Introduction

Computation Institute

Rob Gardner

Computation and Enrico Fermi Institutes

University of Chicago

US ATLAS Meeting

February 5, 2014

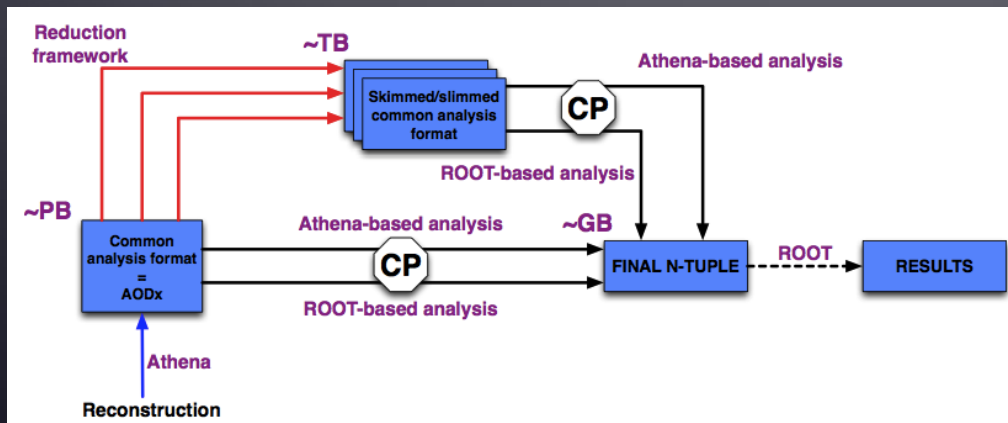# IP in the current quarter: FY14Q2

- DC14 Facility readiness and new analysis model
- MCORE: demand & availability
- FAX in production
- Transatlantic 100 Gbps FAX demonstrator
- Flexible IT Infrastructure
- ATLAS Connect User
- ATLAS Connect Cluster (Tier 3 flocking)

Analysis Model document

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Facility Readiness for DC14.. reminder

Data Challenge-14 Schedule
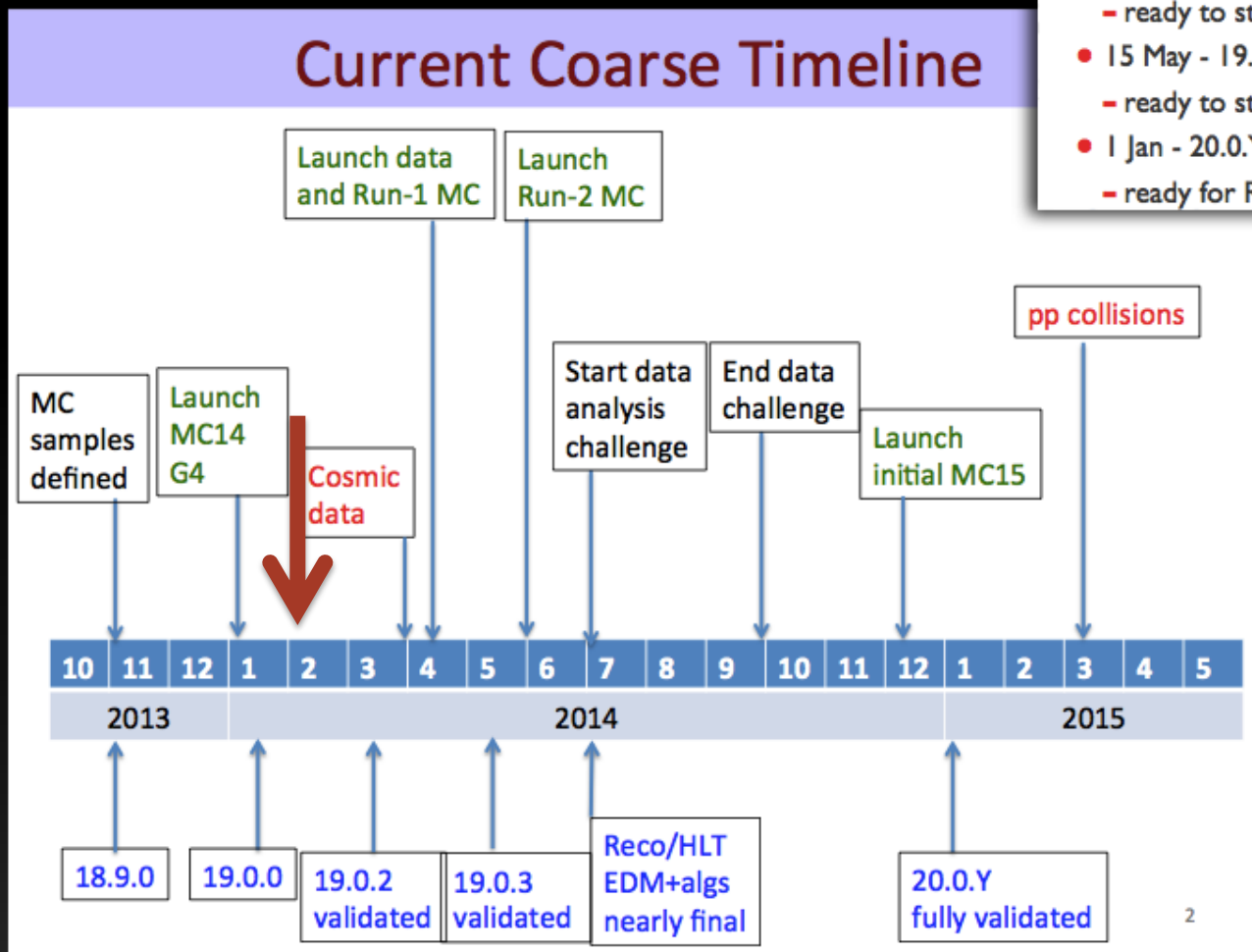
Key Deadlines
- **15 March - 19.0.2 validated**
  - ready to start Run-1 reco
- **15 May - 19.0.3 validated**
  - ready to start Run-2 reco
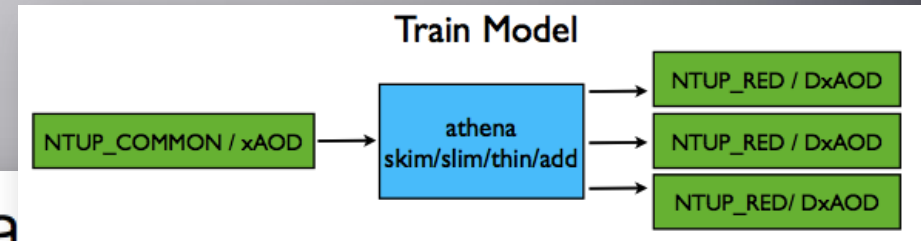- **1 Jan - 20.0.Y validated**
  - ready for Run-2 data

Current Coarse Timeline

Launch data and Run-1 MC

Launch Run-2 MC

pp collisions

MC samples defined

Launch MC14 G4

Cosmic data

Start data analysis challenge

End data challenge

Launch initial MC15

10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5

2013 — 2014 — 2015

18.9.0

19.0.0

19.0.2 validated

19.0.3 validated

Reco/HLT EDM+algs nearly final

20.0.Y fully validated

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Markus Elsing — 17

M. Elsing, ATLAS Weekly

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DF (PB→TB) xAOD
Will be grid based

Train Model

NTUP_COMMON / xAOD → athena skim/slim/thin/add →
- NTUP_RED / DxAOD
- NTUP_RED / DxAOD
- NTUP_RED/ DxAOD

TF#2 Status

Derivation framework: tools and scripts for building analysis specific data formats (~TB sized) in central production

Current status:
Core software largely done
Uses D3PD (NTUP_COMMON) as input.
11 formats currently defined (Top, HSG4, HSG5, HSG8, SM, Tau, SUSY)
Runs locally or with pAthena

Production commissioning
Key aspect is that jobs run in *trains* - multiple output formats per job. Aim is to run existing 11 formats with NTUP_COMMON input in a production train early this year. Work ongoing with ADC to ensure this happens

Priority work for early 2014
- Test train production with NTUP_COMMON
- Define CP group object definitions
  - Migration to common tools (TF#3)
- Define more derivations
  - e.g. nothing from several Higgs groups, surely SUSY needs more than one format, etc etc)
- Migration to xAOD input; DxAOD output
  - Slimming
  - Thinning
  - String-parsing tool
- Development of "smart slimming"
- Migration to ProdSys-2
- DATA CHALLENGE 2014!

If you want to define a derivation, please agree with your group DPD contact and then contact TF#2

M. Elsing, ATLAS Weekly

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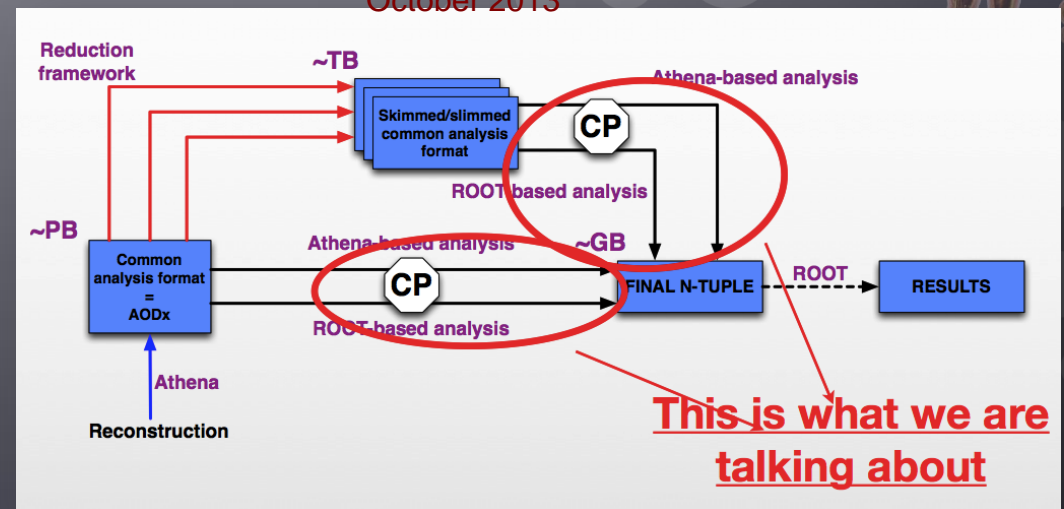THE UNIVERSITY OF CHICAGO

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Supporting analysis in the new model

- There is an effort to build a common framework but a multitude of ROOT-based and Athena-based analyses will still be used.

- How will DF output be managed on DISK(s)?

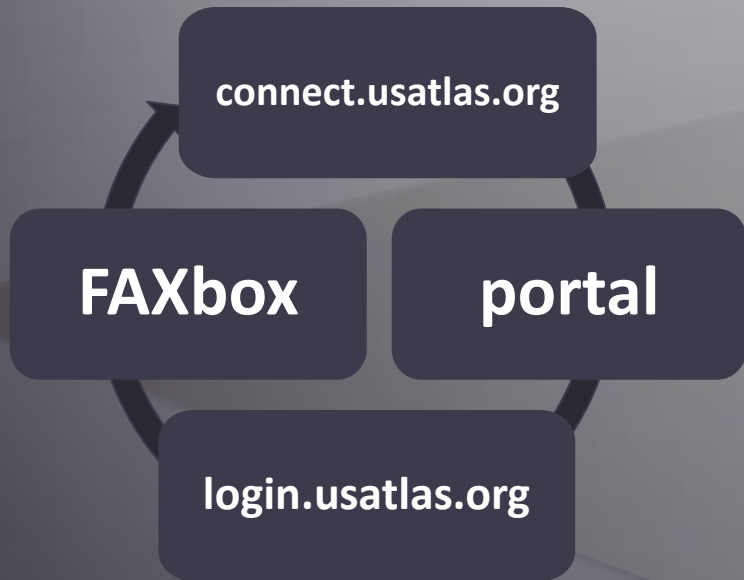- What changes in ANALY queues to result from xAOD-based analysis?

I.Vivarelli
ATLAS SW week

October 2013

DC14 to help answer these questions

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CONNECT user

connect.usatlas.org

FAXbox   **portal**

login.usatlas.org

FUTURE

Community PROOF cluster

UC3
UC RCC   NEW

NEW   MWT2, AGLT2, SWT2, Fresno

Amazon cloud

TACC
Stampede   NEW

```
[rwg@login connect-quickstart]$ historygram rwg
Val            |Ct (Pct)      Histogram
rcc.uchicago.edu|6539 (65.39%) ████████████████████████
mwt2.org        |2493 (24.93%) ██████████
csufresno.edu   |633 (6.33%)   ███
aglt2.org       |335 (3.35%)   █
```
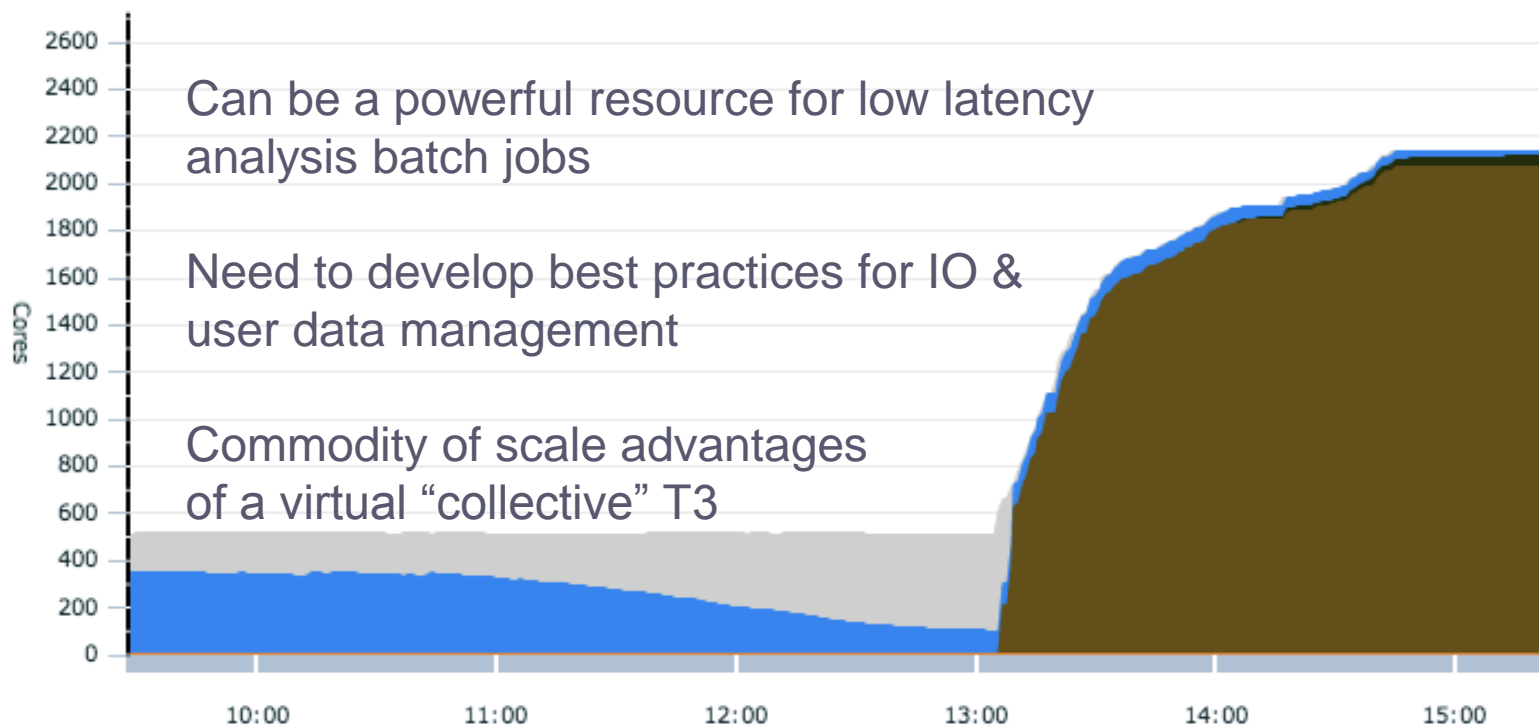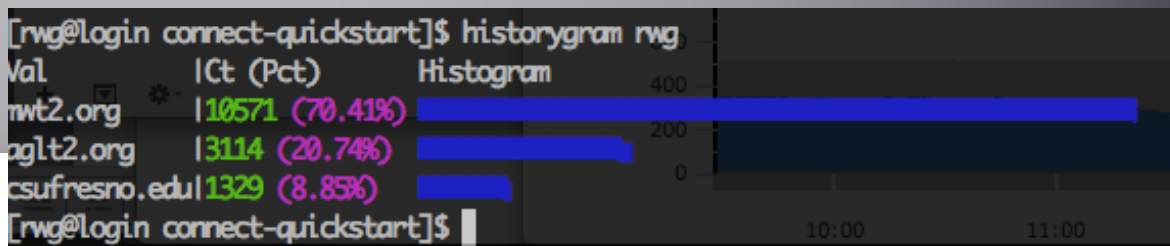
A 10k test 2/5/14
(this morning while writing this talk)

globus   ci connect

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Trivial scaling test on ATLAS Connect

Submit 30k 10 minute jobs
(remove after plateau reached)

```
[rwg@login connect-quickstart]$ historygram rwg
Val           |Ct (Pct)       Histogram                    400
mwt2.org      |10571 (70.41%)                               200
aglt2.org     |3114 (20.74%)                                  0
csufresno.edu |1329 (8.85%)
[rwg@login connect-quickstart]$
                                                      10:00      11:00
```

Show: Historical grid usage in all pools

Time Frame: 3 Hours | Day | Week | Month

View as: Area | Line

Can be a powerful resource for low latency
analysis batch jobs

Need to develop best practices for IO &
user data management

Commodity of scale advantages
of a virtual "collective" T3

Legend
- hbawa
- rwg
- kkrizka
- vpa
- Unclaimed
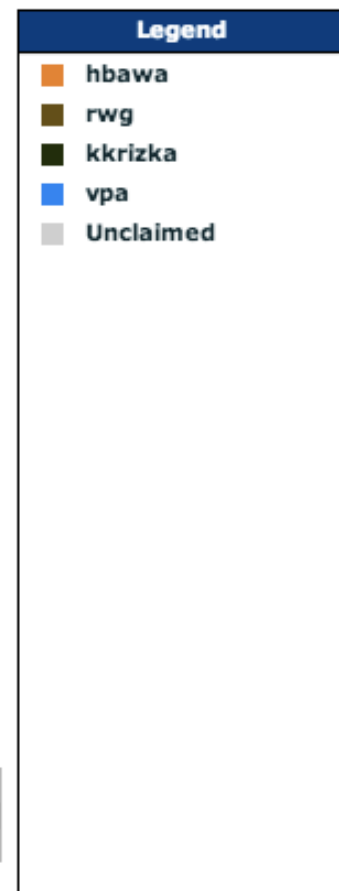
Getting started

- Accounting: by institution or working group
- Encouraging early adopters to join & test & help develop user documentation
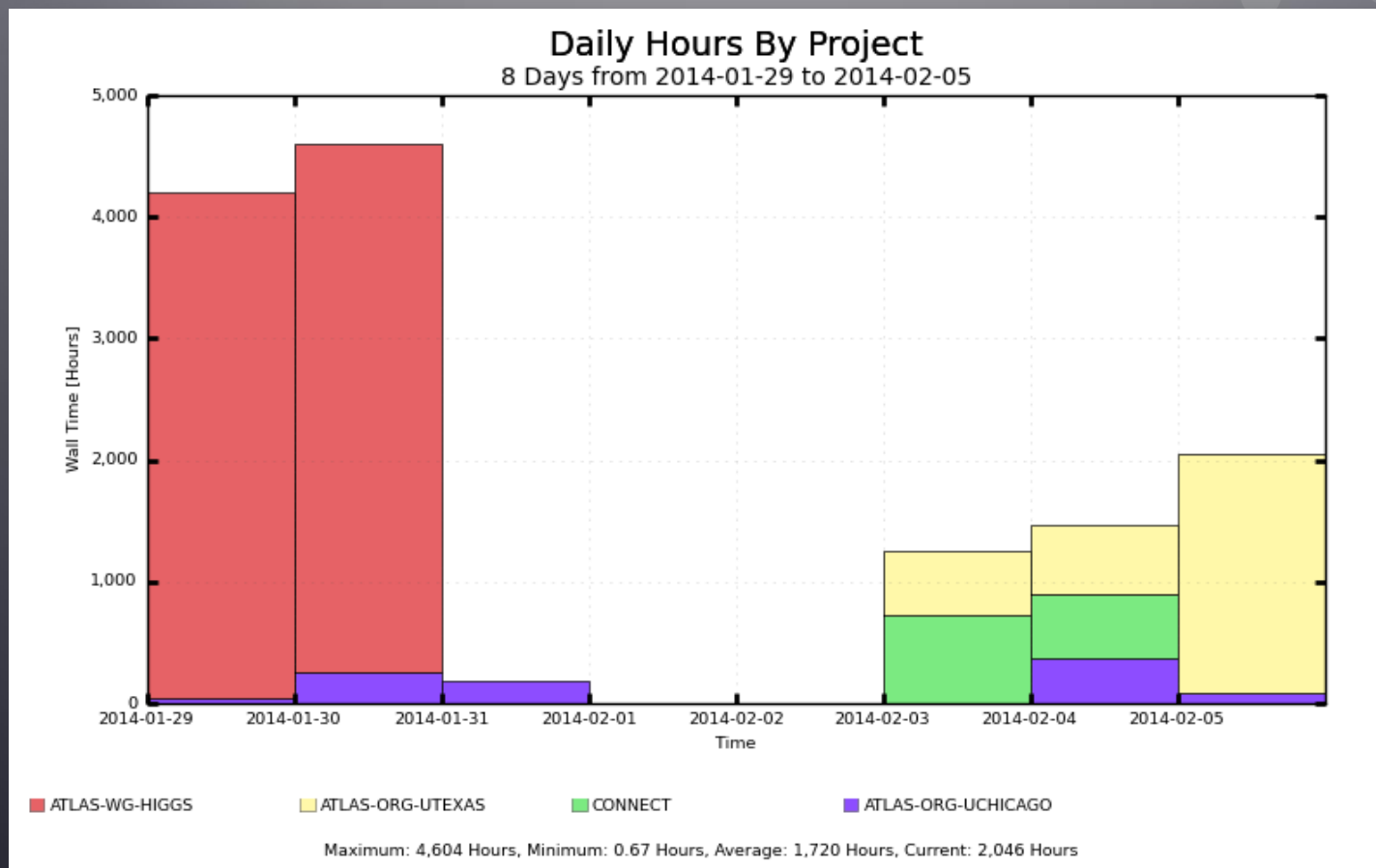
Federated Identity Campaign

- Working with InCommon (Jim Basney) to get all 44 US ATLAS institutions to provide ISP service (for CI Logon)

Quick, simple account provisioning

Ready for this summer's REU students

Also uses personal or campus Globus data service with same ID

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Status

- ## ATLAS Connect User
  - UChicago RCC cluster added (64 slots). Negotiate for pre-emptible SLRUM queue
  - Bosco factory wrappers for Parrot access to CVMFS
    - Testing with ALRB and simple ROOT jobs
  - Early stages of TACC Stampede
    - Bosco factory setup
    - Test jobs complete
  - APF submit into TACC via Bosco is next step
  - Investigate adding NET2, WT2 (firewall issues)
- ## ATLAS Connect Cluster
  - Currently UC, IU, UIUC Tier3's overflow flocking
  - Adding UT Austin Tier 3 flocking

FAX into production

- With Rucio renaming complete for DE and US clouds its full steam ahead for functional and stress testing

- Continuous functional testing in HC on-going

- Dedicated stress testing

  – Friedrich: H$\rightarrow$WW analysis using SMWZ on DE and US

  – Ilija: "deep read" use case with FDR datasets on US cloud (direct access infrastructure test)

Near Term Meetings Schedule

- Biweekly meetings: Feb 19, Mar 5, Mar 19, Apr 2
- WLCG LHCONE workshop at CERN
  - Feb 10-11, 2014 "Site concerns session"
  - http://indico.cern.ch/conferenceDisplay.py?confId=289679
- ATLAS S&C Week
  - Feb 24-28, 2014
    https://indico.cern.ch/conferenceDisplay.py?confId=276497
- US ATLAS Facilities meeting at SLAC
  - April 7-11, 2014, co-located with OSG
    AHhttps://indico.fnal.gov/conferenceDisplay.py?confId=7207
  - Agenda details TBD
- Federated data workshop
  - Also co-located with OSG AH (April 10,11)