Enable Requirements Reuse Via Advanced Workflows And Work Item Links

A different way to combine release, feature and requirement linking with workflow capabilities at Lantiq

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Why Do We Need Advanced Workflows and Linking?

Challenge @ Lantiq

Options

Solution

Benefits
Lantiq at a Glance

Key Facts
- ~800 employees
- Broadband industry leader
- 100M+ chips shipped/year
- Fabless

Focus Markets
- High Speed Broadband & Services
- Connected Home
- Home Automation
- Voice Products

Continuous Innovation
- 70% R&D employees
- Strong IP position: 2,000+ patents
- Premier customer base
- Very active in standards committees

Global Presence

Locations
Polarion @ Lantiq

2012: Evaluation Req. Tools
2013: Setup of Polarion
2014: Change Usage Model

- 17 Projects
- 10k Work Items
- 200 pot. Users
- ~20 active Users

- Linux VM on ESXi Cluster, 4 CPU
- 8 GB RAM
- 10 GB NFS Filer Share
- HP ALM & Atlassian Jira sync
- Ext: Wiki Scripting, LDAP sync, Visio Plugin with REST

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Requirement Engineering
Verification & Test Management
Technical Documentation
Product Development

Roles: Marketing, System Engineering, Architect, System Development, Verification, Documentation, ...
Targets

- Handling of
  - Release
  - Features
  - Requirements
  - Tests, ...

- Reuse items - keep the overview!

- Workflows for
  - Item status
  - Project planning

- Relation Management
Challenge: Feature Cloud

RELEASE 1.0
- USB 2.0
- ADSL
- VDSL

RELEASE 1.5
- USB 2.0
- USB 3.0
- ADSL
- VDSL

RELEASE 2.0
- USB 2.0
- LTE
- ADSL
- USB 3.0
- VDSL

Requirements
- r1
- r95
- r3
- r77
- r28

Statuses:
- draft
- in review
- reviewed
- ... (not specified)
- requested
- confirmed
- withdrawn
- ... (not specified)
Option: Out-of-the-box-approach

USB 2.0 Release 1.0
USB 3.0 Release 1.5
ADSL VDSL Release 2.0
LTE

USB 2.0 USB 3.0
ADSL VDSL LTE ...

State: { + + - ...} Release: {1.0, 1.5, 2.0, ...}

× Handling of release: no details
× No reuse
× Workflow combined
× Relation setup additionally
× Overview lost
Option: Lantiq’s Way

**Item Workflow:**
- **draft**
- **in review**
- **reviewed**

**Relation Workflow:**
- **r1.0**
- **r1.5**
- **r2.0**

- ✓ Separate Handling of all kind of Items
- ✓ Reuse as Unique
- ✓ Different Workflows
- ✓ Organized Relations

- USB 2.0
- USB 3.0
- ADSL
- VDSL
- LTE
Setup of Lantiq's Way

Step 1: Setup
- Release
- Feature
- Req
- Test

Step 2: Content Releases
- Release 1.0
  This release is the first customer demo.
- Release 1.5
  Here we have some more new features
- Release 2.0
  And this is the final solution.

Requirements
- ITRE-388 - r1
- ITRE-389 - r3
- ITRE-390 - r26
- ITRE-391 - r34

Features
- ITRE-382 - USB 2.0
- ITRE-383 - USB 3.0
- ITRE-384 - ADSL
- ITRE-385 - VDSL
- ITRE-386 - LTE

Step 3: Link
- Linking ITRE-379
  from IT Polarian Setup > Details
  is confirmed in
  ITRE-384 -
  ITRE-385 -
  ITRE-386 -

Linked Work Items
<table>
<thead>
<tr>
<th>Suspect</th>
<th>Role</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>ITRE-382 - USB 2.0</td>
</tr>
</tbody>
</table>

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But ...

- **Link Setup**
  - KISS-principle
  - Think well on structure
  - Planning workflow: few steps only

- **Linking Work**
  - Time consuming: one-by-one
  - Remember ID’s
  - “Referenced Release” in requirement document

- **Overview**
  - Slow work item properties window
  - Long link lists
  - Matrix view limited (order)
Lantiq Extension: Wiki Page “Workitem Matrix”

- Macro based
- Preset of Columns
- Preset of typical row items
- flat or structure listing
- Checkboxes for planning actions
- Export to PDF and Excel

<table>
<thead>
<tr>
<th>outlineNumber</th>
<th>WorkItem</th>
<th>ITRE-380 Release 2.0</th>
<th>ITRE-378 Release 1.0</th>
<th>ITRE-379 Release 1.5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>ITRE-387 Features</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>1-1</td>
<td>ITRE-395 USB Features</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>1-2</td>
<td>ITRE-382 USB 2.0</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>2</td>
<td>ITRE-396 Communication</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>2-1</td>
<td>ITRE-384 ADSL</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
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<tr>
<td>2-2</td>
<td>ITRE-385 VDSL</td>
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</tr>
<tr>
<td>2-3</td>
<td>ITRE-386 LTE</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
</tbody>
</table>

Amount of provided Workitems by role:

- **✓** = 4
- **=** = 3
- **X** = 0

9 items found

But ...

- Development effort/cost
- Usability / Performance
Achievements

- Handling of
  - Release
  - Features
  - Requirements
  - Tests, ...

- Reuse items - keep the overview!

- Workflows for
  - Item status
  - Project planning

- Relation Management

✔ Separate Handling of all kind of Items

✔ Reuse as Unique

✔ Different Workflows

✔ Organized
Additional Benefits

- Product & Release Tree
- Feature Overview Table for customer
- Define Features, Requirements, ... only one time
- Link Req to development specification / task
Thank you

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