



MC requests in JIRA

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ATLAS MC tutorial, 29th September 2015

Why request MC?

- **Dumb answer:** Because ATLAS says so

ATL-GEN-INT-2015-001

Approved ATLAS results must be based on official MC production samples.

Preliminary material shown in group meetings can use unvalidated private data sets. However, analyses asking for approval must be based on fully validated official samples.

- This begs the question: **why?** Several reasons, including:
 - Validation
 - Reproduceability
 - Availability to the collaboration
 - Efficient use of grid resources
 - ...
- The next question is why you want **this** sample

Types of MC request (a little simplified)

More work for the requester (usually)



- **Extension of an existing sample**
 - More statistics, with **no** changes to AMI tags
- **Use existing evgen with modified sim/reco**
 - Example: to compare AtlFast-II with fullsim
- **New evgen, based on an existing sample**
 - Examples:
 - To add an evgen filter
 - Systematic variations (different scales, PDF etc)
 - More points for your Higgs/BSM parameter scan
- **New model/process**
 - The **first** generation of a particular SM process or BSM model
 - Includes a change in generator and change in MC campaign (mc12, mc14, mc15, ...)

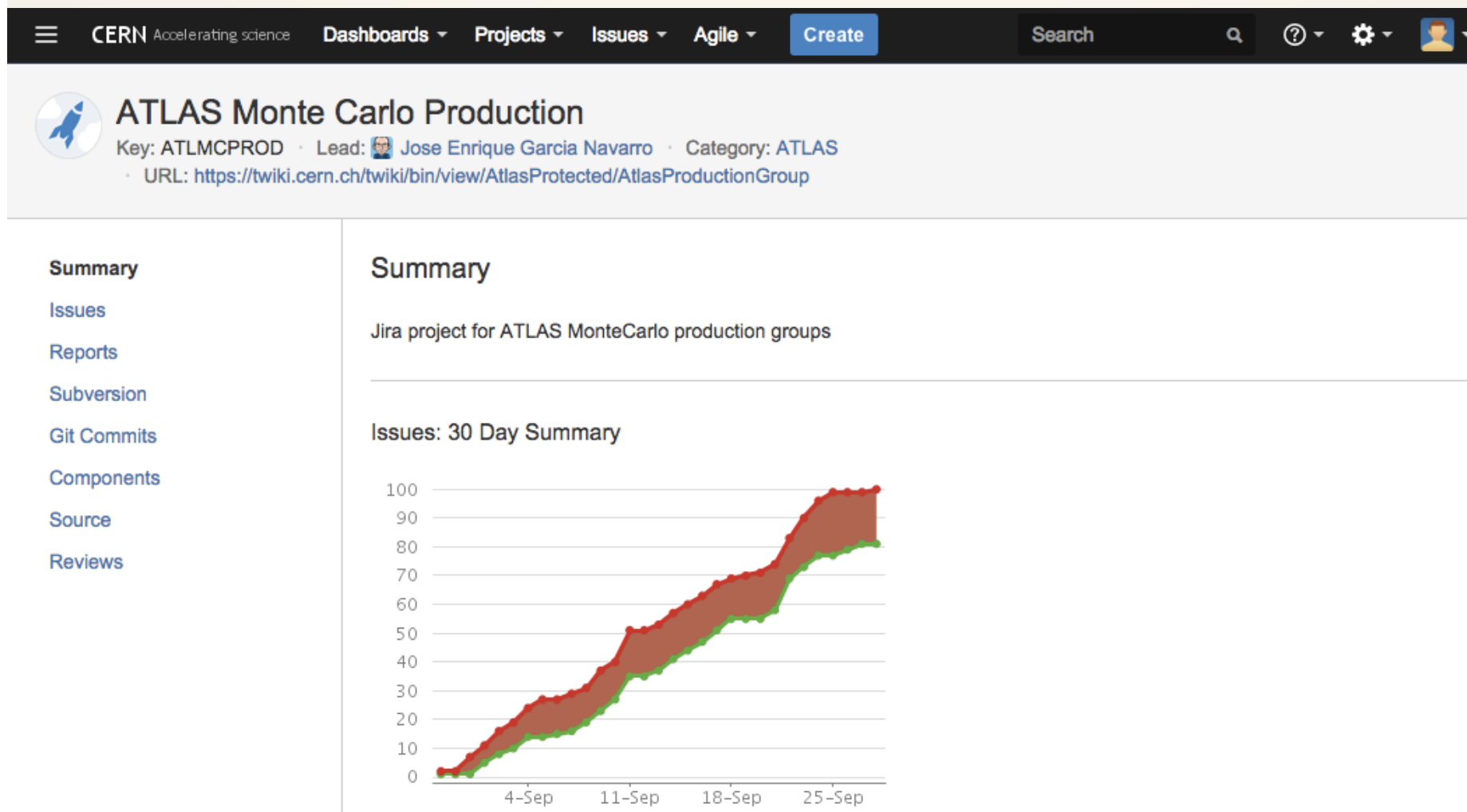
The what and why

<https://twiki.cern.ch/twiki/bin/view/AtlasProtected/AtlasProductionGroup>

- **Think through your request** as much as possible before you start
- **Discuss with**
 - **Conveners, subconveners**
 - **Generator experts** (for technical help)
 - Your group's **MC contact**
- **Questions to think about**
 - **How many datasets?**
 - **How many events?**
 - **What priority?**
 - **Justification:** for you? for ATLAS?
 - Remember to write clearly and that not all readers will be expert in your sub-channel
 - Example: How is your request different to other apparently similar requests?
- Don't panic if you don't know the answers to **all** of the questions before you start – JIRA is also great for discussions & feedback

JIRA front page

<https://its.cern.ch/jira/browse/ATLMCPROD>



JIRA front page

Check out this menu too

Create a new issue

Search existing issues

Shows you're logged in

CERN Accelerating science Dashboards Projects Issues Agile Create Search ? ⚙️ 👤

ATLAS Monte Carlo Production
Key: ATLMCPROD · Lead: Jose Enrique Garcia Navarro · Category: ATLAS
URL: <https://twiki.cern.ch/twiki/bin/view/AtlasProtected/AtlasProductionGroup>

There are different JIRA projects
This one is for requesting MC and job options

Summary

Issues Reports Subversion Git Commits Components Source Reviews

Browse existing issues

Summary

Jira project for ATLAS MonteCarlo production groups

Issues: 30 Day Summary

Date	Total Issues (Red Line)	Issues in Progress (Green Line)
4-Sep	~5	~2
11-Sep	~40	~25
18-Sep	~70	~55
25-Sep	~100	~80

JIRA search

Example: typing „ttbar“ in the search box

The screenshot shows the JIRA search interface with several annotations:

- Save the search if it's useful to you**: A blue box pointing to the "Save as" button.
- Filter by JIRA metadata**: A red box pointing to the "Project...", "Type: All", "Status:...", and "Assign..." dropdowns.
- Sorted list of matching issues**: A green box pointing to the "Order by" dropdown.
- Lots of results => filter more**: An orange box pointing to the "1 2 3 4 5" pagination links.

The search results show a list of issues, with the top result being "ATLMCPROD-1680 ttbar + (di)photon samples". The details of this issue are shown on the right, including the type (Task), status (NEEDS INFORM...), priority (Critical), resolution (Unresolved), component (Higgs, Top), and labels (Eric, HSG1, HSG6, HSG8, Higgs).

Create an issue

Create Issue

⚙️ Configure Fields ▾

Project*

📍 ATLAS Monte Carlo Producti... ▾

Issue Type*

📌 Task ▾ ?

Some issue types are unavailable due to incompatible field configuration and/or workflow associations.

Assignee

👤 Automatic ▾
[Assign to me](#)

Summary*

Priority

⬇️ Minor ▾ ?

Component/s

Start typing to get a list of possible matches or press down to select.

Description

Style ▾ | B | I | U | A ▾ | ↗️ A ▾ | 🔗 ▾ | 🖼️ ▾ | ☰ | ≡ | 😊 ▾ | + ▾ | ⋮

☐ Create another

Create

Cancel

Create an issue

Create Issue ⚙️ Configure Fields ▾

Project* 📌 ATLAS Monte Carlo Producti... ▾ JIRA project: essential for correct processing

Issue Type* 📌 Task ▾ MC request is a **Task** (direct SVN checkin is a **Bug**)

Some issue types are unavailable due to incompatible field configuration and/or workflow associations.

Assignee 👤 Automatic Leave Assignee as Automatic, JIRA knows who does what

Assign to me

Summary* One-line summary of request

Priority ⬇️ Minor Most issues should be Minor (also Major, Critical, Blocker)

Component/s The phys/perf group or subgroup (**essential** for correct assignment)

Start typing to get a list of possible matches

Description Style ▾ B I U A ▾ 🔗 🖼️ ☰ ☷ 😊 + ▾ ⌵

Long description of the process, justification, generator, stats, validation performed so far, etc etc

☐ Create another Create Cancel

Create an issue

Create Issue Scroll down... Configure Fields

~~Fix Version/s~~ ~~None~~

Attachment Drop files here to attach them or Select files Attachments can be added now or later (eg validation plots, job options)

Labels Begin typing to find and create labels or press down to Labels can help others to find your issue Examples: SUSYStrong, MC15, 13TeV

~~Sprint~~ JIRA Agile sprint field

~~Group watchers~~ List of groups in the watchers list.

~~Epic Link~~ Choose an epic to assign this issue to. Skip the last few fields, then GO!

☐ Create another Create Cancel

New request created!

I used the **Test** component, because I don't want this example to be confused with a real MC request. It has been automatically assigned to Jose (sorry Jose!).

The screenshot shows a JIRA issue page for 'ATLAS Monte Carlo Production / ATLMCPROD-2157' with the title 'Test Issue for MC/Sim tutorial'. The issue is a 'Task' with 'Minor' priority, assigned to 'Jose Enrique Garcia Navarro', and is in the 'TO DO' status. The component is 'Test' and the label is 'Testing'. The description is 'This is a test request, for purposes of demonstration'. The activity shows a comment from Jose Enrique Garcia Navarro. The right sidebar shows the assignee, reporter, and dates. A blue box highlights the 'Stop watching this issue' button. A red box highlights the 'Comment' button and the text 'Anyone can now comment Let the games begin!'.

Details

Type: ☒ Task
Priority: ☒ Minor
Component/s: **Test**
Labels: **Testing**

Status: **TO DO** [View Workflow](#)
Resolution: Unresolved

Description

This is a test request, for purposes of demonstration

Activity

All **Comments** Work Log History Activity Subversion Transitions
Git Commits

✓ **Jose Enrique Garcia Navarro** added a comment - 11 hours ago
ok, good reminder that I should take myself out of the list of people getting this entries 😊
Jose

People

Assignee: **Jose Enrique Garcia Navarro**
[Assign to me](#)

Reporter: **Michael James Flowerdew**

Votes: 0

Watchers: **2** [Stop watching this issue](#)

Dates

Created: 11 hours ago
Updated: 11 hours ago

Agile

[View on Board](#)

Comment

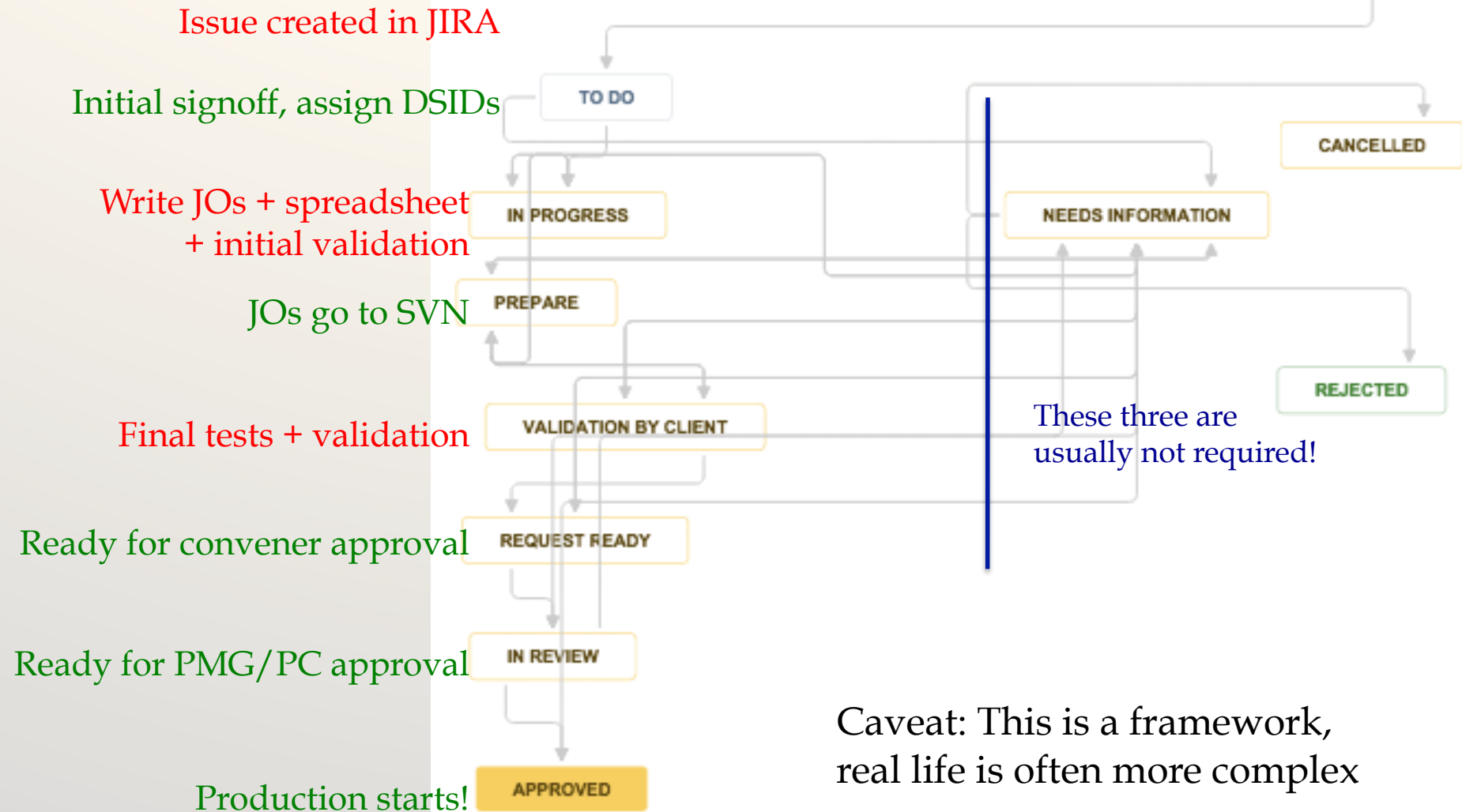
Anyone can now comment
Let the games begin!

Add watchers, so they can follow any discussion
Usually conveners, subconveners and your collaborators

Done by requester
Done by someone else

What next?

The issue then passes through a number of steps defined by the workflow



Input for a request

- One must eventually follow words with actions
- Usually four kinds of input are required:
 - **Job options** + **associated files** needed to run the jobs
 - **MC15JobOptions**: easy & quick to update (see backup)
 - **Other packages**: requires time to tag a new release/p-cache
 - **Additional files**: next slide
 - **Validation plots**
 - **Athena log files** (log.generate)
 - **Spreadsheet**

Associated files

- Some generators need additional files to function or speed up production
 - **LHE files** for non-OTF production
 - **Integration grids** for Powheg, Sherpa and MadGraph5_aMC@NLO
 - Powheg: see https://twiki.cern.ch/twiki/bin/view/AtlasProtected/PowhegForATLAS#Re_using_integration_files
 - Sherpa: ask atlas-generators-sherpa@cern.ch for help
 - MadGraph5_aMC@NLO
- https://twiki.cern.ch/twiki/bin/view/AtlasProtected/MadGraph5aMCatNLOForAtlas#Gridpack_generation
- The files themselves need to be prepared
 - MC contact & prodsys will upload them to the grid
- The file `MC15JobOptions/share/evgeninputfiles.csv` needs to be updated
 - Connects grid datasets with individual MC samples
 - Note the naming conventions when creating the files!

Line	
1	<code>DSID,energy,<u>inputeventfile</u>,(<u>inputconf</u>file)</code>
2	<code>301535, 13000,, group.phys-gener.sherpa020100.301535.Sherpa_CT10_eegammaPt10_35_13TeV.TXT.mc15_v1</code>
3	<code>301536, 13000,, group.phys-gener.sherpa020100.301536.Sherpa_CT10_mumugammaPt10_35_13TeV.TXT.mc15_v1</code>

- Add lines like these to your job options:

`evgenConfig.inputfilecheck = "QBH_emu"`

`evgenConfig.inputconfcheck = "eegammaPt10_35"`

(LHE)
(integration grids)

Validation, log files

- Everyone wants official production to make the thing they asked for
- Details and scope of validation vary from request to request
 - **Bare minimum:** log files using job options *in SVN using the final athena release*
 - Technical test, timings (<24h), filter efficiencies etc
 - Also useful to have logs early on (ie before SVN), *but this does not prove they will work in production!*
 - Only sufficient in some cases, eg extending the mass range for existing BSM model
 - **New processes/models need:** plots of kinematics *using the final athena release*
 - (Jets, leptons, MET, Z, SUSY, ...) \times (p_T , η , ϕ , m , ...) + filter variables etc
 - Use previous campaigns, other generators etc as reference
 - Some cases need weeks/months of hard study
 - Now we're moving out of MC requests and into „real“ physics
 - Example: <https://twiki.cern.ch/twiki/bin/view/AtlasProtected/TtbarBoson>

Spreadsheet

- A spreadsheet provides information to prodsys in a systematic way
 - Example based on

<https://docs.google.com/spreadsheets/d/1WYqoFey9BIVBiDP97ePOZDDRDRNwdli1HNeca04RR1Y/edit#gid=0>

	A	B	C	D	E	F	G
1	Brief description	Dataset Number	Formats	Joboptions	Events (Fullsim)	Events (ATLFAST II)	Priority
2	A sample	123456		MC15...		100000	2

H	I	J	K	L	M	N	O	P	Q
Evgen	Simul	Merge	Digi	Reco	Rec Merge	Rec TAG	Atlfast	Atlf Merge	Atlf TAG

AMI tags: important for some requests

R	S	T	U	V	W	X	Y
Cross-section (nb)	Filter efficiency	NLO cross-section (nb)	Generator	ECM	EF	Comment	Response
				13000		25ns spacing	

Additional info: useful but can be processed without

Core request information

Spreadsheet fields 1

	A	B	C	D	E	F	G
1	Brief description	Dataset Number	Formats	Joboptions	Events (Fullsim)	Events (ATLFAST II)	Priority
2	A sample	123456		MC15...		100000	2

Brief description: Exactly what it says, best if unique within the sheet

Dataset number: Self-explanatory

Formats: Say if you wish to keep **RDO**, **ESD** or **DESD**

Can say, eg, **RDO-10** to keep 10% of the raw files

Job options: Full job option file name MC15.999999.Generator_TunePDF_Process.py

Events: Enter the number of events you want to produce

Do not enter numbers in both columns. If you want fullsim **and** AF-II, you need two rows

Evgen-only: Use the fullsim column and write „Evgen only“ in the comment column

Priority: 0 = urgent, 1 = standard, 2 = long-term

Urgent requires justification (eg it's holding up a paper)

Spreadsheet fields 2

H	I	J	K	L	M	N	O	P	Q
Evgen	Simul	Merge	Digi	Reco	Rec Merge	Rec TAG	Atlfast	Atlf Merge	Atlf TAG

- Fill this bit **if you have specific release/ AMI tag requirements**, for example
 - Consistency with a previous sample
 - Non-standard sim/digi/reco
 - Statistical extension of an existing sample** (please always fill the tags for this)
- A lot of requests („standard MC15“) don't need anything here
- You should understand the tags now, but just in case:

eXXXX_sXXXX_sXXXX_rXXXX_rXXXX_tXXX

Evgen Simul Merge Reco Rec Merge Rec TAG

eXXXX_aXXX_aXXX_rXXXX_tXXX

Evgen Atlfast Atlf Merge Rec Merge Atlf TAG

Spreadsheet fields 3

R	S	T	U	V	W	X	Y
Cross-section (nb)	Filter efficiency	NLO cross-section (nb)	Generator	ECM	EF	Comment	Response
				13000		25ns spacing	

These columns are mostly for information only (eg might help during approval)

(NLO) Cross-section: Useful to judge if the number of events is appropriate

Filter efficiency: May have CPU/walltime issues if low... but you tested this, right?

Generator: Probably redundant, should be obvious from JO name

Please **always** fill the next two

ECM: In GeV

Comment: Essential info for prodsys

Should always say „**Evgen only**“ or give **pileup bunch spacing**

Any other info that varies from sample to sample and may be useful to prodsys

Eg will this sample require high CPU for evgen? (how many events/24h?)

EF and **Response** are basically obsolete now

What next?

http://bigpanda.cern.ch/prodsys/prodtask/request_table/

- Once approved by the working group, the request moves to panda for PMG/PC approval
 - Done by the MC responsible, you don't need to worry about the details

https://prodtask-dev.cern.ch/prodtask/inputlist_with_request/3757/

ATLAS PanDA Requests Tasks Train Datasets Error retry DDMDash SSB Quick search Help Login

ATLAS PanDA

Request ID:	Description:	Reference:	Manager:	Physic group:	Project:	Status:
menu(≡) 3757	Simulation and Reconstruction of samples of gluino production with one step decays	ATLMCPROD-1976	jferrand Me	SUSY	mc15_13TeV	finished

0 + [MC15.371581.MGPy8EG_A14N_GG_onestepCC_1705_1105_505.py](#) mc15_13TeV:mc15_13TeV.371581.MGPy8EG_A14N_GG_onestepCC_1705_1105_505.evgen.EVNT.e4039/

☒ (Atifast)Evgen exists events: 20000

e4039	a766					a777	r6282	t599	
submitted									edit (saved)
T:	done					done	done	done	

1 + [MC15.371582.MGPy8EG_A14N_GG_onestepCC_1705_1345_985.py](#) mc15_13TeV:mc15_13TeV.371582.MGPy8EG_A14N_GG_onestepCC_1705_1345_985.evgen.EVNT.e4039/

What does this all mean? Next talk!

Exercise

- Create an issue in JIRA!
 - <https://its.cern.ch/jira/browse/ATLMCPROD>
 - **Important:** We don't want to confuse real requests with tests, so please
 - Use Component **Test**
 - Do **not** tag conveners etc or add them as watchers – use your neighbour instead
 - Use one of the samples from the other practical sessions, or use your own favourite process/model
- You don't have validation plots etc, but **think about what you would provide**
 - For example: if you look up the cross-section & filter efficiency (now you know how!), how many events do you think you would need to provide?
- **Try some JIRA functionality**
 - Add your neighbour as a watcher, add a comment and tag them (@username)
 - Add a comment with a bullet/numbered list, or some code
 - Can you find how to preview your post? Formatting guidelines are there too
 - Attach a file (hint: explore the **More** menu)
 - Link to another JIRA issue (how many ways can you find to do this?)

ADDITIONAL INFO

Job options + associated files

- Most MC requests require updates to **Generators/MC15JobOptions**
 - Described yesterday, let's assume you know what you need
- MC15JobOptions is unusual, it is **not part of any release**
 - A tarball with important files is made for production jobs
 - This arrangement is **flexible**: one can request arbitrary MC15JobOptions tag with any ATLAS release
 - But testing local modifications can be tricky, as **CVMFS may override your copy**
 - Checkout, add your modifications, then compile
 - Easiest to copy --jobConfig and any param cards etc to your local directory
 - Python includes should be found OK if compiled properly
 - More details (aimed at SUSY, but most suggestions can apply generally):

https://twiki.cern.ch/twiki/bin/viewauth/AtlasProtected/SUSYMcRequestProcedure#2_1_Quick_EVGEN_running_start_up

- Depending on what you're requesting, you may also need to provide:
 - **Updates to other packages** (GeneratorFilters, XxxControl and so forth)
 - Allow time to tag, validate in the nightlies and to build new release/p-cache
 - **Associated files** (LHE files, integration grids aka gridpacks)
 - Generator-dependent, again allow time to produce them