Squore KPI Platform

How to automatically generate OEM Software sourcing report
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Introduction

Quality of the software

- Software Factory: Building Software is a real industrial process
- Report is the reflection of Quality
  - Quality of the delivered product
  - Quality of the environment in which the product is built

Report is a painful task

- Hard to consolidate complex engineering data
- Manual steps cost money and are sources of mistakes
- Endless task along the project lifecycle

Solution

- Continuous Quality: Integrate quality gates in a automated building tool chain
- Auto-generated Report: Let the tool work for you
Delivery Quality Report

- **Format**
  - File (Word, Excel, ppt...)
  - Online Report

- **Content**
  - Toolchain overview
    - Technical Debt
    - Static Code Analysis
    - Test Results
    - Requirement Coverage
    - ...
  - Standard compliance (HIS, MISRA, ISO26262...)
  - Derogations list

- **Constraint**
  - Easy to produce
  - Consistent whatever the “in place” tools
  - Synthetic ... and exhaustive in case of investigations

![Standard Compliance Report](image)
Squore Solution overview

- Automate conversion of complex engineering data into high level KPIs
- Ensure a Continuous Quality process
- Comment/collaborate with supplier
- Assess continuous quality/progress

SUPPLIER

CUSTOMER

SQUARE KPI PLATFORM
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**Vector Portfolio**

- System Validation
- System Integration Test
- SW Integration / Black-Box Testing
- White-Box Testing on host / on target
- Source Code Qualimetry & Design (Technical Debt Analysis)

**Benefits**

- Full support in the development process
- Uniform test management, test automation (CI), result analysis and traceability
Key Factors to success

- Automate software build/delivery process
  - Implement automated pipeline in Continuous Integration

- Deploy the Continuous Quality
  - Integrate “Quality Gates” within Continuous Integration

- Avoid useless and repeated Human interaction
  - Automate re-use of derogations or justifications in report
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Demo workflow

- Pipeline in Jenkins
  - Qualimetry: **SQUARE Source Code Analyseur**
  - Static Code Analysis: **QAC**
  - Unit Test: **VectorCAST**
  - Quality Gate: **SQUARE**
  - Packaging (Report generation): **SQUARE (Via Rest API)**

![Pipeline Diagram]

- Quality Gate:
  - Based on a SQUARE “Highlights” (easy/customizable)
  - Reject modules where:
    - Complexity is at least medium (VG>5)
    - Statement Coverage is not perfect (=100%)
    - Required MISRA violations are not justified
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Author:
Cyril Benkimoun
Vector Germany