

# Change Management

Cours LPSIL  
2013

# Questions ?

# Agenda

- ▶ Introduction
- ▶ Changes Types
- ▶ Risk Management
- ▶ Traceability
- ▶ Tooling
- ▶ Maintenance and Support
- ▶ Archiving
- ▶ Conclusion

# Agenda

- ▶ **Introduction**
- ▶ Changes Types
- ▶ Risk Management
- ▶ Traceability
- ▶ Tooling
- ▶ Maintenance and Support
- ▶ Archiving
- ▶ Conclusion

# Introduction

- ▶ Why changing ?

# Introduction

- ▶ Reasons of changes
  - New requirements
  - Improvement / Performance / Usability
  - Bug fixing
  - Feature request
  - New regulation
  - Customer request
  - Better maintainability (reduce costs)
  - ...

# Introduction

- ▶ What can be changed ?

# Introduction

- ▶ Almost everything !
  - Project scope
  - Schedule
  - Budget
  - Product content (features)
  - Environment / Platforms / OS / Language
  - Hardware
  - Documentation
  - Process
  - Customer contract
  - Market
  - ...



# Introduction

- ▶ Why do we need to manage changes ?

# Introduction

- ▶ Why do we need to manage changes ?
  - Evaluate the rationale for the change
  - Assess risks & impacts
  - Estimate costs
  - Ensure all stakeholders will be informed/consulted
  - Get **approval** for the change
  - Plan changes
  - Log changes
  - Build knowledge
  - Track implementation status
  - ...

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# Change Types

- ▶ Changes can be related to:
  - the project/product specifications
  - the organization
  - the environment

# Change Types

- ▶ In the product specifications ?

# Change Types

- ▶ In the product specifications
  - Requirements
  - New features
  - Change requests
  - Bug fix requests
  - List of supported platforms

# Change Types

- ▶ In the organization ?

# Change Types

- ▶ In the organization
  - People turnover
  - Merger / Acquisition / Reorganization
  - Processes / Policies
  - Management line
  - Business objectives
  - ...



# Change Types

- ▶ In the environment ?

# Change Types

- ▶ In the environment
  - Market target
  - Competitors / challengers
  - Regulations
  - Economic downturn
  - ...

# Change Types

- ▶ All at the same time ?
- ▶ Impact on the development plan ?

# Change Types

## ▶ Example

- Iterative development process
- Planning phase (define baseline)
- Development iterations (**track** changes)
- Stabilization iterations (**monitor** changes)
- **Code freeze milestone**
- Delivery/Release phase (strictly **control** changes)

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# Risk Management

- ▶ What is a risk ?

# Risk Management

## ▶ Risk Definition

- An uncertain event or condition that, if occurs, has a positive or negative effect on a project objective

# Risk Management

- ▶ How to identify risks ?
  - Documentation reviews
  - Knowledge / Historical data / Lesson learnt of previous experiences
  - Brainstorming with key people
  - Interviewing / Consulting experts



# Risk Management

## ▶ Risk Analysis

- Probability of occurrence
- Impact assessment
- → Matrix

The diagram is a 3x4 grid. The vertical axis is labeled 'Likelihood' and has three categories: 'Very likely', 'Likely', and 'Unlikely'. The horizontal axis is labeled 'Impact' and has three categories: 'Minor', 'Moderate', and 'Major'. The grid cells contain risk levels and scores: 'Very likely' (Medium 2, High 3, Extreme 5), 'Likely' (Low 1, Medium 2, High 3), and 'Unlikely' (Low 1, Low 1, Medium 2). Below the grid, the text 'What is the chance it will happen?' is aligned with the likelihood axis.

Very likely	Medium 2	High 3	Extreme 5
Likely	Low 1	Medium 2	High 3
Unlikely	Low 1	Low 1	Medium 2
What is the chance it will happen?	Minor	Moderate	Major

# Risk Management

## ▶ Risk responses ?

- Avoid
- Transfer
- Mitigate
- Accept

# Risk Management

- ▶ Positive risks ?
- ▶ = Opportunities
  
- ▶ Strategies
  - Exploit
  - Share

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# Traceability

- ▶ No change can be done without a **(good) REASON**
  - Defect (minor / major / blocker ?)
  - Planned item
    - Improvement needed
    - Code refactoring for better performance
  - Request from a key customer
  - Legal issue, copyright, licensing...
  - Risk of Revenue loss

# Traceability

- ▶ No change can be done without an **APPROVAL**
- ▶ Must be approved by all key stakeholders
  - Notify impacted people
  - Get their estimate/feeling
  - Get their GO formally
  - Summarize outcome and Communicate about the change decision

# Traceability

- ▶ Changes must be planned
  - What to change ?
  - How ?
  - When ?
  - Who must validate ?
  - When do we consider change request is closed ?

# Traceability

- ▶ Changes follow-up
  - Track the status of the change
  - Validate the change is conform
  - Write lessons learnt outcome for future projects
    - why this change ?
    - how has it been implemented ?
    - how much did it cost ?



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# Tooling

- ▶ What tools in Software Development discipline ?
- ▶ Which features expected ?

# Tooling

- ▶ Project Management
- ▶ Source Code management
- ▶ Defect Tracking
- ▶ Quality Management
- ▶ Documentation / Processes
- ▶ Customer case management
- ▶ Public website
  
- ▶ → Remember the continuous integration

# Tooling

- ▶ **Project Management**
  - Consult / Inform stakeholders
  - Approval / Go-NoGo

# Tooling

- ▶ Source code control
  - Revision number
  - Comment
  - ID + link to change request or fixed defect

# Tooling

- ▶ Issues Tracking
- ▶ Jira / Bugzilla or equivalent
  
- ▶ Can work for lot of change types
  - Bugs/Defects
  - Improvements
  - Wishes
  - Customer change requests
  - User story
  - Feature
  - Task

# Tooling

- ▶ Issues Tracking System
- ▶ What's an issue ?
  - An ID for the change
  - A Status (Open / In Progress / Resolved / Closed)
  - A Priority (Low / Medium / High)
  - A Severity (Low / High / Critical / Blocker)

# Tooling

- ▶ Issues Tracking System
- ▶ What's an issue ?
  - Reported by someone (created by)
  - In the hands of someone (assignee/owner)
  - Planned in a delivery (next release ? fixpack ? hotfix ? patch ?)



# Tooling

- ▶ Issues Tracking System
- ▶ What's an issue ?
  - A knowledge base
  - Comment Thread
  - Link to Code changes (diff introduced)
  - Link to Build execution results
  - Link to Tests execution results

# Tooling

- ▶ Acceptance of the change ?
  - The developer commits the change
  - The continuous integration process operates
  - The build and the tests are executed

# Tooling

- ▶ Acceptance of the change ?
  - The developer marks the issue as « resolved »
  - The QA verify the fix and put the issue as « closed »
  - (can also be reopened if not fixed)
- ▶ Now ready for delivery to customer

# Tooling

- ▶ Continuous integration ensures
  - Changes Traceability
    - Code change revision
    - Build validation / numbering
    - Test execution / reports
    - List of changes in each deliverable
  - Continuous validation of changes

# Tooling

- ▶ An example
- ▶ See the pictures
  
- ▶ The build will provide lots of valuable information
  - The build information itself (ID / Result)
  - The changes included + code revision numbers
  - The defect ID

# In Defect tracking system ?

The screenshot shows a defect tracking system interface for Defect 35557. The summary is "Installation Manager already installed" and the status is "Resolved" with a "Fixed" label. The details section includes fields for Type (Defect), Filed Against (Functional Teams/QA/Software), Severity (S3), and Affected Versions (Aramis is selected). The description states that an error message is shown when selecting an IM-based install from the latest launchpad Custom Installation page. The discussion section contains two comments: one from David Rushall on 2 oct. 2012, 16:45, and another from David Green on 11 oct. 2012, 08:47.

**Defect 35557** Save

Summary: \* Installation Manager already installed ➔ Resolved ✓ Fixed

**Details**

Type: Defect

Filed Against: \* Functional Teams/QA/Software

Severity: S3

Affected Versions:  
No Version  
Unassigned Version  
Porthos  
**Aramis**  
8.0  
7.5  
7.1

Team Area: [Software Factory / Busine... Rules](#)

Creation Date: 2 oct. 2012 16:45

Created By: ~~David Rushall~~

Tags:

Owned By:

**Description**

When I select an IM-based install from the latest launchpad Custom Installation page, such as the WAS 8003 or Decision Server 801 installer, I am presented with an error message saying that Installation Manager 1.5.2 is already installed (see screenshot) and the install is cancelled.

The Prerequisites section of the launchpad tells me

**Discussion** (2 comments; 2 new) [Add Comment](#)

1. ~~David Rushall~~, 2 oct. 2012, 16:45  
Added: [attachment 15080](#) (capture-20121002-1539.bmp)
2. ~~David Green~~, 11 oct. 2012, 08:47  
Hi,  
  
For information, this should be resolved in beta2.  
Regards  
~~David Green~~

Overview Links Defect Info Approvals History

# In the build tool ?

JRules trunk > Launchpad > #271 Plan Status: #272 failed !

Symphonie Launchpad build plan

✓ #271 was successful History ◀ ✓ ✓ ! ! ! ! ✓ ✓ ✓ ✓ !

**Plan Navigator**

- Build #271
- Default Stage
- ✓ Default Job

**Build Result Summary**

Summary Tests Changes Artifacts Logs Metadata Issues ▶ Run Plan ⚙ Actions

**Details**

Trigger This build occurred because it is a dependant of [TRUNK-INSTALLERS-458](#).

Revisions Plan Repository

Agent [\[redacted\]@fr.ibm.com](#)

Completed 10 Oct 2012, 2:59:00 PM – 4 days ago

Duration 86 minutes

Successful since #268 (2 days before)

Labels None [✎](#)

**Code Changes** [View all 3 code changes ▶](#)

Plan Repository

[\[redacted\]@fr.ibm.com](#) 10 Oct 2012, 10:44:05 AM  
rollback progress bar styling as seems only not working when using RDP (maybe IE version problem) 217328

[\[redacted\]@fr.ibm.com](#) 10 Oct 2012, 10:31:15 AM  
[RTC 35557](#) - some typos in functions calls 217325

[1 more change...](#)

**Comments**

No comments on this Build.

# In SCM tool ?

https://svn.ilogfr-bso.fr.ibm.com/repositories/JRules/tr.../distrib - Log Messages - TortoiseSVN

Filter by Messages, Paths, Authors, Revisions, Bug-IDs, Date, Date Range From: 04/10/2012 To: 14/10/2012

Revision	Actions	Author	Date	Message
217413		[redacted]	jeudi 11 octobre 2012 14:48:13	remove unused imports
217410		[redacted]	jeudi 11 octobre 2012 14:44:29	fix compil error
217397		[redacted]	jeudi 11 octobre 2012 11:43:49	comment task 8 : problem selenium
217392		[redacted]	jeudi 11 octobre 2012 09:57:23	add Test annotations for Bamboo integr...
217389		[redacted]	jeudi 11 octobre 2012 08:27:23	RTC-RTC-34869: Ship JDBC Drivers: cor...
217336		[redacted]	mercredi 10 octobre 2012 11:57:48	28121 changing Rules SDK branding to ...
217328		[redacted]	mercredi 10 octobre 2012 10:44:05	rollback progress bar styling as seems o...
217325		[redacted]	mercredi 10 octobre 2012 10:31:15	RTC 35557 - some typos in functions calls
217296		[redacted]	mardi 9 octobre 2012 17:14:44	Fix Defect 34874
217286		[redacted]	mardi 9 octobre 2012 16:33:22	add RunAllTest and update the pom.xml
217284		[redacted]	mardi 9 octobre 2012 16:32:34	add new test script to build in DE a rule ...
217283		[redacted]	mardi 9 octobre 2012 16:31:49	Fix addCOBOLEnabledBOM
217270		[redacted]	mardi 9 octobre 2012 15:38:16	Back to white as gray seems not working
217269		[redacted]	mardi 9 octobre 2012 15:37:58	RTC-35826: Enable os400 platform in of...
217268		[redacted]	mardi 9 octobre 2012 15:37:47	modify paths
217257		[redacted]	mardi 9 octobre 2012 15:10:06	add RunAllTest and update the pom.xml
217254		[redacted]	mardi 9 octobre 2012 15:03:14	Fix Defect 34553
217242		[redacted]	mardi 9 octobre 2012 14:15:16	Add @Test
217223		[redacted]	mardi 9 octobre 2012 11:58:49	Add profile for optionally disabling upda...
217218		[redacted]	mardi 9 octobre 2012 11:52:00	update data javaxomfromjar.zip
217217		[redacted]	mardi 9 octobre 2012 11:50:56	Add defect reference for DERunDebugT...
217216		[redacted]	mardi 9 octobre 2012 11:49:34	paths have changed in gettingstarted f...
217203		[redacted]	mardi 9 octobre 2012 11:02:54	add @Test
217199		[redacted]	mardi 9 octobre 2012 10:49:28	IVT part for RTC 33751
217197		[redacted]	mardi 9 octobre 2012 10:43:44	Prepared properties for beta2 release I...
217196		[redacted]	mardi 9 octobre 2012 10:41:33	Use rootoom proptv for infocenter URL.

RTC 35557 - some typos in functions calls



# In SCM tool – more details ?

```
revisions 217324-217325, distrib - TortoiseUDiff
File
1 Index: installers/IM/common/launchpad/com.ibm.wodm.launchpad/launchpadCont
2 =====
3 --- installers/IM/common/launchpad/com.ibm.wodm.launchpad/launchpadContent
4 +++ installers/IM/common/launchpad/com.ibm.wodm.launchpad/launchpadContent
5 @@ -258,7 +258,7 @@
6     if (top.OSTYPE == "windows") {
7         return getUserWindowsInstallationManagerProperties (securityCheck);
8     } else if (top.OSTYPE == "unix") {
9 -     return getUserAdminUnixInstallManagerProperties (securityCheck);
10 +     return getUserUnixInstallManagerProperties (securityCheck);
11     }
12
13 }
14
```

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# Maintenance and Support

- ▶ How to manage the changes requested by customers ?

# Maintenance and Support

- ▶ How to manage the changes requested by customers ?
  - Contract
  - Communication with customer
  - Fixpack rollout strategy
  - Urgent issue management
  - Compatibility and migration

# Maintenance and Support

## ▶ Contract

- SLA
- Warrantee
- Maintenance cost

# Maintenance and Support

## ▶ Communication with customer

- Support engineers
- FAQ
- Hotline
- ...

# Maintenance and Support

- ▶ Fixpack rollout strategy
  - End of service (lifecycle)
  - Frequency

# Maintenance and Support

- ▶ Urgent issues management
  - Hotfix
  - Critsit
  - Escalation process
  - Sending consultant onsite



# Maintenance and Support

- ▶ Compatibility and migration
  - Data migration
  - Plug'n'play
  - Public API

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# Archiving

- ▶ What ?
- ▶ When ?
- ▶ Where ?

# Archiving

- ▶ What ?
  - Deliverables to customers
  - Source code
  - Build configurations
  - Documentation
  - Test plans

# Archiving

- ▶ When ?
  - Each release ?
  - Reccurent: weekly, monthly, etc...

# Archiving

- ▶ Where ?
  - Offsite
  - Third party

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# Conclusion

- ▶ Change must be **assessed**
- ▶ Change must be **approved**
- ▶ Change must be **planned**
- ▶ Change must be **tracked/monitored/controled** depending on the phase
- ▶ Change must be **verified** (closed ! =DONE)



# Questions ?



