



# Automating OW2 SQuAT Assessment and Reporting using Workflow and Metric Collection Tools



6/11/2014

*Jean-Christophe Deprez, Durieux Dimitri*

FEDER



UNION EUROPEENNE



Wallonie



LE FONDS EUROPEEN DE DEVELOPPEMENT REGIONAL  
ET LA WALLONIE INVESTISSENT DANS VOTRE AVENIR.

Innovation

Proof-of-concept

Research projects

**SCIENTIFIC**  **INDUSTRY**



RÉGION WALLONNE

Applied research

Feasibility studies

Technology transfer



SEVENTH FRAMEWORK  
PROGRAMME

## CHOOSE (2012) :

- Application of QualOSS Methodology
- Targeting OW2's Mature Transition Checklist (MTC)
- Automated analysis and reporting
- For Java only
- Workflow oriented approach





## Technical

- Source code, Documentation and Binaries
- Build maturity
- Source code repository and management



## SQuAT (Software Quality Assurance Trustworthiness)



## Community

- Committers activity
- Dashboard completeness
- Project Activity



## Technical

- Source code, Documentation and Binaries
- Build maturity
- Source code repository and management



QualOSS adapted to SQuAT (with Community)



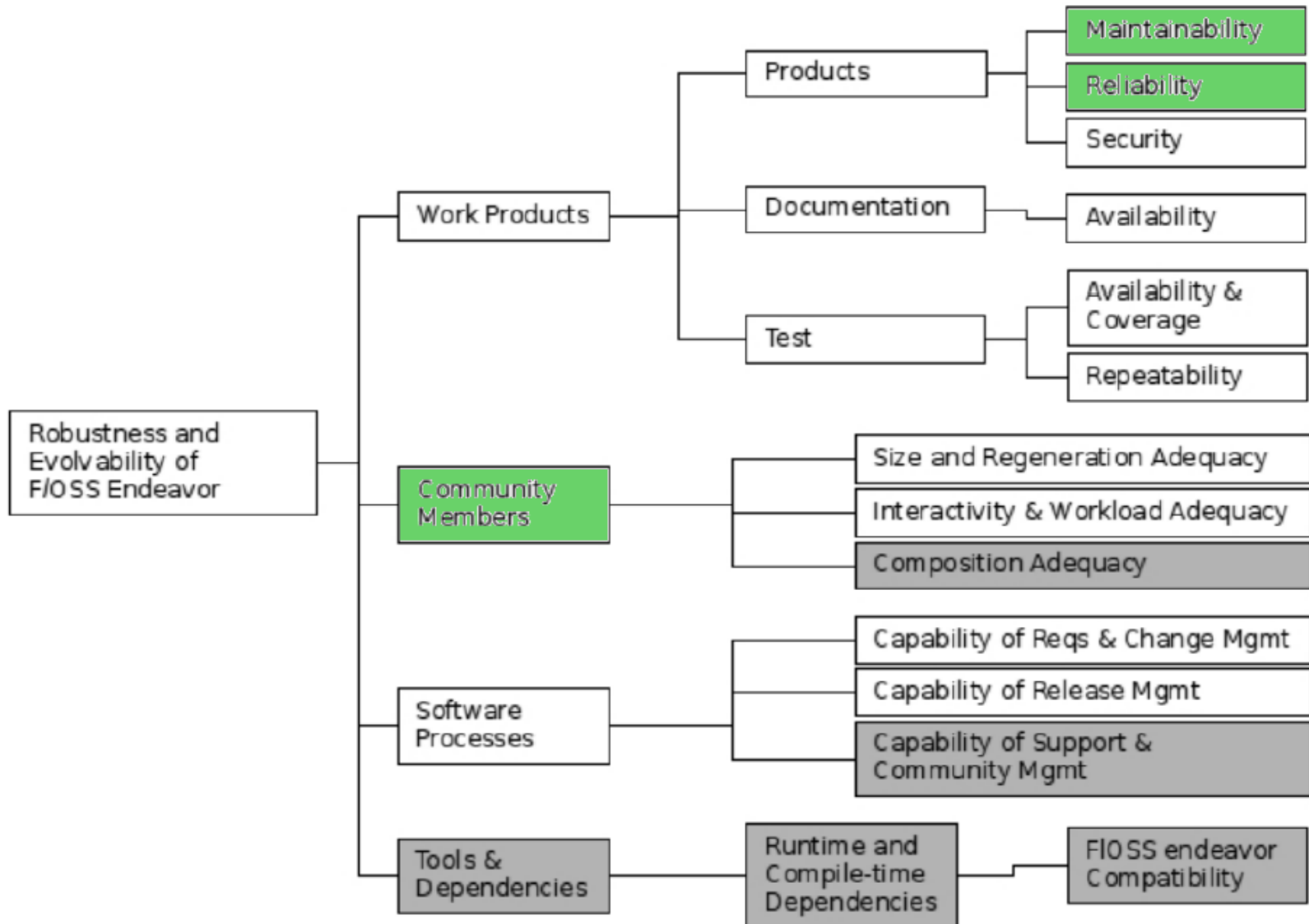
## Community

- Committers activity
- Dashboard completeness
- Project Activity

QualOSS is methodology to assess F/OSS endeavor

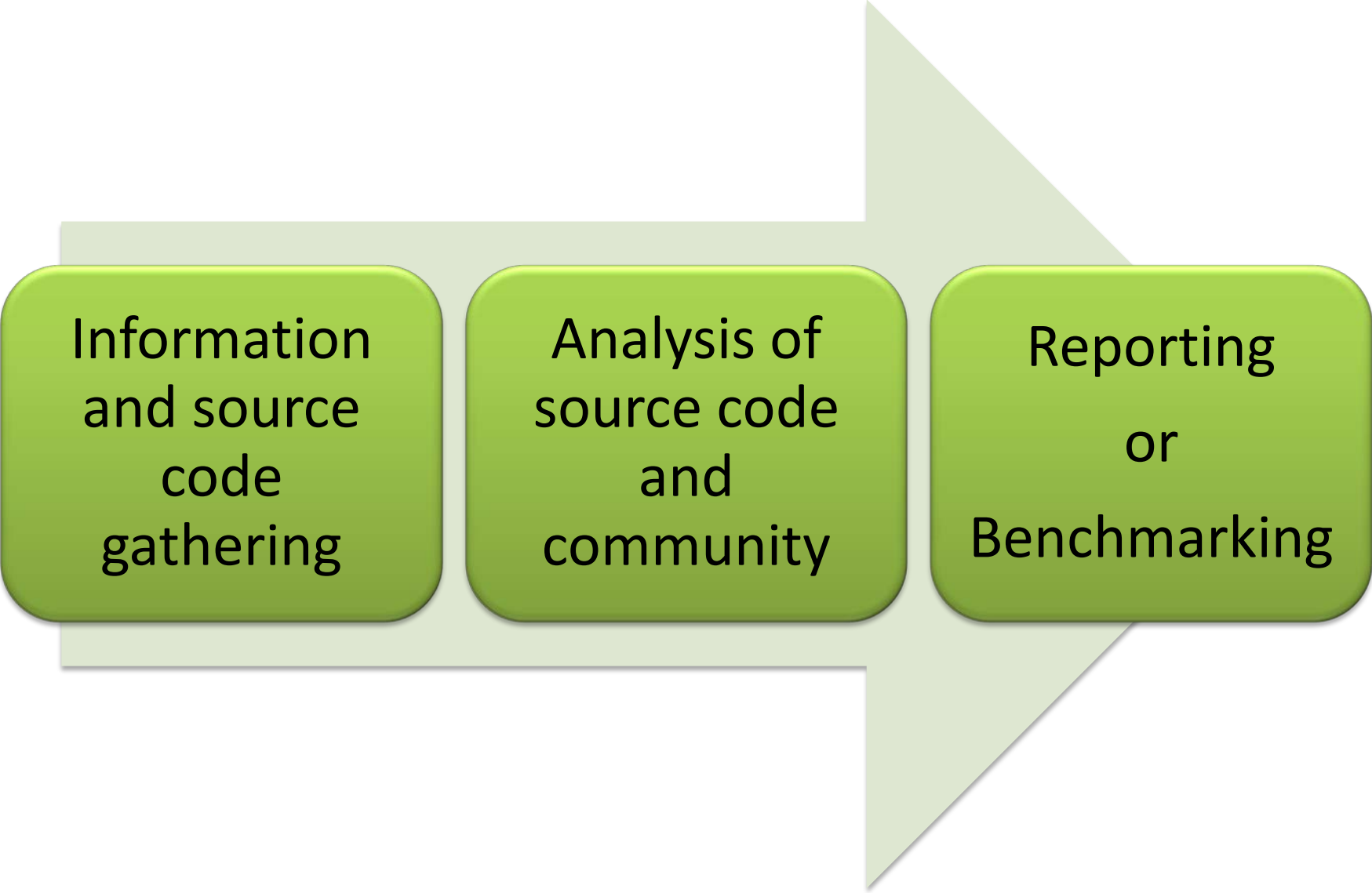
=> to construct assessment model :

- Benchmarking of F/OSS for integration or services
- Deciding of the migration frequency
- Deciding of the setup of new endeavor to increase chance of success
- Assess maturity of an F/OSS endeavor



- QualOSS defines a set of 35 indicators
  - Releases
  - Mailing List
  - Commits log
  - Bugs List
- Evolution based indicators
  - Multiple major and minor releases
- Indicators' scoring system depend on thresholds
  - Calibration on 400 SourceForge projects
  - Specific calibrations made according to MTC





Information  
and source  
code  
gathering

Analysis of  
source code  
and  
community

Reporting  
or  
Benchmarking

Reliability score : 2.28/3.5

Indicator		Rating
[?]	Average number of bugs in stable releases	Green
[?]	Slope number of bugs in stable releases	Yellow
[?]	Number of bugs by number of stable releases	Green
[?]	Slope number of bugs by stable releases lifetime	Red
[?]	Average number of bugs in stable releases specific	Green
[?]	Slope number of bugs in stable releases specific	Red
[?]	Average number of new and modified files per day between minor releases	Black
[?]	Average percentage of modified files between minor releases	Black
[?]	Average number of coding convention violation	Green

## 6. SQuAT

SQuAT (Software Quality Assurance Trustworthiness) is OW2's software quality program, it provides a set of tools dedicated to software quality.

Using the SQuAT tools, it will be easier to ensure of the quality of a project (IP/Licence management, code style, ...).

A mature project has to publish reports concerning the following aspects:

- \* IP/Licence control (Proposed tool: FOSSology)
- \* Quality measurements (Proposed tool: Sonar)
- \* Trustworthiness and maturity indicators : we propose the QualOSS assesement method.

The following evaluation were performed by the QualOSS assessment method. (<http://qualoss.org/>)

Each criterion evaluation has a score between 0 and 3.5. The mean is as following :

- \* 0 : not yet computed
- \* 0.5 : high risk
- \* 1.5 : medium risk
- \* 2.5 : small risk
- \* 3.5 : negligeable risk

The community evaluation is compute on version repository logs, the maintainabilty and reliability ones have been performed on the bugs list and sources.



Community evaluation	1.5/3.5
Maintainability evaluation	2.21/3.5
Reliability evaluation	2.28/3.5

- Tools support 35 maturity indicators
- Tools validated on some OW2's projects
- The information gathering process has been validated on a larger number of projects
- Generated reports are the same as OW2 MTC

- Continue QualOSS characteristics automation
- Improve technology coverage
- Increase number of indicators

*Thank you*  
*Merci*

[Jean-christophe.deprez@cetic.be](mailto:Jean-christophe.deprez@cetic.be)  
[dimitri.durieux@cetic.be](mailto:dimitri.durieux@cetic.be)



Aéropôle de Charleroi-Gosselies  
Rue des Frères Wright, 29/3  
B-6041 Gosselies  
[info@cetic.be](mailto:info@cetic.be)

[www.cetic.be](http://www.cetic.be)

