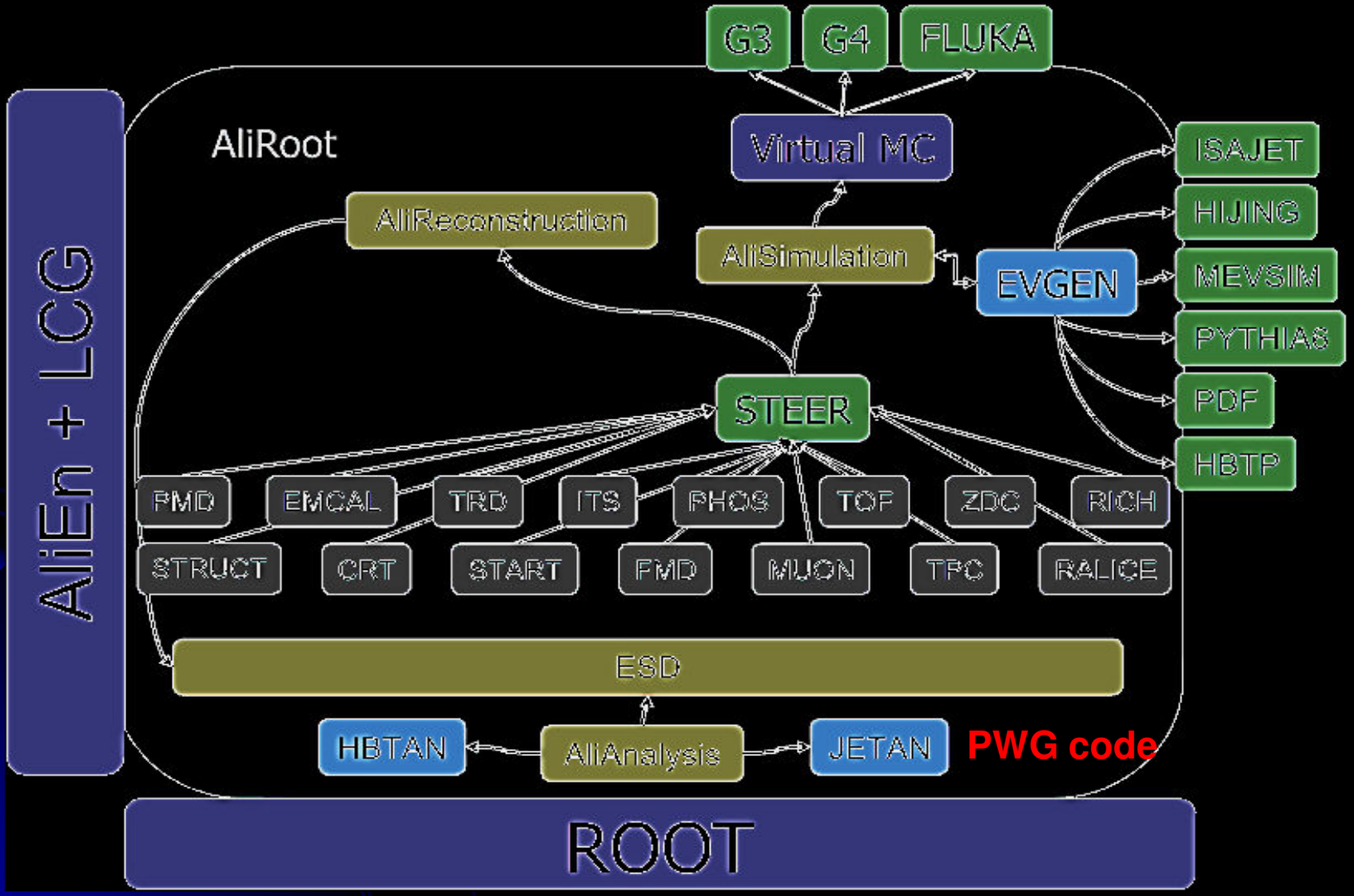
Strategy for software releases in ALICE

WLCG CB

November 13, 2009

General AliRoot architecture



AliRoot responsibilities

- Core offline team
  - Maintenance of AliRoot framework, including analysis
  - Choice of versions of external software dependencies (ROOT, Grid)
  - Particular emphasis - close tracking of ROOT releases, always use the newest
  - Building, non-regression tests, validation and distribution

AliRoot responsibilities (2)

- Detector groups
  - Develop, test and maintain the modules
- Physics working groups
  - Develop, test and maintain the analysis packages
  - Choice and tuning of MC event generators

AliRoot release policy

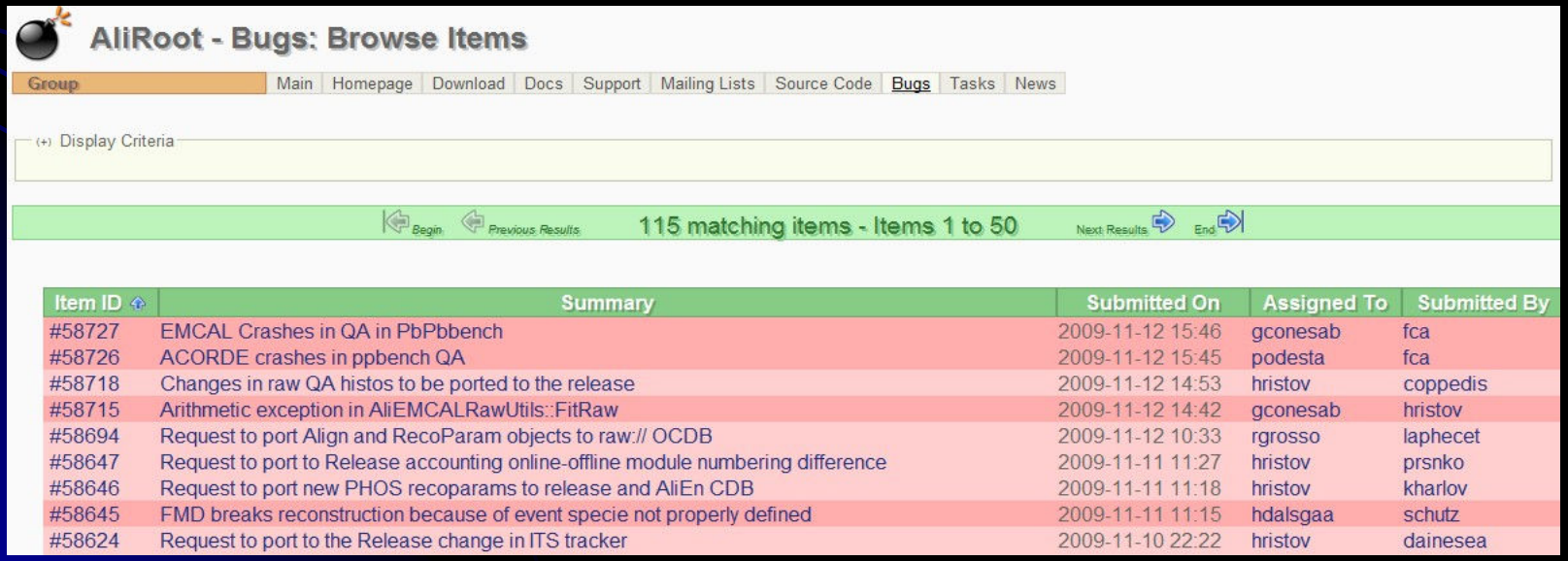
- Release is announced months prior to branching
  - Twice per year
  - Tag is done 15 days (delay to fix all bugs) after branching
- Postpone the functionality, not the tag
- After the branch accept only bug fixes in the release
- The branch is always backward compatible
  - Strictly enforced

AliRoot release policy (2)

- Two distinct versions every week
  - From the release version (Rev-x) validated and tested for MC simulation, RAW reconstruction
  - From the trunk (Rev-x-AN): validated (lighter policy) and tested for analysis
- Latest release: v4-17-Release, July 2009
  - Prepared for the start of cosmics and calibration data taking
  - This is the release for first LHC physics
  - Latest revision of this release v4-17-Rev-15 (yesterday)

Problem tracking procedures

- All issues and bugs are tracked in AliRoot Savannah
  - Categorized by release, dependencies, modules, compilers, priority
  - Issue must be resolved to be closed
  - Blocker issues can disqualify code (reverts)



Item ID	Summary	Submitted On	Assigned To	Submitted By
#58727	EMCAL Crashes in QA in PbPbbench	2009-11-12 15:46	gconesab	fca
#58726	ACORDE crashes in ppbench QA	2009-11-12 15:45	podesta	fca
#58718	Changes in raw QA histos to be ported to the release	2009-11-12 14:53	hristov	coppedis
#58715	Arithmetic exception in AliEMCALRawUtils::FitRaw	2009-11-12 14:42	gconesab	hristov
#58694	Request to port Align and RecoParam objects to raw:// OCDB	2009-11-12 10:33	rgrosso	laphecet
#58647	Request to port to Release accounting online-offline module numbering difference	2009-11-11 11:27	hristov	prsnko
#58646	Request to port new PHOS recoparams to release and AliEn CDB	2009-11-11 11:18	hristov	kharlov
#58645	FMD breaks reconstruction because of event specie not properly defined	2009-11-11 11:15	hdalsgaa	schutz
#58624	Request to port to the Release change in ITS tracker	2009-11-10 22:22	hristov	dainesea

Problem tracking procedures (2)

- Weekly status review (Monday)
  - Organized by core Offline
  - Discussion of progress on open items
  - Review of updates to the release
  - Participation from all detector and physics groups, especially those concerned by the updates
- Following the review, the new revision is prepared, build, non-regression tested and published

Mechanics and dependencies

- AliRoot code versioning – SVN
- Dependent code for builds
  - ROOT SVN
  - AliEn CVS
- AliRoot is build against stable versions of ROOT, MC, AliEn

AliRoot Releases for ia64-unknown-linux-gnu

Release	Date	Description	Status	Built on	Build time	Build #
HEAD	--/--/----	Current CVS head	✔	Tue Nov 10 01:40:52 2009	10:53:44	7
v4-18-09-AN	11/11/2009	11/11/2009	✔	Thu Nov 12 19:03:21 2009	10:24:49	2

Build systems and OS support matrix

- Code portability - built and validate on as many platforms and compiler versions as possible
  - Latest adopted set of build and test on Ubuntu with gcc-4.4.1
  - Natural emphasis on Grid-predominant platforms

Validation and distribution

- The build is followed by a set of automatic tests
  - MC generation benchmarking: p+p, Pb+Pb, followed by simple analysis
  - RAW reconstruction (selected run)
  - Memory profiling

Simulation PbPb

Start	End	Duration	State	OS	Arch	Release	CPU time	Wall time	Total memory	RSS memory
- All -			Successful	- All -	- All -	v4-17-Rev-14			Reset selection	Filter
10.11.2009 13:52	10.11.2009 19:32	5:40	OK	Linux	ia64	v4-17-Rev-14	2:34	2:35	1.832 G	1.355 G
09.11.2009 18:34	09.11.2009 20:09	1:35	OK	Linux	i686	v4-17-Rev-14	40m 54s	42m 4s	1.381 G	1.02 G
09.11.2009 18:08	09.11.2009 20:01	1:52	OK	Linux	x86_64	v4-17-Rev-14	4m 36s	40m 48s	1.773 G	1.238 G

Validation and distribution (2)

- After the test, the build is published on the Grid
  - With its dependent software (ROOT, …)
  - Automatically distributed on all Grid sites

Package name	Platforms				
	Linux-i686	Linux-x86_64	Linux-ia64	Darwin-i386	Darwin-x86_64
AliRoot v4-16-Rev-10	☐	☐	☐	☐	
AliRoot v4-16-Rev-11	☐	☐	☐	☐	
AliRoot v4-16-Rev-12	☐	☐	☐	☐	
AliRoot v4-16-Rev-13	☐	☐	☐	☐	

Summary

- The AliRoot release policy has been elaborated and refined over the past 10 years
  - First AliRoot Release-3-02 , June1999
- Controlled inclusion of new functionality (or rejection thereof) through major revisions twice a year assures continuous code stability

Summary (2)

- Special emphasis is given to code portability through validation on multiple platforms and compilers
- Automatic build, test and distribution systems are used throughout to minimize human errors
- Coherent tracking and weekly reviews with detectors and physics groups of all important issues assures the code readiness for LHC startup