goodbye red!
goodbye red!
goodbye red!

Electronic Control Units
goodbye red!

tool evolution
goodbye red!
goodbye red!

small teams
goodbye red!

cross divisional group - software, methods and tools
goodbye red!

eclipse
goodbye red!

a single IDE
goodbye red!

12 teams
goodbye red!

250+ developers
goodbye red!

500k LoC
goodbye red!

24 integration servers
goodbye red!

2 main releases

service releases
goodbye red!

4000+ users
goodbye red!

CHAOS
goodbye red!
goodbye red!

tests red!
Goodbye red!

builds red!
goodbye red!

developers red!
goodbye red!

managers

red!
goodbye red!

STOP

Eating animals
goodbye red!
goodbye red!

get people on board
goodbye red!

change mindset
goodbye red!

engage
good quality tools
goodbye red!
goodbye red!

set limits
goodbye red!

get people on board
goodbye red!

managers
goodbye red!

and how?
goodbye red!

show them numbers
goodbye red!

users
goodbye red!

and how?
goodbye red!

establish
change control boards
goodbye red!

show them numbers(again)
goodbye red!

get commitment
goodbye red!

change mindset
goodbye red!

it works

for me
goodbye red!

someone’s gonna fix it
goodbye red!

someone’s gonna tell me
goodbye red!

it’s anyways red.
goodbye red!

Yellow Book
goodbye red!

not a process document
goodbye red!

not a bible
goodbye red!

a set of best practices
goodbye red!

from so WHAT? to WHHATT!
goodbye red!
goodbye red!

if you caused it
goodbye red!

fix it
goodbye red!

if not
check if someone is fixing it
goodbye red!

if not
goodbye red!

tell someone who might fix it
goodbye red!

engage quality tools
goodbye red!
goodbye red!
new Test Strategy
goodbye red!

to

Manual Tests
goodbye red!

to

UI Tests
goodbye red!

to

Unit Tests
goodbye red!

the art of Unit Testing
Dependency Breaking techniques
Dependency Breaking techniques

BREAKING DEPENDENCIES WITHOUT BREAKING BONES

FMZ Präsentationsraum  Wednesday, October 29, 2014 - 17:00 to 17:35
goodbye red!

test classification
goodbye red!

Test Competence Team
goodbye red!
goodbye red!

Testing days
goodbye red!

ozone

the test utilities store
goodbye red!

set

limits
goodbye red!

test success > 99%
goodbye red!

code coverage

> 40%

> 80%
static code analysis

0 Blockers
Critical
goodbye red!

red builds

= lesson learnt meeting
goodbye red!

RC 1 red build =

lesson learnt meeting
goodbye red!

RC 2

RC 3

👍 from PM
goodbye red!

the proofs
1 year of hard work
goodbye r ed!
goodbye red!
goodbye red!
goodbye red!

Cross Divisional Group - Software, Methods and Tools
goodbye red!

### TEAMS

<table>
<thead>
<tr>
<th>QG NAME</th>
<th>UTS SUCCESS</th>
<th>BLOCKER ISSUES</th>
<th>CRITICAL ISSUES</th>
<th>OVERALL COVERAGE</th>
<th>COVERAGE</th>
<th>IT COVERAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>100.0%</td>
<td>0</td>
<td>0</td>
<td>47.6%</td>
<td>28.5%</td>
<td>24.7%</td>
</tr>
<tr>
<td></td>
<td>99.8%</td>
<td>0</td>
<td>0</td>
<td>44.0%</td>
<td>7.4%</td>
<td>42.5%</td>
</tr>
<tr>
<td></td>
<td>98.9%</td>
<td>0</td>
<td>0</td>
<td>0.0%</td>
<td>64.4%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>100.0%</td>
<td>0</td>
<td>0</td>
<td>47.6%</td>
<td>28.8%</td>
<td>25.0%</td>
</tr>
<tr>
<td></td>
<td>100.0%</td>
<td>0</td>
<td>0</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td></td>
<td>100.0%</td>
<td>2</td>
<td>0</td>
<td>42.6%</td>
<td>1.0%</td>
<td>42.1%</td>
</tr>
</tbody>
</table>

---

**Cross Divisional Group - Software, Methods and Tools**

CDG-SMT/EMT1 | 10/29/2014 | © Robert Bosch GmbH 2014. All rights reserved, also regarding any disposal, exploitation, reproduction, editing, distribution, as well as in the event of applications for industrial property rights.
### Teams Table

<table>
<thead>
<tr>
<th>Team</th>
<th>UTS Success</th>
<th>Blocker Issues</th>
<th>Critical Issues</th>
<th>Overall Coverage</th>
<th>Coverage</th>
<th>IT Coverage</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>100.0%</td>
<td>0</td>
<td>0</td>
<td>47.6%</td>
<td>28.5%</td>
<td>24.7%</td>
</tr>
<tr>
<td>B</td>
<td>99.8%</td>
<td>0</td>
<td>0</td>
<td>44.0%</td>
<td>7.4%</td>
<td>42.5%</td>
</tr>
<tr>
<td>C</td>
<td>98.9%</td>
<td>0</td>
<td>0</td>
<td>0.0%</td>
<td>64.4%</td>
<td>0%</td>
</tr>
<tr>
<td>D</td>
<td>100.0%</td>
<td>0</td>
<td>0</td>
<td>47.6%</td>
<td>28.8%</td>
<td>25.0%</td>
</tr>
<tr>
<td>E</td>
<td>100.0%</td>
<td>0</td>
<td>0</td>
<td>47.6%</td>
<td>28.8%</td>
<td>25.0%</td>
</tr>
<tr>
<td>F</td>
<td>100.0%</td>
<td>0</td>
<td>0</td>
<td>47.6%</td>
<td>28.8%</td>
<td>25.0%</td>
</tr>
<tr>
<td>G</td>
<td>100.0%</td>
<td>0</td>
<td>2</td>
<td>42.6%</td>
<td>1.0%</td>
<td>42.1%</td>
</tr>
<tr>
<td>H</td>
<td>100.0%</td>
<td>0</td>
<td>0</td>
<td>47.6%</td>
<td>28.8%</td>
<td>25.0%</td>
</tr>
</tbody>
</table>

---

Cross Divisional Group - Software, Methods and Tools
goodbye red!
goodbye red!

<table>
<thead>
<tr>
<th>QG</th>
<th>NAME</th>
<th>UTS SUCCESS</th>
<th>BLOCKER ISSUES</th>
<th>CRITICAL ISSUES</th>
<th>OVERALL COVERAGE</th>
<th>COVERAGE</th>
<th>IT COVERAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>100.0%</td>
<td>0</td>
<td>0</td>
<td>47.6%</td>
<td>28.5%</td>
<td>24.7%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>99.8%</td>
<td>0</td>
<td>0</td>
<td>44.0%</td>
<td>7.4%</td>
<td>42.5%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>98.9%</td>
<td>0</td>
<td>0</td>
<td>0.0%</td>
<td>0.0%</td>
<td>64.4%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>100.0%</td>
<td>0</td>
<td>0</td>
<td>47.6%</td>
<td>28.8%</td>
<td>25.0%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>100.0%</td>
<td>0</td>
<td>0</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>100.0%</td>
<td>0</td>
<td>0</td>
<td>2.8%</td>
<td>68.7%</td>
<td>0.0%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>100.0%</td>
<td>0</td>
<td>2</td>
<td>42.6%</td>
<td>1.0%</td>
<td>42.1%</td>
</tr>
</tbody>
</table>
**goodbye red!**

### Cross Divisional Group - Software, Methods and Tools

<table>
<thead>
<tr>
<th>TEAM</th>
<th>UTS SUCCESS</th>
<th>BLOCKER/issues</th>
<th>CRITICAL_issues</th>
<th>OVERALL COVERAGE</th>
<th>COVERAGE</th>
<th>IT COVERAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>100.0%</td>
<td>0</td>
<td>0</td>
<td>47.6%</td>
<td>28.5%</td>
<td>24.7%</td>
</tr>
<tr>
<td></td>
<td>99.8%</td>
<td>0</td>
<td>0</td>
<td>44.0%</td>
<td>7.4%</td>
<td>42.5%</td>
</tr>
<tr>
<td></td>
<td>98.9%</td>
<td>0</td>
<td>0</td>
<td>47.6%</td>
<td>28.8%</td>
<td>64.4%</td>
</tr>
<tr>
<td></td>
<td>100.0%</td>
<td>0</td>
<td>0</td>
<td>47.6%</td>
<td>25.0%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>100.0%</td>
<td>0</td>
<td>0</td>
<td>47.6%</td>
<td>28.8%</td>
<td>68.7%</td>
</tr>
<tr>
<td></td>
<td>100.0%</td>
<td>0</td>
<td>2</td>
<td>42.6%</td>
<td>1.0%</td>
<td>42.1%</td>
</tr>
</tbody>
</table>
goodbye red!

next steps
goodbye red!

better infrastructure
goodbye red!

better code coverage
goodbye red!

maintain
goodbye red!
goodbye red!
### SOURCES

<table>
<thead>
<tr>
<th>Images</th>
<th>References</th>
</tr>
</thead>
<tbody>
<tr>
<td>Robert Bosch GmbH</td>
<td></td>
</tr>
<tr>
<td>Eclipse Artwork</td>
<td></td>
</tr>
<tr>
<td><a href="http://www.clker.com">www.clker.com</a></td>
<td></td>
</tr>
<tr>
<td>SonarQube™: <a href="http://www.sonarqube.org">www.sonarqube.org</a></td>
<td></td>
</tr>
<tr>
<td>Eclipse: <a href="http://www.eclipse.org">www.eclipse.org</a></td>
<td></td>
</tr>
</tbody>
</table>