

# Status of the LEGO framework

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- LEGO framework is the system for organized analysis in ALICE
- key elements:
  - MonALISA
  - LEGO backend
  - Lightweight Production Manager (LPM)
  - AliEn

active = run since the last Offline week  
presentation on the 26th of June

- 64 active trains (out of 79 in the system) (for all PWGs)
- 122 active users (out of 188 in the system)

Very well used system

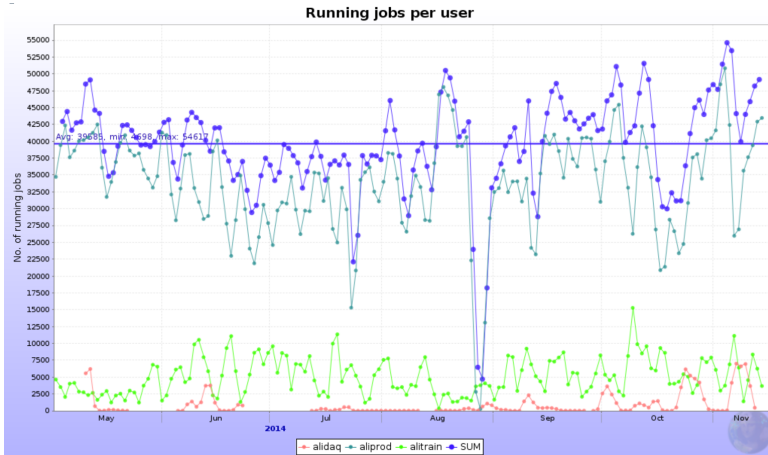


Figure 1: Performance of the GRID in the last 6 months.

user	avg number of jobs	relative to the sum
sum	42626 (up from 37200)	100%
alitrain	5203 (down from 5800)	12% (15)
users	2700 (up from 2300)	6% (6)

	03.2014 - 06.2014	07.2014 - 10.2014
Total wall time	365y	326y
Total number of train runs	730	661
Wagons per train run	9.3	7.2
Number of Grid jobs	2.8 Million	3.1 Million
Train duration	14:01	13:09
Submission	0:37	1:50
Analysis & per Run merging	12:40	10:21
Final merging	0:44	0:58
ESD	57y (16%)	48y (15%)
AOD	197y (54%)	185y (57%)
MC ESD	51y (14%)	68y (21%)
MC AOD	42y (11%)	25y (8%)

Table 2: Per month normalized status values of the train system.

# Presentation of the System

- talk about the train system at the ACAT conference in Prague on the 1st of September
- available at <https://aliceinfo.cern.ch/node/24954>
- proceedings are in the review phase



## The ALICE Analysis Train System

Markus Zimmermann for the ALICE collaboration

01.09.2014

Figure 2: Talk at the ACAT conference about the train system.

# Presentation of the LEGO trains

- presented the trains on the Juniors Day on the 3rd of July 2014
- presentation of the trains at the analysis tutorial on the 2nd of October in Croatia by Michael Weber

The LEGO Train System

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03/07/2014

  
ALICE

  
WESTFÄLISCHE  
WILHELMS-UNIVERSITÄT  
MÜNSTER

Markus Zimmermann The LEGO Train System 1

Figure 3: Talk at the juniors day about the train system.

# UPDATES



# Group management

Updated the group management so that the operator can

- see all wagons of the group
- move multiple wagons to another group
- delete multiple wagons at the same time
- allow automatic wagon activations in the group if a wagon is in the dependencies of another wagon

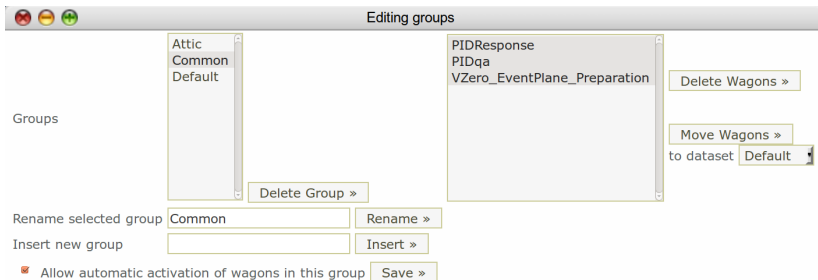


Figure 4: New group management window.

# Wagon activation

- group 'Common' allows to activate wagons automatically
- 'ProtonFemtoscopy\_central\_3D\_LCMS' is activated  
→ PIDResponse is activated, too
- changed wagon activation to asynchronous javascript (Ajax)  
only new content is loaded → speeds up the reload process

Name	Owner	Dependencies	FILTER_PbPb_...	LHC10h_AOD086
Group Common				
PIDResponse	sjena		✓	✗
Group Default				
ProtonFemtoscopy_central_3D_LCMS	maszyman	PIDResponse	✗	✗
ProtonFemtoscopy_central_3D_PRF	maszyman	PIDResponse	✗	✗

Figure 5: Example for automatic wagon activation.

# Wagon overview

- rebuilt the wagon page
- information about a wagon are split into four tabs
- each tab presents the contained information in a clear way

Editing wagon **TwoPlusOneCorrelation**

**Basic settings** | **Advanced settings** | **Subwagon configuration** | **Testing statistics** [Click here for documentation](#)

Wagon name: TwoPlusOneCorrelation  
NB. Only alphanumerical characters (a-z, A-Z, 0-9) and underscore (\_) allowed.

Wagon owner: mazimmer (dropdown) Only users who have a wagon in some train are displayed.

Wagon group: Default (dropdown)

Macro path: PWGCF/Correlations/macros/twoplusone/AddTaskTwoPlusOne.C  
Example: PWG4/macros/AddTaskPhiCorrelations.C  
 AddTask macro needs AllEn connection

Macro parameters: 0, 0.393, "histosTwoPlusOne", "PWGCF\_TwoPlusOne"  
Example: kTRUE, "param"

Macro customization: \_\_\_R\_ADDTASK\_\_->SelectCollisionCandidates(AllEvent::kMB | AllEvent::kCentral | AllEvent::kSemiCentral);

**Subwagons are activated!**

\_\_\_R\_ADDTASK\_\_->SetZVertex(7);  
\_\_\_R\_ADDTASK\_\_->SetMixingTracks(50000);

Note: you get access to the created task by using the variable \_\_\_R\_ADDTASK\_\_.  
Do not forget the semicolon (;) at the end of the lines.  
Example: \_\_\_R\_ADDTASK\_\_->SelectCollisionCandidates(AllEvent::kAnyINT);

Libraries: CORRFW,PWGTools,PWGFCorrelationsBase,PWGFCorrelationsDPhi  
Note: separate libraries with comma (,); do not specify lib in front  
Example: CORRFW,EMCALUtils

Submit »

Figure 6: Example for new subwagon page.

- 'Advanced settings' contain the wagon information which are rarely changed

The screenshot shows a web interface for editing a wagon named 'TwoPlusOneCorrelation'. The interface has a title bar with standard window controls and the text 'Editing wagon TwoPlusOneCorrelation'. Below the title bar are four tabs: 'Basic settings', 'Advanced settings' (which is selected), 'Subwagon configuration', and 'Testing statistics'. A link 'Click here for documentation' is located in the top right corner. The main content area is divided into several sections:

- Dependencies:** A list of dependencies including 'badrajeetriggerd', 'BalanceFunction', 'BalanceFunction\_1', 'BalanceFunction\_2', 'BalanceFunction\_Multi\_pPb', 'BalanceFunction\_Multi\_pPb\_2', 'BalanceFunction\_Multi\_pPb\_3', 'BalanceFunction\_Psi1', 'BalanceFunction\_Psi2', and 'BalanceFunction\_Psi3'. A note says '(Select more than one by pressing CTRL)' and there is a link 'Sort alphabetically'.
- Output file:** A text input field containing 'AnalysisResults.root'.
- Configuration:** A checkbox labeled 'This wagon cannot process several runs within the same job' which is currently unchecked.
- Terminate File:** An empty text input field. Below it, a note says 'Only needed when files are produced in Terminate()' and an example is given: 'Example: event\_stat.root'.
- Copy from other wagon:** A dropdown menu with 'no copy -' selected, a 'Copy' button, and a warning message: 'WARNING: This overwrites all settings in the current entry.'

At the bottom center of the form is a 'Submit »' button.

Figure 7: Advanced settings of the wagon page.

- need only one wagon definition to run multiple task configurations in a single train run
- one task configuration is called a 'subwagon'
- to use this feature user must change their AddTask macro: last parameter is a suffix for the output container name
- all requirements and a detailed example are on the twiki: <https://twiki.cern.ch/twiki/bin/viewauth/ALICE/AnalysisTrains#Subwagons>

Editing wagon **TwoPlusOneCorrelation**

Basic settings | **Advanced settings** | Subwagon configuration | Testing statistics [Click here for documentation](#)

You can run this wagon with multiple different configurations. For each subwagon, one wagon is created in the train. The customizations below are individually attached to the macro customization. **Important:** Your AddTask macro must support this, i.e. the last parameter of your AddTask macro must be a suffix to the output container name. Please click [here](#) for more information.

subwagon name

`_R_ADDTASK --> SetThreeParticleMixed(kFALSE);`

subwagon name   activated

`_R_ADDTASK --> SetThreeParticleMixed(kTRUE);`

- the train system has been presented
  - on the ACAT conference to the public
  - at the Juniors Day
  - at the analysis tutorial in Croatia
- several updates have been put into production
  - new group management
  - activation/deactivation of wagons with ajax
  - tabs for the wagons
  - META wagons
  - several other small improvements
- Future plans
  - META datasets