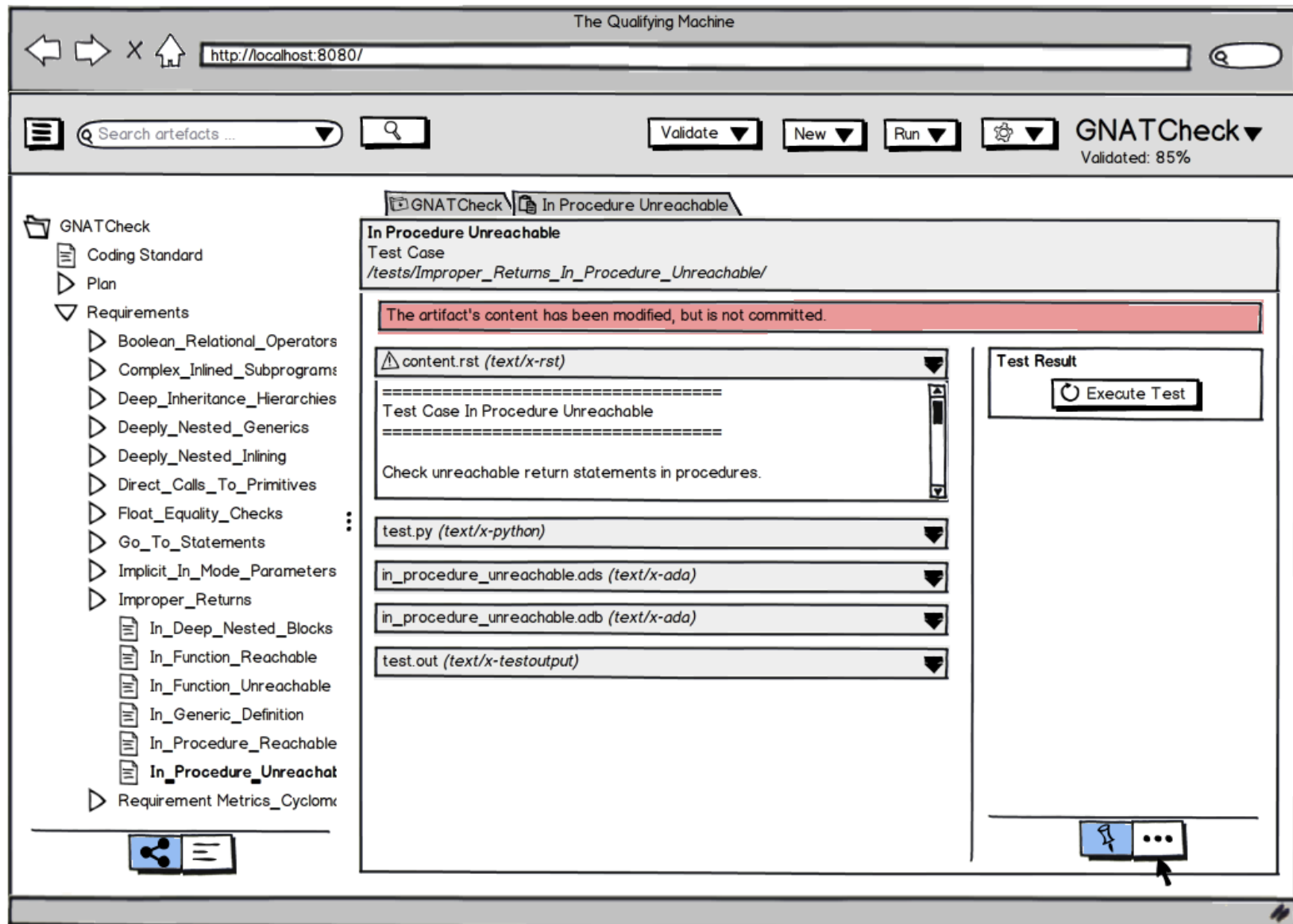
Browse either by traceability links  
or by filesystem path

Artifact content

Show artifact activities or dependencies



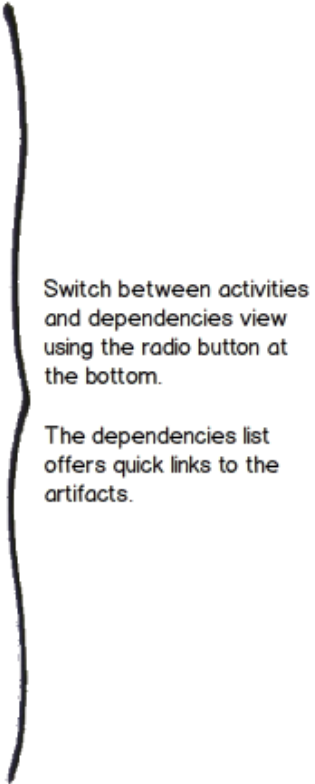
Advanced search box



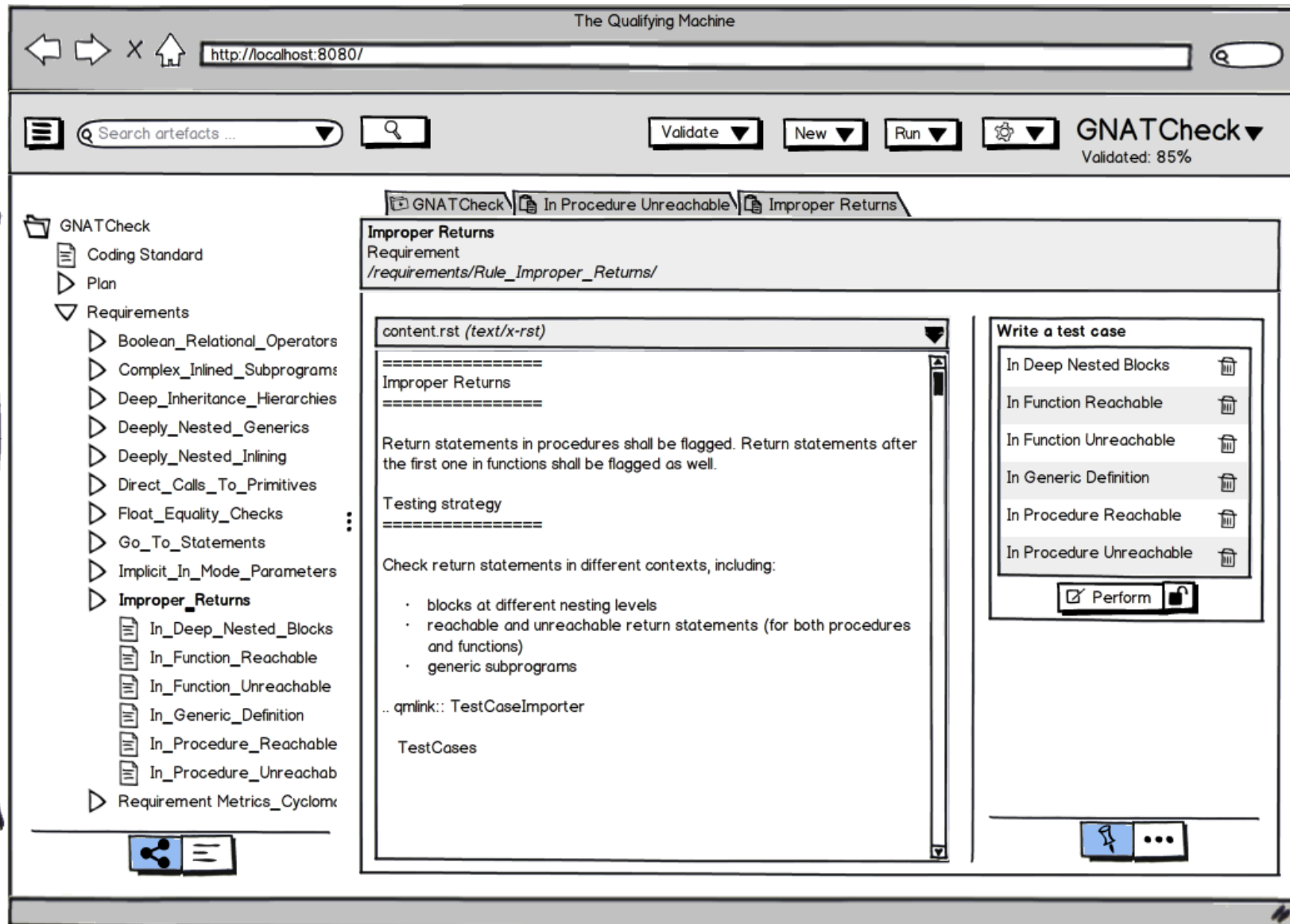
Opened artefact are registered in the MDI (Multiple Document Interface) to be easily re-opened

Opening an artifact through search reveal it in the browser

Artifact with multiple files as content.  
The content.rst is opened by default.  
Clicking on the filename roll in/out the file preview.  
Preview uses the correct widget corresponding to the file mime-type.



Each mime-type should be provided with both an editable and a read-only view. These views are used by this preview widget to display the content of the file. If no view is provided, source view is used by default.



Activity with occurrences:  
1..n

This interface permits the user to perform 'n' times the activity, then notify the QM by 'locking' the activity, fixing the value of 'n'.

This value is reseted when the artifact is invalidated.

Only one file available so open it with maximum height for more confort when reading.

http://localhost:8080/



Search artefacts ...



Validate

New

Run



GNATCheck

Validated: 85%

## GNATCheck

Coding Standard

Plan

Requirements

Boolean\_Relational\_Operators

Complex\_Inlined\_Subprograms

Deep\_Inheritance\_Hierarchies

Deeply\_Nested\_Generics

Deeply\_Nested\_Inlining

Direct\_Calls\_To\_Primitives

Float\_Equality\_Checks

Go\_To\_Statements

Implicit\_In\_Mode\_Parameters

Improper\_Returns

In\_Deep\_Nested\_Blocks

In\_Function\_Reachable

In\_Function\_Unreachable

In\_Generic\_Definition

In\_Procedure\_Reachable

In\_Procedure\_Unreachab

Requirement Metrics\_Cyclomx

GNATCheck

In Procedure Unreachable

Improper Returns

## Improper Returns

Requirement

/requirements/Rule\_Improper\_Returns/

content.rst (text/x-rst)

=====  
Improper Returns  
=====

Return statements in procedures shall be flagged. Return statements after the first one in functions shall be flagged as well.

Testing strategy

=====

Check return statements in different contexts, including:

- blocks at different nesting levels
- reachable and unreachable return statements (for both procedures and functions)
- generic subprograms

.. qmlink:: TestCaseImporter

TestCases

## Write a test case

In Deep Nested Blocks



In Function Reachable



In Function Unreachable



In Generic Definition



In Procedure Reachable

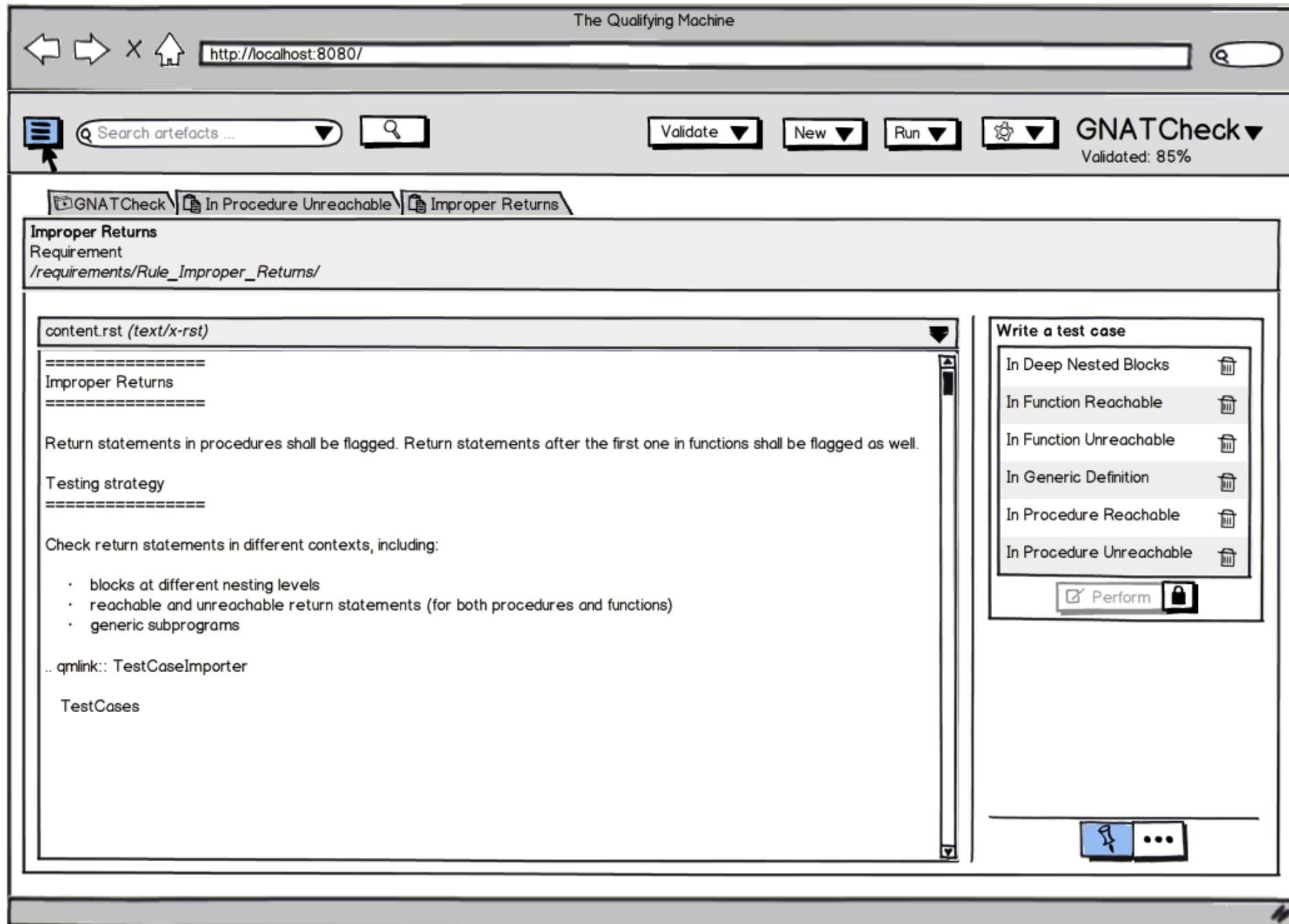


In Procedure Unreachable

☒ Perform

The activity is now locked.  
No more test case can be created.





Hides the artifact browser  
using the button at the top.  
The artifact viewer is now  
using the full window.

This is useful for small  
screens.

Opened artifacts can still  
be easily accessible using  
the MDI's tabs.

The Qualifying Machine
http://localhost:8080/

Search artefacts ...

Validate

New

Run

GNATCheck
Validated: 85%

GNATCheck
In Procedure Unreachable

In Procedure Unreachable
Test Case
/testes/Improper\_Returns\_In\_Procedure\_Unreachable/

The artifact's content has been modified, but is not committed.

content.rst (text/x-rst)

=====
Test Case In Procedure Unreachable
=====

test.py (text/x-python)

in\_procedure\_unreachable.ads

in\_procedure\_unreachable.adb

test.out (text/x-testoutput)

DEPENDENCIES

Requirement Improper\_Returns

REPOSITORY /trunk/GNATCheck

OWNER delay

Improper Returns
Requirement
/requirements/Rule\_Improper\_Returns/

content.rst (text/x-rst)

=====
Improper Returns
=====
Return statements in procedures shall be flagged. Return statements after the first one in functions shall be flagged as well.
Testing strategy
=====
Check return statements in different contexts, including:

- blocks at different nesting levels
- reachable and unreachable return statements (for both procedures and functions)
- generic subprograms

... qmlink:: TestCaseImporter
TestCases

Write a test case

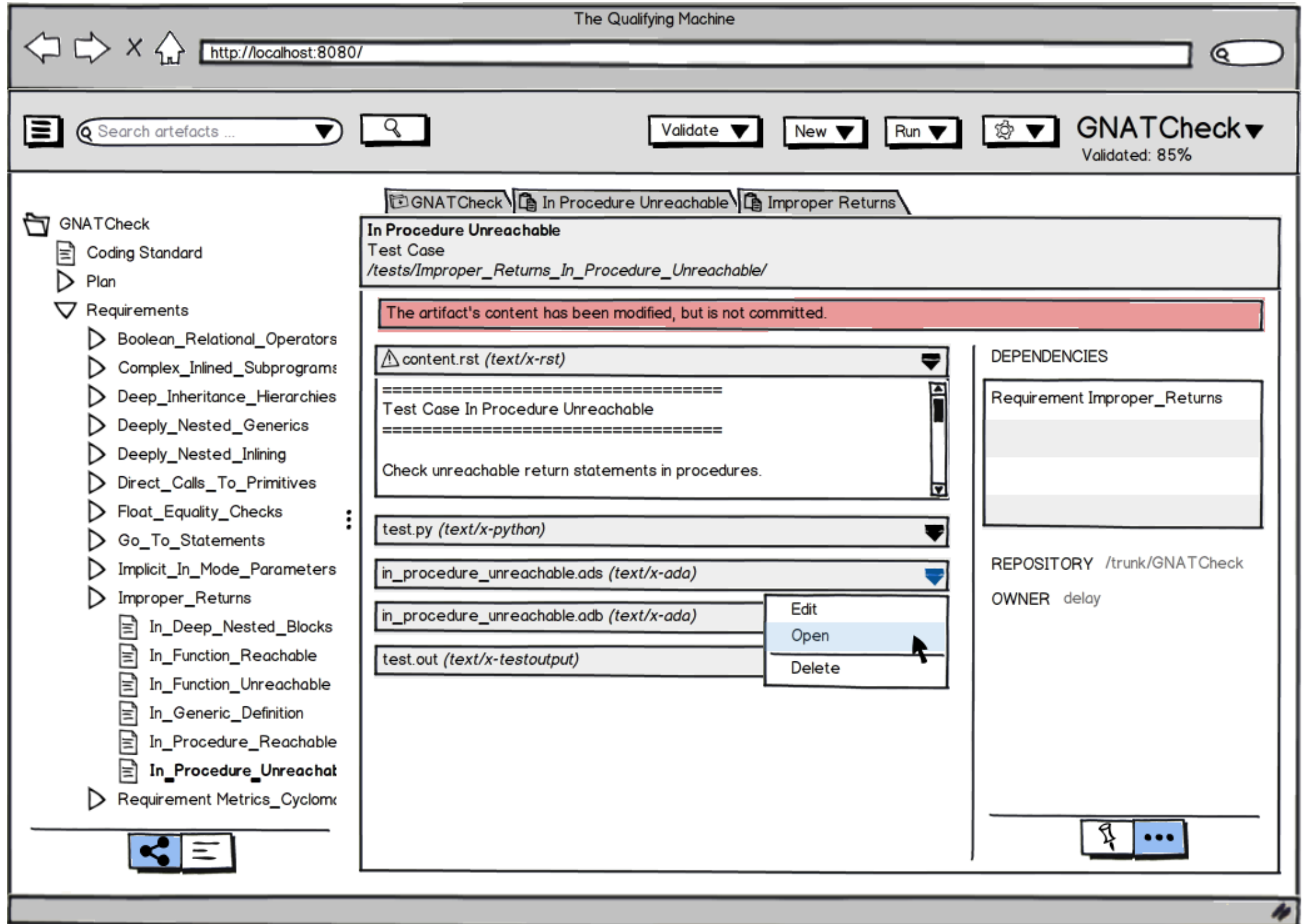
In Deep Nested Blocks
In Function Reachable
In Function Unreachable
In Generic Definition
In Procedure Reachable
In Procedure Unreachable

☒ Perform

This 'no-artifact-browser' view is also useful when confronting two entries of the MDI.

This is needed when working on a requirement and one of its test cases, or between the test case source file and its output.





The preview offers edition capabilities. This is goog for quick fixes.

For a more confortable view, one can open the file as a new MDI's tab.

The Qualifying Machine

http://localhost:8080/

Search artefacts ...

Validate New Run

GNATCheck Validated: 85%

GNATCheck

- Coding Standard
- Plan
- Requirements
  - Boolean\_Relational\_Operators
  - Complex\_Inlined\_Subprograms
  - Deep\_Inheritance\_Hierarchies
  - Deeply\_Nested\_Generics
  - Deeply\_Nested\_Inlining
  - Direct\_Calls\_To\_Primitives
  - Float\_Equality\_Checks
  - Go\_To\_Statements
  - Implicit\_In\_Mode\_Parameters
  - Improper\_Returns
    - In\_Deep\_Nested\_Blocks
    - In\_Function\_Reachable
    - In\_Function\_Unreachable
    - In\_Generic\_Definition
    - In\_Procedure\_Reachable
    - In\_Procedure\_Unreachat
  - Requirement Metrics\_Cyclomx

GNATCheck In Procedure Unreachable Improper Returns in\_procedure\_unreachable.ads

**in\_procedure\_unreachable.ads**  
Ada source file  
/tests/Improper\_Returns\_In\_Procedure\_Unreachable/in\_procedure\_unreachable.ads

Edit

```

package In_Procedure_Unreachable is

  Condition : Boolean := True;

  procedure Simple_No_Params;

  procedure Simple_Params (A : in Boolean; B : out Boolean);

  procedure If_No_Params;

  procedure If_Params (A : in Boolean; B : out Boolean);

  procedure Loop_No_Params;

  procedure Loop_Params (A : in Boolean; B : out Boolean);

  procedure While_No_Params;

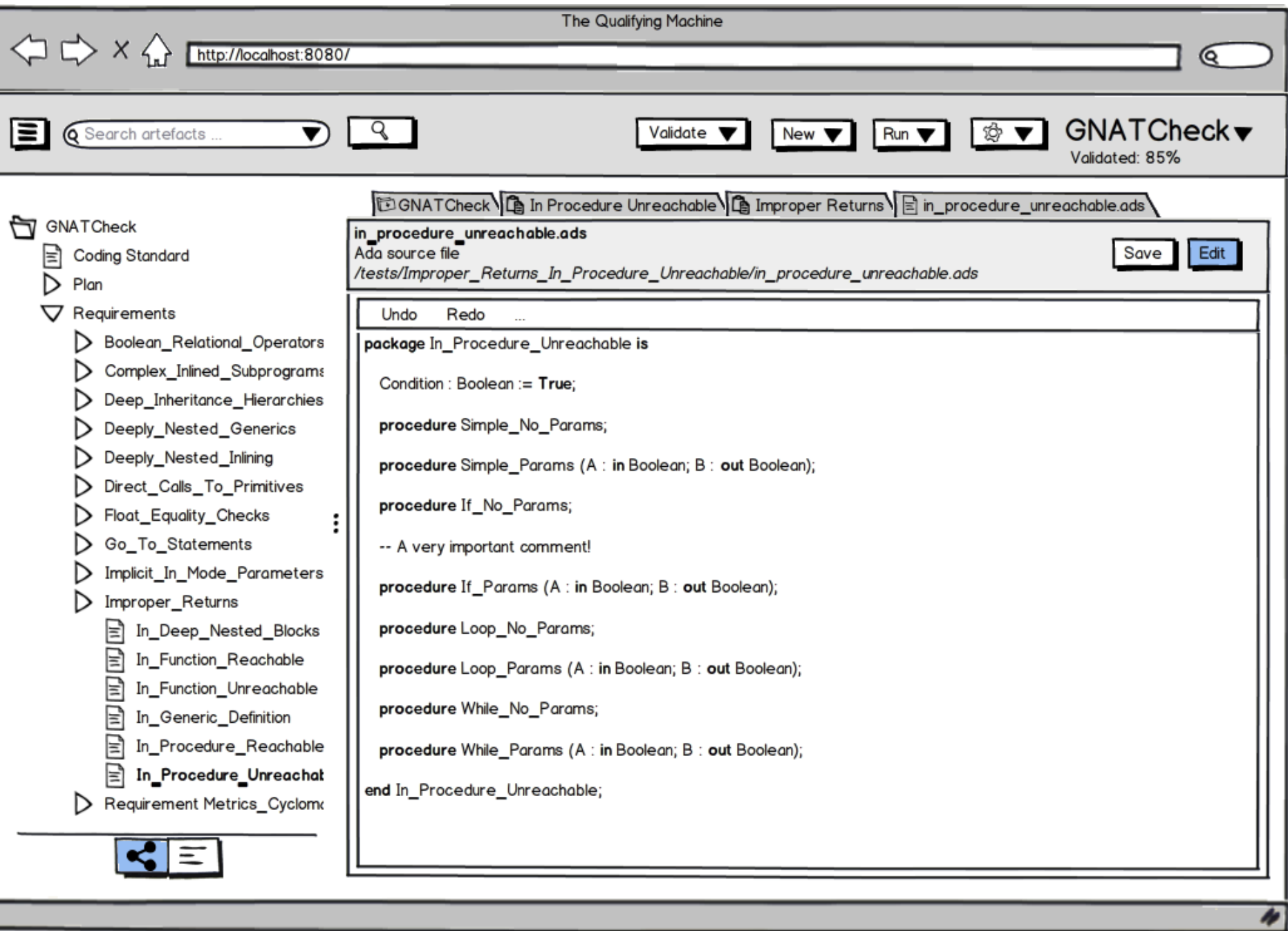
  procedure While_Params (A : in Boolean; B : out Boolean);

end In_Procedure_Unreachable;
  
```

Opening a file as a tab permits the user to confront different type of file/artifact when using the dual view.

For example, one can edit both the body and the spec of an Ada package.

It is then easier to read/review...



The save button appears when changes occurred.

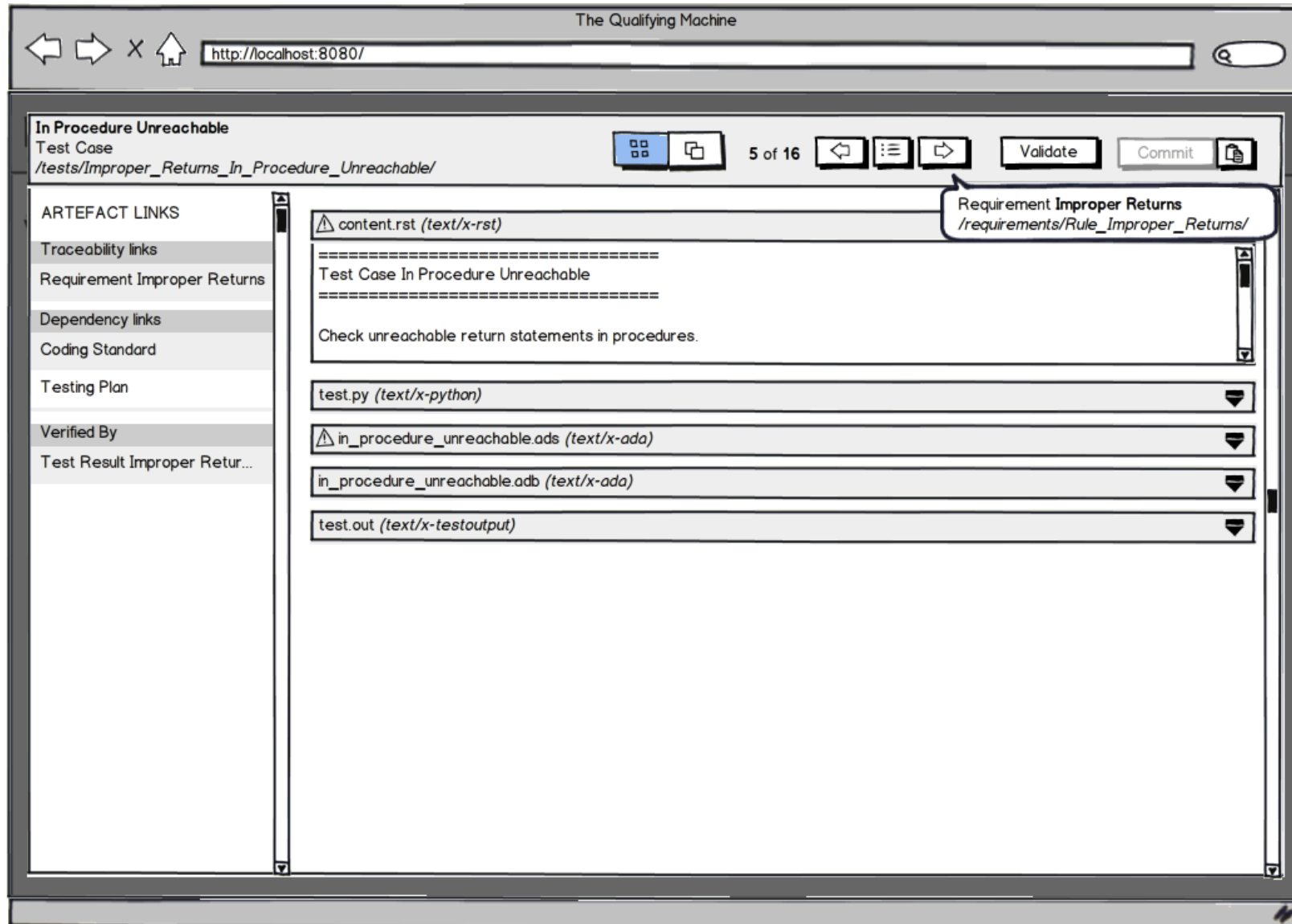
It is no use to weighten the interface with widget we don't need at a particular moment.

We only show them when we need them.

Both read-only and editable view are using the same modules associated with the mime-type of the file being manipulated than the one used by the preview panels.

... and edit!





Provides two different views:

- the current state of the artifact
- a diff view with a previous version

Provides a mechanism to switch between artifacts that need to be validated.

Provides a toggle button to tag the artifact as 'Validated'.

Provides a 'Commit' button available when at least one artifact as been validated.

Provide a view of the input and output links of the artifact.

This can be useful when revalidating an artifact which has not changed, but was invalidated by a modification done in an other artifact.

Displays the current state of the artifact's content.



http://localhost:8080/

**In Procedure Unreachable**

Test Case

/tests/Improper\_Returns\_In\_Procedure\_Unreachable/



5 of 16



Validate

Commit



## ARTEFACT LINKS

Traceability links

Requirement Improper Returns

Dependency links

Coding Standard

Testing Plan

content.rst (text/x-rst)

Test Case In Procedure Unreachable

Check unreachable return statements in procedures.

test.py (text/x-python)

in\_procedure\_unreachable.ads (text/x-ada)

in\_procedure\_unreachable.adb (text/x-ada)

test.out (text/x-testoutput)

## GNATCheck

## Requirements

Go\_To\_Statements

Implicit\_In\_Mode\_Parameters

Improper\_Returns

In\_Deep\_Nested\_Blocks

In\_Function\_Reachable

In\_Function\_Unreachable

In\_Generic\_Definition

In\_Procedure\_Reachable

In\_Procedure\_Unreachable

Requirement Metrics\_Cyclomatic\_Comple

TOR Thales Adiru

Tests Results

Testing Infrastructure

Provides a tree view of artefacts in this validation set.

One can switch between artefact using two different ways:

- Through the left/right arrows, which navigate in the artefacts list which is sorted in a topological way.
- Through the tree view widget, which displays the artifacts respecting the traceability links.



The Qualifying Machine

http://localhost:8080/

In Procedure Unreachable  
Test Case  
/tests/Improper\_Returns\_In\_Procedure\_Unreachable/

5 of 16

Validate Commit

Comments scratchpad

2011-nov-9

LATEST

LINKS

- Traceability links
- Requirement Improper Returns
- Dependency links
- Coding Standard
- Testing Plan

content.rst (text/x-rst)

Test Case In Procedure Unreachable

Check unreachable return statements in procedures.

test.py (text/x-python)

in\_procedure\_unreachable.ads (text/x-ada)

```
procedure Simple_Params (A : in Boolean; B : out Boolean);  
  
procedure If_No_Params;  
  
procedure If_Params (A : in Boolean; B : out Boolean);
```

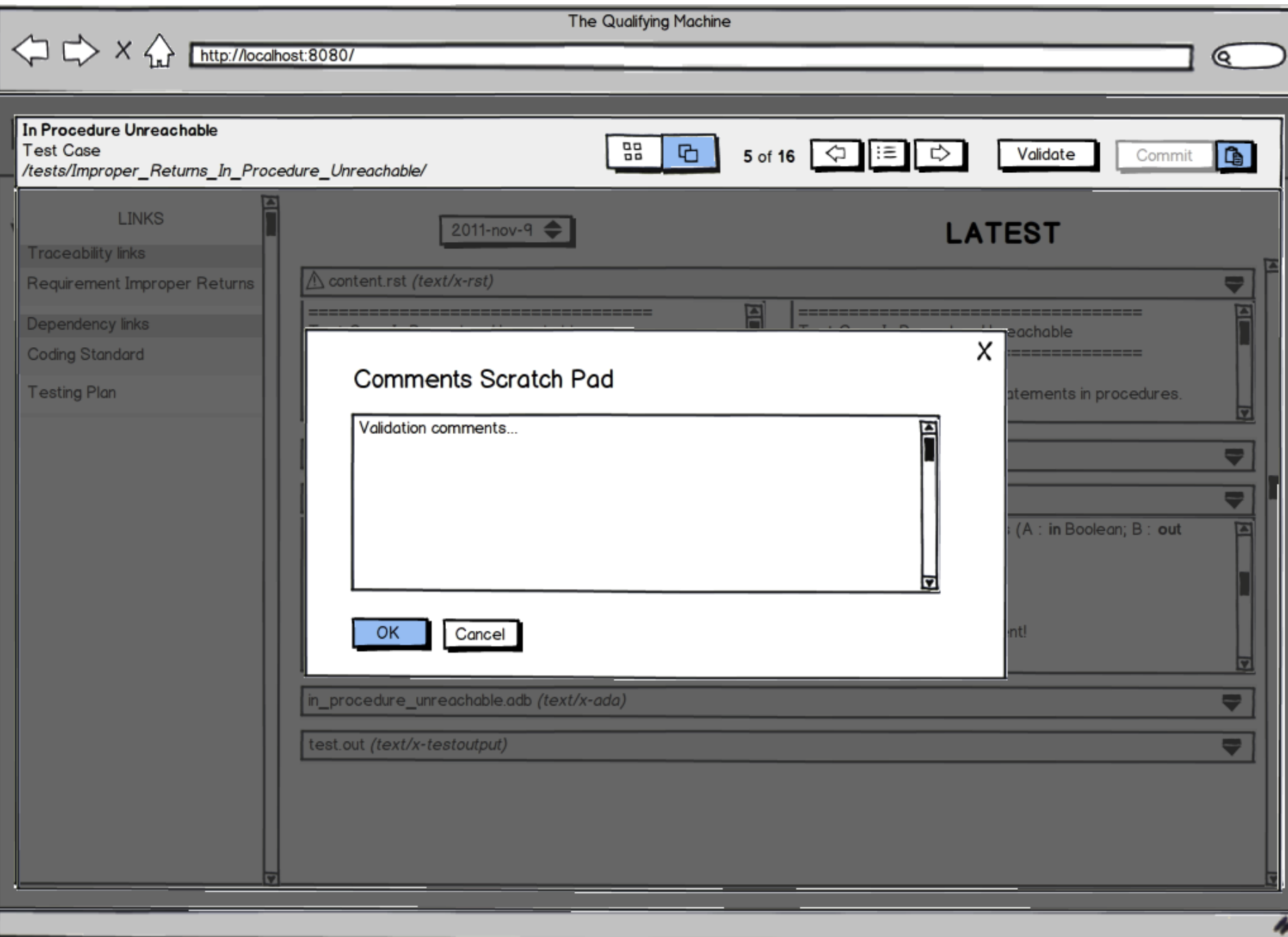
```
procedure Simple_Params (A : in Boolean; B : out Boolean);  
  
procedure If_No_Params;  
  
-- A very important comment!
```

in\_procedure\_unreachable.adb (text/x-ada)

test.out (text/x-testoutput)

The diff view confront two versions of the artefact contents.

This view can confront any previous version of the artifact with the last one.



The comment scratch pad is a quick and easy way to write one's comments during the validation process, iteratively.

At the end, all comments written here are pasted in the final commit message.

This scratch pad is available through the toggle button close to the 'commit' button.

<http://localhost:8080/>**In Procedure Unreachable**

Test Case

*/tests/Improper\_Returns\_In\_Procedure\_Unreachable/*

5 of 16



Validated

Commit



## LINKS

Traceability links

Requirement Improper Returns

Dependency links

Coding Standard

Testing Plan

2011-nov-9

## LATEST

content.rst (text/x-rst)

Test Case In Procedure Unreachable

Check unreachable return statements in procedures.

Test Case In Procedure Unreachable

Check unreachable return statements in procedures.

test.py (text/x-python)

in\_procedure\_unreachable.ads (text/x-ada)

```
procedure Simple_Params (A : in Boolean; B : out Boolean);
```

```
  procedure If_No_Params;
```

```
  procedure If_Params (A : in Boolean; B : out Boolean);
```

```
procedure Simple_Params (A : in Boolean; B : out Boolean);
```

```
  procedure If_No_Params;
```

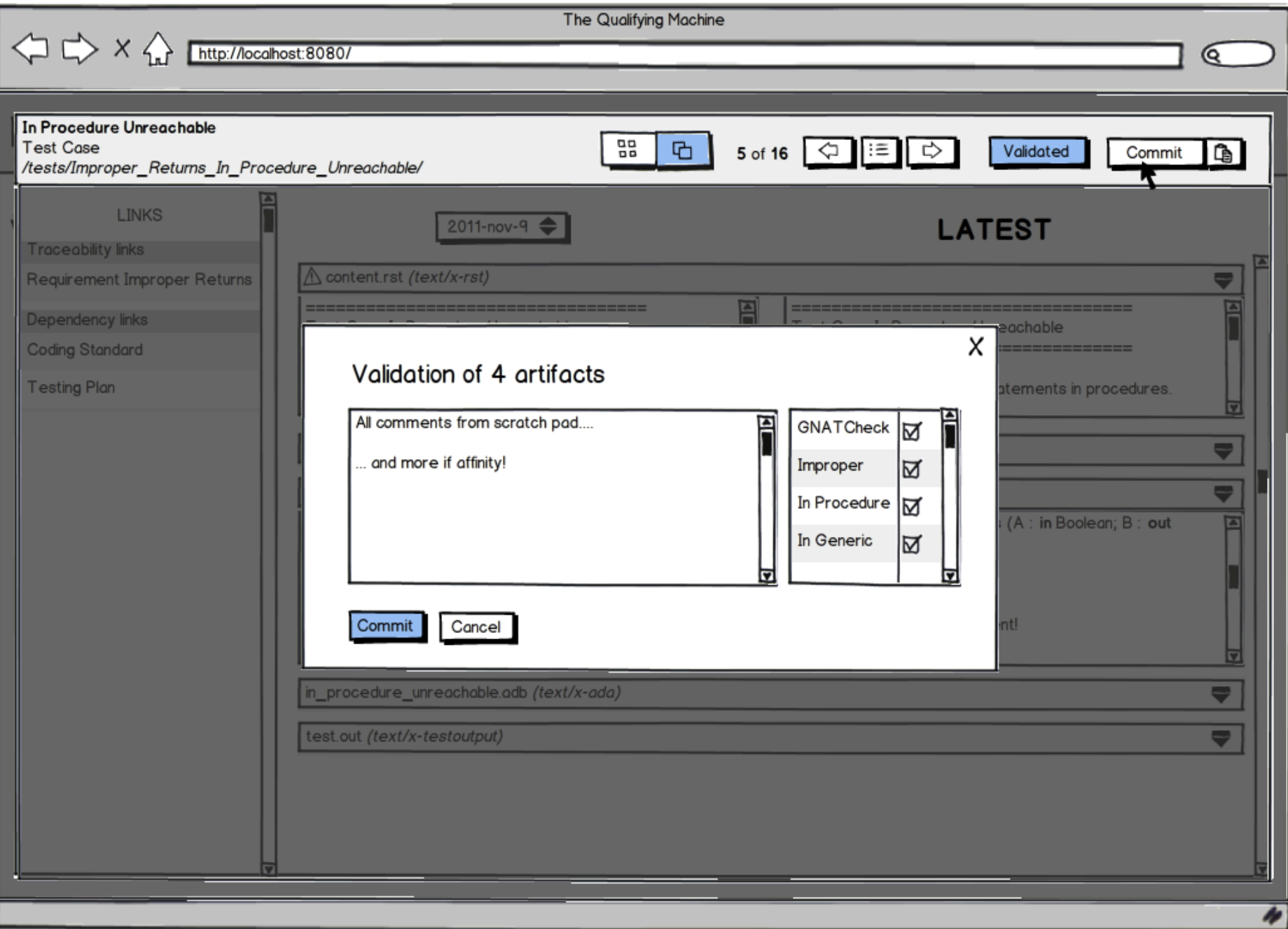
```
  -- A very important comment!
```

in\_procedure\_unreachable.adb (text/x-ada)

test.out (text/x-testoutput)

Once reviewed, we can tag an artifact as 'Validated' through the toggle button.

From then, at least one artifact is validated, so the commit button become available.



A set of artifacts has been validated. One can commit it.

This allows multiple commits on the same set, dividing them into several atomical commits.

The comments are retrieved from the comments scratch pad. They can still be edited and completed before the final commit.

<http://localhost:8080/>

## In Procedure Unreachable

Test Case

[/tests/Improper\\_Returns\\_In\\_Procedure\\_Unreachable/](/tests/Improper_Returns_In_Procedure_Unreachable/)

Quick Fix

## LINKS

Traceability links

Requirement Improper Returns

Dependency links

Coding Standard

Testing Plan

2011-nov-9

## LATEST

content.rst (text/x-rst)

Test Case In Procedure Unreachable

Check unreachable return statements in procedures.

Test Case In Procedure Unreachable

Check unreachable return statements in procedures.

test.py (text/x-python)

in\_procedure\_unreachable.ads (text/x-ada)

```
procedure Simple_Params (A : in Boolean; B : out
Boolean);
```

```
procedure If_No_Params;
```

```
procedure If_Params (A : in Boolean; B : out Boolean);
```

```
procedure Simple_Params (A : in Boolean; B : out
Boolean);
```

```
procedure If_No_Params;
```

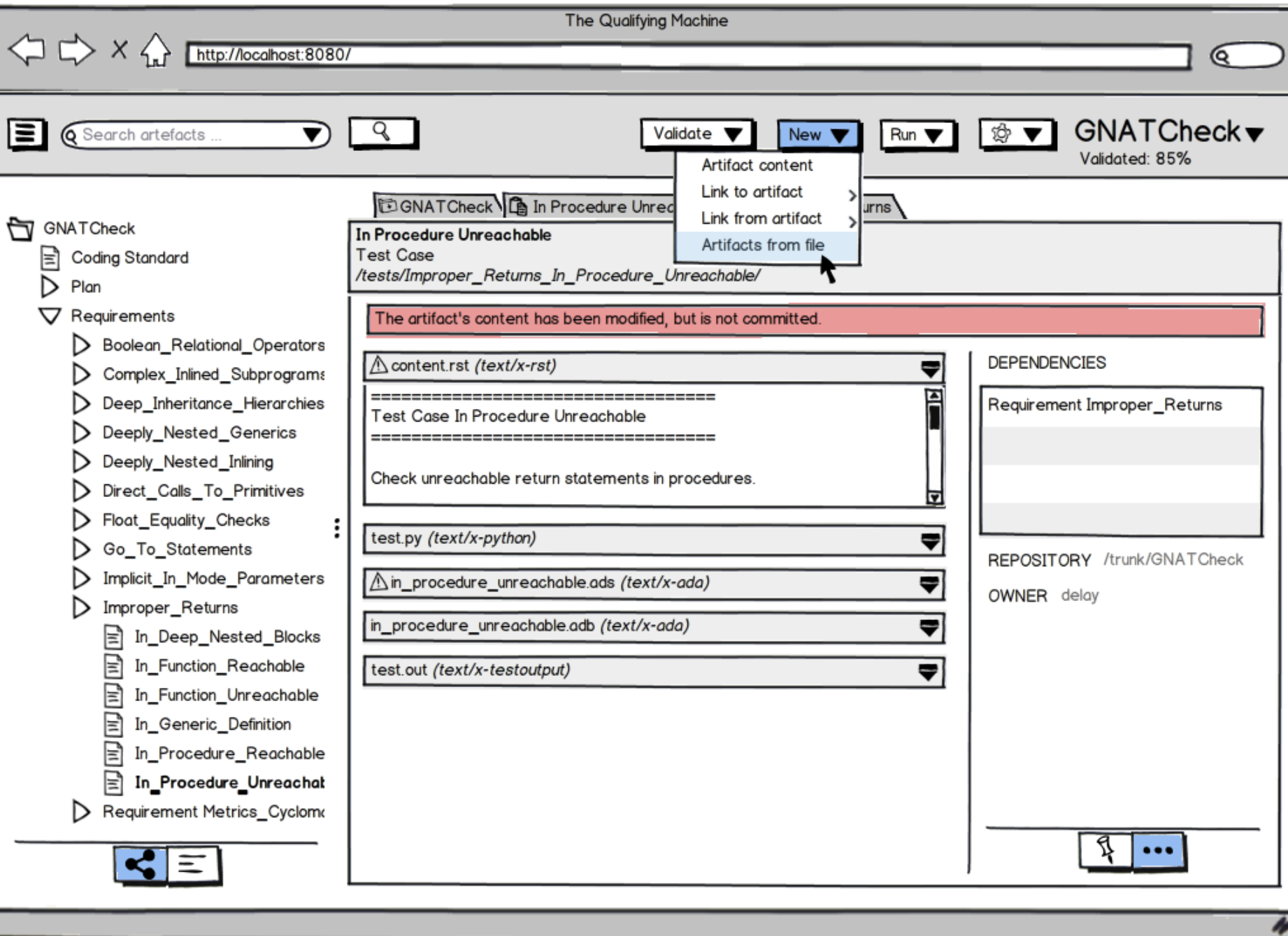
```
-- A very important comment!
```

in\_procedure\_unreachable.adb (text/x-ada)

test.out (text/x-testoutput)

Quick Fix view with a minimum of capabilities.

Only one artifact can be reviewed and committed.



One can create artifact directly from the Qualifying Machine.

This can be done through the 'New' button.





http://localhost:8080/



Search artefacts ...



Validate ▾

New ▾

Run ▾



GNATCheck ▾

Validated: 85%

GNATCheck

Coding Standard

Plan

Requirements

Boolean\_Relational\_Operat

Complex\_Inlined\_Subprogr

Deep\_Inheritance\_Hierarch

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Direct\_Calls\_To\_Primitives

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Improper\_Returns

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In\_Function\_Reachable

In\_Function\_Unreachable

In\_Generic\_Definition

In\_Procedure\_Reachable

In\_Procedure\_Unreachat

Requirement Metrics\_Cyclomx

GNATCheck In Procedure Unreachable Improper Returns

In Procedure Unreachable

Test Case

/tests/Improper\_Returns\_In\_Procedure\_Unreachable/

The artifact's content has been modified, but is not committed.

## Create artifacts from file

File: Upload

Importer plug-in: Test Case Artifacts Importer

OK

Cancel

in\_procedure\_unreachable.adb (text/x-ada)

test.out (text/x-testoutput)

DEPENDENCIES

requirement Improper\_Returns

REPOSITORY /trunk/GNATCheck

OWNER delay

