



Enabling Grids for E-science

Software Quality Metrics

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EGEE-II final EU Review

Cern 08-07-2008

www.eu-egee.org






- **Software process**
- **Tools and tracking**
- **Metrics**
- **Improving software quality**

- **We operate a continuous program of updates to gLite**
 - On average one set of updates is released per week
- **Services and components are updated individually**
- **This process incorporates a number of QA checkpoints, including a full certification stage**
- **The process works on Patches, self consistent sets of changes to the middleware stack**
- **The process is recorded in a number of standard documents:**
 - **MSA3.2 & 8** : Process document
 - **MSA3.5**: Test plans
 - **MSA3.7**: Developers' guide
- **Metrics can be found at:**
 - Software process monitoring:
 - <http://glite.web.cern.ch/glite/statistics/PatchStatistics.asp>
 - Defects and new features:
 - <http://glite.web.cern.ch/glite/statistics/BugStatistics.asp>

- Based on the **Savannah** project at CERN



gLite Middleware - Patches: patch #1900, R3.1/SLC4/i386: GFAL &...

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You are both [technician](#) and [manager](#) for this tracker.

patch #1900: R3.1/SLC4/i386: GFAL & lcg_util update

<i>Submitted by:</i>	Paolo Tedesco <ptedesco>	Submit Changes and Browse Item
<i>Submitted on:</i>	2008-06-06 08:39	Submit Changes and Return to this It
<i>Status:</i>	Ready for Certification ▾	<i>Open/Closed:</i> Open ▾
<i>Priority:</i>	5 - Normal ▾	<i>Assigned to:</i> rtiago ▾
<i>Discussion Lock:</i>	Unlocked ▾	
<i>Summary:</i> *	R3.1/SLC4/i386: GFAL & lcg_util update	
<i>gLite subsystem tag(s) / ETICS configuration:</i>	glite-data_R_3_1_85_1	
<i>gLite release:</i> *	gLite 3.1 ▾	
<i>RPM name(s):</i> *	GFAL-client-1.10.15-1.slc4.i386.rpm lcg_util-1.6.14-2.slc4.i386.rpm	



A gLite 3.1 update announcement

Enabling Grids for E-science

Patch #	Description
1648	sl4/i386 New torque 2.3.0-snap.200801151629.2cri and Maui 3.2.6p20-snap.1182974819.8
1708	R3.1/SLC4/i386: glite-AMGA_oracle metapackage
1782	VOMS Admin Server 2.0.14.1 & VOMS Admin Client 2.0.7.1 & VOMS Admin Interface 2.0.2.1
1787	VOMS server configuration update (multiple bug fixes)
1802	New version of log-info to support multiple BDII endpoints in LCG_GFAL_INFOSYS
1854	New yaim to fix the bug #36982 in WMS patch 1726
1874	Fix for rpm conflicts in gLite 3.1 update 25

Service updates

Priority	Service	Version	Details
Normal	glite-TORQUE_client	3.1.4-0	Details
Normal	glite-AMGA_postgres	3.1.6-0	Details
Normal	glite-LB	3.1.1-1	Details
Normal	glite-VOBOX	3.1.13-0	Details
Normal	glite-VOMS_oracle	3.1.11-0	Details
Normal	glite-WMS	3.1.2-0	Details
Normal	log-CE	3.1.16-0	Details
Normal	glite-AMGA_oracle	3.1.1-0	Details
Normal	glite-TORQUE_server	3.1.4-0	Details
Normal	glite-VOMS_mysql	3.1.11-0	Details
Normal	glite-WN	3.1.15-0	Details
Normal	glite-UI	3.1.15-0	Details

- **Acceptance criteria**
 - At each stage in the Patch release process acceptance criteria are imposed
- **Build (ETICS)**
 - Reports and codebase analysis
- **Certification**
 - Documentation checks
 - Deployment tests
 - Functional tests
 - Stress tests (on demand), ageing tests
- **PPS service**
 - Exposes the updates to other deployment scenarios and real-world workflows

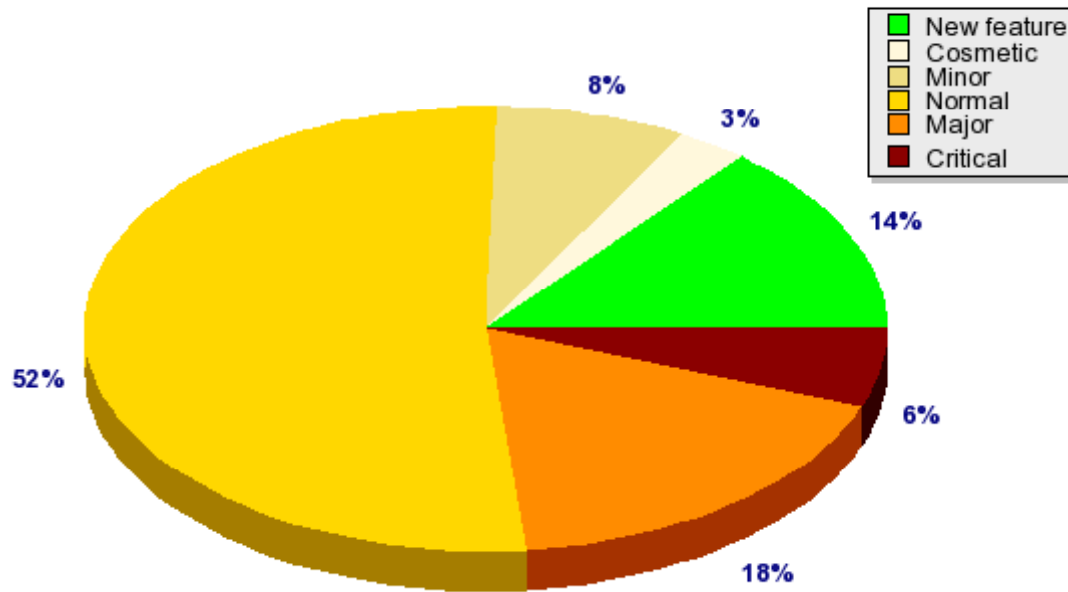
- As with Patches, based on the **Savannah** project at CERN
- Used also for **feature requests**.
- Allows defects to be associated directly with the changes which fix them
- Stats are primarily based on the data in this system

Details

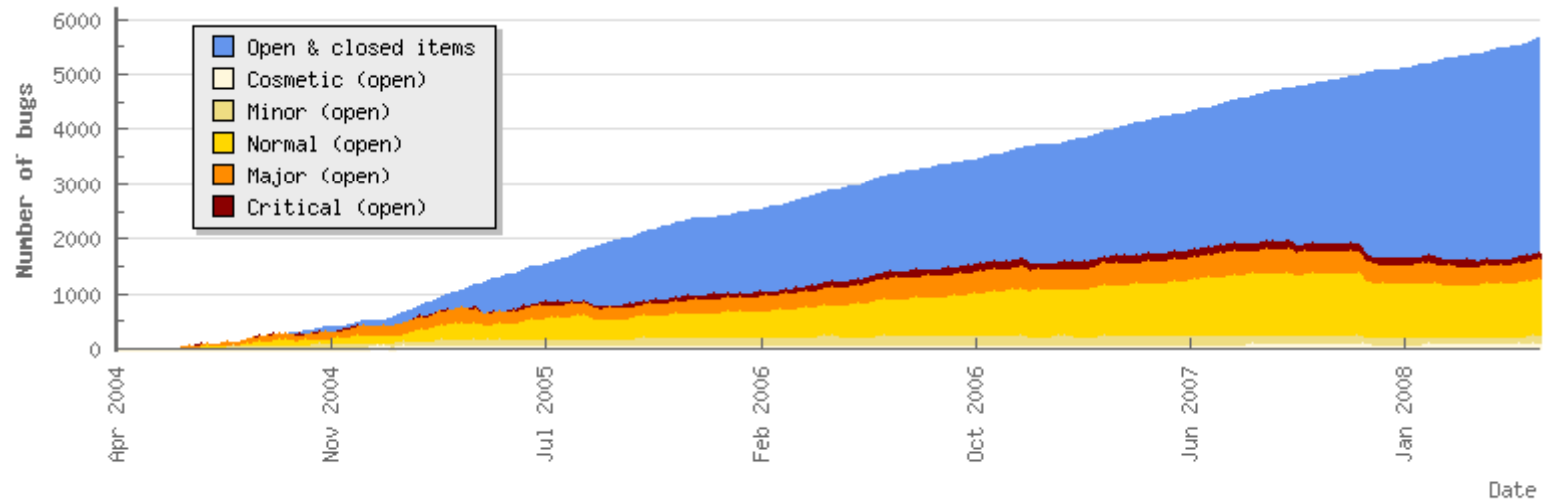
<u>Status:</u>	<input type="text" value="Unknown"/>	<u>Category:</u>	<input type="text" value="Unknown"/>
<u>Severity:</u>	<input type="text" value="PLEASE SET VALUE"/>	<u>Baseline Release:</u>	<input type="text" value="Unknown"/>
<u>OS:</u>	<input type="text" value="Unknown"/>	<u>Architecture:</u>	<input type="text" value="Unknown"/>
<u>Bug detection area:</u>	<input type="text" value="Production"/>	<u>Assigned to:</u>	<input type="text" value="Unknown"/>
<u>GGUS reference URL:</u>	<input type="text"/>		
<u>Summary:</u>	<input type="text"/>		

Original Submission: ([Full Markup](#))

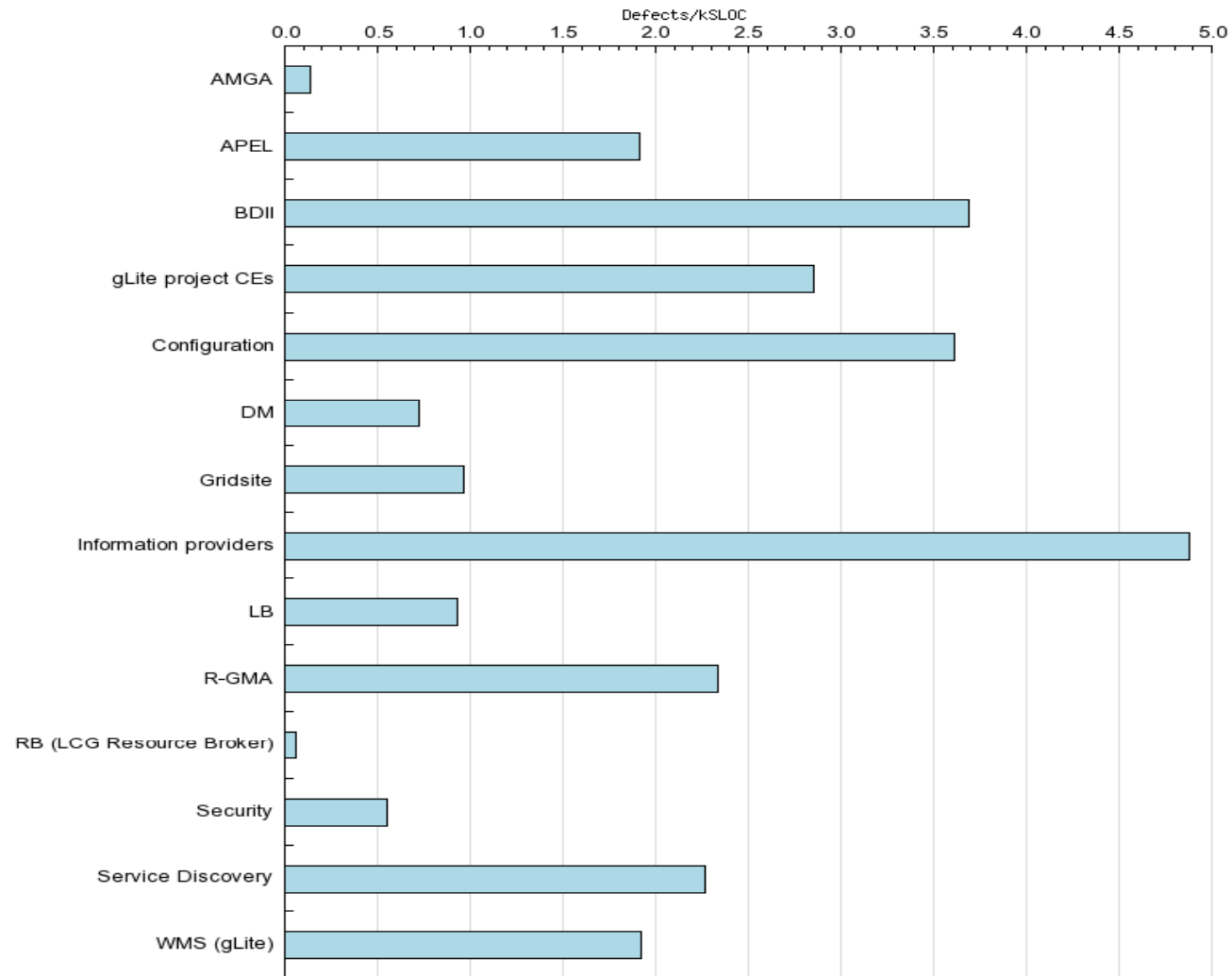
Bug severity distribution for category 'all'



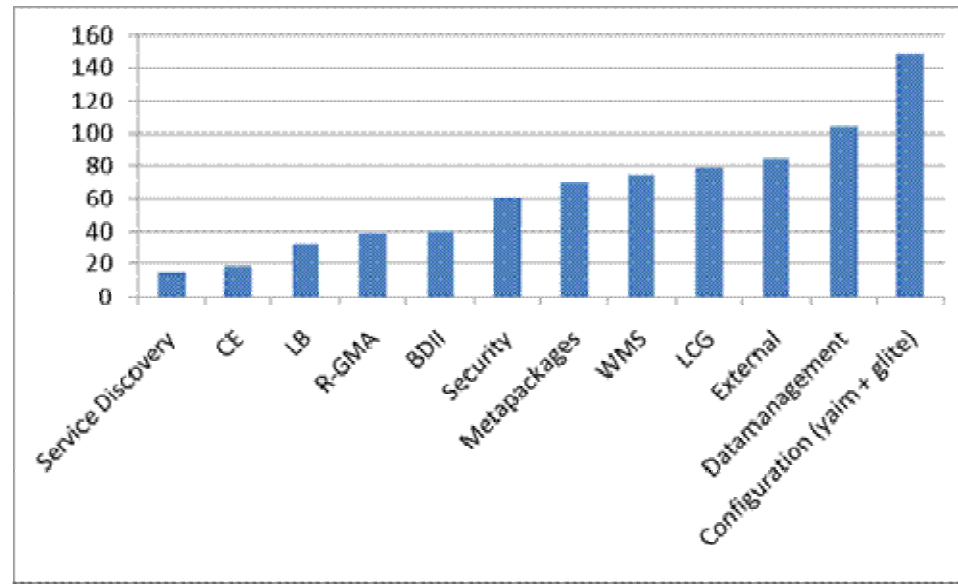
Open vs closed bug history



Defects per kSLOC

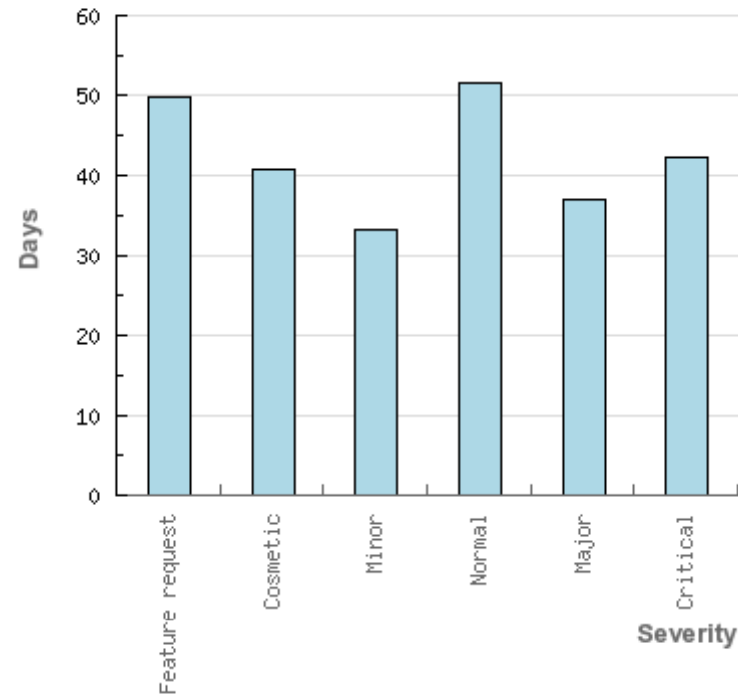


Patches released per service

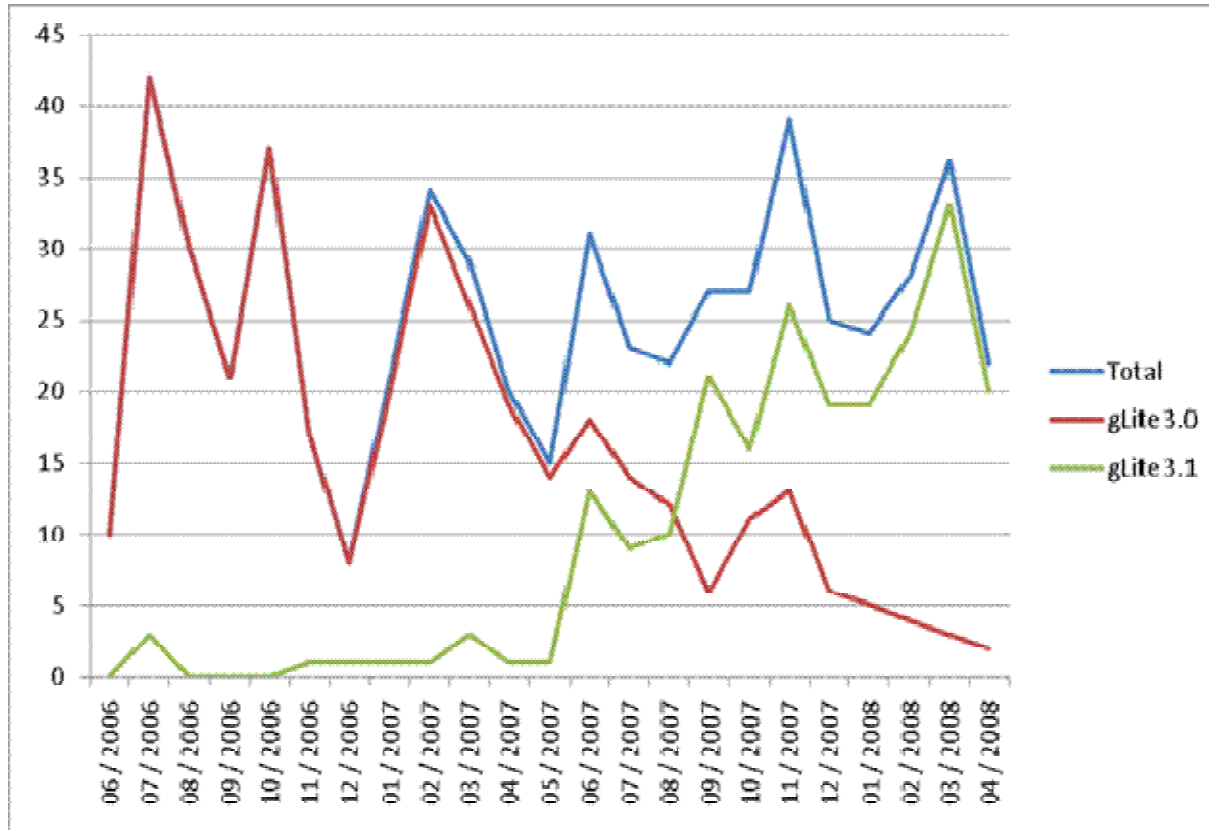


Only bugs released via a patch

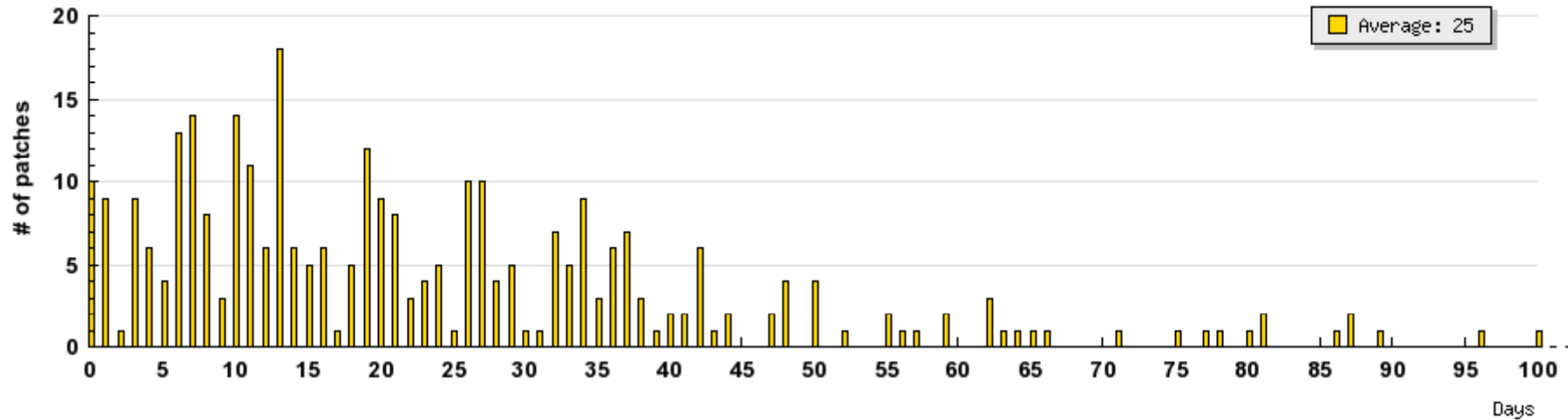
Average time to fix / release a bug



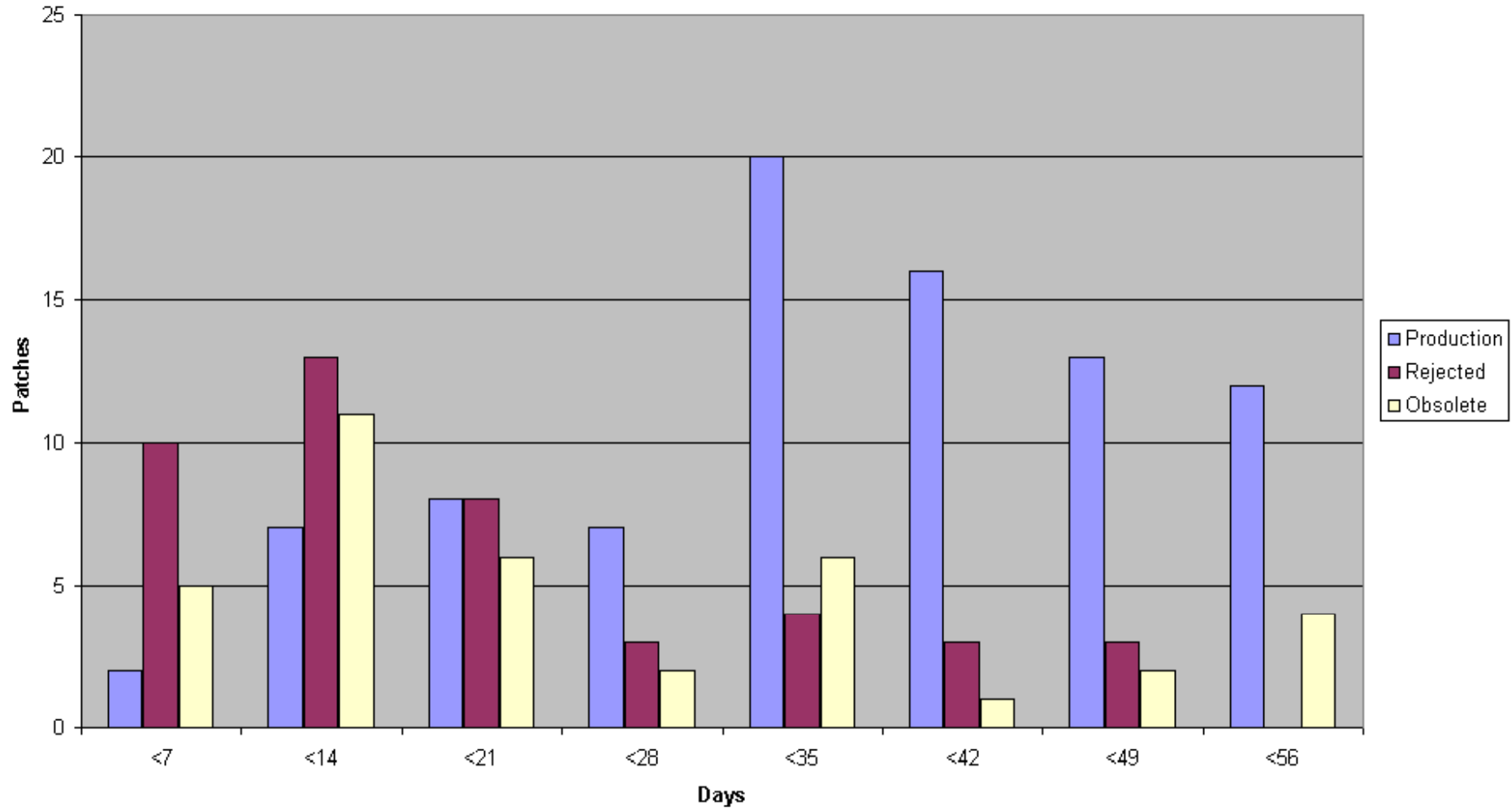
Patches released over time



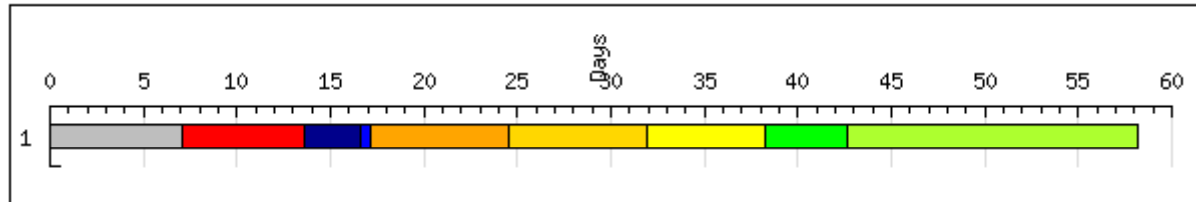
Total time spend in certification (323 patches considered)



Patch Latency

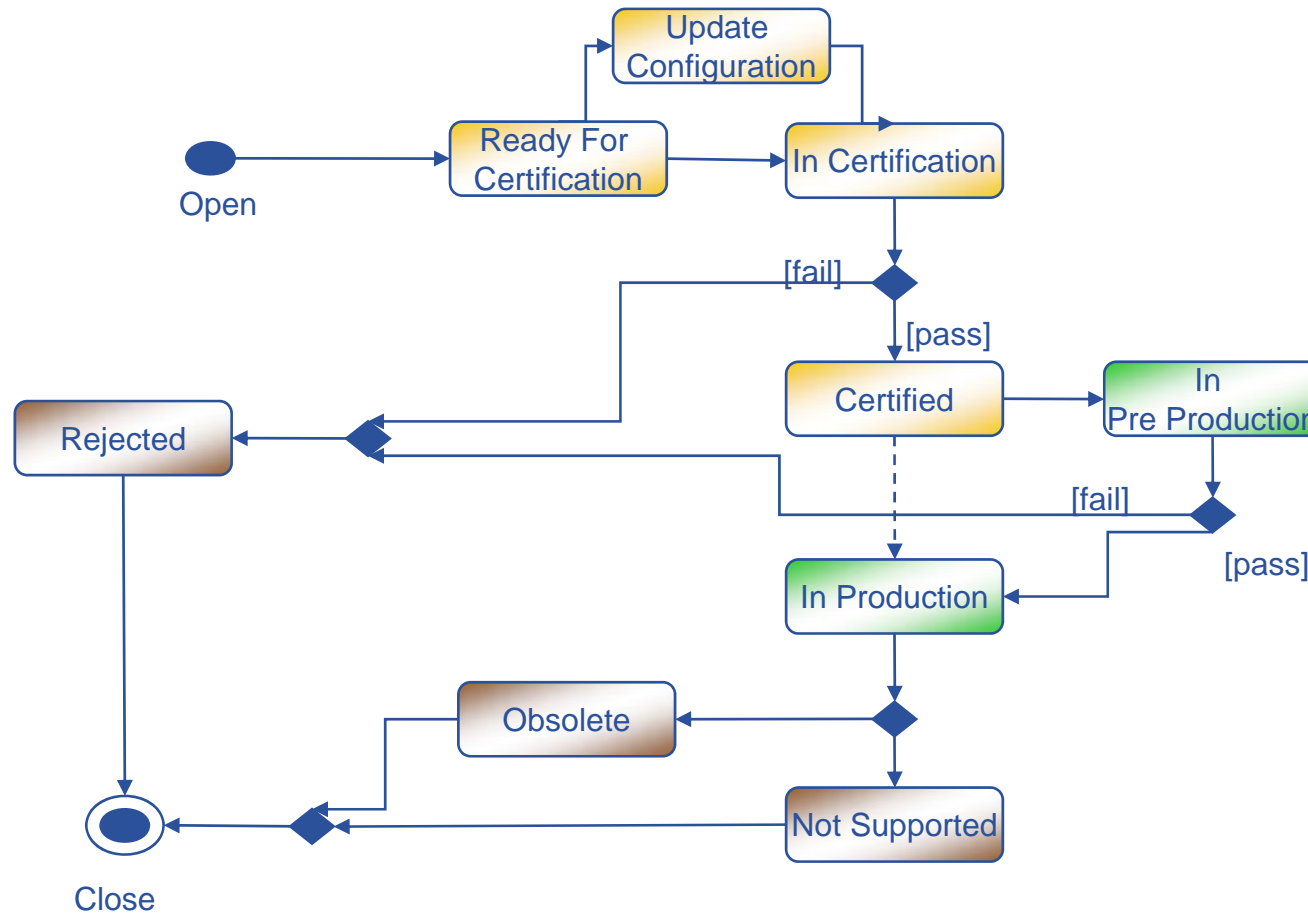


Average lifetime of patch states

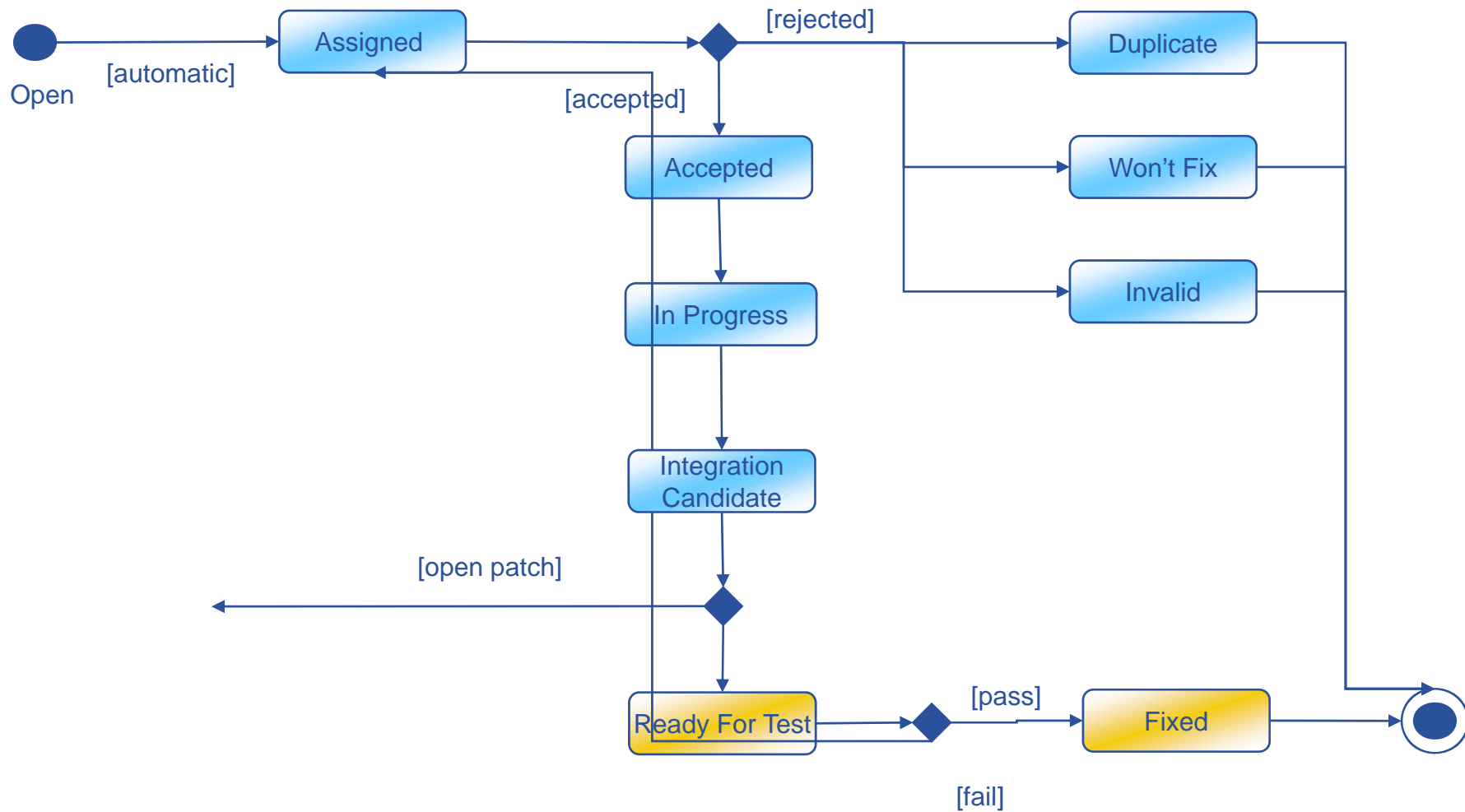


- Automating the testing and certification procedures will continue, with the aim of making as much testing available to the developers as possible
- EGEE-III collocates testing manpower directly with the developers, reducing overheads
- Formalisation of regression testing
- Optimise reporting and release process to be maximally responsive
- Programmatic interface to savannah
- Many metrics are now available in realtime and serve as monitoring tools for the release process

- **Number of lines / sub-system**



Defect Tracking Cycle



- **gLite uses the ETICS build infrastructure**
- **To produce a release candidate we require;**
 - Remote build (thus a known environment)
 - Locked configuration (for repeatability)
 - Permanently stored build logs alongside artifact
- **Build configuration is centrally maintained by the integration team**
- **Developers can build against this and perform initial tests on their release candidates**

Lazy SAM 

Region: VO:

Type: Status:

You are identified as: /DC=ch/DC=cern/OU=Organic Units/OU=Users/CN=okeeble/CN=609355/CN=Oliver Keeble

Latest test statuses of **CE** services of **Certified Production** sites in the **All region** region from the **DTeam VO** point of view:

SITENAME	HOSTNAME	apel	bi	cert	cp	cr	crl	esh	del	gfal	js	rep	
		swdir	ver	votag	wn								
CESGA-SA3	sa3-ce.egee.cesga.es	apel: n.a.	bi: ok	cert: err	cp: ok	cr: ok	crl: n.a.	esh: ok	del: ok	gfal: ok	js: warn	rep: err	rgn
		swdir: ok	ver: ok	votag: warn	wn: ok								
CERN-2	lxb2034.cern.ch	apel: n.a.	bi: ok	cert: err	cp: ok	cr: ok	crl: n.a.	esh: ok	del: ok	gfal: ok	js: warn	rep: ok	rgn
		swdir: ok	ver: ok	votag: warn	wn: ok								
CERN-1	lxb2018.cern.ch	apel: n.a.	bi: ok	cert: err	cp: err	cr: err	crl: n.a.	esh: ok	del: err	gfal: ok	js: warn	rep: err	rgn
		swdir: ok	ver: ok	votag: warn	wn: ok								
CERN-3	lxb2035.cern.ch	apel: n.a.	bi: ok	cert: err	cp: err	cr: err	crl: n.a.	esh: ok	del: err	gfal: ok	js: warn	rep: err	rgn
		swdir: ok	ver: ok	votag: warn	wn: ok								
VIRTUAL	ctb-generic-10.cern.ch	apel: n.a.	bi: n.a.	cert: n.a.	cp: n.a.	cr: n.a.	crl: n.a.	esh: n.a.	del: n.a.	gfal: n.a.	js: n.a.	rep: n.a.	rgn
		swdir: n.a.	ver: n.a.	votag: n.a.	wn: n.a.								

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 Portal last modified: 2008, feb, 4

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