



Developing for OpenOffice.org (aka How to Contribute)



Agenda

- Speaker Introduction
- Contributions to the OOo project
- The JCA and other stuff
- A new/different development process
- Child workspaces in practice
- Challenges
- Q & A



Who I am

- Joined the StarWriter 2.0 Team in 1994
- Program Manager OpenOffice.org / StarOffice
- Project Lead Tools
- Project Lead Porting
- Project Lead External
- Member of Community Council
- “Ratte”: Release Mgr of SRC680 code line



Contributions to OOo

- Use the product
 - *Download, install and use OOo*
 - *<http://download.openoffice.org>*
 - *Give feedback via Survey*
 - *<http://www.openoffice.org/welcome/regitsratrion-site.html>*
 - *Donate money or other resources*
- Participate
 - *Subscribe to mailing lists*
 - *Ask questions and give answers*
 - *[Wiki on ooo.services.openoffice.org /go-ooo.org](http://ooo.services.openoffice.org/go-ooo.org)*
- Join a project
 - *Review work, give feedback via mail, IssueTracker*
 - *Request for enhancements, input for specifications*



Contributions to OOo

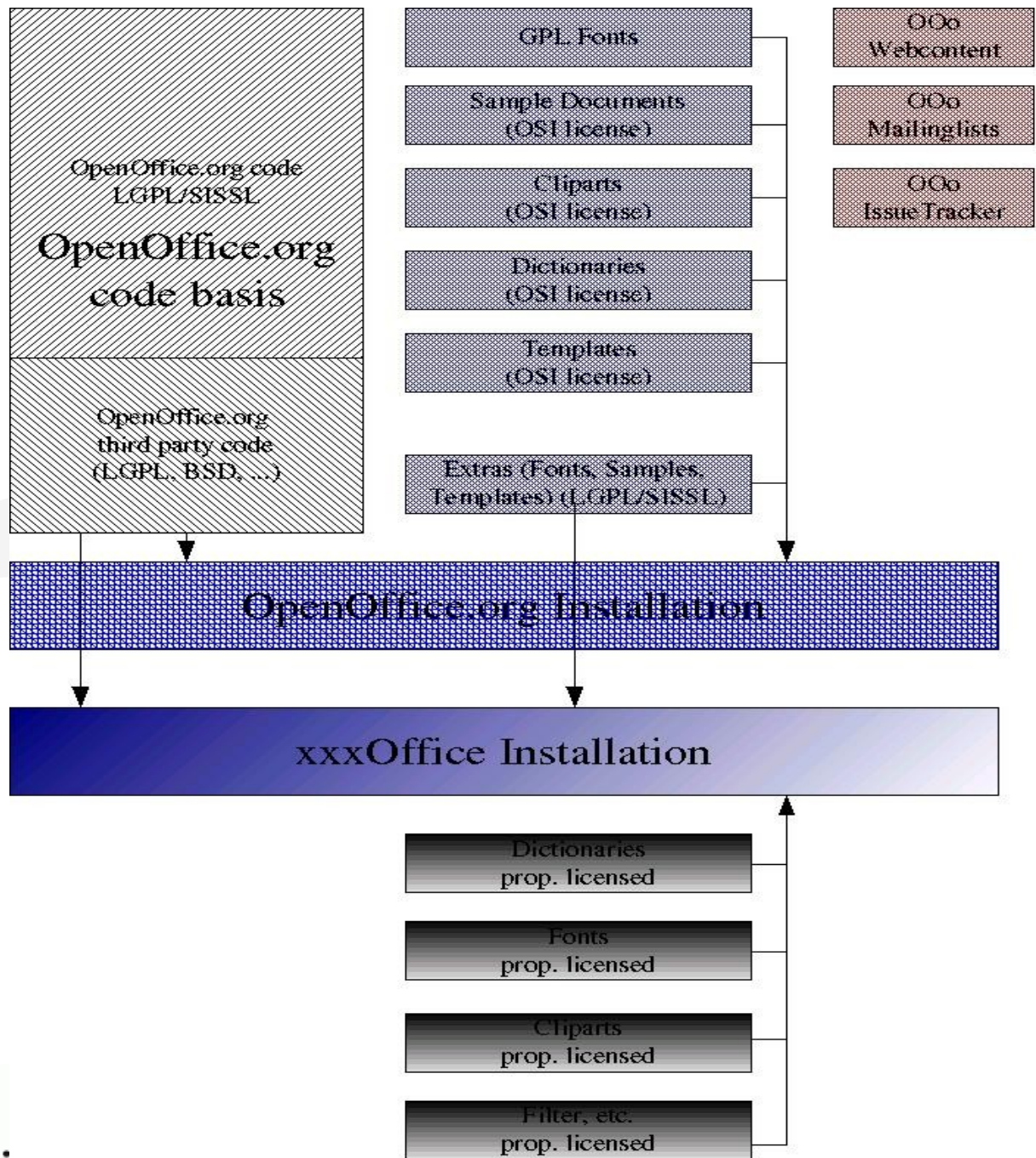
- Become a QA expert
 - *Use the the latest snapshots (biweekly snapshots)*
 - *Review and file new issues*
 - *Work on test plans*
- Localize
 - *New localizations*
- Develop
 - *Use the API*
 - *Components*
 - *Compile and review the code*
- Core Development
 - *Add new functionality*
 - *Porting*



The JCA and other stuff

- Code contributions
 - *Sign the JCA for changes or additions to the code basis or localization*
- External components
 - *Code: LGPL, BSD style*
 - *Get documented within external project*
 - *Other artifacts*
 - *Licenses compliance*

External Components





Software Development

- Preparation
 - *Writing a Specification*
 - *Planning a change*
- Implementation
 - *Coding*
 - *Hacking*
- Verification
 - *QA with a testplan*
 - *Does the beast compile*
 - *Regression/automated tests*



OOo complexity

- The Platforms
 - *Unix (Linux, Solaris, MacOSX, FreeBSD and other)*
 - *Different baselines*
 - *Windows*
- The Code size
 - *The beast need hours to build (interface changes)*
 - *It's a moving target (several hundred code changes per day)*
 - *Architectural dependencies (layered arch.)*
- Localization
 - *UI-Freeze*
 - *Layout*



The traditional model

- Continuous integration and build
 - *Developer has to stay until their changes has been build and smoke tested (tinderbox builds)*
 - *The build has to be fixed immediately*
- Release early and often
 - *Early and often releases ensures quick bug findings*
- Make a Release stable
 - *Until it is ready/bug free*



The problems with the traditional model

- Continuous integration and build
 - *Too many changes within a build cycle*
 - *The problem of not having atomic commits*
- Release early and often
 - *A developer wants user to test code*
 - *A user wants already tested code and not extra burden writing bugs*
- Make a Release stable
 - *Can be an unpredictable process*



The OOo 2.0 numbers

- >100 developers committed to the repository
- Committed > 100,000 times
 - 450 files per day
- Fixing > 4000 issues
 - *Reported by > 500 people*



The new process

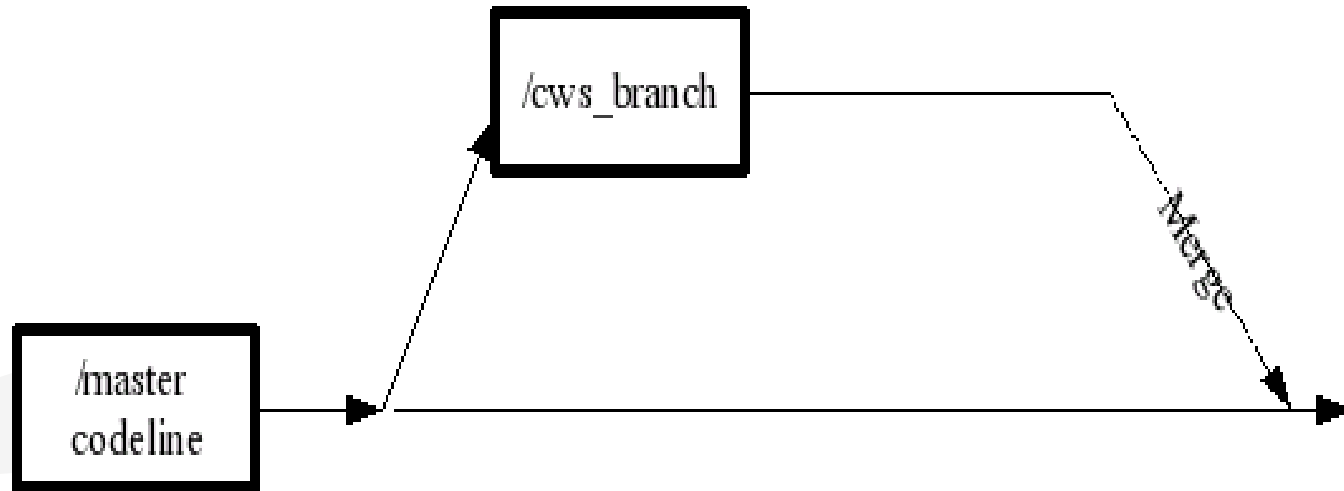
Old

- Continuous commits
- QA after integration
- Having known problems in the master build
- Features which are not finished get into the tree

New

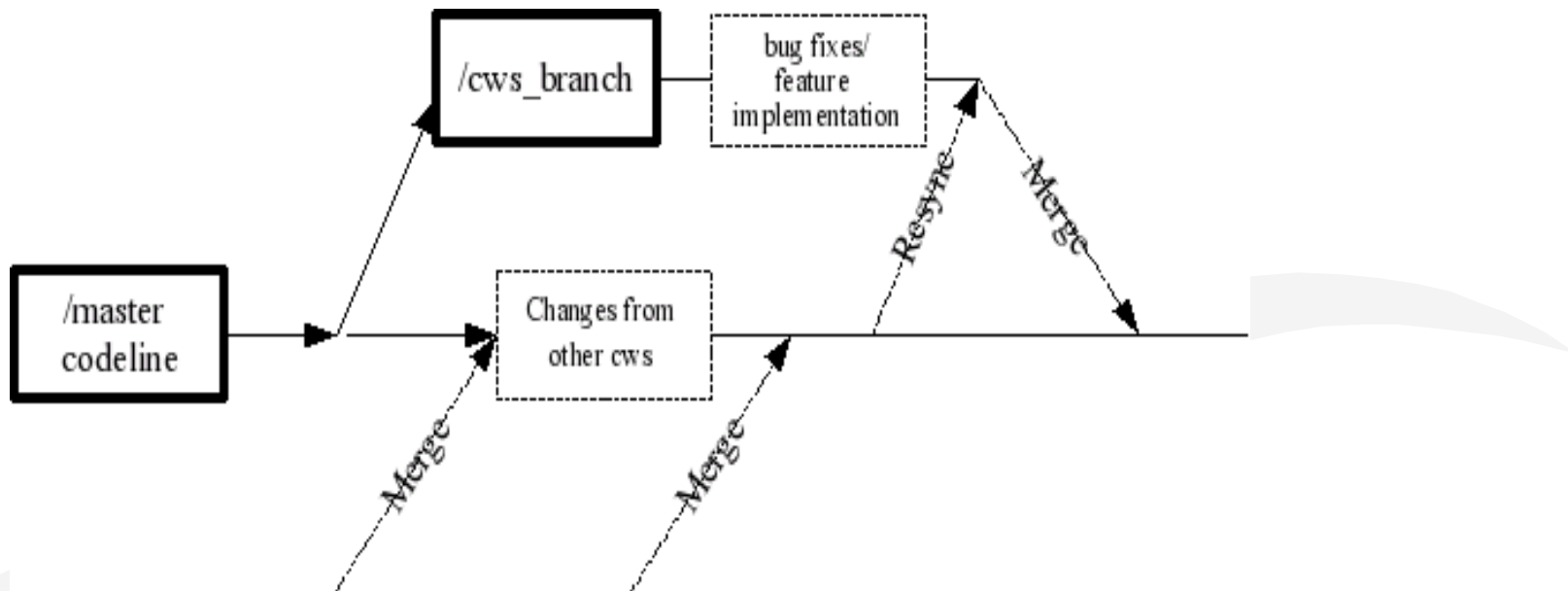
- Scheduled commits
- QA before integration into the code line
- Have less problems on the master build
- A new feature only get integrated when it is ready
- Possibility to reschedule target milestone of a feature

Child workspace



- A child workspace is implemented as a CVS branch

Cws resync



- A cvs branch can be merged backed without conflicts only if now conflicted changes has been done in the meantime
- “Long” living cws will need a resync first before joined back



Tools for cws

- Create a new child workspace – cwscreate
- Add a new module – cwsadd
- Update a child workspace – cwsresync
- Analyze a child workspace - cwsanalyze
- Register a new task – cwsaddtask
- Environment Information System (EIS)

- http://tools.openoffice.org/dev_docs/ooo-cws-tools-doc.sxw
- <http://eis.services.openoffice.org>

EIS - cws data

QA-comment: HR->HJS: Please have a look at this CWS while I'm in vacation. Thanks.

General data

Milestone (created)	Milestone (current)	Milestone (integrated)	Release	Status	Estimated due date	Estimated due date (QA)	Level of impact	VCS id (creator)
m52	m52		OOo 2.0	integrated	2004-09-20 00:00:00.0	2004-09-20 00:00:00.0	Implementation Details Only	

1 record

Status history

Status	At
new	2004-09-06 20:58:28.0
ready for QA	2004-09-09 13:25:51.0
nominated	2004-09-13 17:50:34.0
integrated	2004-09-17 14:55:20.0

4 records

Tasks

Show tasks in issuezilla

Taskid	Added to CWS
i32398	2004-09-09 13:00:39.0

1 record

Modules & Files

Module	Filename	Revision	Author	Taskid
libxml2				
libxml2	libxml2-2.5.11_patch	1.7	pjanik	i32398
libxml2	makefile.mk	1.6	pjanik	i32398

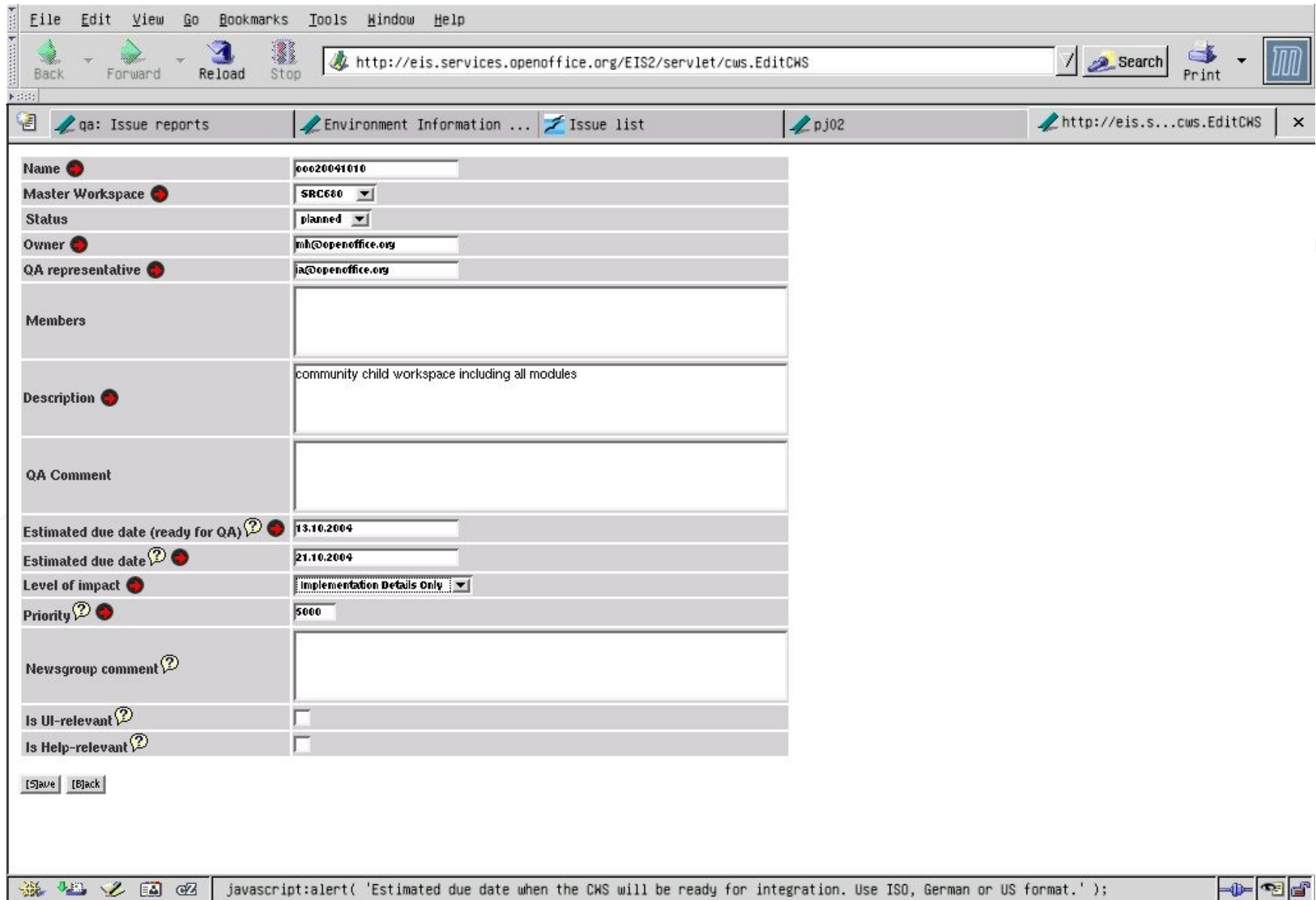
3 records



Child workspace creation

- Create a new child workspace
 - *Register in database in EIS*
 - *What's the purpose ?*
 - *Provide a description*
 - *What level of QA is needed*
 - *UI relevant*
 - *Help relevant*
 - *-> Specification needed ?!*
 - *Timeframe*
 - *What are the impacts*
 - *Regarding the user experience ?*
 - *To other developers ?*

cwscreate



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qa: Issue reports Environment Information ... Issue list pj02 http://eis.s...cws.EditCWS

Name	<input type="text" value="ooo20041010"/>
Master Workspace	<input type="text" value="SRC680"/>
Status	<input type="text" value="planned"/>
Owner	<input type="text" value="mh@openoffice.org"/>
QA representative	<input type="text" value="ja@openoffice.org"/>
Members	
Description	<input type="text" value="community child workspace including all modules"/>
QA Comment	
Estimated due date (ready for QA)	<input type="text" value="13.10.2004"/>
Estimated due date	<input type="text" value="21.10.2004"/>
Level of impact	<input type="text" value="Implementation Details Only"/>
Priority	<input type="text" value="5000"/>
Newsgroup comment	
Is UI-relevant	<input type="checkbox"/>
Is Help-relevant	<input type="checkbox"/>

javascript:alert('Estimated due date when the CWS will be ready for integration. Use ISO, German or US format.');



Cws lifetime

- The quick thing (less than one day, some days)
 - *There's no impact, it just fix the damn thing*
 - *Trivial bug fixes*
 - *Build problems*
- The big thing (months or years)
 - *New functionality*
 - *Leads to new UI, translation is needed*
 - *Needs documented in Help, Documentation*
 - *Specification is needed*
 - *New architecture*
 - *Other developer need to know about these changes*

Environment Information System

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Master: SRX645, SRC680, SRX644, SRX645
 Release: OOo 1.1.1, OOo 1.1.2, OOo 1.1.3, OOo 1.1.4, OOo 2.0
 Status: fixed on master, integrated, new, nominated, planned
 Modules: MathMLDTD, UnoControls, Xml Search, accessibility, apache_java
 Owner: <all>
 UI relevant? any yes no
 Help relevant? any yes no
 QA Representative: <all>

Name: TaskId: Integrated after: Integrated before: Due date before: Due date after: Priority:

id	Master	Name	Release	Status	Creation date	Milestone (current)	Milestone (integrated)	Integration date	Estimated due date	Description	# Tasks	UI relevant	Help relevant	Priority
877	SRX645	kildarefilterteam22	OOo 1.1.2	integrated	2004-01-16	m29	m35s1	2004-03-18	2004-02-19	filter problems for PP3	9	false	false	5000
931	SRX645	sab011	OOo 1.1.2	integrated	2004-01-30	m34	m35s1	2004-03-18	2004-03-26	my PP3 fixes	2	false	false	5000
1120	SRX645	comptrans0	OOo 1.1.2	integrated	2004-03-08	m35	m37	2004-03-30	2004-03-23	Use office components transparent from Java	4	false	false	5000
1124	SRX645	vclpp3bugs	OOo 1.1.2	integrated	2004-03-09	m33	m38	2004-04-07	2004-04-01	PP3 tasks in vcl	8	false	false	5000
1126	SRX645	ooo111regression4	OOo 1.1.2	integrated	2004-03-09	m33	m34	2004-03-10		Merged to SRC680 CWS geordi2q16	5	false	false	5000
1136	SRX645	pp3calc	OOo 1.1.2	integrated	2004-03-12	m34	m37	2004-04-02	2004-03-25	OOo1.1.2/SO7PP3 fixes for Calc and i18n @RE	6	false	false	5000
1141	SRX645	ooo111regression5	OOo 1.1.2	integrated	2004-03-15	m34	m35	2004-03-16	2004-03-15	More last minute fixes for OOo-1.1.1. Merged to SR	2	false	false	5000
1151	SRX645	mh112	OOo 1.1.2	integrated	2004-03-18	m35	m37	2004-03-30	2004-03-29	OOo 1.1.2 fixes	9	false	false	5000

Done

Conference

EIS - releases

Environment Information System 2.0

Child workspaces | Changes-Mails | Sourcecode

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759	SRC680	il2	2.0	integrated	2003-11-07	m50	2004-08-26	CLF-DND related issues, java framework issues	2	false	false	m52
1425	SRC680	vcl25	2.0	integrated	2004-07-14	m49	2004-08-23	bugs	16	false	false	m54
1522	SRC680	hr6	2.0	integrated	2004-08-20	m51	2004-08-23	Small CWS for misc fixes to CWS tools.	1	false	false	m52
1462	SRC680	fontlists03	2.0	integrated	2004-07-26	m48	2004-08-28	Using the new CWS FontLists02 infrastructure to f	8	false	false	m53
1488	SRC680	opendocbehavior	2.0	integrated	2004-08-04	m49	2004-08-27	Implement the new Open Document Behavior.	3	true	true	m54
1490	SRC680	gtkfpicker1	2.0	integrated	2004-08-04	m49	2004-08-28	Use the system gtk fpicker if gnome is running and	1	false	false	m54
1513	SRC680	encodingfix	2.0	integrated	2004-08-13	m50	2004-08-23	English strings have been fixed	1	true	false	m54
1534	SRC680	getfilesize1	2.0	integrated	2004-08-24	m50	2004-09-01	add osl_getFileSize to use instead of seeking to t	1	false	false	m54
1036	SRC680	sj09	2.0	ready for QA	2004-02-06	m52	2004-09-21	CustomShape UI + Q-PCD - Loss of any Wod Art if	29	true	true	
1260	SRC680	desktintgr02	2.0	integrated	2004-05-12	m50	2004-09-10	OOo filter for the Windows Indexing Server Col	14	false	false	m54
1354	SRC680	insight02	2.0	integrated	2004-06-15	m51	2004-08-30	cws for bugfixes for the new database	14	true	false	m54
1477	SRC680	enhselect	2.0	integrated	2004-07-30	m49	2004-08-27	Enhanced table/text selection feature	4	true	true	m54
1519	SRC680	iha02	2.0	integrated	2004-08-18	m50	2004-08-26	Prio2 Fix for Paintbrush Feature	2	false	false	m54
918	SRC680	pdf01	2.0	integrated	2004-01-29	m49	2004-08-25	New PDF features pl: sj kindly has agreed t	26	true	true	m54
1046	SRC680	impress11	2.0	integrated	2004-02-09	m48	2004-08-27	Bug fixes for the Multi Pane GUI.	10	true	false	m54
1290	SRC680	swundo03	2.0	integrated	2004-05-25	m50	2004-08-27	Undo improvements	15	true	true	m54

EIS - integrated

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- FIX645
- SRC680
 - fixed on master
 - integrated
 - new
 - nominated
 - planned
 - ready for QA
- SRX644
- SRX645

Expand All Collapse All

Name	Release	Status	Creation date	Milestone (current)	Estimated due date	Description	# Tasks	UI relevant	Help relevant	Milestone (integrated)	Integration order	ready for QA date
fwk01ea	00o 2.0	integrated	2004-01-30	m46	2004-09-10	fixes/features for loading documents/uch handling	3	false	false			2004-09-09 2
keyconfig01	00o 2.0	integrated	2004-05-06	m47	2004-09-09	implement uno core services for accessing the key	11	true	true			2004-09-09 2
ause011	00o 2.0	integrated	2004-08-17	m51	2004-09-22	fix misc. build problems	15	false	false			2004-09-17 2
os19	00o 2.0	integrated	2003-09-01	m53	2004-09-10	Implementation of PCD Ease of use FL 06 Spellin	30	true	true			2004-09-08 2
os34	00o 2.0	integrated	2004-05-26	m53	2004-09-11	Conversion Traditional Chinese <-> Simplified	13	true	true			2004-09-08 2
syssettings02	00o 2.0	integrated	2004-07-12	m52	2004-09-07	Read user settings from GConf or Windows registry	2	true	true			2004-09-03 2
imarmion3	00o 2.0	integrated	2004-08-23	m51	2004-09-15	cws for issue i31751	1	false	false			2004-09-10 2
pi02	00o 2.0	integrated	2004-09-06	m52	2004-09-20	Build fixes for SRC680_m52/m53.	1	false	false			2004-09-09 2
pi03	00o 2.0	integrated	2004-09-13	m53	2004-09-13	Some build fixes for Microsoft Wlndows/tcsh for m5	2	false	false			2004-09-13 2
cheffsache01	00o 2.0	integrated	2004-09-14	m52	2004-09-16	fixing a major file format issue in impress/draw	2	false	false			2004-09-15 2
dr25	00o 2.0	integrated	2004-09-14	m52	2004-09-21	#i21549# Table AutoFormat changes for Calc and Wri	1	false	false			2004-09-14 2
encodingfix	00o 2.0	integrated	2004-08-13	m50	2004-08-23	English strings have been fixed	1	true	false	m54		2004-08-23 2
insight02	00o 2.0	integrated	2004-06-15	m51	2004-08-30	cws for bugfixes for the new database	14	true	false	m54		2004-08-17 2

Cws stats

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Master
RX645
SRC680
SRX644
SRX645 [Find]

Time spent per status for Child Workspaces

Integration month	Count	Avg. days in new	Avg. days in ready for QA	Avg. days in nomination	Avg. lifetime
2004-09	49	46.28	4.12	8.11	58.52
2004-08	42	68.91	6.59	3.76	79.26
2004-07	46	55.85	6.18	3.39	65.42
2004-06	41	62.76	9.26	3.00	75.01
2004-05	36	81.75	7.64	2.96	92.34
2004-04	18	58.23	5.05	2.16	65.44
2004-03	36	78.60	10.72	2.70	92.01
2004-02	1	60.67	1.19	0.13	61.99
2003-12	1	50.09	5.93	0.14	56.16
2003-11	2	54.51	29.49	3.51	87.51
2003-10	1	6.06	0.01	0.08	6.15
2003-09	2	5.43	0.00	0.09	5.52
Total	275	63.13	7.13	3.94	74.21

13 records

A line in the above statistics lists: A month, the number of Child Workspaces created in the given month, the average number of days these Child Workspaces were in the status 'new', the average number of days these Child Workspaces were in the status 'ready for QA', the average number of days these Child Workspaces were in the status 'nominated' and the total lifetime from creation to integration.

Further notes:



A better solution

- Continuous integration and build
 - *Simulate atomic commits of file sets*
 - *Group issues to logical entities*
- Release early and often
 - *Release often already tested code*
 - *It does not matter if a features gets in weeks earlier or later*
- stable Release
 - *Minimize the time needed to make the product stable*
 - *Be able to release a stable code base at any time*



Challenges

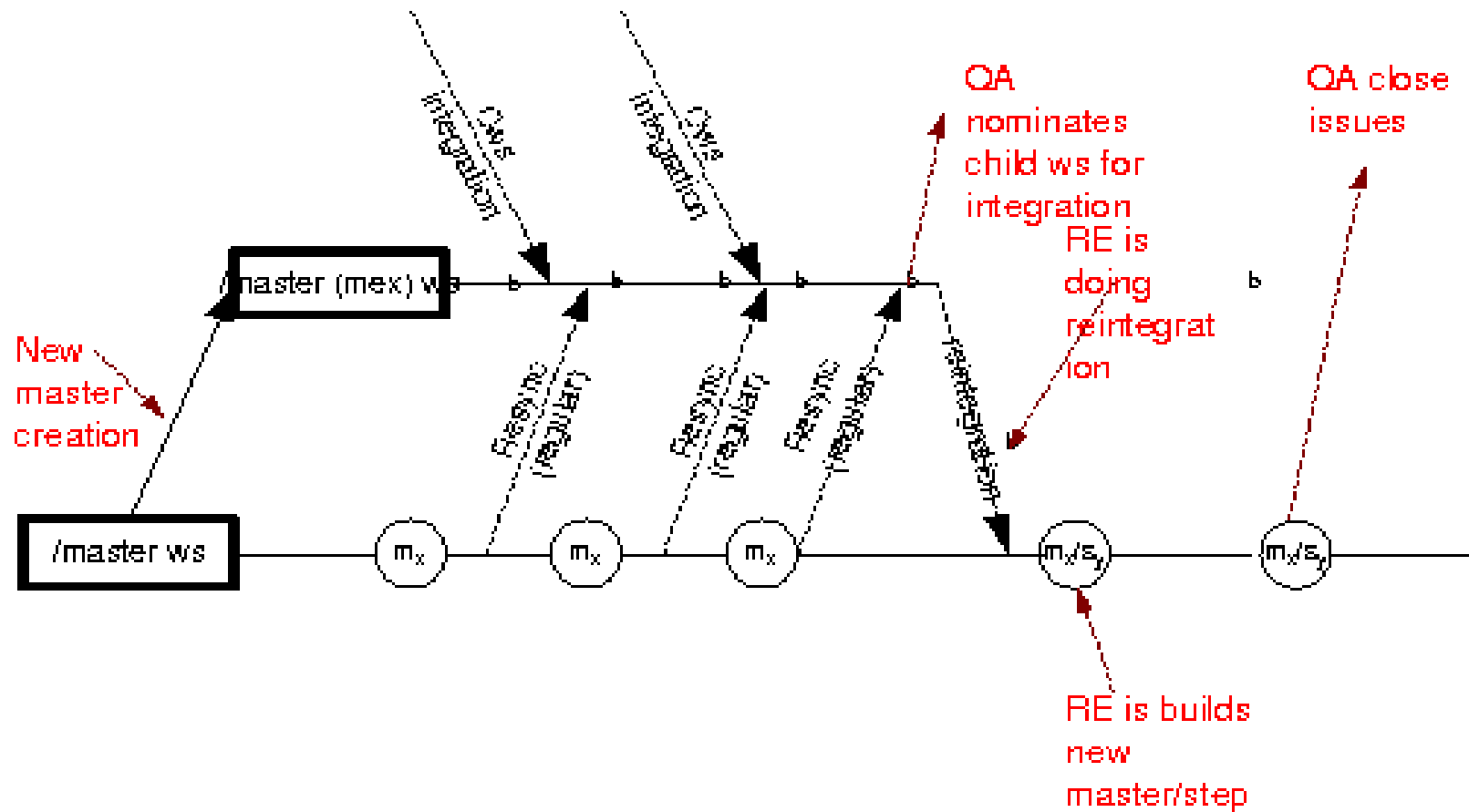
- Experimental code lines
 - *Developers requires to have experimental code tested broadly*
 - *More than one build is required*
- Specification process
 - *Which Criteria make a specification necessary*
 - *In which cases a test plan, documentation or just comment in the source code are sufficient*
- Communication
 - *<http://www.go-ooo.org/ooo-build.html>*
 - *Be honest, speak about pro's and con's*
 - *Talk with each other, make sure that you get understood by your partner*



Experimental code line

- Work with `#ifdef` for experimental code
 - *High maintenance costs*
 - *Gets horrible if you get staggered ifdef cascades*
- Cascading parent/child concept
 - *scales*
- Dependent Master
 - *Resync after every new milestone*
 - *Exit criteria must be clear*
- Open Question: Single or multiple cws integration ?

Experimental Code line





Source Control System

- Is CVS perfect for OpenOffice.org ?
- Which problems we do have with CVS ?
- CVS vs Subversion ?
- Are there other alternatives (distributed Source Control) ?



Team Work

- Common understanding of Users, Developers and QA how a feature is intended to work
- Documentation of why decisions have been made about controversial issues
- <http://specs.openoffice.org/collaterals/Specificat>
- http://specs.openoffice.org/collaterals/OpenOffice_org_Specification_guide.sxw
- Different levels of specifications:
 - *Specification*
 - *Test plan*
 - *Comments in Source Code*



ToDo's and the vision

- Experimental / QA code line
- Interaction with community
 - *Tweaking the Specification Process*
 - *Requests of Enhancements*
- Planning Releases
- Get quick cws round trips for “need to have” things
- Speed up the patch process
 - *Patch Gatekeeper wanted*
- Get automated tinderbox builds for cws
- QA wanted to test before integration
 - *Enhance smoketest and automated test and integrate them into the build system*



Summary

- Be every time in a state to release
- QA before integration
- Grant liberal commit access to the cvs repository
- Think twice before nomination for integration !
- Get assistance !