Acts Developers Workshop Highlights

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Acts Developers Meeting

- Annual Acts developers workshop - November 7-11, held at IJCLab in Orsay, France. Indico

- Mix of production, R&D, project, and user feedback related talks

- I'll show some (personal opinion) highlights

Acts Project Structure

A Proposal - up for discussion

SLAC
LDMX

BNL
sPHENIX
EIC

DESY
Lohengrin

CERN
ATLAS
FASER
ALICE
NA60+
BGV
FCCee/hh

KEK
Belle-2

CePC
STCF

Create an advisory/steering board, possible composition (for discussion):

Suggest that every experiment that runs ACTS in production code nominates one person to this board

ATLAS
FASER
sPHENIX

CePC, FCCee/hh, STCF
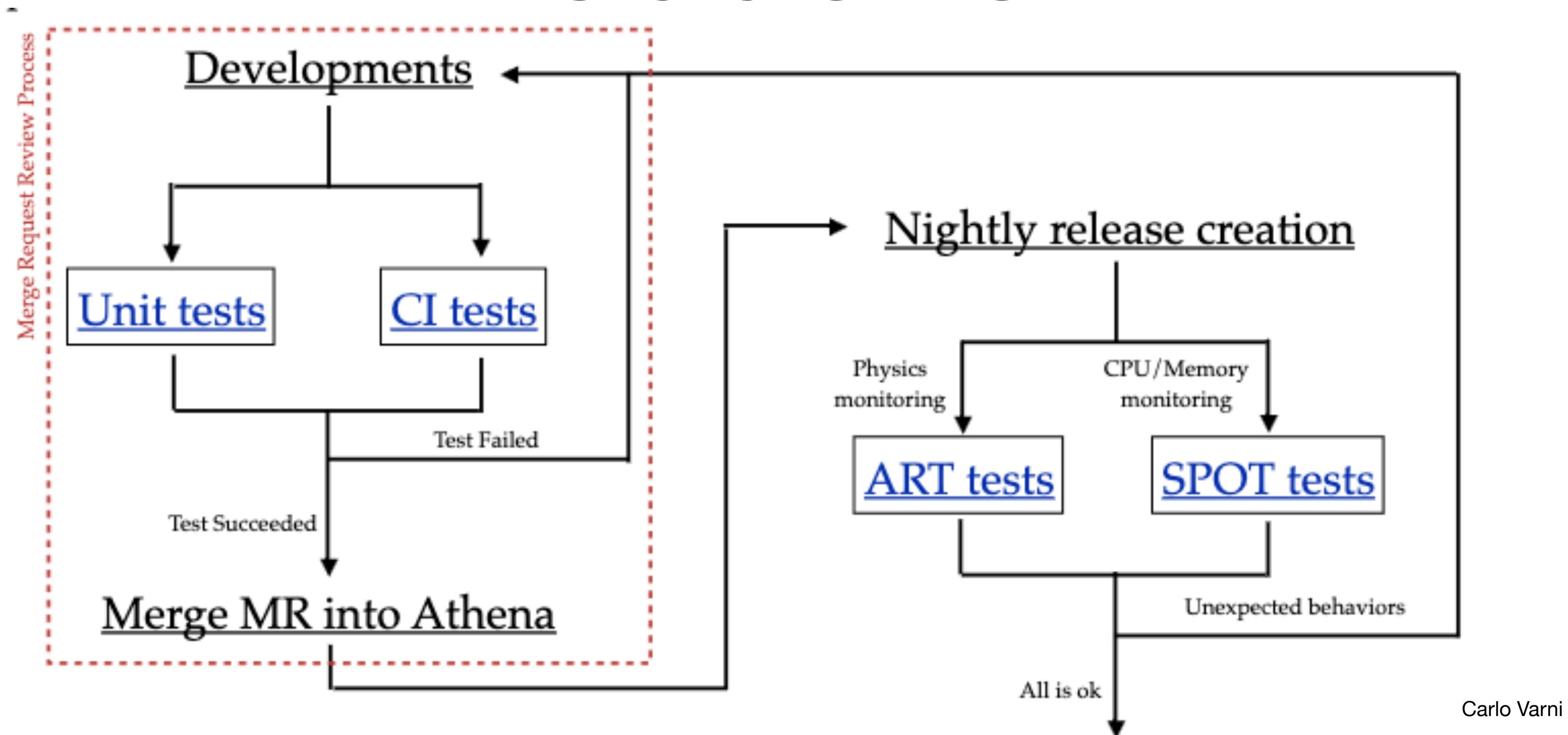
NA60+
LDMX
Lohengrin
...

+ 1-2 person representing future collider

+ 1-2 person representing Telescope detector Studies

Andreas Salzburger

- Talk from Andreas Salzburger about formalizing project structure (requested by ATLAS)

- Acts has wide range of production, R&D projects

  - Structure needs to serve all aspects of project

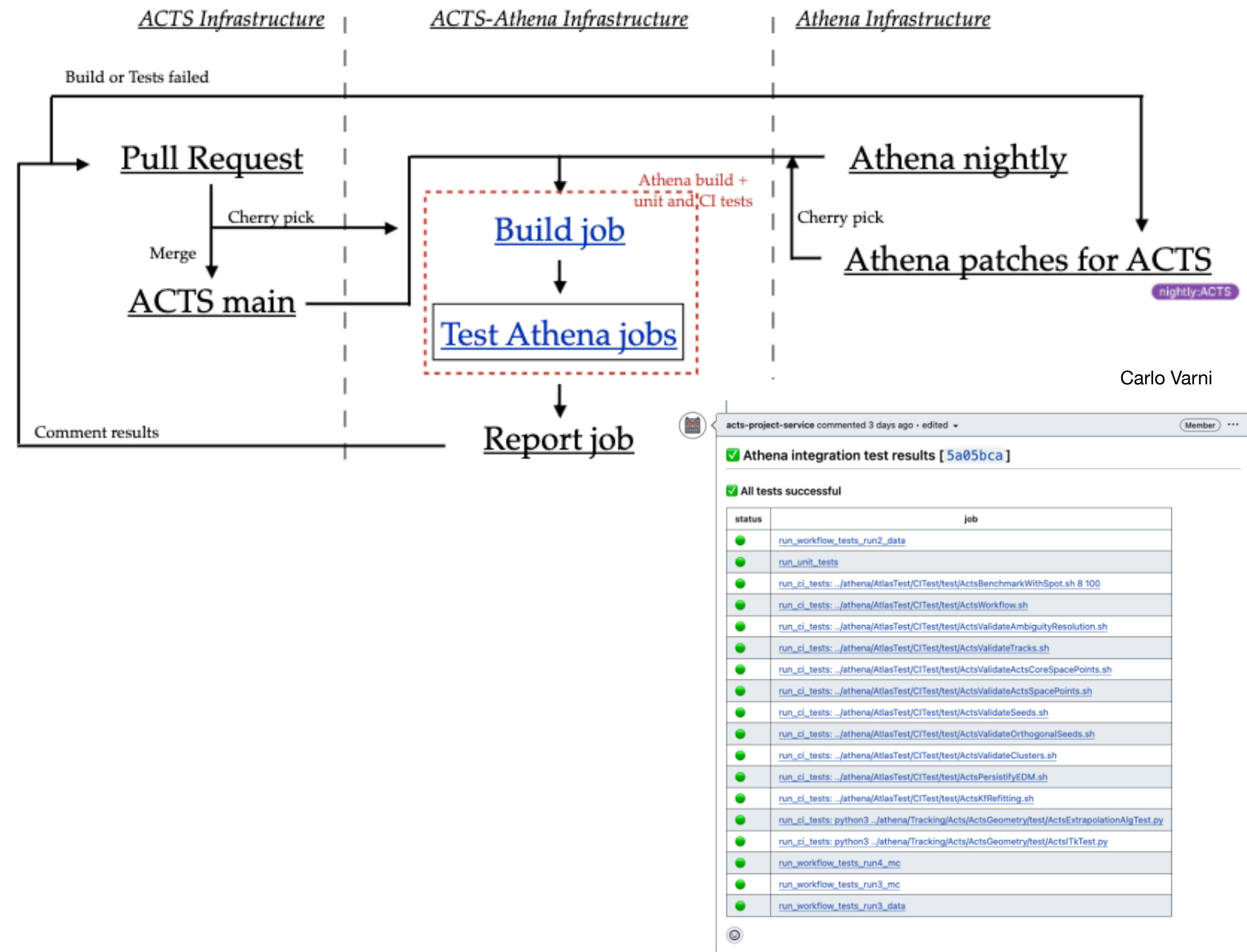- Project "membership" - something more formal (?)

  - Person power is an issue

Production

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- ATLAS, FASER, and sPHENIX use Acts in production

- Acts averages 1 major version release per month (!!)

- Challenging to deploy consistently and reliably to multiple experiments

  - Acts testing, while extensive, does not (and cannot) cover the same level of detail as individual experiments CI

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Acts-Athena-Apogee Infrastructure

- ATLAS team developed some infrastructure that reports Athena tests back to Acts on each Acts PR

- Apogee is a first attempt to generalize this with an API that integrates to GitHub

- Seems promising, but is ATLAS a "simpler" test case due to the large overlap with Acts team? TBD

- Other experiments would benefit from a similar pipeline - would also test experiment generalization

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Other Topics of Interest

- Lots of discussion, too much to cover here. Some other topics of interest

- Technical talks

  - Fitting algorithms - KalmanFilter, Gaussian Sum Filter, Global χ^2 fitter, traccc (GPU implementation)

  - Geometry model and plans for future development

  - "Other" algorithms - track seeding (CPU/GPU), vertexing+timing, clustering

  - Infrastructure and CI

- Experiment feedback from 9 experiments (ATLAS, ALICE, CEPC/STCF, FASER, NA60+, LDMX, Lohengrin, ePIC, sPHENIX)

  - Echoed topics include integration, telescope-like and drift chamber detector support, GSF development, seeding use-case expansion, alignment development