



SAAB

Agile Software Development



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Training & Simulation

Agile Manifesto

- **Individuals and interactions** over processes and tools
- **Working software** over comprehensive documentation
- **Customer collaboration** over contract negotiation
- **Responding to change** over following a plan

How to become agile?

If you have Control you *might* be Agile!

➤ Take Control of your

- Requirements
- Design
- Source Code
- Builds
- Quality



- Automate everything that can be automated
- Don't use an agile method, make your method agile
- Visualize project status
- Keep the team close together – communication-wise
- There is always a better and faster way to do things

Take Control of your Requirements

- Understand what to deliver
- Do not do things that are not required
- Be prepared to change your requirements at all times
- Refine your requirements iteratively as a part of the development process

Take Control of your Design

- Design for change!
- With monoliths it is hard to be agile
- Create modules with well defined interfaces
 - Interfaces are abstract
 - Module contains logically related code

Take Control of Your Source Code

- Use Source Code Control!
- A well defined branching policy is crucial
 - Handle releases and maintenance of releases
 - Development branches for larger changes
- Check in often
- You must be able to recreate released versions

Branching policy – Basic

- ▶ Single development team, continuous releases



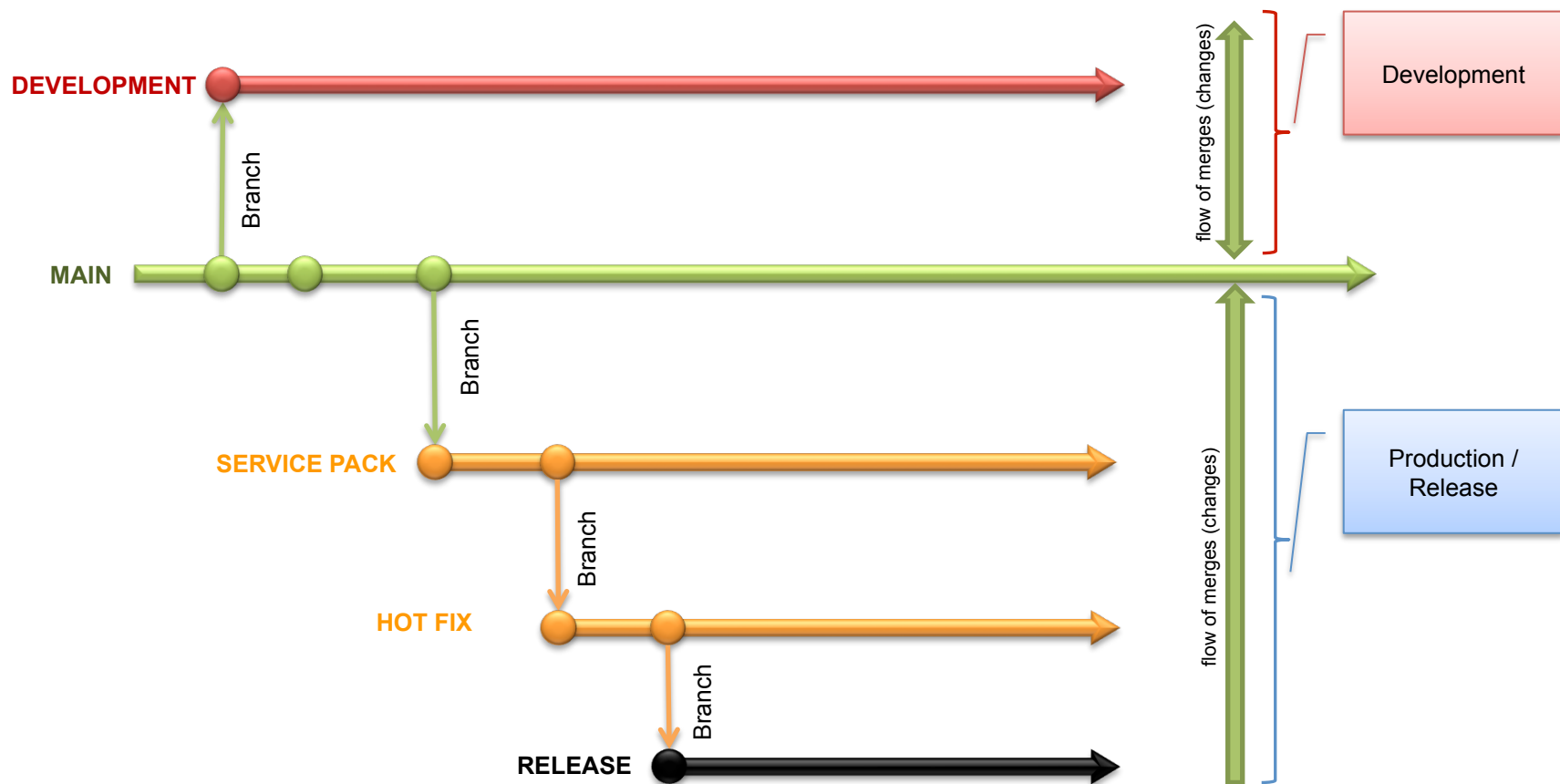
Branching policy – Standard

- ▶ Single team, continuous releases and service packs



Branching policy – Advanced

- ▶ Single team, continuous releases, service packs and hot fixes



Take Control of your Builds

- Automate, automate, automate!
- Everyone should be able to build and run the code
- Visualize build results
 - Wallboard
 - Email
 - Easy-to-read build logs
- Use frequent builds (daily, weekly)

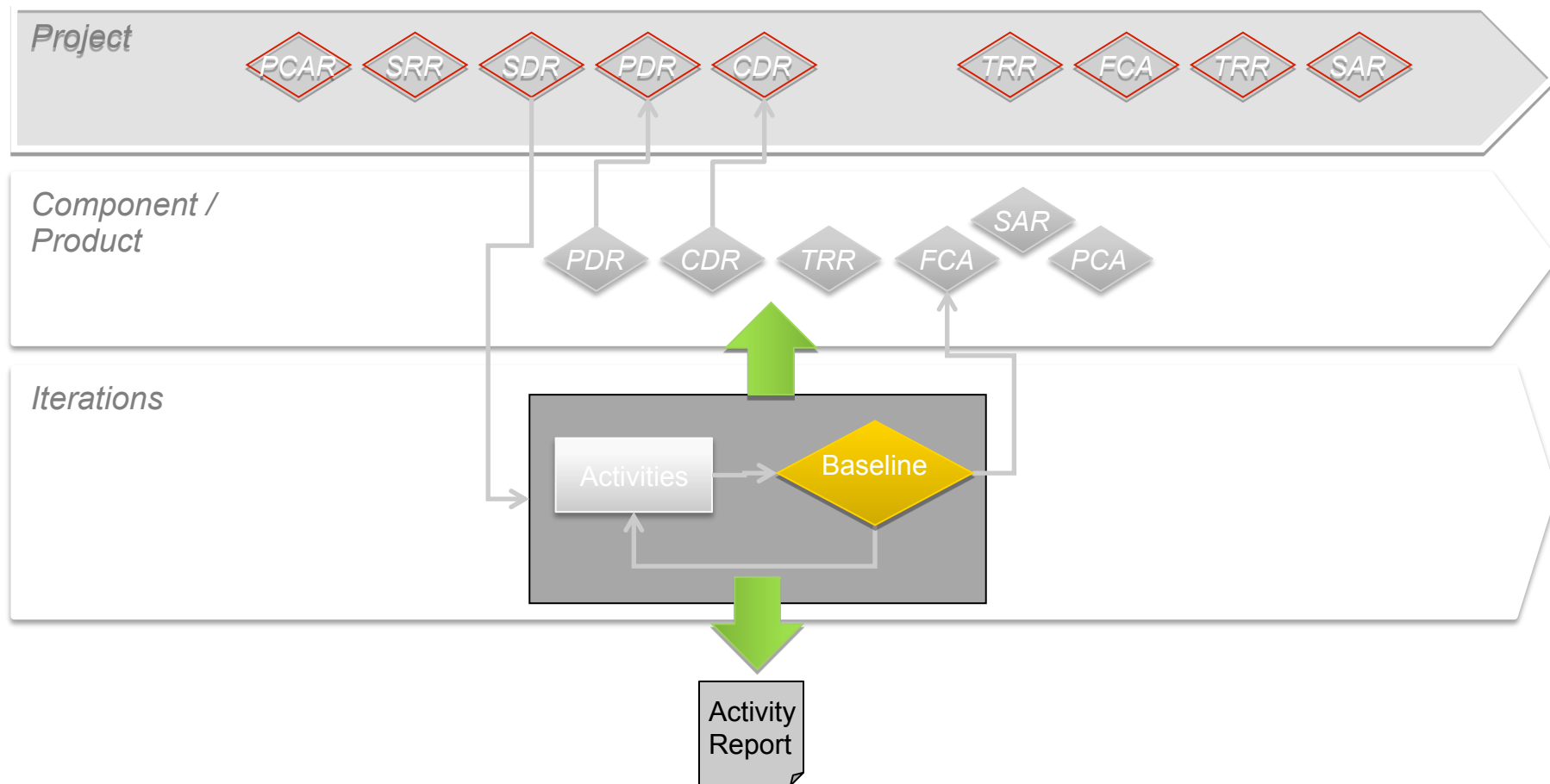
Take Control of your Quality

- Automate, automate, automate!
- Build errors have top priority!
- Testing is more important than coding
- Do automated test as a part of the build process
- Ensure code coverage
- Use installation packages or merge modules for every piece of software.
- No program is too small to have an installation package

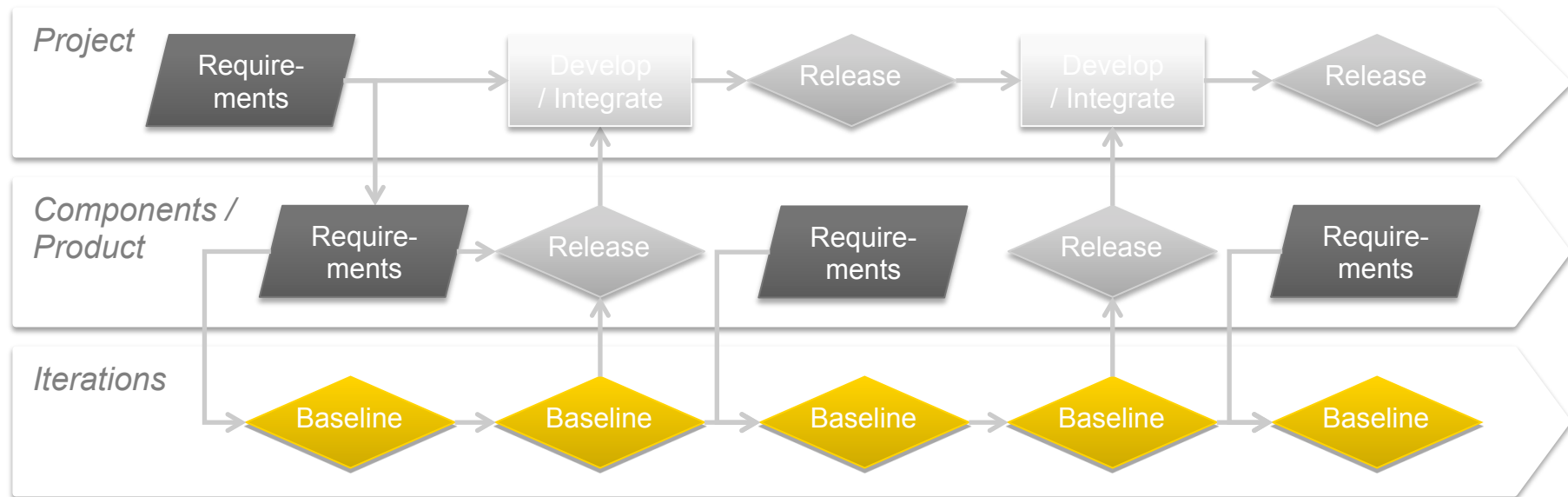
How we do it!



SW DEVELOPMENT PROCESS

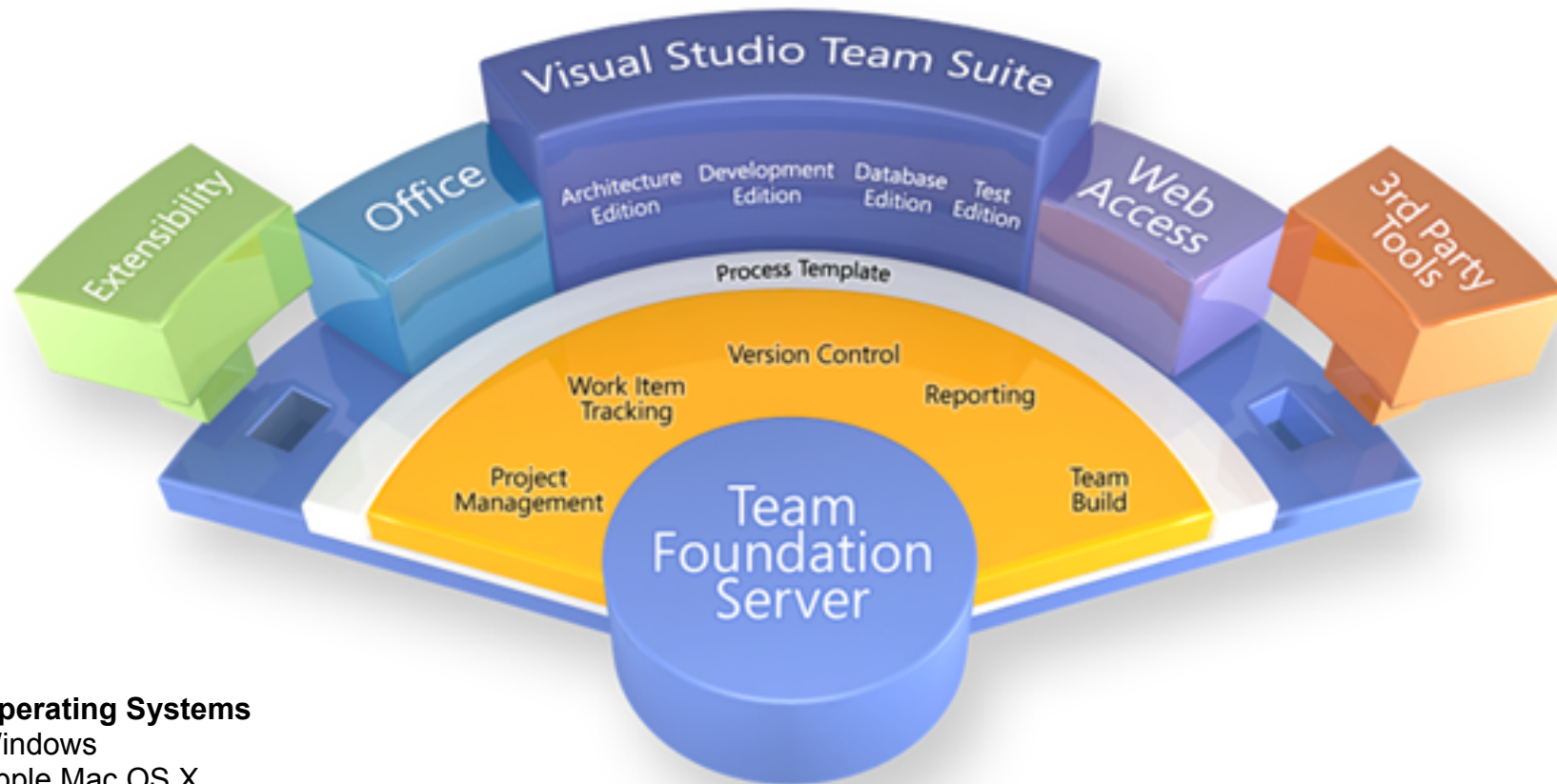


RELEASES PROCESS



Each baseline is about 2-4 weeks

Team Foundation Server 2010



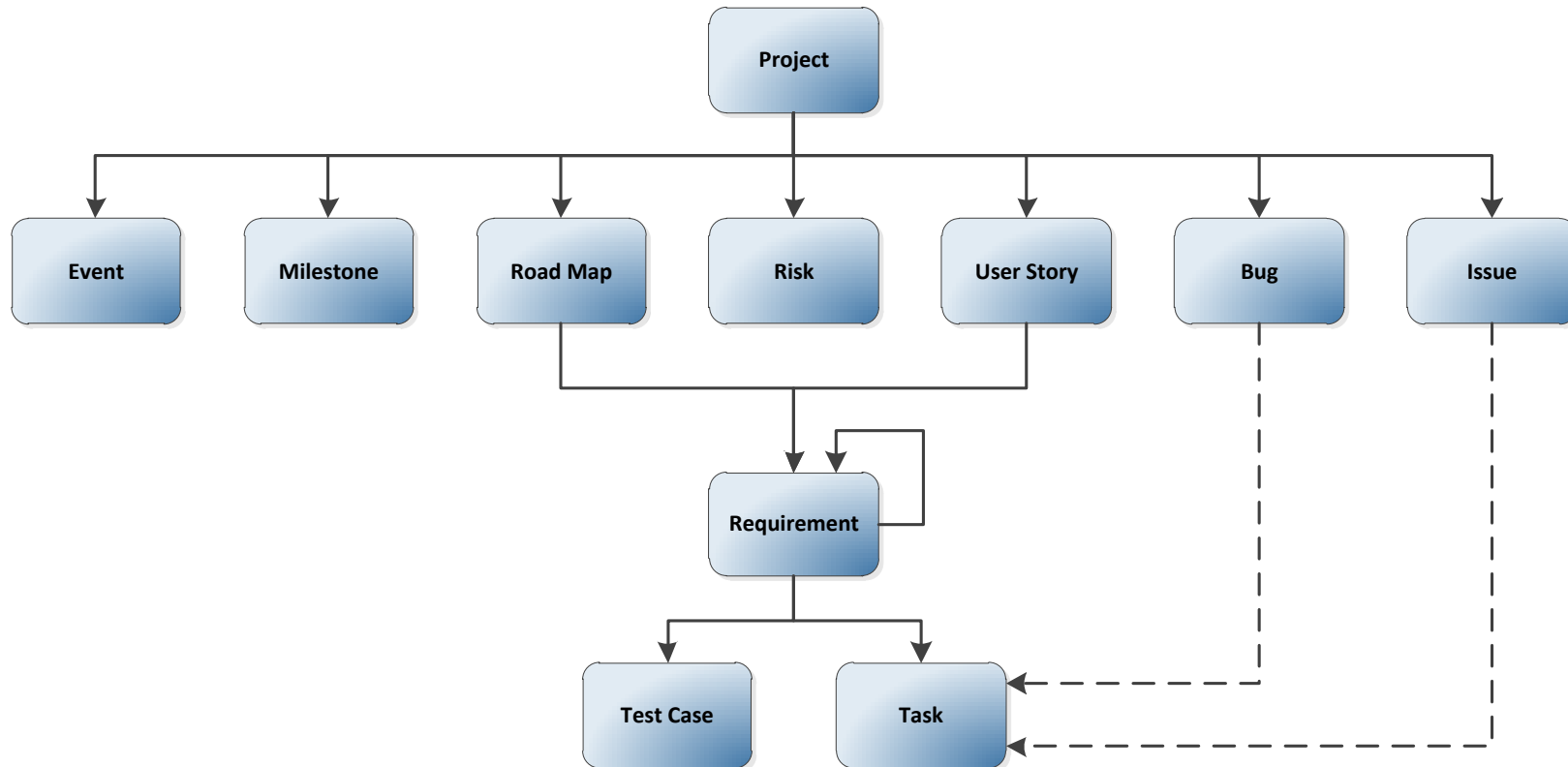
Operating Systems

Windows
Apple Mac OS X
HP-UX
IBM AIX
Linux
Solaris
Unix

IDE:s

Visual Studio
Eclipse
IBM Rational Application Developer

Team Foundation Work Items



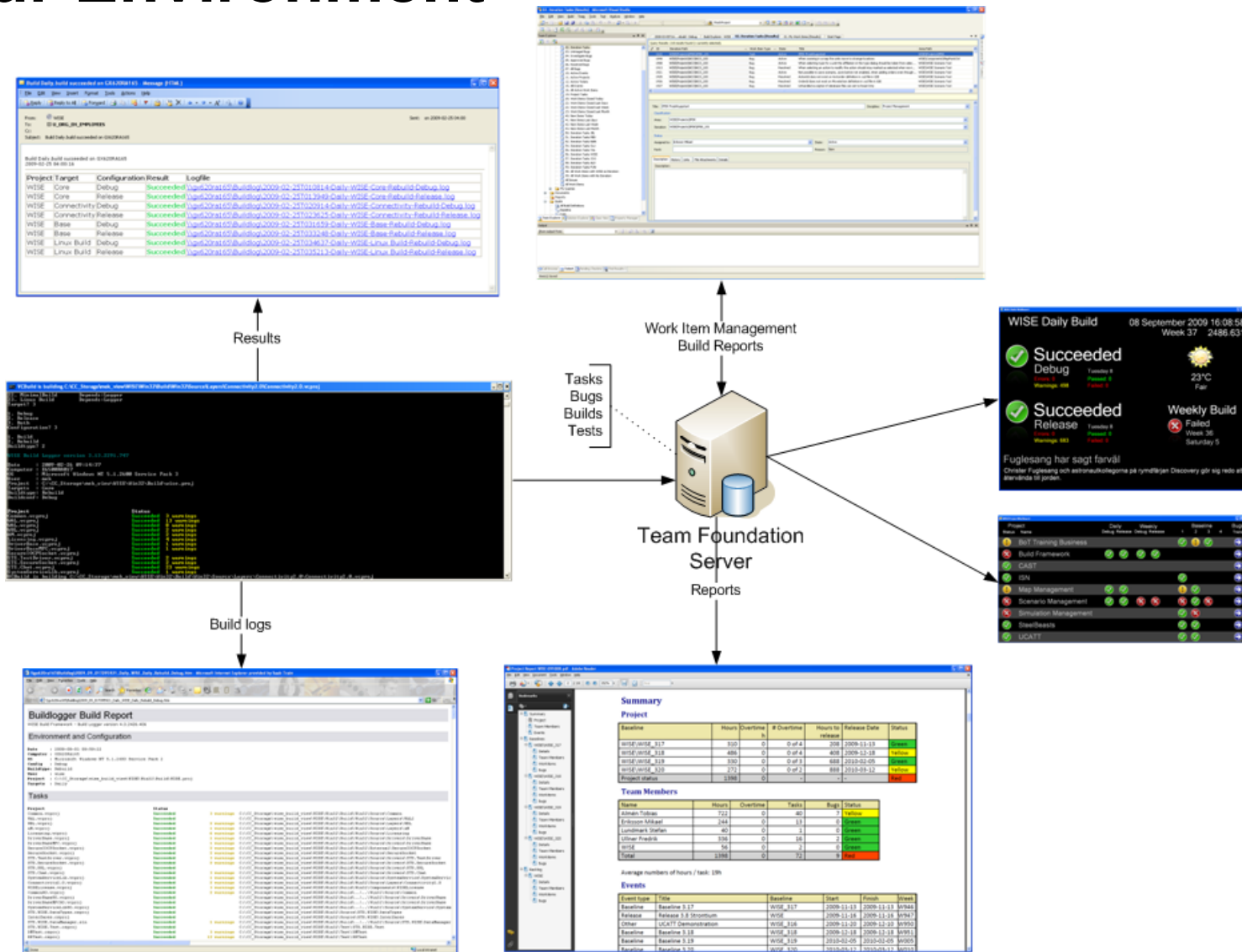
- These work items are adapted to our needs

BaTS – Build and Test Solution

- A set of tools that adapts and extends TFS
- Uses MsBuild as build engine
- A set of tasks that extends MsBuild
- All automated tests use MsTest as test engine
- Custom reports are created from the TFS repository



Our Environment



DevBuilder

- Easy to use
- Controlled by project files and build files

```
C:\ VCBuild is building C:\CC_Storage\mek_view\WISE\Win32\Build\Win32\Source\Layers\Connectivity2.0\Connectivity2.0.vcproj

22. MinimalBuild      Depends:Logger
23. Linux Build       Depends:Logger
Target? 3

1. Debug
2. Release
3. Both
Configuration? 3

1. Build
2. Rebuild
Buildtype? 2

WISE Build Logger version 3.13.2291.747

Date       : 2009-02-26 09:14:37
Computer   : E6500RA017
OS         : Microsoft Windows NT 5.1.2600 Service Pack 3
User       : mek
Project    : C:\CC_Storage\mek_view\WISE\Win32\Build\wise.proj
Targets    : Core
Buildtype  : Rebuild
Buildconf  : Debug

Project      Status
Common.vcproj Succeeded 3 warnings
WAL.vcproj    Succeeded 13 warnings
WAL.vcproj    Succeeded 8 warnings
WBL.vcproj    Succeeded 2 warnings
AM.vcproj     Succeeded 2 warnings
Licensing.vcproj Succeeded 4 warnings
DriverBase.vcproj Succeeded 1 warnings
DriverBaseMFC.vcproj Succeeded 1 warnings
SecureIOCPSocket.vcproj Succeeded
STS.TestDriver.vcproj Succeeded 2 warnings
STS.SecureSocket.vcproj Succeeded 2 warnings
STS.Chat.vcproj Succeeded 23 warnings
SystemServiceLib.vcproj Succeeded 1 warnings
VCBuild is building C:\CC_Storage\mek_view\WISE\Win32\Build\Win32\Source\Layers\Connectivity2.0\Connectivity2.0.vcproj
```

Mail Notifications

- Users are notified of the build status

Build Daily.build succeeded on GX620RA165 - Message (HTML)

File Edit View Insert Format Tools Actions Help

Reply Reply to All Forward

From: WISE Sent: on 2009-02-25 04:00
To: U_ORG_EH_EMPLOYEES
Cc:
Subject: Build Daily.build succeeded on GX620RA165

Build Daily.build succeeded on GX620RA165
2009-02-25 04:00:16

Project	Target	Configuration	Result	Logfile
WISE	Core	Debug	Succeeded	\\gx620ra165\Buildlog\2009-02-25T010814-Daily-WISE-Core-Rebuild-Debug.log
WISE	Core	Release	Succeeded	\\gx620ra165\Buildlog\2009-02-25T013949-Daily-WISE-Core-Rebuild-Release.log
WISE	Connectivity	Debug	Succeeded	\\gx620ra165\Buildlog\2009-02-25T020914-Daily-WISE-Connectivity-Rebuild-Debug.log
WISE	Connectivity	Release	Succeeded	\\gx620ra165\Buildlog\2009-02-25T023625-Daily-WISE-Connectivity-Rebuild-Release.log
WISE	Base	Debug	Succeeded	\\gx620ra165\Buildlog\2009-02-25T031659-Daily-WISE-Base-Rebuild-Debug.log
WISE	Base	Release	Succeeded	\\gx620ra165\Buildlog\2009-02-25T033248-Daily-WISE-Base-Rebuild-Release.log
WISE	Linux Build	Debug	Succeeded	\\gx620ra165\Buildlog\2009-02-25T034637-Daily-WISE-Linux Build-Rebuild-Debug.log
WISE	Linux Build	Release	Succeeded	\\gx620ra165\Buildlog\2009-02-25T035213-Daily-WISE-Linux Build-Rebuild-Release.log

Reports

- Activity report
 - Baseline activities. Tasks & Bugs
- Project Area Report
 - Activities sorted by area
- Project Report
 - Project status
- Collective Project Report
 - Aggregated status for several projects
- Department Workload Report
 - Employee status for several projects
- Requirement Report
 - List of project requirements and their status.
- User Report
 - List of all items associated with a person.

Project Report WISE 091008.pdf - Adobe Reader

File Edit View Document Tools Window Help

61,6%

Find

Bookmarks

- Summary
 - Project
 - Team Members
 - Events
- Baselines
 - WISE\WISE_317
 - Details
 - Team Members
 - Workitems
 - Bugs
 - WISE\WISE_318
 - Details
 - Team Members
 - Workitems
 - Bugs
 - WISE\WISE_319
 - Details
 - Team Members
 - Workitems
 - Bugs
 - WISE\WISE_320
 - Details
 - Team Members
 - Workitems
 - Bugs
- Backlog
 - WISE
 - Details
 - Team Members

Limit work time : 23 days = 187h/person

Team Members

Name	Hours	Overtime	Tasks	Bugs	Status
Almén Tobias	170	0	12	5	Green
Eriksson Mikael	96	0	4	0	Green
Lundmark Stefan	40	0	1	0	Green
Ullner Fredrik	4	0	0	2	Green
Total	310	0	17	7	Green

Workitems

ID	h	Assigned to	Area	Title
325	16	Almén Tobias	WISE\WISE Core\Drivers	TENA Driver: Design
331	8	Almén Tobias	WISE\WISE Core\Stack	Class triggers: Design.
332	32	Almén Tobias	WISE\WISE Core\Stack	Class triggers: Implementation in WBL and AM (WISE).
333	8	Almén Tobias	WISE\WISE Core\Stack\DataManager	Class triggers: Implementation in DataManager.
334	8	Almén Tobias	WISE\Test\Testcase 3 (DataManager)	Class triggers: Test on DataManager level
335	8	Almén Tobias	WISE\WISE Core\Stack\Connectivity	Class triggers: Implementation in Connectivity layer.
345	16	Almén Tobias	WISE\WISE Core\Drivers	RTPS driver: Design
346	16	Eriksson Mikael	WISE\WISE Core\Drivers	RTPS driver: Design
347	40	Eriksson Mikael	WISE\WISE Core\Drivers	RTPS driver: Implementation of low-level library 1
351	20	Almén Tobias	WISE\WISE Core\Drivers	RTPS driver: Test
408	4	Almén Tobias	WISE\Setup	Sanity check in transform wizard when adding a transform with a name that already exist in the Storage but to a different transform library
70	24	Almén Tobias	WISE\Test	Create complete test suite for Recorder/Replayer
121	24	Eriksson Mikael	WISE	Create project VOB
125	40	Lundmark Stefan	WISE	WISE Admin Guide
129	16	Eriksson Mikael	WISE\WISE Core\Drivers	TENA Driver: Design
642	8	Almén Tobias	WISE\WISE Core\CoDE	Create connectivity project report

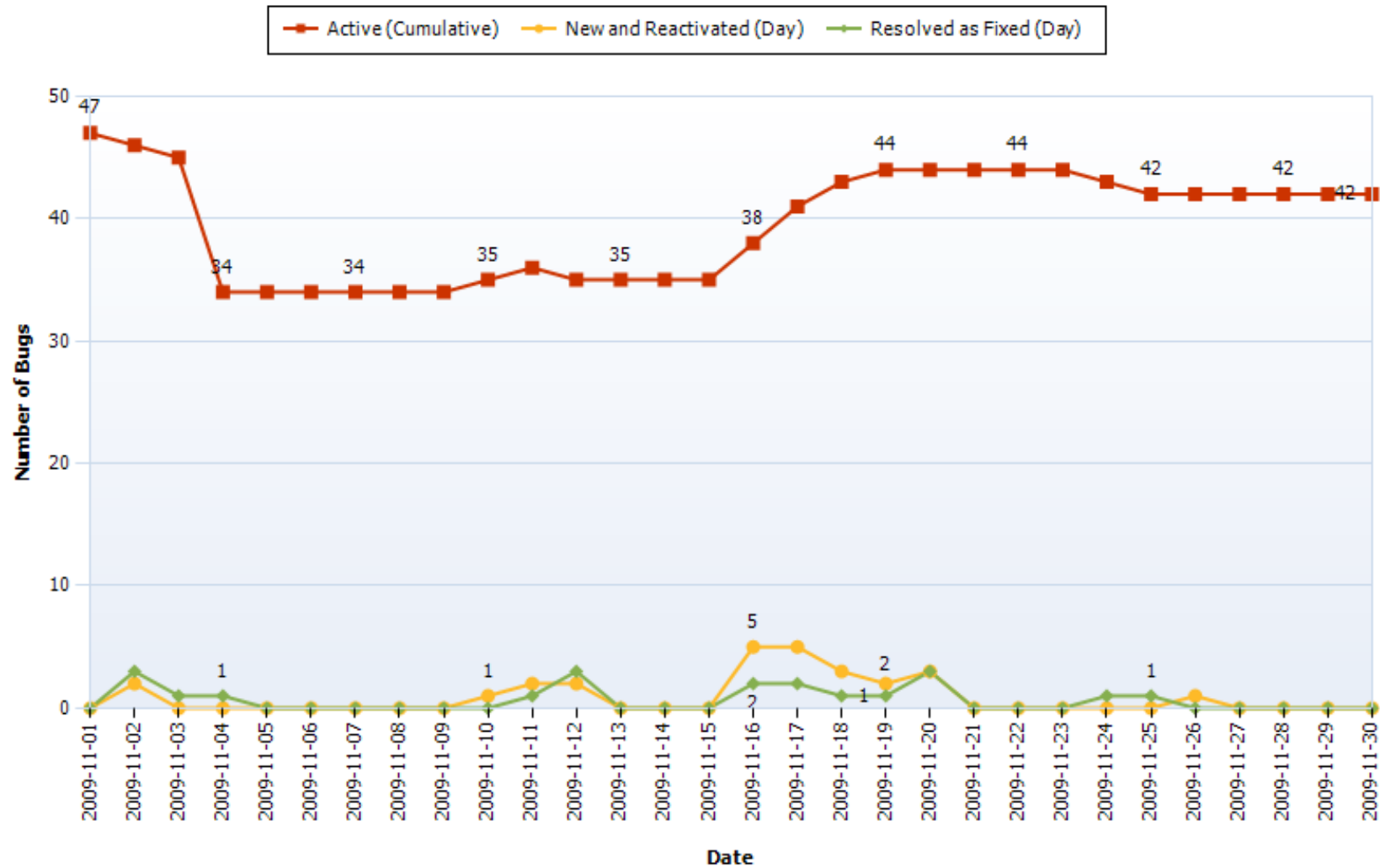
INTERN/COMPANY RESTRICTED 2

2009-10-08 16:21:28 Project Report for WISE

643	8	Almén Tobias	WISE\WISE Core\CoDE	Threaded generation of reports
606	1	Ullner Fredrik	WISE\WISE Core\CoDE\Connection	Add ability to auto-map connection files if they use the same schema model

All reports can be automatically generated and distributed.

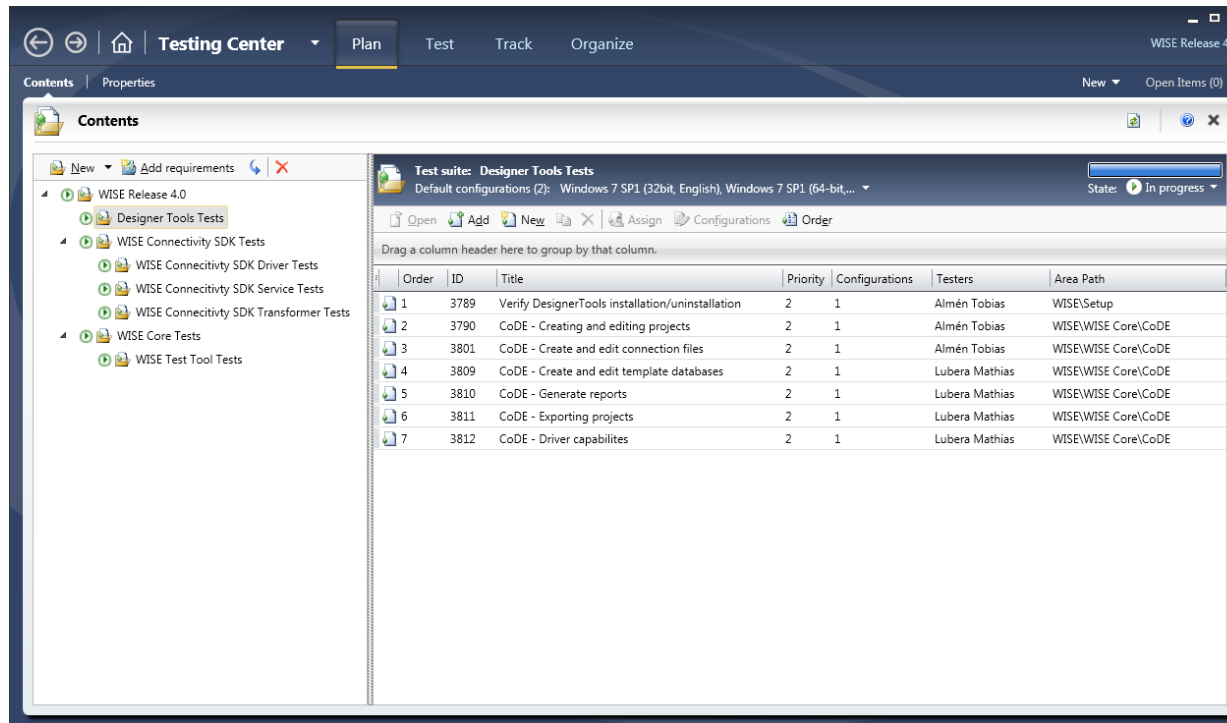
Trend - Open bugs



Test management

► TFS Test Manager

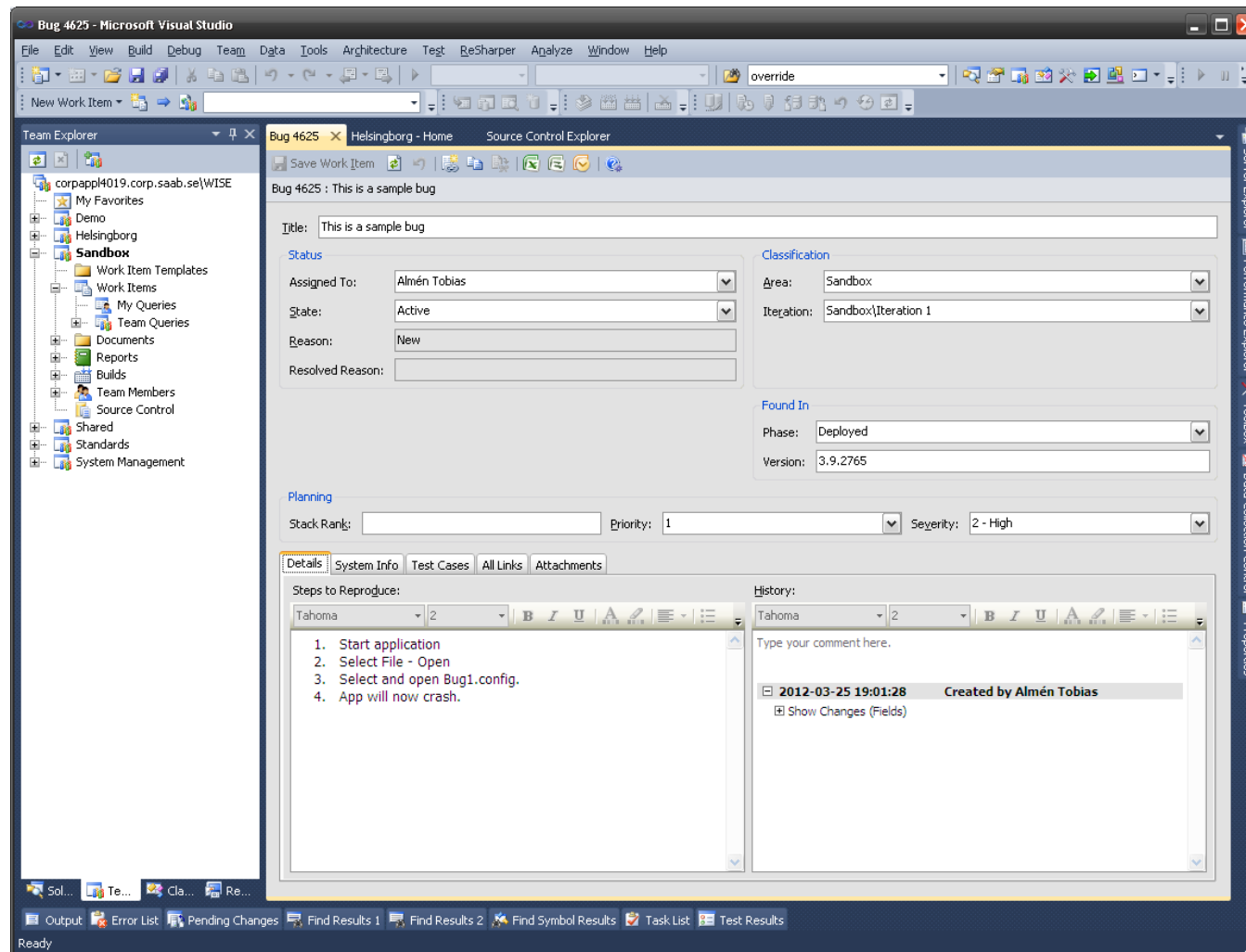
- Test cases mapped to requirements.
- Results logged in TFS.
- Supports both manual and automated tests



Visual Studio / Eclipse Integration

- TFS directly integrated in development environment.
- Quick access for developers.

Visual Studio Integration – Bug view



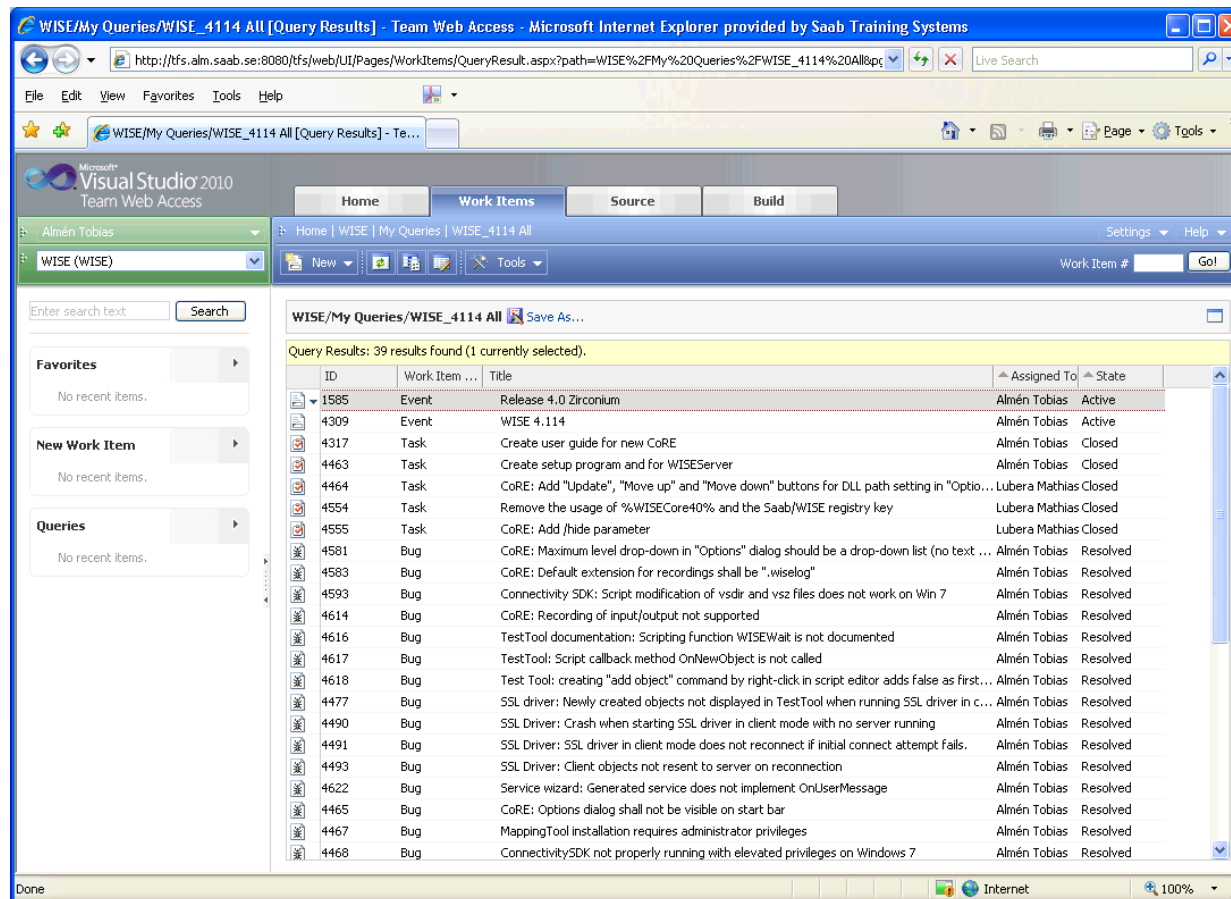
Visual Studio Integration – Builds view

The screenshot displays the Visual Studio Build Explorer window for a project named 'WISE'. The window is divided into several panes. On the left is the 'Team Explorer' pane showing a hierarchy of project items. The main area is the 'Build Explorer' pane, which shows a list of build tasks. The tasks are organized into two tabs: '02. Iteration Tasks [Results]' and '01. My Work Items [Results]'. The '02. Iteration Tasks [Results]' tab is active, showing a list of build tasks with columns for Name, Build Definition, Build Quality, Date Completed, and Requested By. The tasks are sorted by Date Completed, showing builds from 2009-02-21 down to 2009-02-18. The 'Build Quality' column shows 'Unknown' for all builds. The 'Requested By' column shows 'wise' for all builds. The '01. My Work Items [Results]' tab is also visible, showing a list of build tasks with columns for Name, Build Definition, Build Quality, Date Completed, and Requested By. The tasks are sorted by Date Completed, showing builds from 2009-02-21 down to 2009-02-18. The 'Build Quality' column shows 'Unknown' for all builds. The 'Requested By' column shows 'wise' for all builds. The bottom of the window shows the 'Output' pane, which is currently empty. The status bar at the bottom indicates 'Item(s) Saved'.

Name	Build Definition	Build Quality	Date Completed	Requested By
2009-02-21T02:11:57 - Weekly - WISE - Connectivity - Rebuild - Debug	Weekly	Unknown	2009-02-21 02:37	wise
2009-02-21T01:42:09 - Weekly - WISE - Core - Rebuild - Release	Weekly	Unknown	2009-02-21 02:11	wise
2009-02-21T01:10:51 - Weekly - WISE - Core - Rebuild - Debug	Weekly	Unknown	2009-02-21 01:42	wise
2009-02-20T03:46:59 - Daily - WISE - Linux Build - Rebuild - Release	Daily	Unknown	2009-02-20 03:54	wise
2009-02-20T03:41:32 - Daily - WISE - Linux Build - Rebuild - Debug	Daily	Unknown	2009-02-20 03:46	wise
2009-02-20T03:27:55 - Daily - WISE - Base - Rebuild - Release	Daily	Unknown	2009-02-20 03:41	wise
2009-02-20T03:12:44 - Daily - WISE - Base - Rebuild - Debug	Daily	Unknown	2009-02-20 03:27	wise
2009-02-20T02:34:36 - Daily - WISE - Connectivity - Rebuild - Release	Daily	Unknown	2009-02-20 03:12	wise
2009-02-20T02:07:55 - Daily - WISE - Connectivity - Rebuild - Debug	Daily	Unknown	2009-02-20 02:34	wise
2009-02-20T01:39:06 - Daily - WISE - Core - Rebuild - Release	Daily	Unknown	2009-02-20 02:07	wise
2009-02-20T01:09:39 - Daily - WISE - Core - Rebuild - Debug	Daily	Unknown	2009-02-20 01:39	wise
2009-02-19T03:50:06 - Daily - WISE - Linux Build - Rebuild - Release	Daily	Unknown	2009-02-19 03:57	wise
2009-02-19T03:44:14 - Daily - WISE - Linux Build - Rebuild - Debug	Daily	Unknown	2009-02-19 03:50	wise
2009-02-19T03:30:39 - Daily - WISE - Base - Rebuild - Release	Daily	Unknown	2009-02-19 03:44	wise
2009-02-19T03:15:34 - Daily - WISE - Base - Rebuild - Debug	Daily	Unknown	2009-02-19 03:30	wise
2009-02-19T02:37:45 - Daily - WISE - Connectivity - Rebuild - Release	Daily	Unknown	2009-02-19 03:15	wise
2009-02-19T02:10:52 - Daily - WISE - Connectivity - Rebuild - Debug	Daily	Unknown	2009-02-19 02:37	wise
2009-02-19T01:41:25 - Daily - WISE - Core - Rebuild - Release	Daily	Unknown	2009-02-19 02:10	wise
2009-02-19T01:09:53 - Daily - WISE - Core - Rebuild - Debug	Daily	Unknown	2009-02-19 01:41	wise
2009-02-18T03:18:22 - Daily - WISE - Linux Build - Rebuild - Release	Daily	Unknown	2009-02-18 03:25	wise
2009-02-18T03:13:56 - Daily - WISE - Linux Build - Rebuild - Debug	Daily	Unknown	2009-02-18 03:18	wise
2009-02-18T03:00:28 - Daily - WISE - Base - Rebuild - Release	Daily	Unknown	2009-02-18 03:13	wise
2009-02-18T02:45:23 - Daily - WISE - Base - Rebuild - Debug	Daily	Unknown	2009-02-18 03:00	wise
2009-02-18T02:24:49 - Daily - WISE - Connectivity - Rebuild - Release	Daily	Unknown	2009-02-18 02:45	wise
2009-02-18T02:05:51 - Daily - WISE - Connectivity - Rebuild - Debug	Daily	Unknown	2009-02-18 02:24	wise

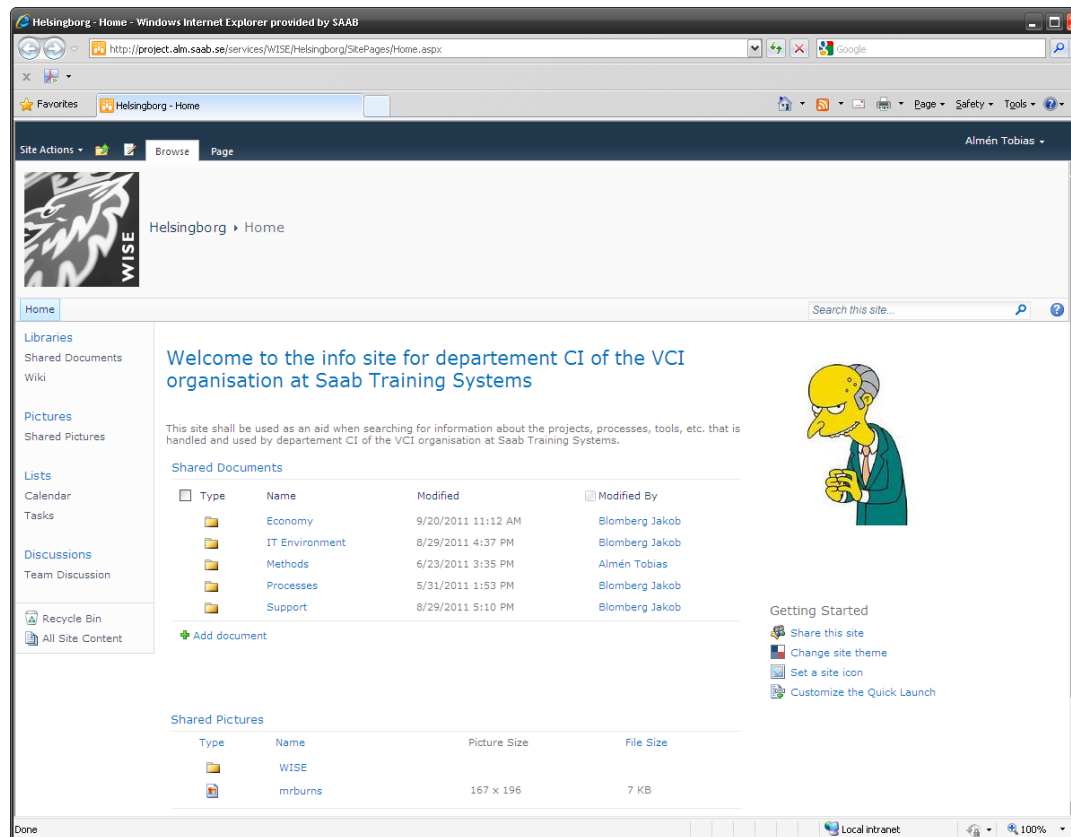
TFS Project Web Access

- Access to TFS data for non-developers.



Optional Project Sharepoint Site

- For extended project information such as documents, wikis, shared calendars etc.



Build Status Wallboard

 WISE Build Wallboard

WISE Daily Build

08 September 2009 16:08:58
Week 37 2486.631




Succeeded

Debug

Tuesday 8


Errors: 0
Warnings: 498

Passed: 0
Failed: 0



23°C

Fair



Succeeded


Release

Tuesday 8

Errors: 0
Warnings: 683

Passed: 0
Failed: 0

Weekly Build



Failed























Week 36

Saturday 5

Fuglesang har sagt farväl

Christer Fuglesang och astronautkollegorna på rymdfärjan Discovery gör sig redo att återvända till jorden.

Project Status Wallboard

Project		Daily		Weekly		Baseline				Bugs Trend
Status	Name	Debug	Release	Debug	Release	1	2	3	4	
	BoT Training Business									
	Build Framework									
	CAST									
	ISN									
	Map Management									
	Scenario Management									
	Simulation Management									
	SteelBeasts									
	UCATT									

Questions?





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