



# A Lean Quality

or how assessing software quality at each step of its lifecycle to enhance reliability of control systems

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ICALEPCS 2011

# Introduction

- Vincent Hardion
- Synchrotron Soleil, ICA (Control Group)
- Special responsibility for Software Quality
- Software Craftsmanship and DevOps

# Agenda

- Kaizen
- Last enhancement
  - Automatic Test
  - Quality Control
  - Production Monitoring

# Kaizen

## or Continuous Improvement

- Lean or “Toyota way” : No Productivity without Quality...
- Agile Manifesto : Interaction before, tools and process after
- Bottom-up information and other principles : KISS, DRY ...
- Software Factory : Jenkins, Maven

# Automatic Test

- GUI : JFCUnit
- Client/Server : TangoUnit
- Equipment availability : Device Simulation

# Continuous Quality Control

- Static Code Analysis : Sonar (since late 2010)
- Huge amount of Metrics : Top Priority Violation
- Analyze C++ : CppCheck and Vera++
- Functionalities : Basic, Test metrics, Compliance of the style, Dependency Matrix, Evolution Trends, Technical Debt ...

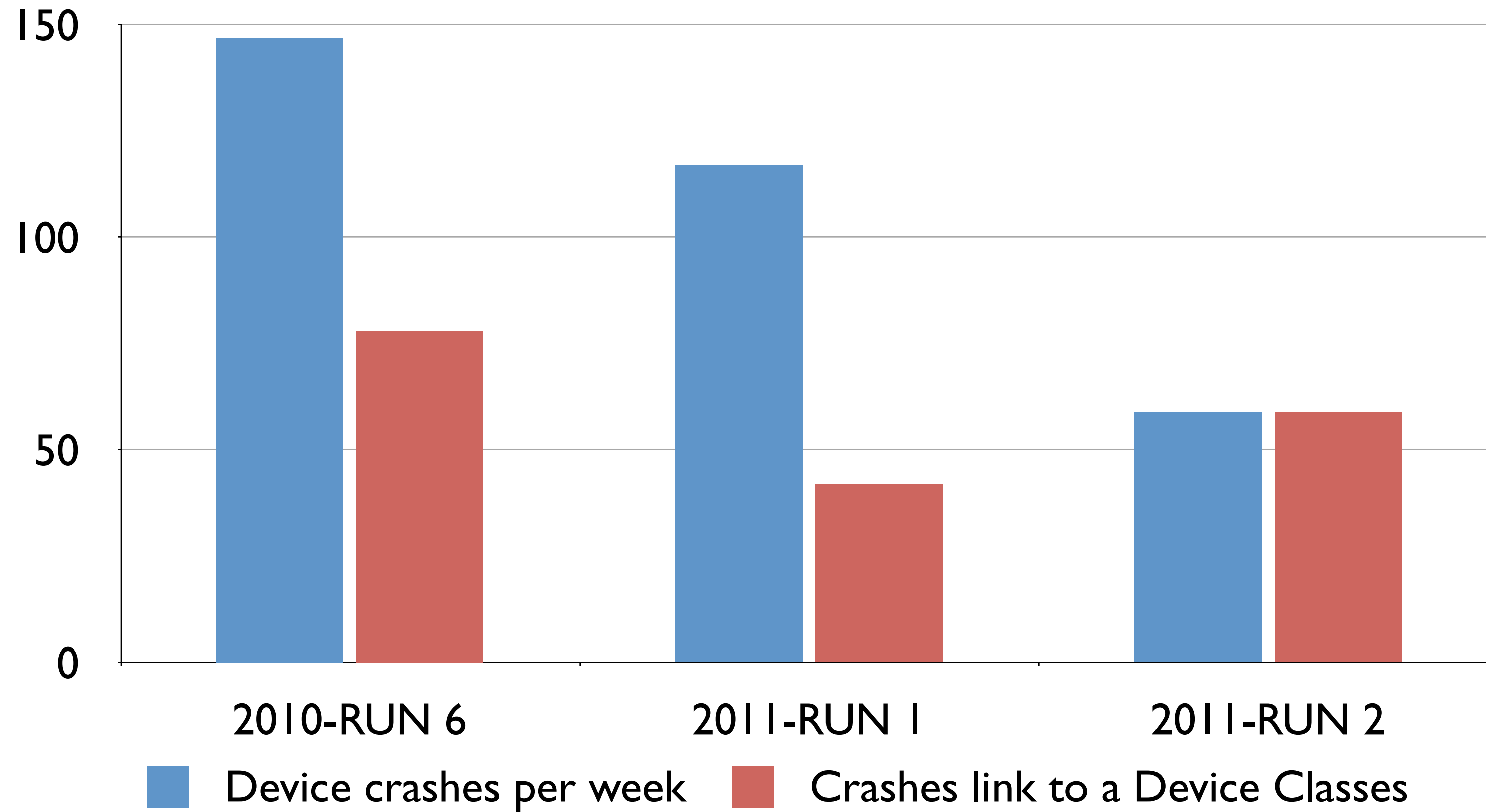


# Production Monitoring

- Software Crashes : Crash Reporting
- Google BreakPad : CrashReport Library for C++
- Debugging : Replay the crash
- Report from RUN



# Production Monitoring



# Conclusion

- Other tricky things like Obsolescence
- Future :TDD, Sonar Views plugin, BreakPad Socorro, Continuous Deployment ...
- Interaction : importance of Bottom-up
- DevOps person as Quality manager

# Credits

Kai

Zen

改

善

Change

Good

- The developers :  
S.PIERRE-JOSEPH ZEPHIR,  
G.ABEILLE, N.LECLERCQ

- The admin system : S.LE

- ... all the ICA Team

