Aligning Requirements and Verification

PER RUNESON, LUCAS DAY, OCTOBER 24, 2012

Diagram:

- Abstraction Level
- Product Line
- Time

Requirements Artefacts
- Goals
- Strategies
- Roadmaps
- Features
- Requirements Specifications

Implements

Code

Test Artefacts
- Goals Approaches
- Test Suites
- Test Cases
- Scripts

Verifies
World’s largest SE interview study
(30 interviewees, 319 pages of text, 217 030 words)

<table>
<thead>
<tr>
<th>Role/company</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
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</thead>
<tbody>
<tr>
<td>Requirements engineer</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>F1, F5, F6, F7</td>
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<tr>
<td>Systems architect</td>
<td></td>
<td>D3</td>
<td>E1</td>
<td>F4</td>
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<tr>
<td>Software developer</td>
<td>B1, B2, B3</td>
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<td>F13</td>
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<tr>
<td>Test engineer</td>
<td>A2</td>
<td>C1, C2</td>
<td>D2</td>
<td>E3</td>
<td>F9, F10, F11, F12, F14</td>
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<tr>
<td>Project manager</td>
<td>A1</td>
<td>C3</td>
<td>D1</td>
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<td>F8, F3</td>
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<tr>
<td>Product manager</td>
<td>A3</td>
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<td>E2</td>
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<td>Process manager</td>
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<td>F2, F15</td>
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</table>

Key enlightenings

1. Human and organizational sides is at the core of industrial alignment practices;
2. Requirements’ quality is critical for alignment with testing activities;
3. Size, domain and product type make a big difference for challenges and practices, and,
4. The incentives for investing in good alignment practices vary between domains.
Challenges
1. Aligning goals within organization
2. Cooperation
3. Req’s specification quality
4. V&V quality
5. Alignment under change
6. Req’s abstraction levels
7. Traceability
8. Time and resources
9. Large document spaces
10. Outsourcing

Practices
1. Requirements
2. Validation
3. Verification
4. Change
5. Process enforcement
6. Tracing
7. Traceability responsibility
8. Tools
9. Metrics
10. Job rotation
Dig deeper:
• Information alignment (M. Borg)
• Gaps analysis (E. Bjarnason)
• Req´s in source code (E. Bjarnason)

• **Goal definition** Björn Regnell Tony Gorschek Per Runeson Robert Feldt
• **Design and planning** Annabella Loconsole Giedre Sabaliauskaite Emelie Engström
• **Evidence collection** Markus Borg Michael Unterkalmsteiner Emelie Engström Björn Regnell Per Runeson Giedre Sabaliauskaite Annabella Loconsole Tony Gorschek Robert Feldt Börje Haugset Elizabeth Bjarnason
• **Transcription** Annabella Loconsole Giedre Sabaliauskaite Elizabeth Bjarnason Markus Borg Emelie Engström Michael Unterkalmsteiner
• **Data analysis** Elizabeth Bjarnason, Markus Borg Emelie Engström Michael Unterkalmsteiner Per Runeson
• **Coaches** Björn Regnell Tony Gorschek Per Runeson.
• **Reporting** Elizabeth Bjarnason Per Runeson