QA&QC DURING THE SOFTWARE DEVELOPMENT LIFE CYCLE

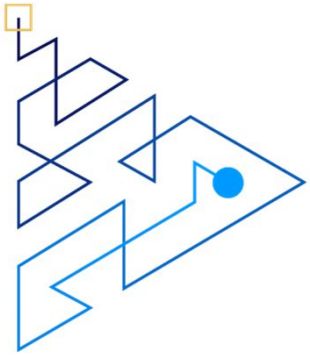
Presenters:

Roxana Soporan

Peter Toth 2022

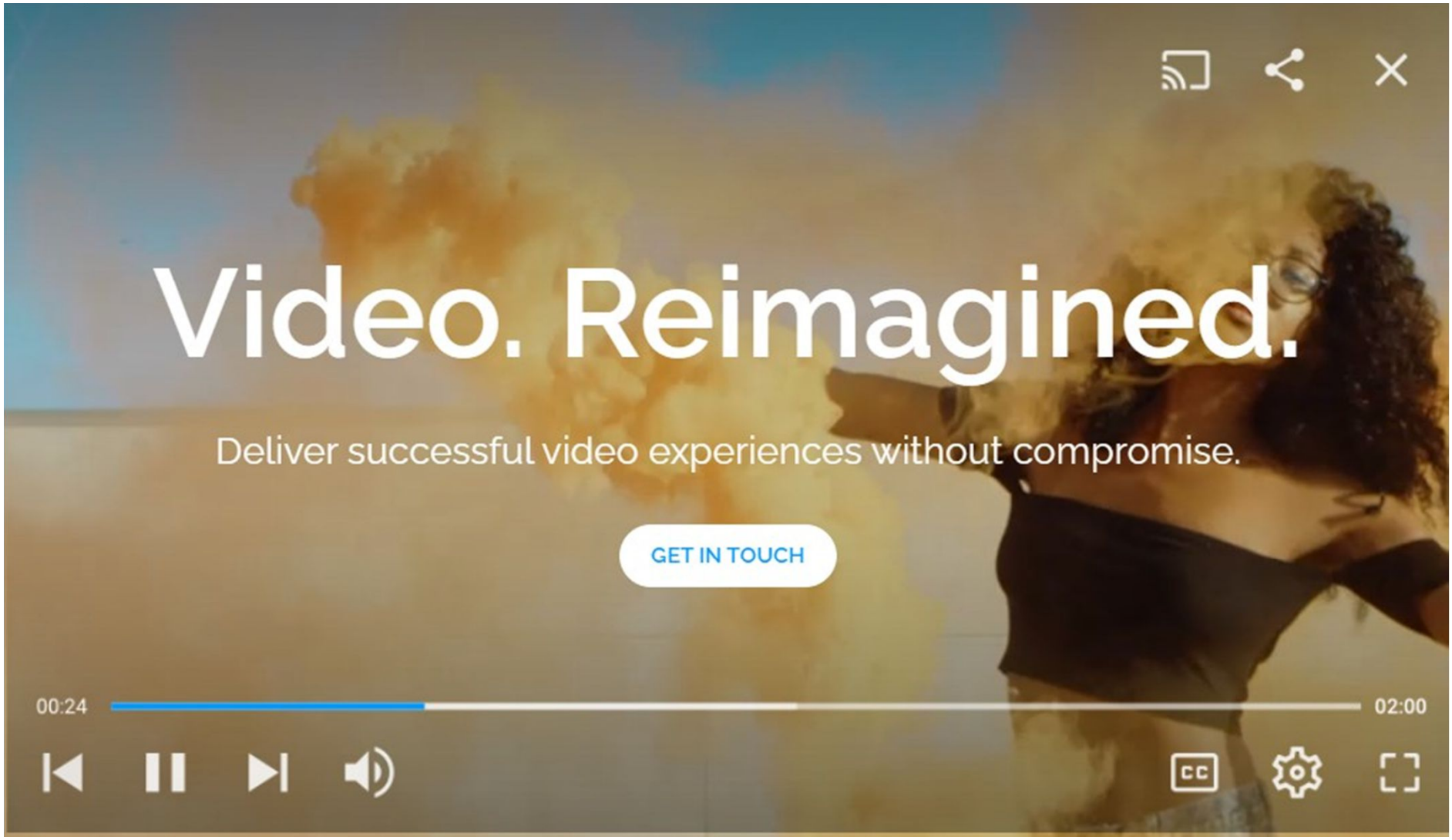
Connatix

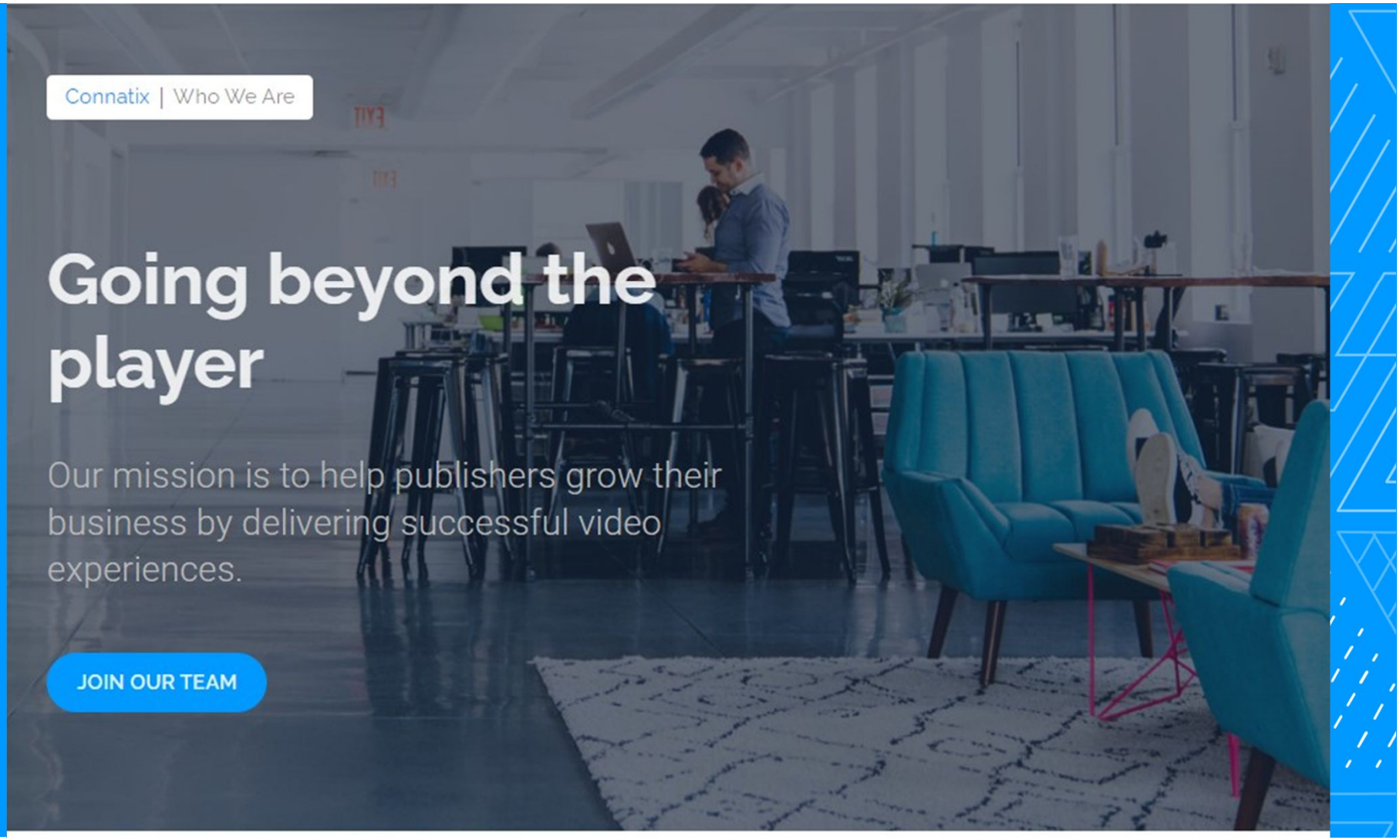
Agenda



01	Introduction	Roxana & Peter
02	QA & QC and Testing	Peter
03	Continuous Improvement (CI)	Peter
04	Requirements design	Roxana
05	Test Planning, Design, Execution & Reporting	Roxana
06		Peter
07	Agile Scrum in Connatix	Roxana
	Life in a company, post pandemic and current situation	

What do you know about Connatix?


Video. Reimagined.
Deliver successful video experiences without compromise.
GET IN TOUCH
00:24
02:00
CC


Connatix | Who We Are
Going beyond the player
Our mission is to help publishers grow their business by delivering successful video experiences.
JOIN OUR TEAM

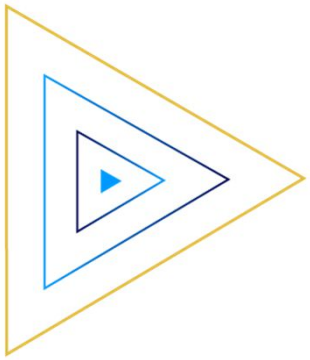
Playspace

An end-to-end video platform designed for publishers to maximize revenue and engage readers.

GET IN TOUCH

Trusted by over 3K sites

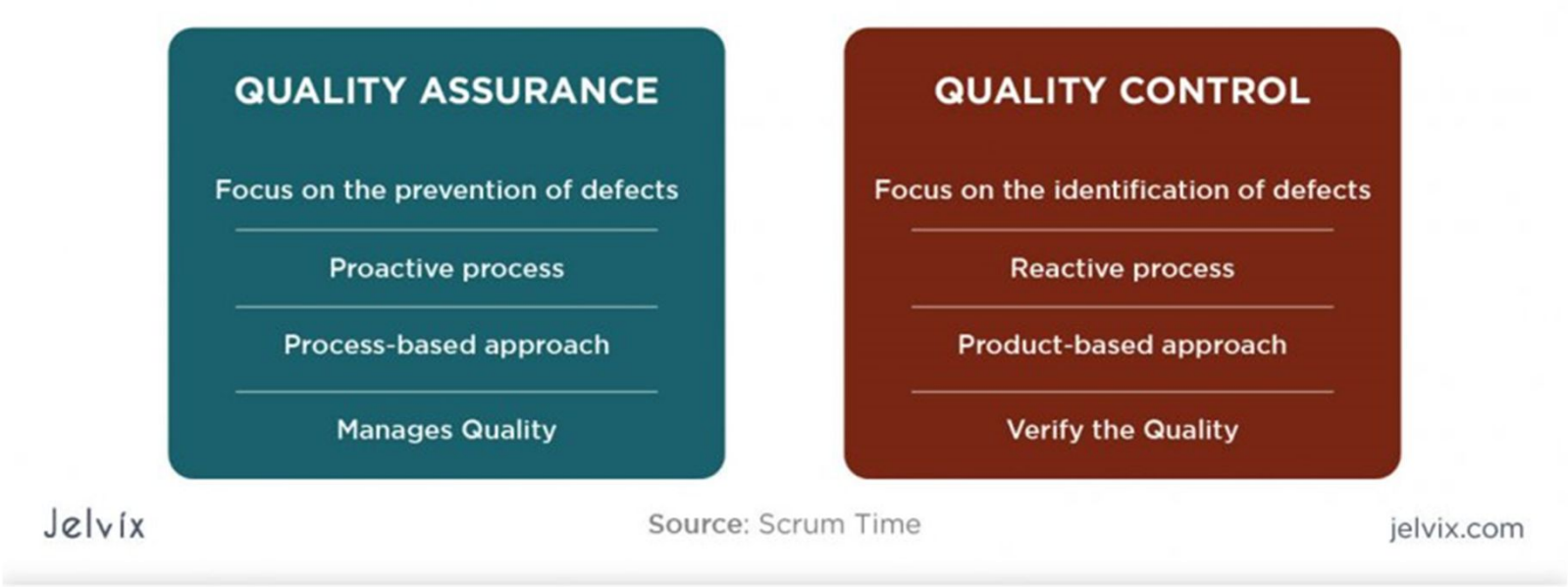
QA & QC



Quality assurance and Quality control:

what is the difference?

QA & QC


QUALITY ASSURANCE
Focus on the prevention of defects
Proactive process
Process-based approach
Manages Quality
QUALITY CONTROL
Focus on the identification of defects
Reactive process
Product-based approach
Verify the Quality
Jelvix
Source: Scrum Time
jelvix.com

Testing

…What is testing?

Testing

…more about testing in following slides

Measuring Quality

If you cannot define it

you cannot achieve it

If you cannot measure it

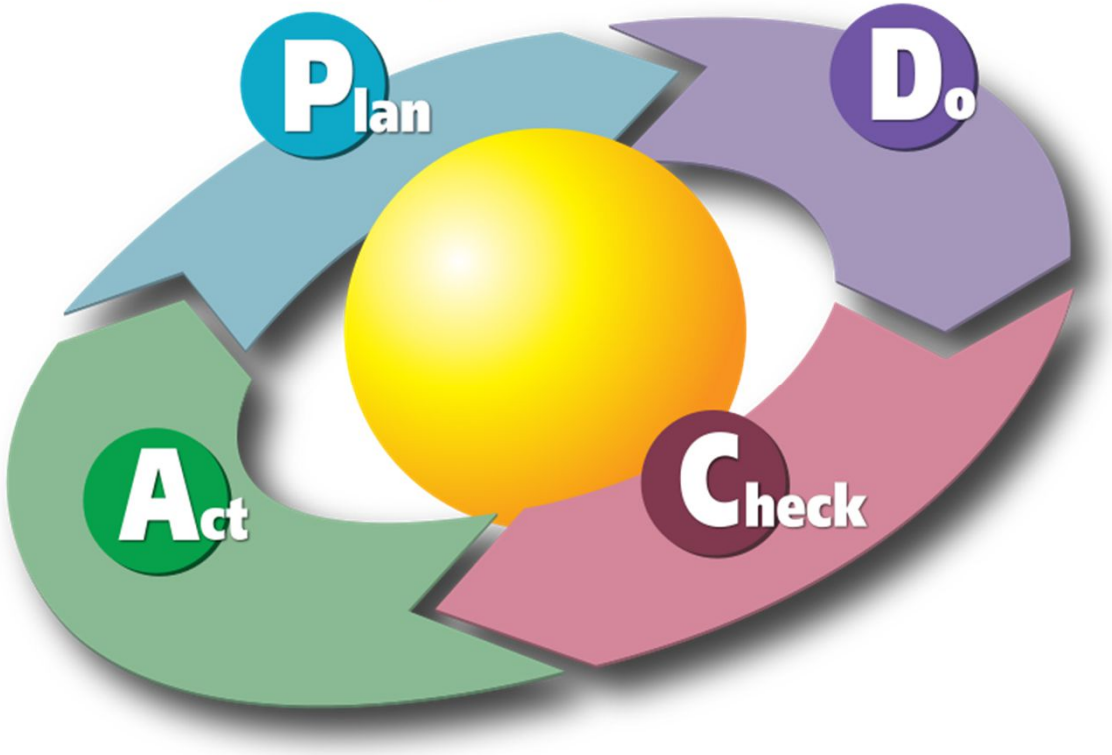
You do not know how you are progressing

You do not know when you have arrived

You cannot demonstrate it

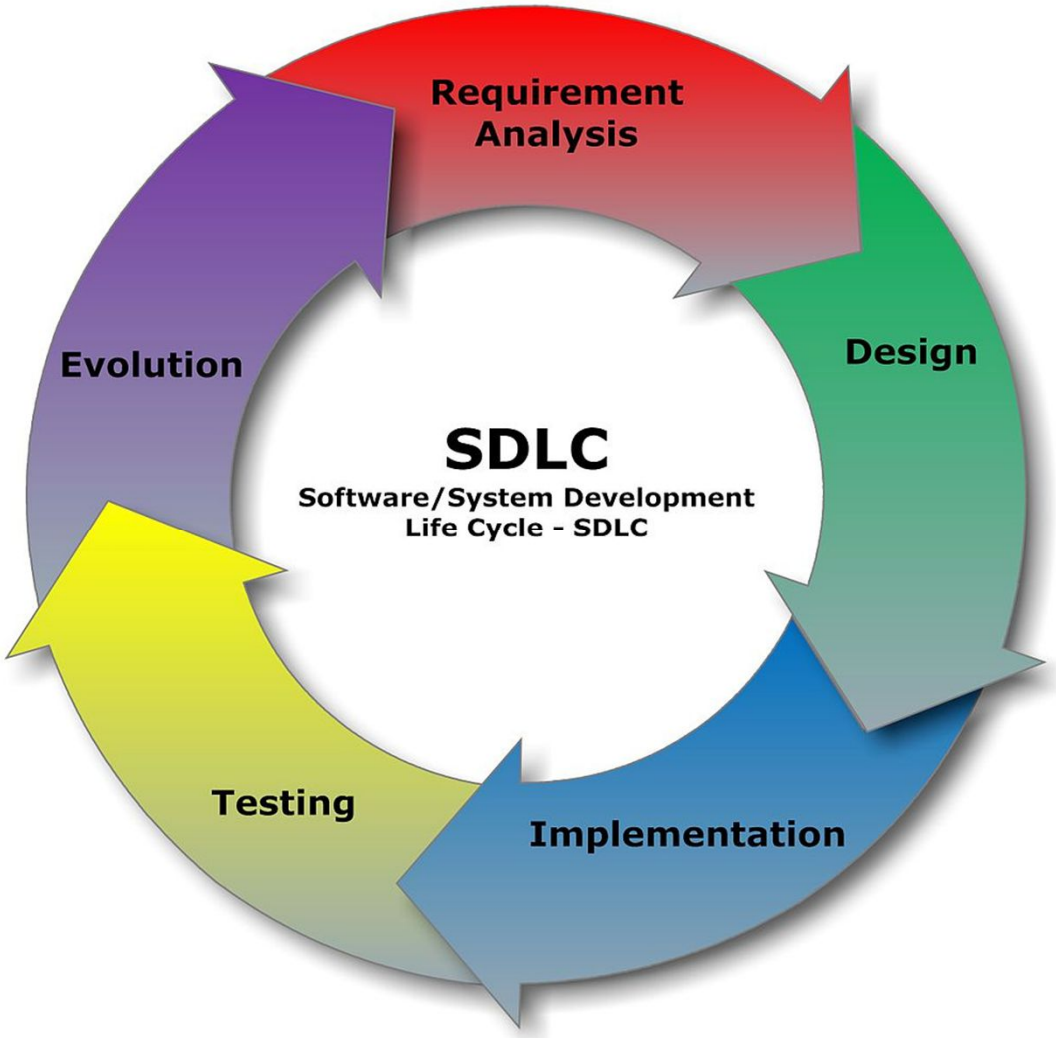
Quality Management System (QMS)

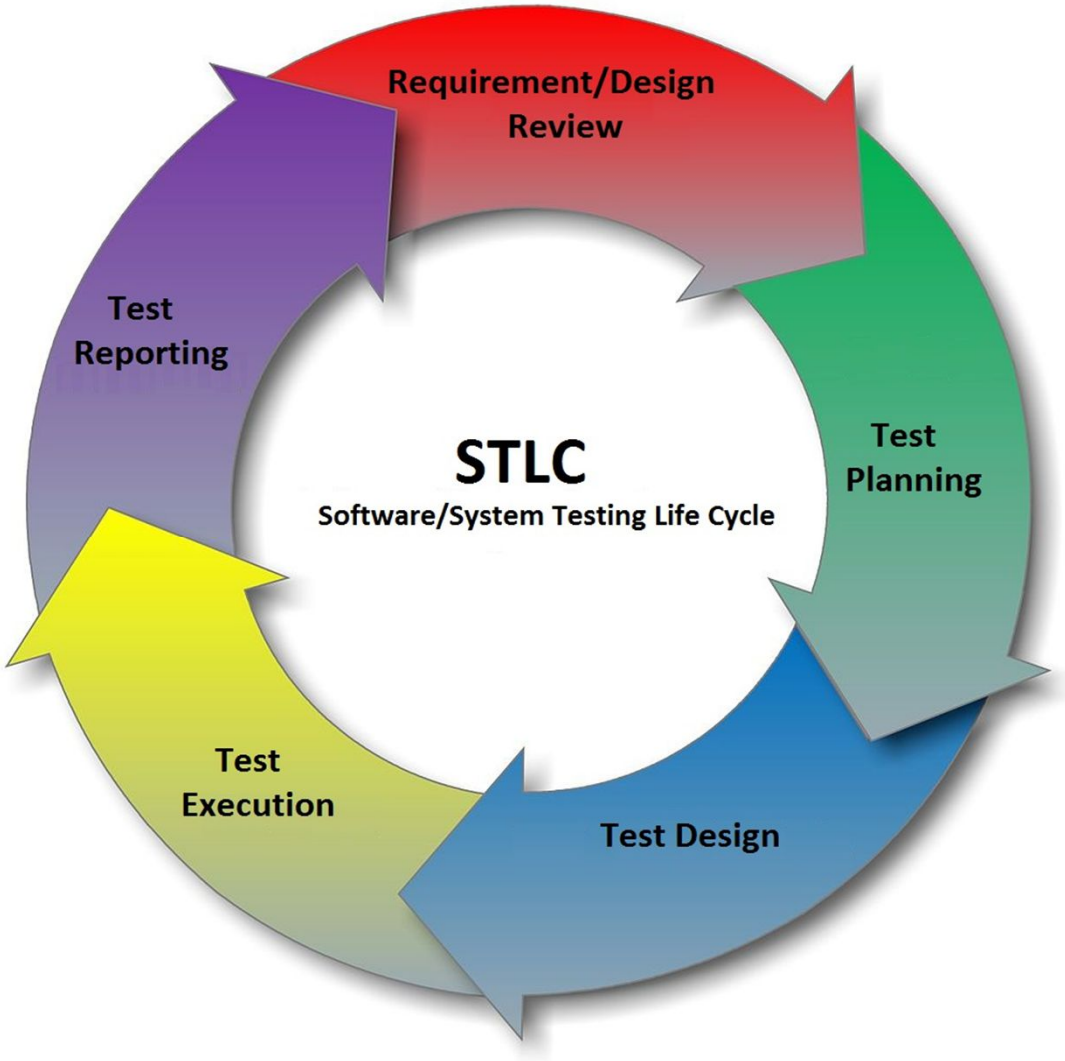
Continuous Improvement

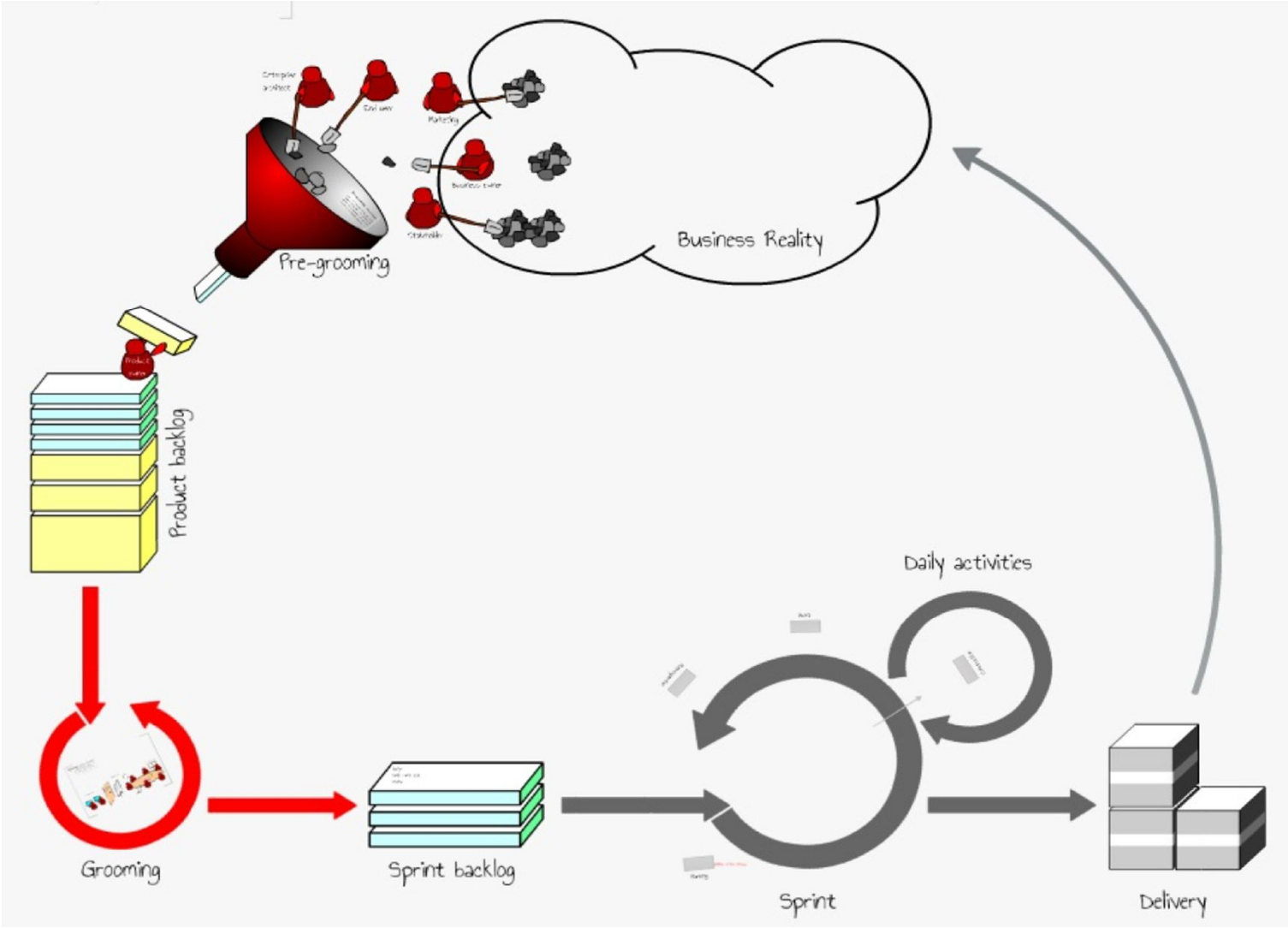


Why is software testing necessary?

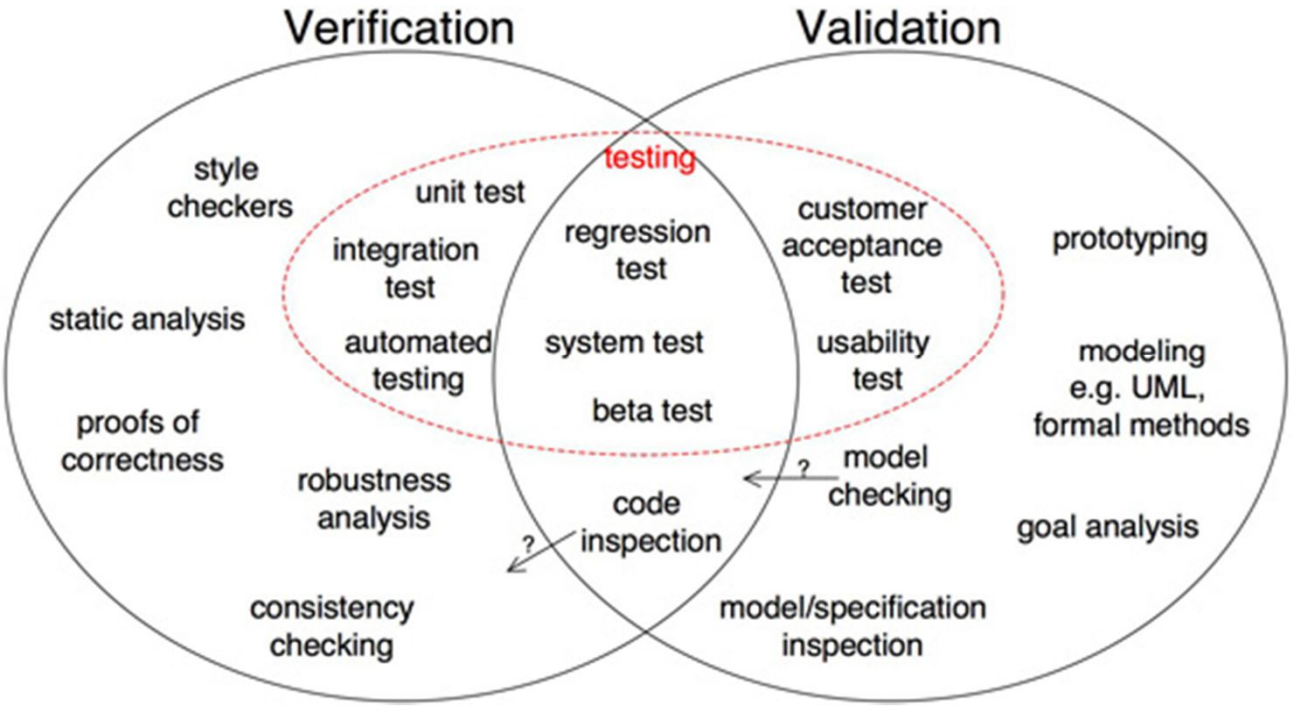
“On 4 June 1996 the maiden flight of the Ariane 5 launcher ended in a failure. **Only about 40 seconds after initiation of the flight sequence, at an altitude of about 3700 m, the launcher veered off its flight path, broke up and exploded.”**
(*https://www.esa.int*)

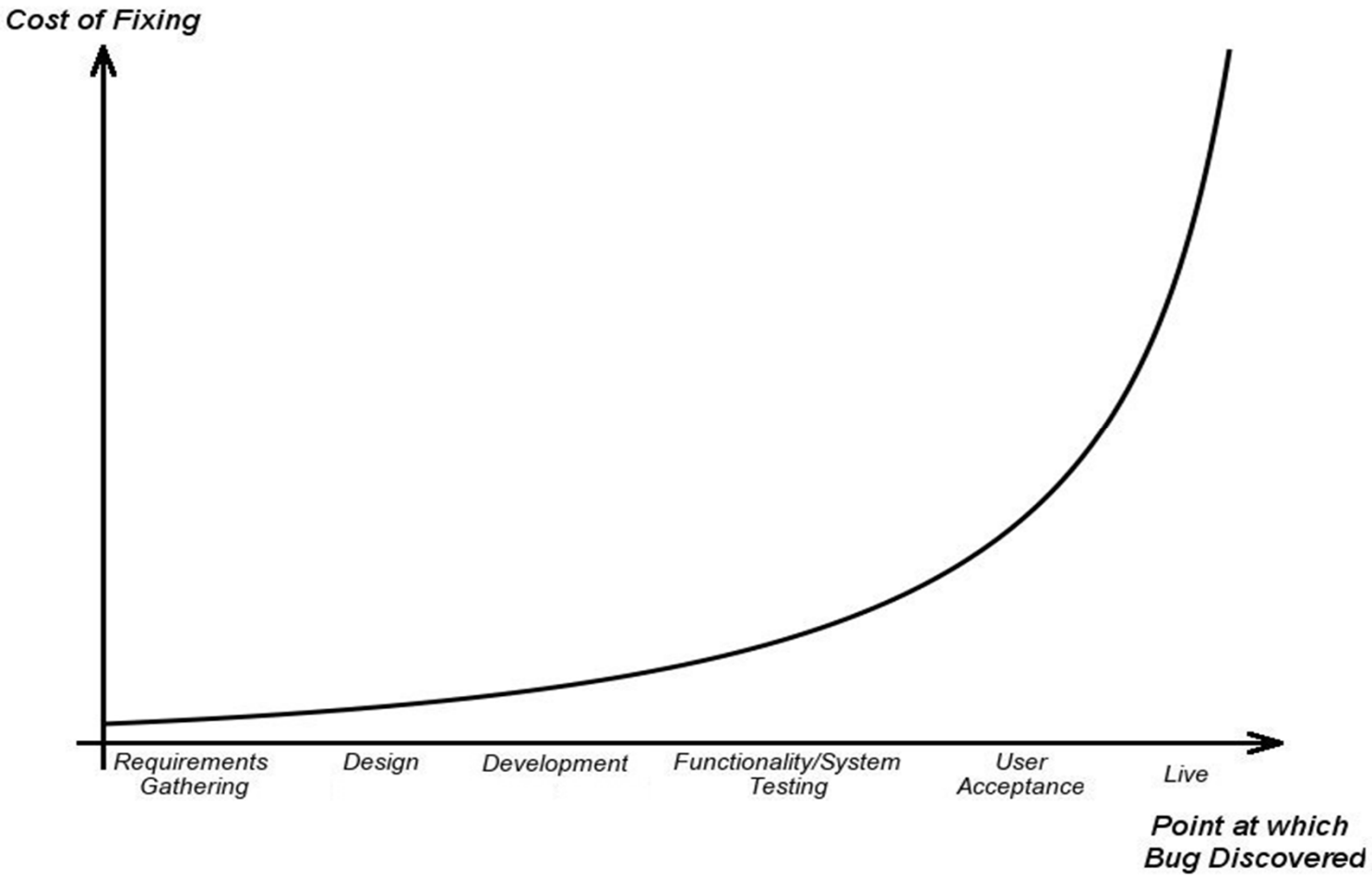

Requirement Analysis
Design
Implementation
Testing
Evolution
SDLC
Software/System Development Life Cycle - SDLC


Requirement/Design Review
Test Planning
Test Design
Test Execution
Test Reporting
STLC
Software/System Testing Life Cycle


Business Reality
Pre-grooming
Product backlog
Grooming
Sprint backlog
Daily activities
Sprint
Delivery

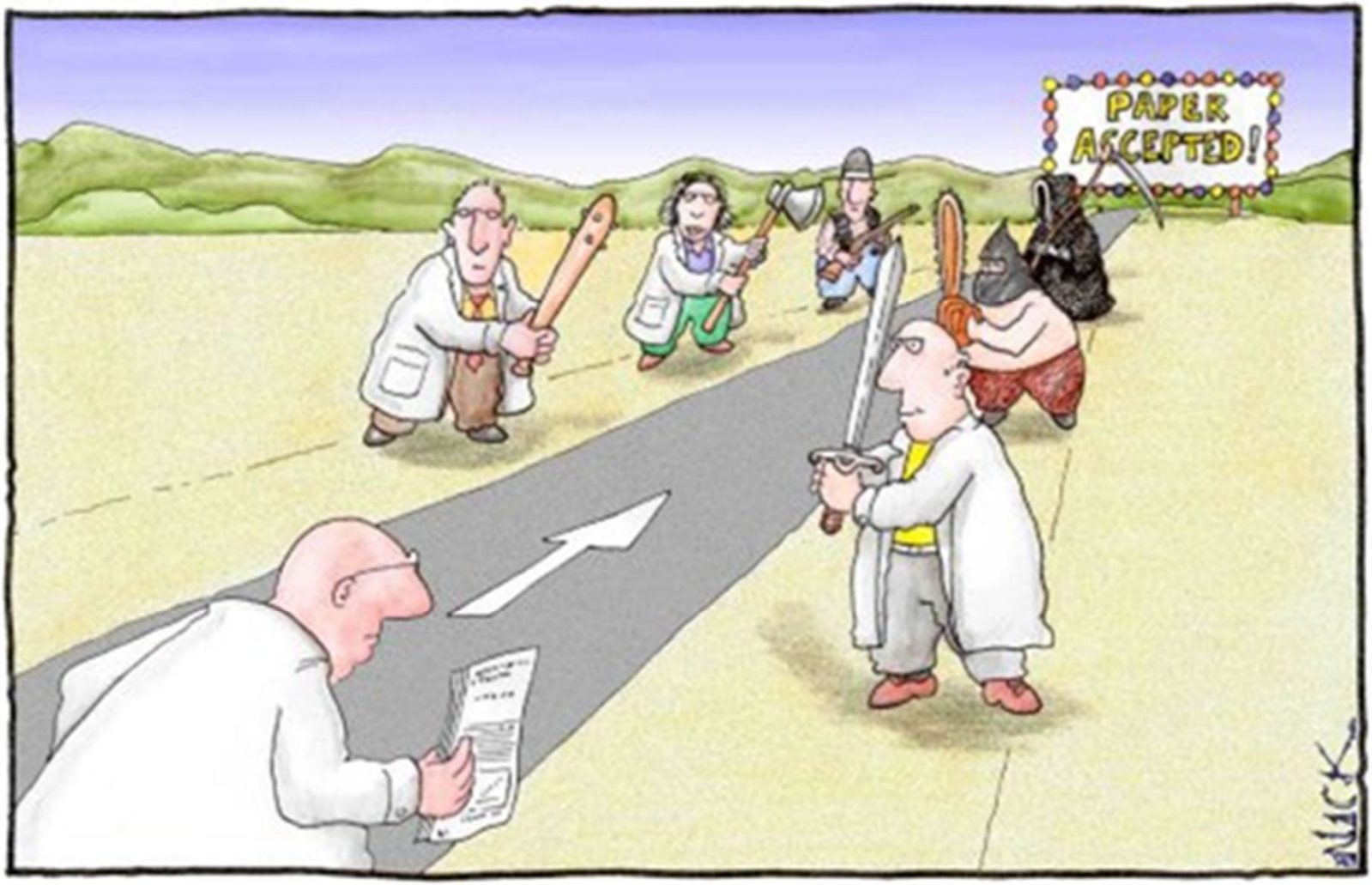
Verification & Validation



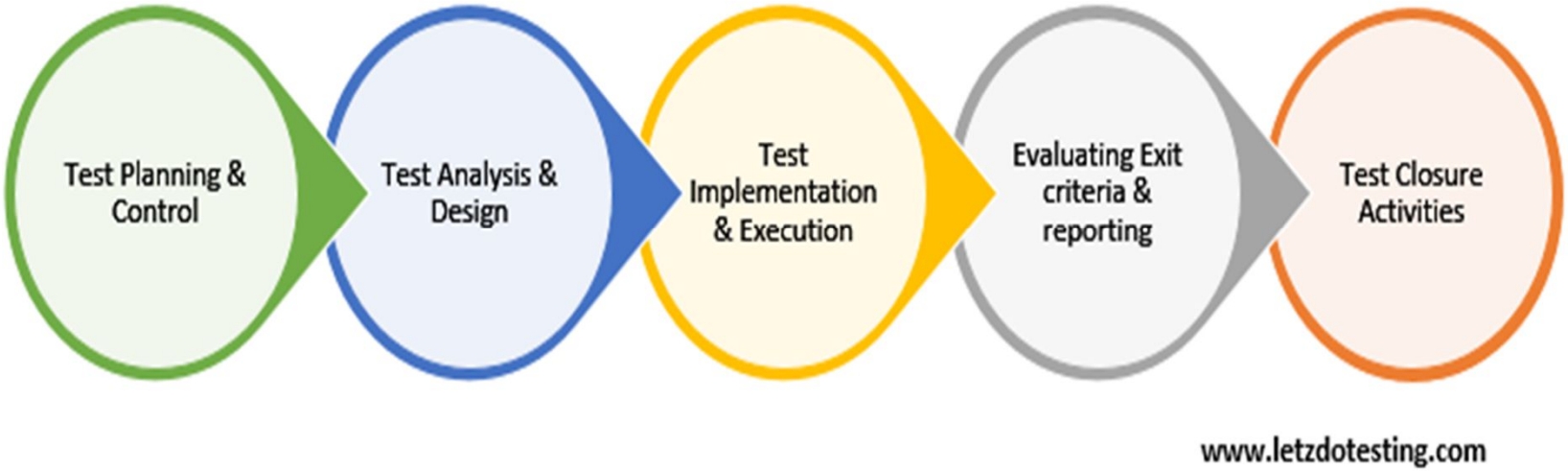

Cost of Fixing
Requirements Gathering
Design
Development
Functionality/System Testing
User Acceptance
Live
Point at which Bug Discovered

Why is software testing important?

“On 4 June 1996 the maiden flight of the Ariane 5 launcher ended in a failure. **Only about 40 seconds after initiation of the flight sequence, at an altitude of about 3700 m, the launcher veered off its flight path, broke up and exploded.”**
(*https://www.esa.int*)


PAPER ACCEPTED!

The fundamentals of test process



Test Planning and Control

Test Planning:

Activities:

- Determine the scope and risks and identify the objectives of testing
- Determine the test approach (techniques, test items, coverage, identifying the testing team, resources)
- Schedule test analysis and design tasks, test implementation, execution and evaluation
- Determine exit criteria

Deliverables: Test Policy, Test Strategy, Test Plan

Test Control:

Activities:

- Compare actual progress against the planned progress
- Monitor and document progress, test coverage and exit criteria and provide information on testing through reports
- Initiate corrective actions, if necessary

Deliverables: reports, test data

Test Analysis and Design

The phase where general testing objectives are transformed into tangible test conditions and test designs.

Activities:

- Review the test basis examining the specification for the software that we are testing
- Identify test conditions
- Design the high-level tests
- Evaluate testability of the requirements and the system
- Design the test environment setup and identify any required infrastructure and tools

Deliverables: test conditions, test suites

Test Implementation and Execution

Test Implementation:

Activities:

- Develop and prioritize our test-suites
- Create scenarios and test-cases derived for efficient test execution
- Implement / configure and verify the test environment

Deliverables: test data, test cases, test scripts.

Test Execution:

Activities:

- Execute the test-suites and test-cases
- Compare actual result with expected results
- Log the outcome of the test execution, report discrepancies (bugs, defects, error reports)
- Re-execute the tests that previously failed in order to confirm the fixes

Deliverables: test-execution reports, issues, issue-reports

Evaluating Exit Criteria and Reporting

Evaluating exit criteria is the activity where test execution is assessed against the defined objectives.

Activities:

- Check the test logs against the exit criteria specified in test planning phase
- Assess if more tests are needed or if the exit criteria specified should be changed
- Write a test summary report for stakeholders

Deliverables: Test Summary Report, other reports

Test Closure activities

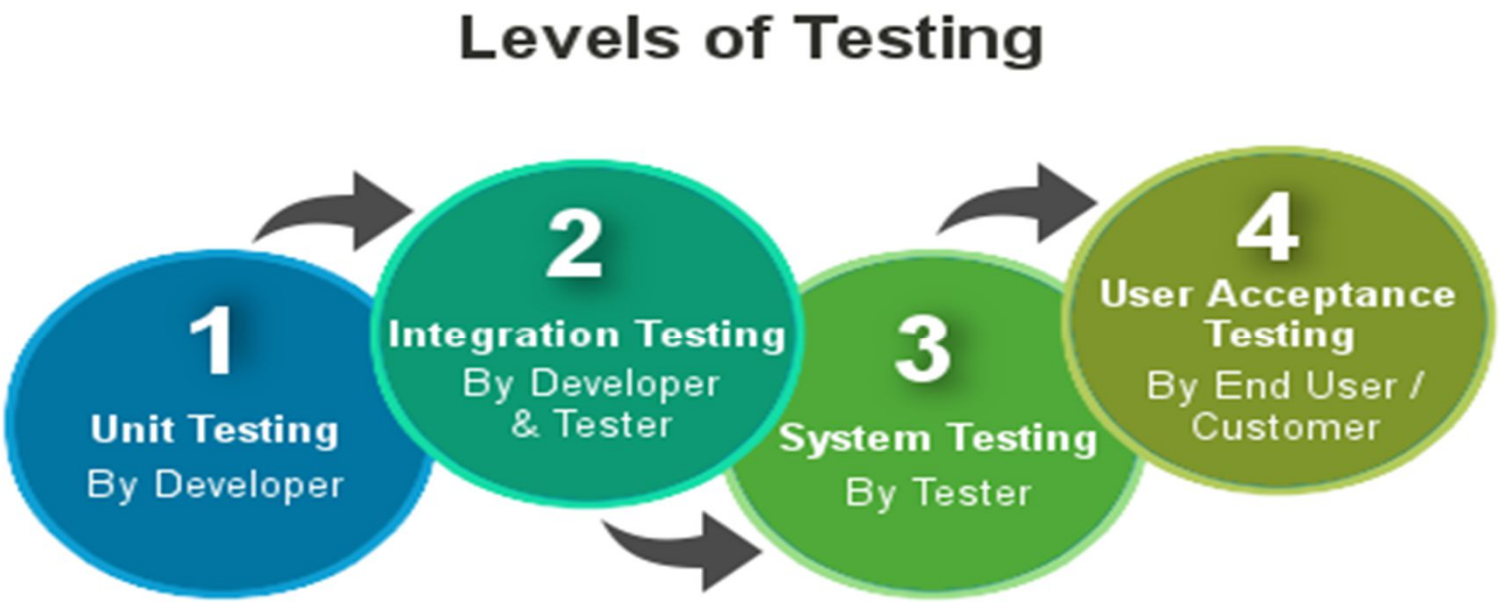
Closing the corresponding testing activities.

Activities:

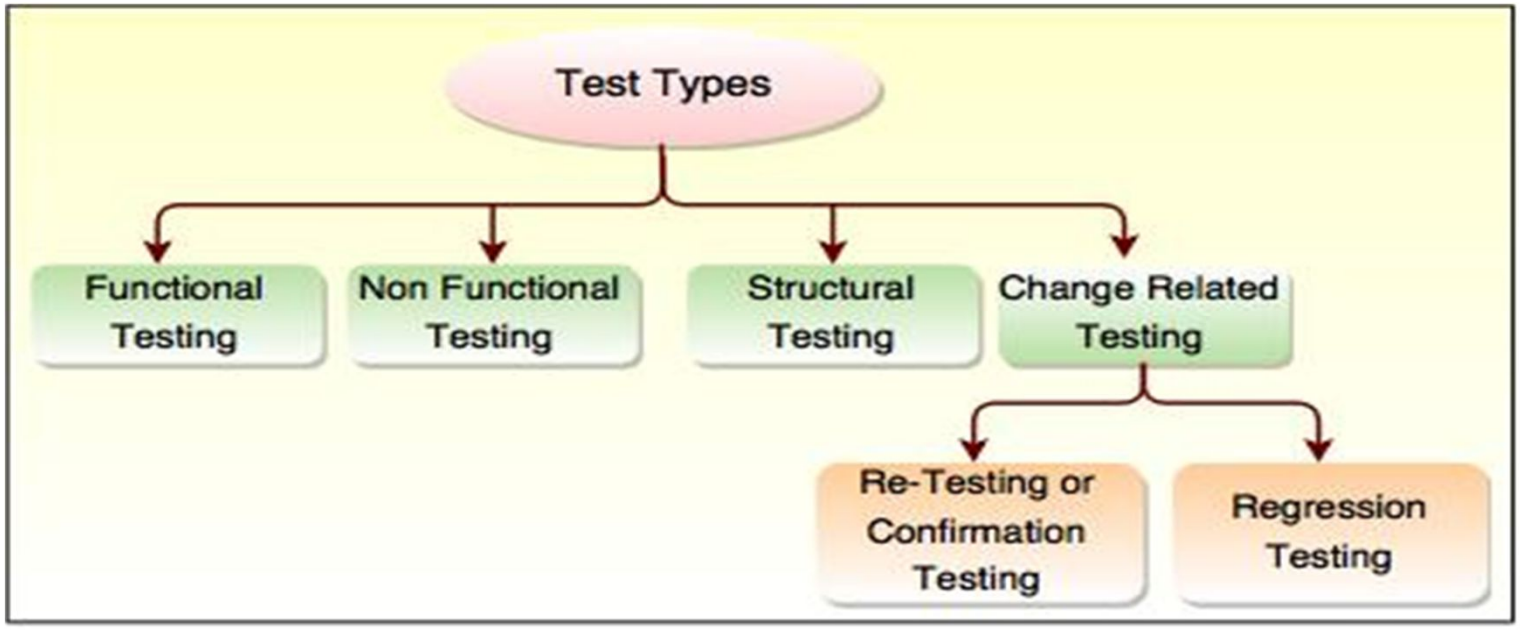
- Check which planned deliverables are actually delivered and to ensure that all incident reports have been resolved
- Finalize and archive testware such as scripts, test environments, etc. for later reuse
- Handover the testware to the maintenance organization. They will give support to the software and make any bug fixes or maintenance changes.
- Evaluate how the testing went and learn lessons for future releases and projects

Deliverables: testware, archives with testware; process improvement suggestions

Test Levels


Levels of Testing
1
Unit Testing
By Developer
2
Integration Testing
By Developer
& Tester
3
System Testing
By Tester
4
User Acceptance
Testing
By End User /
Customer

Test Types


Test Types
Functional Testing
Non Functional Testing
Structural Testing
Change Related Testing
Re-Testing or Confirmation Testing
Regression Testing

Questions?

Agile Software Development using SCRUM

The **SCRUM methodology** is a framework within which people can address complex adaptive problems, while productively and creatively delivering products of the highest possible value.

In other words Scrum is a lightweight framework that helps people, teams and organizations generate value through ***adaptive solutions*** for complex problems.

Agile Software Development using SCRUM

A **SCRUM Team** is usually formed by 5 to 9 members working together to deliver the required product increments.

In Scrum, there are three roles: **Product Owner, Development Team, and Scrum Master**. Together these are known as the Scrum Team.

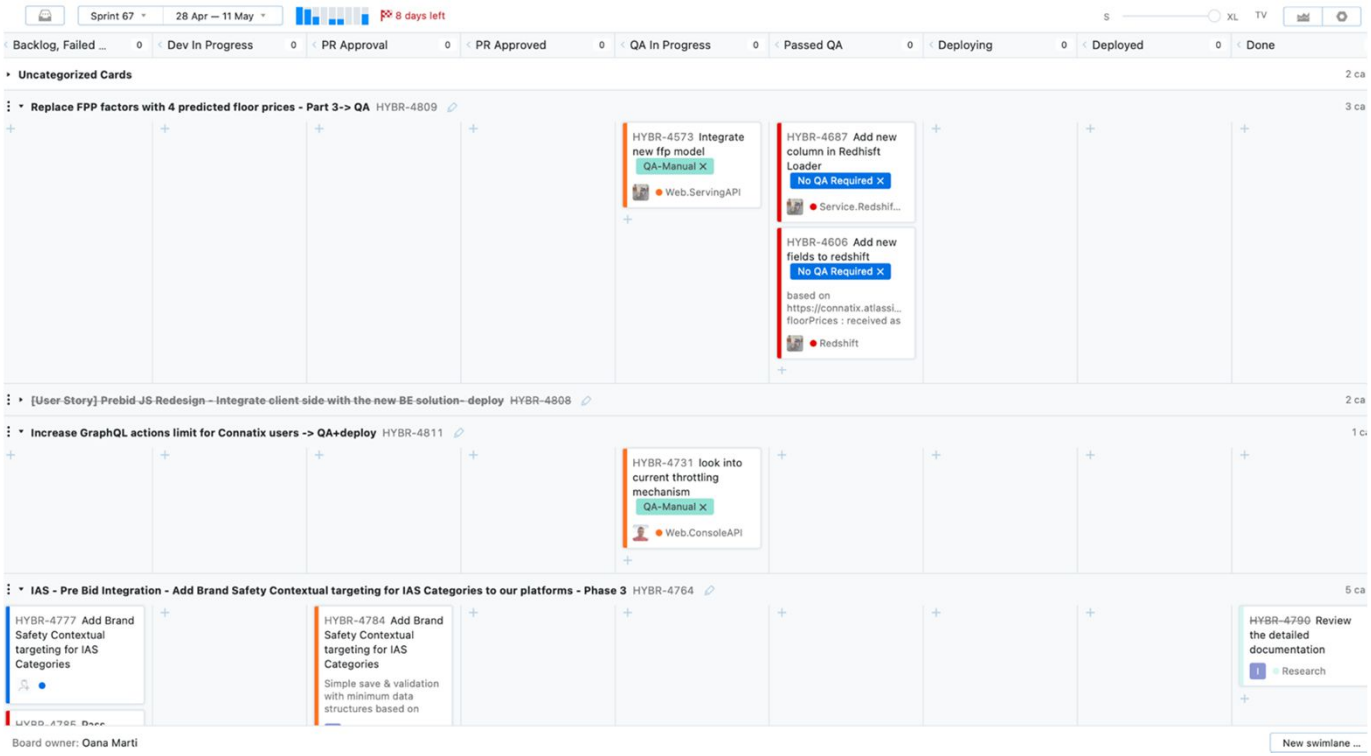
The common **roles in our company** within a SCRUM Team are:

- **Product Owner** – “translates” the customer needs to the whole team; refines the Project Backlog (what to do)
- **Team Lead** – ensures that the process runs smoothly, removes impediments, organizes critical events and meetings (how to do things)
- **Developer** – writes the code for the project
- **Tester** – tests the code

Agile Software Development using SCRUM

- The most common **AGILE Project Management tool** that is designed to support any AGILE methodology, be it Scrum, Kanban, or something else is **Jira Software.**
- From sprint boards to reports, the team can plan, track, and manage all their software development projects within a single tool.
- But there are others: **Youtrack, Rally, Azure, Helix, Trello.**

How does a SPRINT BOARD look like in Youtrack?



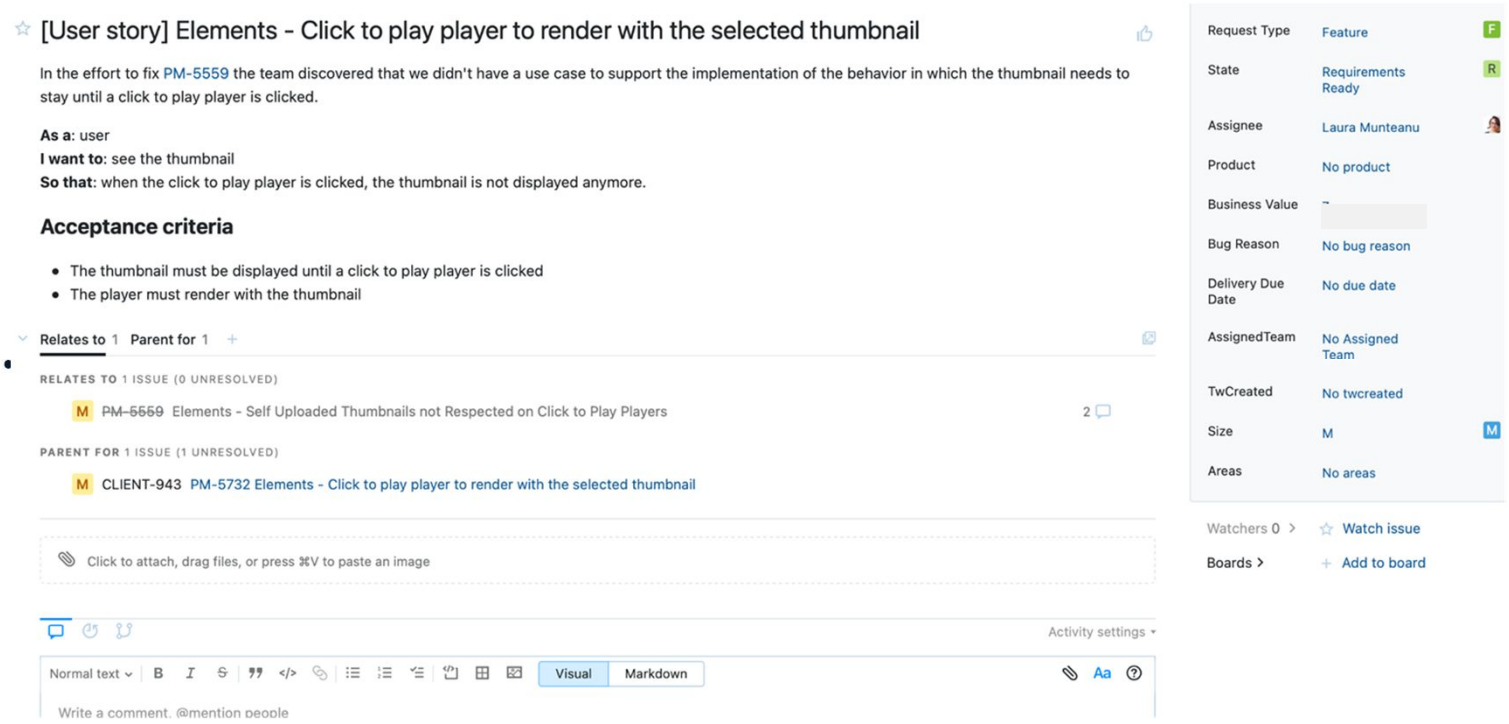
What is a USER STORY?

Is a small, self-contained unit of development work designed to accomplish a specific goal within a product (It can represent a user's need, serve as a planning item in agile software development).

- We can look at it as a (software) requirement formulated in everyday language so it can be easily understood by everyone who reads it; usually follows the simple format:

  E.g: “As a user I want to perform <this action> so that I can accomplish <this goal>.”

How does a USER STORY look like?



What is a TEST SCENARIO? What is a TEST CASE?

Test Scenario:

Is a collective set of test cases which helps the testing team to determine the positive and negative characteristics of the project.

- Gives a high-level idea of what we need to test.
- As a tester, you should put yourself in the end user's shoes and figure out the real-world scenarios and use cases of the applications under test.

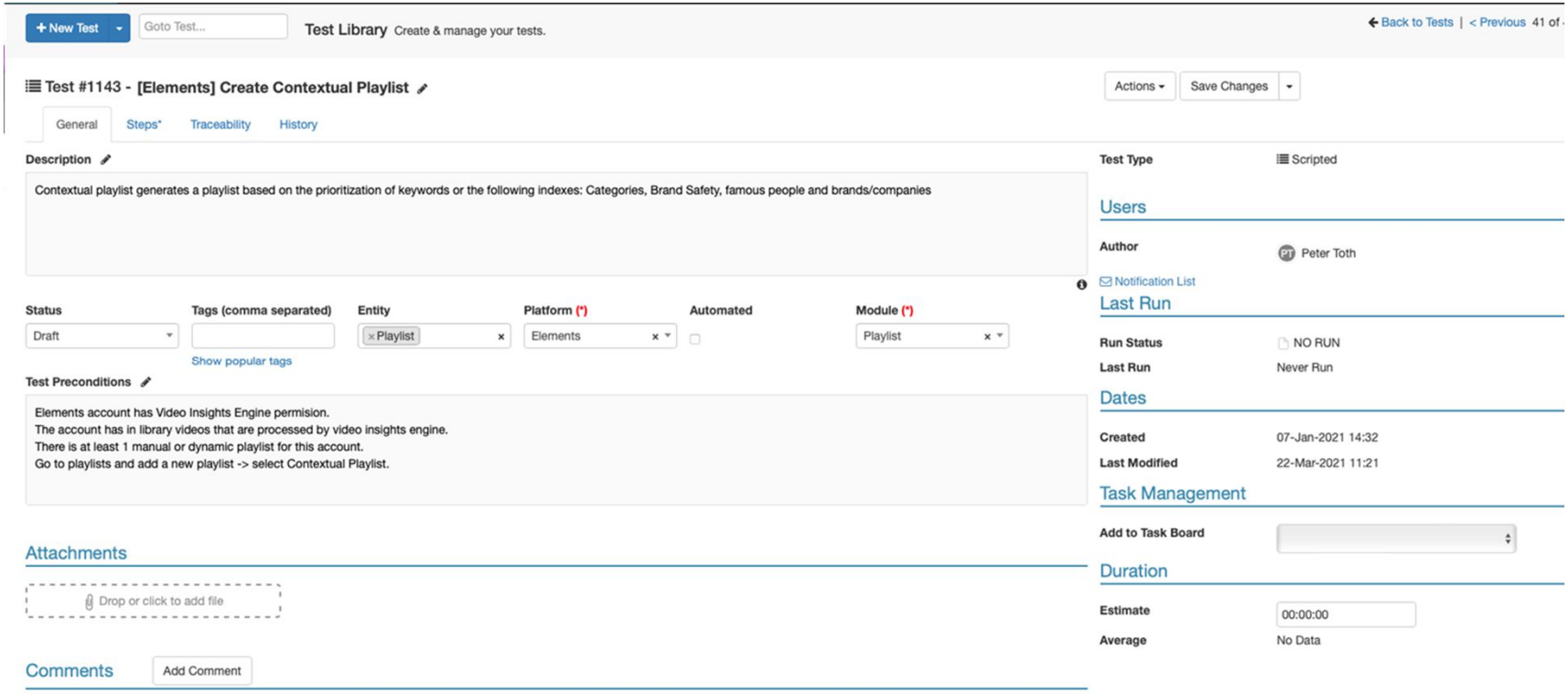
Test Case:

Set of actions executed to verify a particular feature or functionality of the software application.

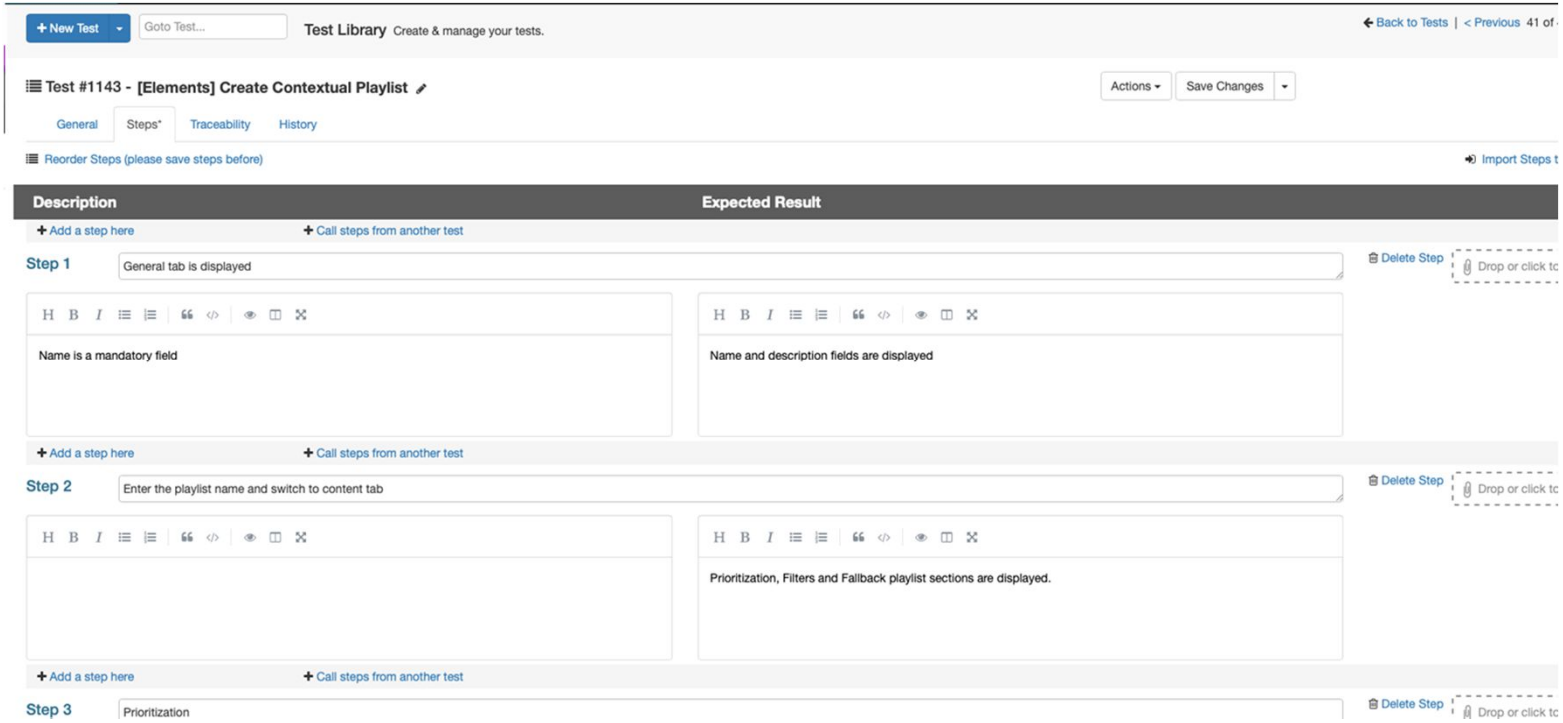
It contains:

- Input values
- Preconditions
- Steps to reproduce
- Expected results
- Postconditions

HOW DOES A TEST CASE LOOK LIKE



HOW DOES A TEST CASE LOOK LIKE



What is a BUG?

- A human being can make an error (mistake) which produces a DEFECT (or a BUG, a flaw) in the code.
- If the defect in the code is executed, it can cause a **failure**, but not all defects result in failures.
- In other words, when **actual result** deviates from the **expected result** while testing, then it results into a defect. Hence, any deviation from the specification mentioned in the product functional specification document is a defect.
- Depending on the organization, the defect is called differently like: **bug**, **issue**, **incident** or **problem**.

How do we report a Bug?

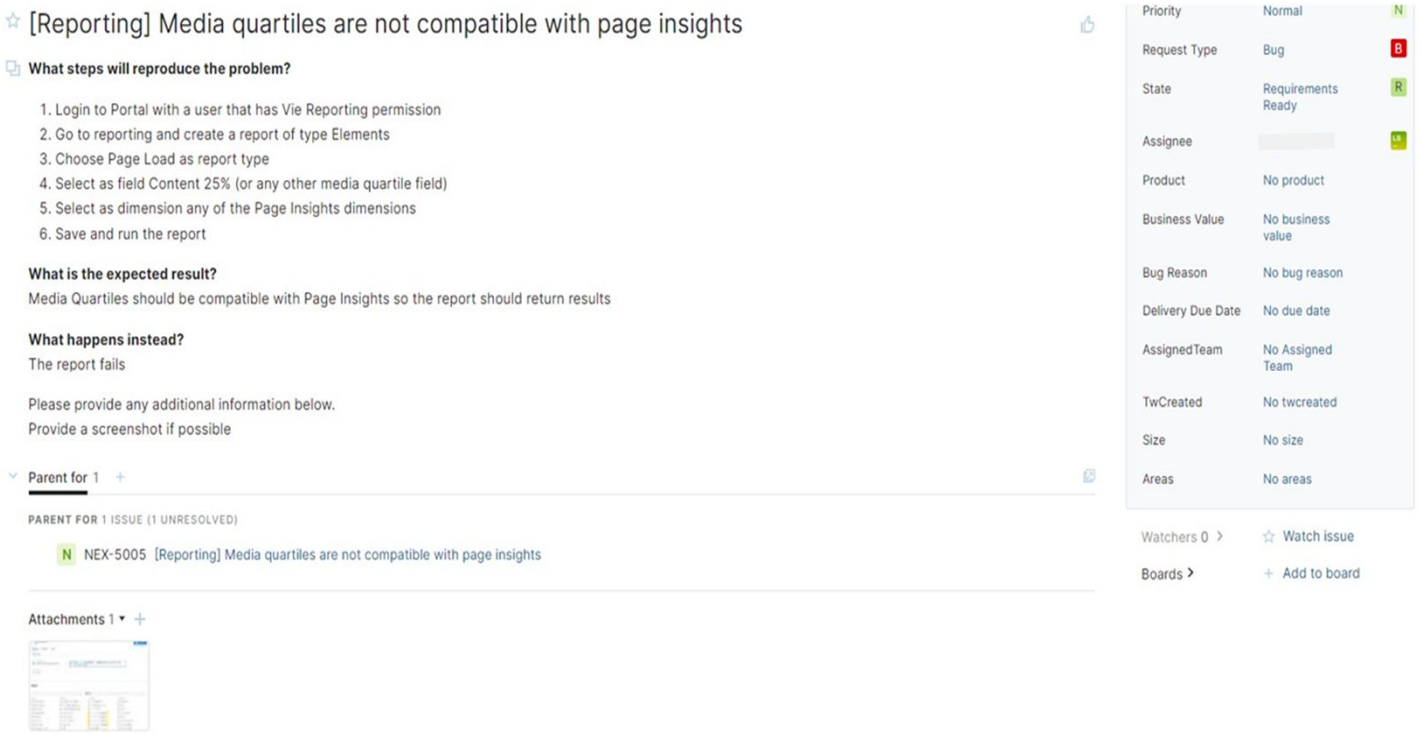
When reporting a defect a tester should:

- Have a clear goal in mind, know exactly what he wants to transmit
- Provide developers, managers and others detailed information about the behavior observed and the defect itself
- Be precise, concise, clear, unambiguous
- Attach screenshots if you can
- Express the observations in a neutral tone, fact-focused and impartial

A defect should mainly contain:

- Defect ID - Unique identification number for the defect
- Severity and priority
- Version - Version of the application in which defect was found.
- Date Raised - Date when the defect is raised
- The name of the person who found the defect
- Status of the defect
- Description of the defect with:
  - Steps to reproduce
  - Expected result
  - Actual result
- Screenshots, logs or videos which capture and prove the defect found

Bug example



[Reporting] Media quartiles are not compatible with page insights

What steps will reproduce the problem?

1. Login to Portal with a user that has Vie Reporting permission
2. Go to reporting and create a report of type Elements
3. Choose Page Load as report type
4. Select as field Content 25% (or any other media quartile field)
5. Select as dimension any of the Page Insights dimensions
6. Save and run the report

What is the expected result?
Media Quartiles should be compatible with Page Insights so the report should return results

What happens instead?
The report fails

Please provide any additional information below.
Provide a screenshot if possible

Parent for 1

PARENT FOR 1 ISSUE (1 UNRESOLVED)

N NEX-5005 [Reporting] Media quartiles are not compatible with page insights

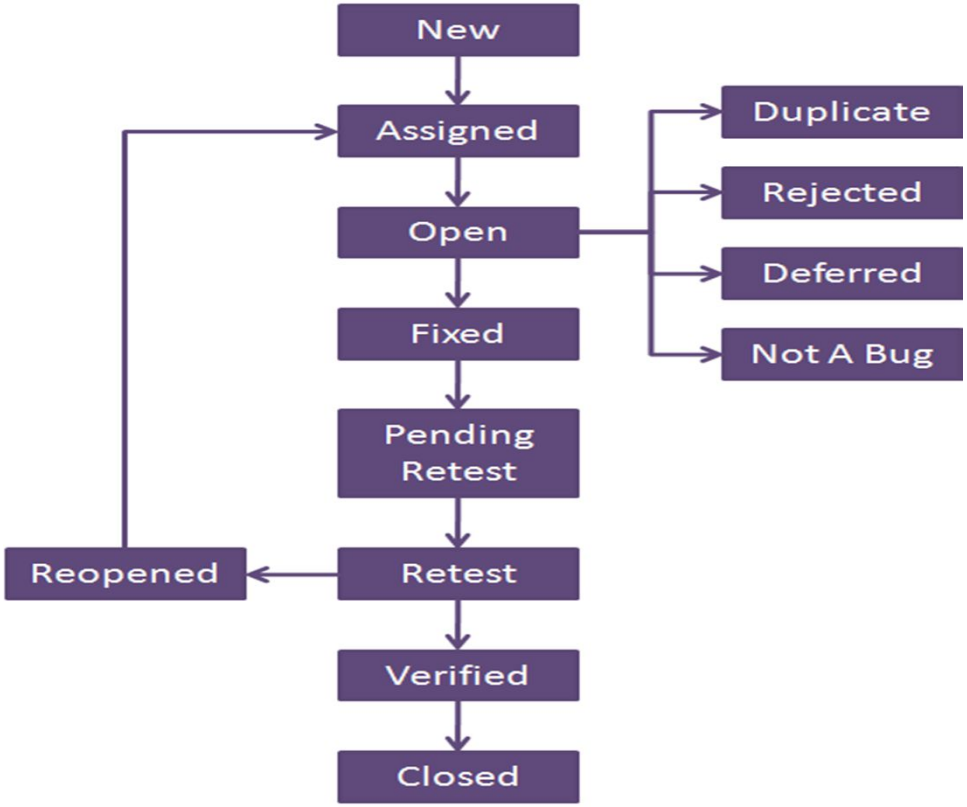
Attachments 1

Priority	Normal
Request Type	Bug
State	Requirements Ready
Assignee	
Product	No product
Business Value	No business value
Bug Reason	No bug reason
Delivery Due Date	No due date
AssignedTeam	No Assigned Team
TwCreated	No twcreated
Size	No size
Areas	No areas

Watchers 0 · Watch issue

Boards · Add to board

Defect Life Cycle example



Testing & Quality

- Testing is part of quality assurance and it contributes to higher quality.

- Testing helps in **measuring** the quality of software in terms of the number of defects found, tests run, test coverage.

- Testing **identifies defects as early as possible**, before the software is in use, in this way avoiding unwanted cost of the stakeholders.

- Testing activities and QA activities complete each other:
  - the goal of a **Tester** is to find bugs, find them as early as possible and make sure they get fixed.
  - the goal of a **QA person** is to create and enforce standards and methods to improve the development process and to prevent bugs from ever occurring.

- Testing **gives confidence** in the quality of the software, because when testing find defects, the quality of the software increases if those defects are fixed.

Directions in testing area

Automation testing

From post pandemic situation

WFH

From post pandemic situation

HAVING MORE TIME WITH FAMILY AND FURRY FRIENDS

To current situation

CONFERENCES, WORKSHOPS AND EVENTS

Current situation

WFH/WFO,
TEAMS,

TEAM BUILDINGS,

COMPANY EVENTS

Resources & Bibliography

Useful links:

- https://artoftesting.com/
- https://www.atlassian.com/agile
- https://www.softwaretestingtricks.com/
- https://www.guru99.com/
- http://tryqa.com/

Books:

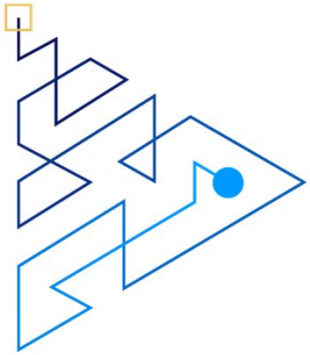
Foundation of Software Testing – Dorothy Graham

Agile Testing. A Practical Guide For Testers and Agile Teams – Lisa Crispin & Janet Gregory

Thank you!

You can send us questions at:
roxana.soporan@connatix.com
peter.toth@connatix.com

Quiz time! Let's play



01 Access: menti.com

02 Introduce the code mentioned in the course!

03 Make sure you fill in your entire name and group number, e.g. RoxanaSoporan_231