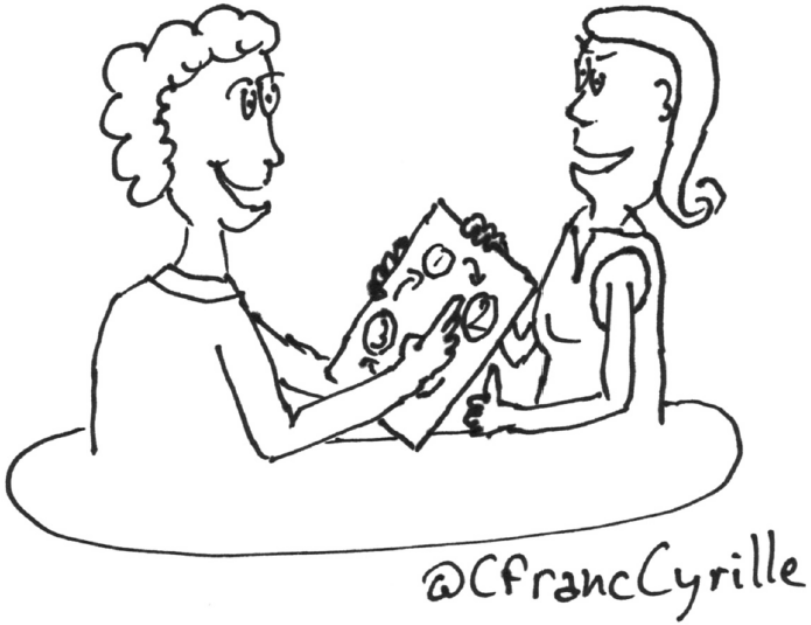
PLUGIN SONAR ICODE CNES

SONAR PLUGIN FOR THE CODE ANALYSIS TOOL: ICODE CNES

GET STARTED WITH SONAR PLUGIN ICODE CNES

- Sonar Server (OPS)
  - VirtualBox and VMs
  - Sonar configuration
  - Deploy & run
- Development environment (DEV)
  - Java JdK
  - Eclipse

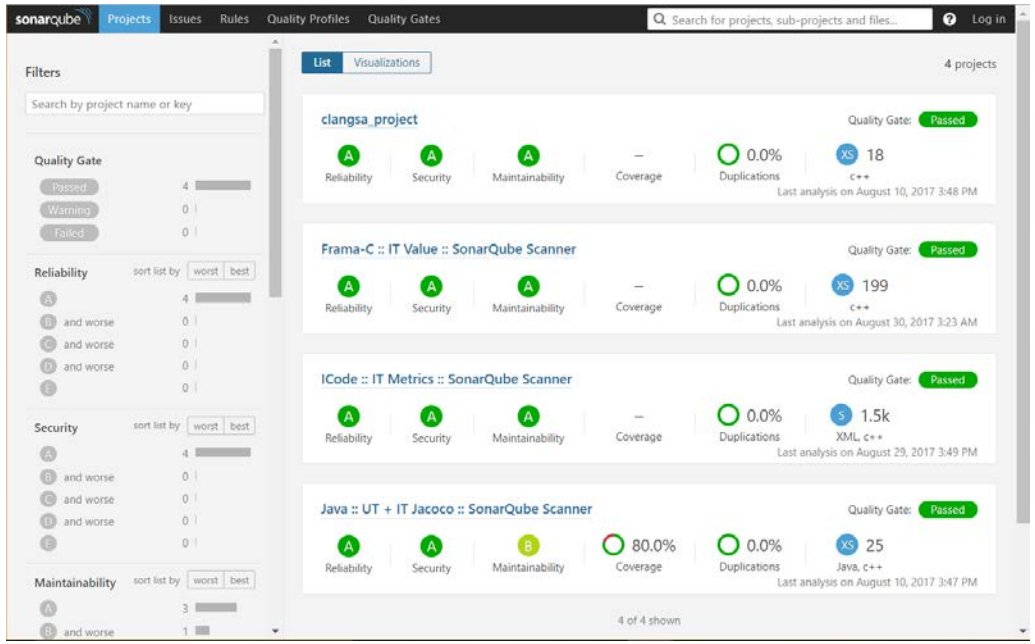


PLUGIN ARCHITECTURE

- languages: Specific Plug-in language
- measures: Metrics and computed measures definitions
- report: Parse a ICode output report
- rules: ICode rules definition
- sensor: Sensor executed by sonar-scanner into ICode projects
- settings: Plug-in preference

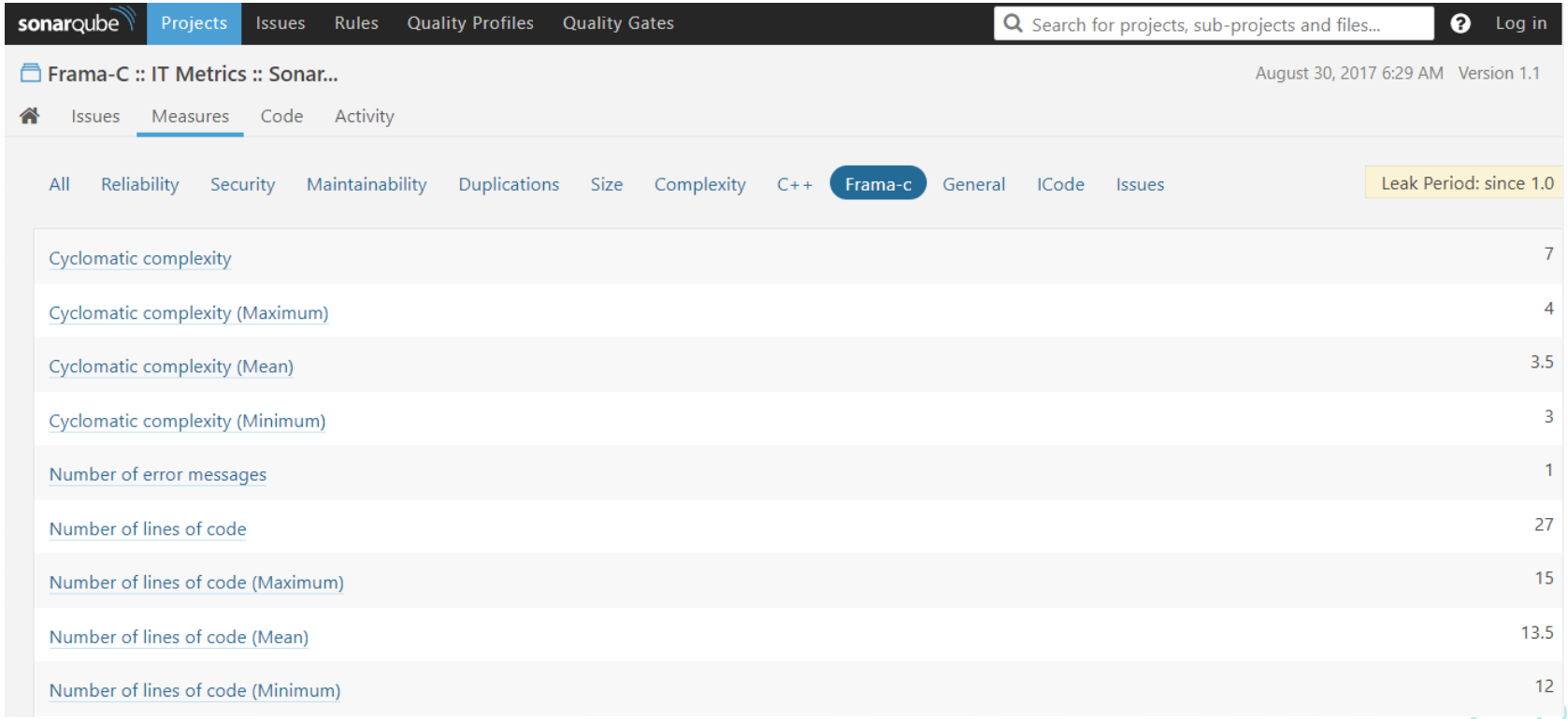
PREPARE ICODE CNES PROJECT

- Source files:
  - File name: *.f, *.f77, *.f90, *.sh
- Sonar.properties
- Report directory:/icode-reports
- Report files:
  - Into the report directory
  - Same name as source file



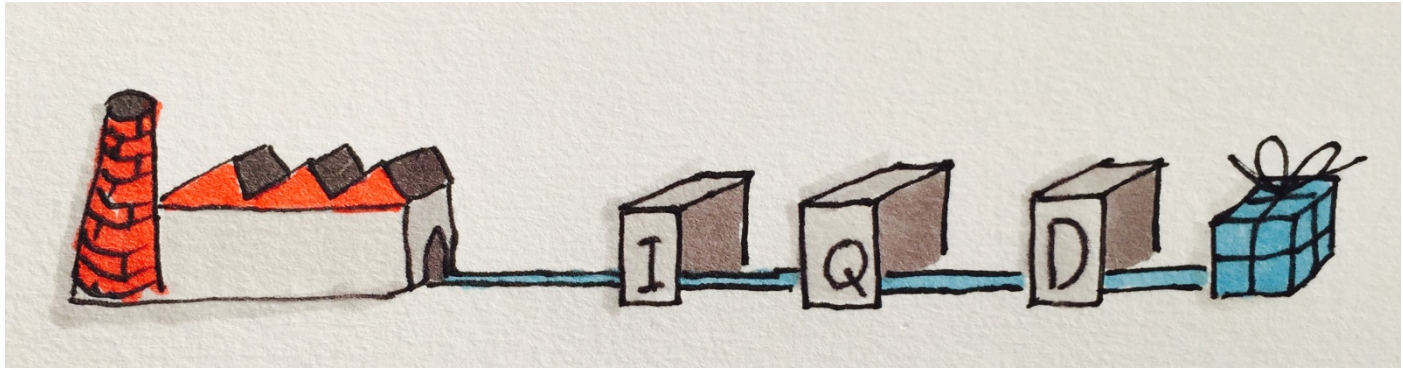
ANALYSE A ICODE CNES PROJECT

- Sonar scanner
- Metrics:
  - Cyclomatic complexity (Sum, Mean, Min, Max)
  - Line of codes: SLOC (Sum, Mean, Min, Max)
- Sonar web



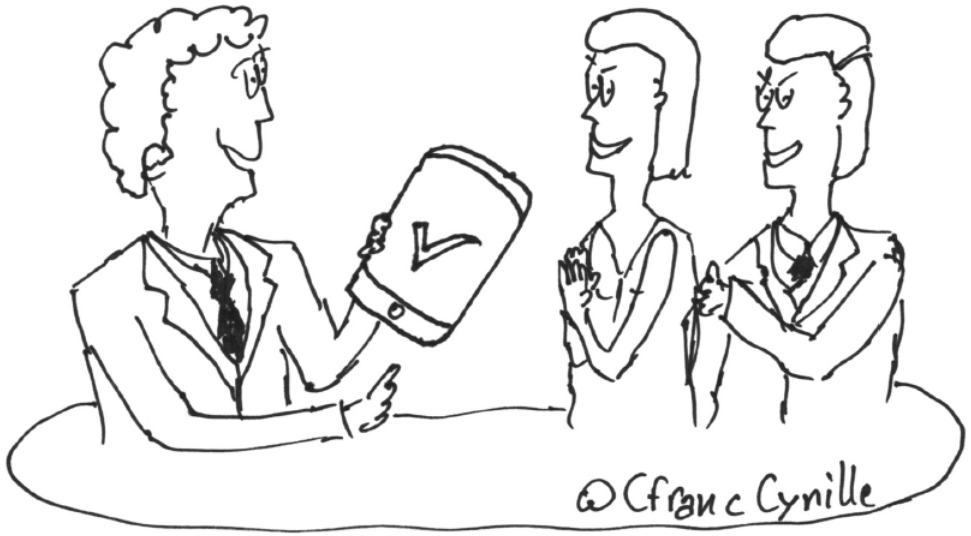
DEVOPS

- From a new plugin revision => deploy-plugin.sh
- To a new project analysis into Sonar



QUALITY PROFILES & RULES

- ICode default Quality Profile without rules
- Create a new Quality Profile
- Pattern matching



ICODE CNES RULES & ISSUES

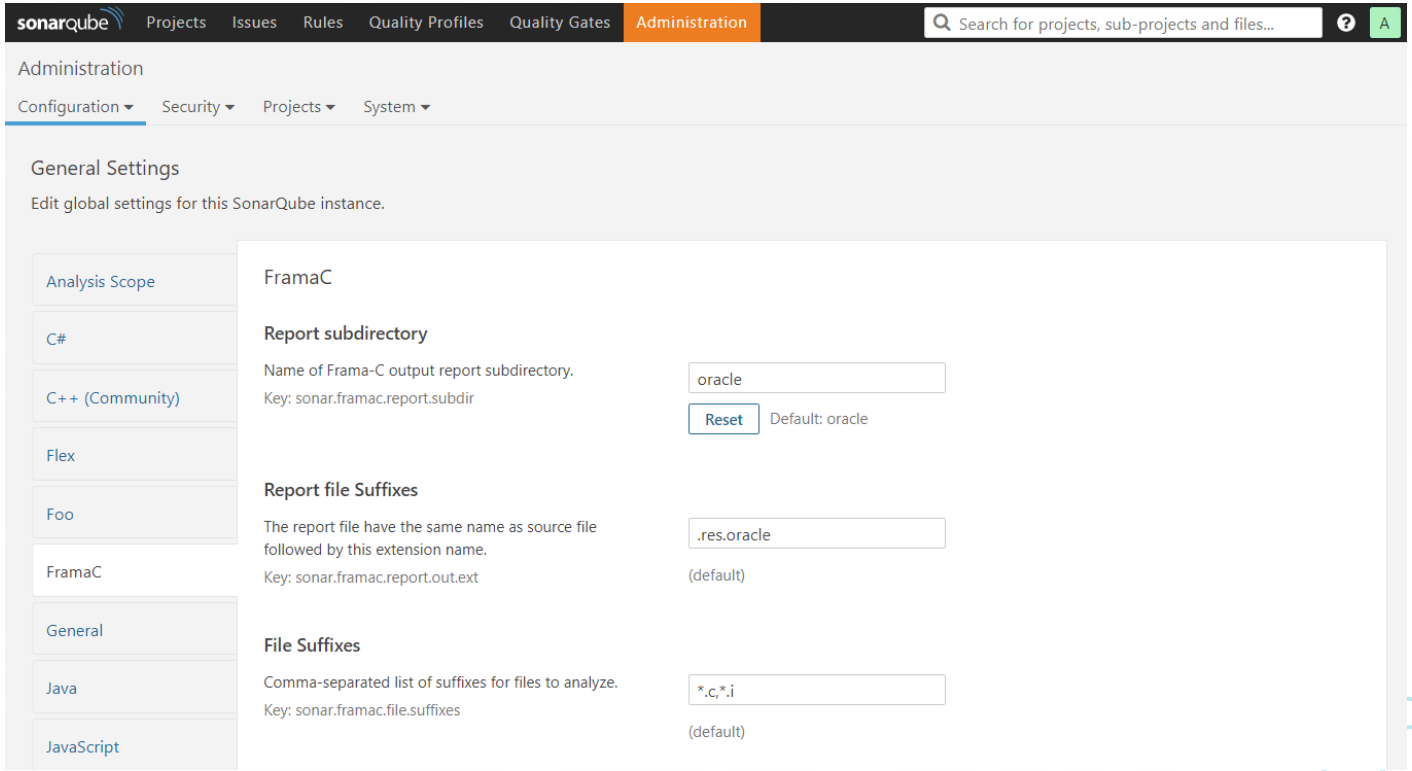
```
317         </check>
318         <check
319               class="fr.cnes.analysis.tools.fortran90.rules.F90TYPEReal"
320               id="fr.cnes.analysis.tools.fortran90.rules.F90TYPEReal"
321               name="F90.TYPE.Real" languageId="fr.cnes.analysis.tools.languages.f90">
322         </check>
323      </extension>
324
325   </plugin>
```

- Plug-in resources: icode-rules.xml
- Sonar issues
- From Icode CNES plugins.xml file to icode-rules.xml…

```
1992          </rule>
1993          <rule>
1994                <key>F90.TYPE.Real" </key>
1995                <name>F90.TYPE.Real" </name>
1996                <internalKey>*</internalKey>
1997                <description>Unreferenced rule</description>
1998                <severity>MAJOR</severity>
1999                <cardinality>SINGLE</cardinality>
2000                <status>READY</status>
2001                <type>CODE_SMELL</type>
2002                <tag>value</tag>
2003                <remediationFunction>CONSTANT_ISSUE</remediationFunction>
2004                <remediationFunctionBaseEffort>30min</remediationFunctionBaseEffort>
2005          </rule>
2006    </icodelint-rules>
```

PLUGIN ICODE CNES PREFERENCES

- File suffixes for *ICodeLanguage*
- Report file suffixes:
  - Replace the source file extension
- Report sub-directory
- Plugin metrics:
  - Number of error messages
  - Report files error



CONTINUOUS INTEGRATION (CI)

Github -> Travis -> sounar.cloud

- Create Travis and sonar.cloud account
- Configure Travis into Github project
- Add sonar.cloud key to .travis.yml
- Demo & CNES Github/Travis/etc settings

CONCLUSION

- Generic architecture
- ICode CNES rules definition with properties file
- Simples plug-in preferences
- Ready to DevOps & CI

- Compliant with ICode CNES requirements (from ICode CNES plugins.xml files)
- Warning some rules are defined several times into different plugins.xml files