Sonar XSL

A Schematron-based SonarQube plugin for XSL code quality measurement.

Code Quality

What is « Good Code » ?

- **Code should be easily maintainable**
  - Clear architecture
  - human-readable code
- **Code should be reliable**
  - Wich means that is should be tested
- **Code should not expose vulnerabilities**

What is « Good Code » ?

- **Code should be documented**
  - To be easily understood : for maintainance, debugging, enhancement…
  - For external usage (Public API, Library...)

Some Coding Standards exists for many langages

- **Example, for Java :**
  - Sun Code Conventions
  - Google Java Style
  - Etc.
- **For JS :**
  - StandardJS
  - EsLint / JsLint
  - Etc.

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- **They are designed to be checked programmatically.**

XSLT-Quality

- **The XSLQuality StyleSheet**

In 2009, Mukul Gandhi released his **XSL Quality XSLT**.

A tool written in XSLT 2.0 that checks the conformance of an XSL Stylesheet to a set of 25 rules that he defined.

- **The XSLT-Quality Schematron**

Late 2017 Matthieu Ricaud Dussarget released a Schematron based on this work.

SonarQube

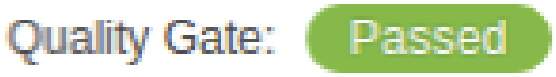
- **A code quality measurement tool**
  - That allows to quantify, with metrics, the code quality of an application.
- **SonarQube analyses the source code**
  - And checks the respect of some best-practice rules
  - These rules are defined in some Plugins
  - SonarQube embeds a dozen plugins
    - For the main programming langages (Java, Python, C#, Js...)
    - These plugins are maintained by an open-source community
  - An API allows to extend SornarQube by creating plugins
    - To add new rules
    - To handle some new programming langages
    - This API is available in Java (SonarQube is written in Java)

- **Rules...**
  - ...of differents types
    - Code smell – Coding style / Best-pratices
    - Bug – Potiential source of failure
    - Vulnerability – Security concerns
  - ...of differents severity level
    - Info
    - Minor
    - Major
    - Blocker
    - Critical
  - …on different issues
    - Coding Style
    - Test coverage
    - Etc.

- **When a rule is broken in the code**
  - SonarQube raises it as an **Issue**
    - Traceability of fix actions
  - This mechanism can be integrated to the project workflow tools (Jira, Trello, Slack, Mantis, Github Issue...)

- **The Quality Gate :**
  - Requirements definition for a project
    - Minimal/maximal values admitted for the metrics related to the project
  - Each analysis of the project ends whith a « verdict » :
    Succes, ***Warning*** or ***Failed***
  - Key actions should depend of this result :

    Examples :
    - No delivery if the analysis ends to ***failed***
    - Improvements planning
    - Etc.



- **Exemple : the default « Sonar Way » *Quality Gate***

Sonar way Built-in

Conditions

Only project measures are checked against thresholds. Sub-projects, directories and files are ignored.

Metric	Over Leak Period	Operator	Warning	Error
Coverage on New Code	Always	is less than		80.0%
Duplicated Lines on New Code (%)	Always	is greater than		3.0%
Maintainability Rating on New Code	Always	is worse than		A
Reliability Rating on New Code	Always	is worse than		A
Security Rating on New Code	Always	is worse than		A

The Sonar XSL Plugin

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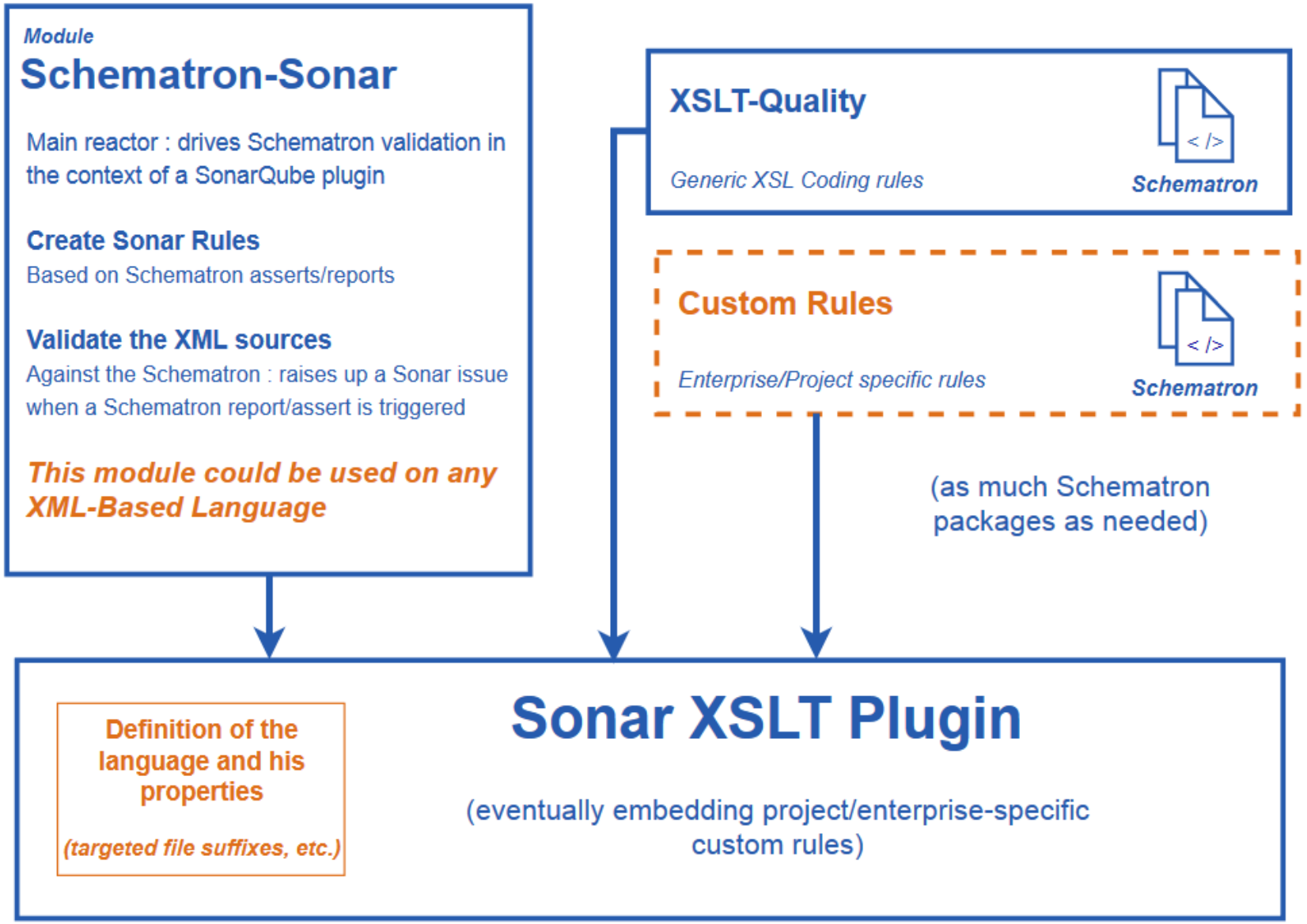

- **Finalise the code**
- **Deployment and use in real-world**
  - Experimental usage at *Editions Lefebvre Sarrut*
- **Documentation and communication**

- **SonarQube is not a « punitive » tool**

  - It allows developpers (and not only them) to have more visibility on the quality of what they do
  - It is a documentation repository

Any Questions ?