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Netherlands Institute for Radio Astronomy
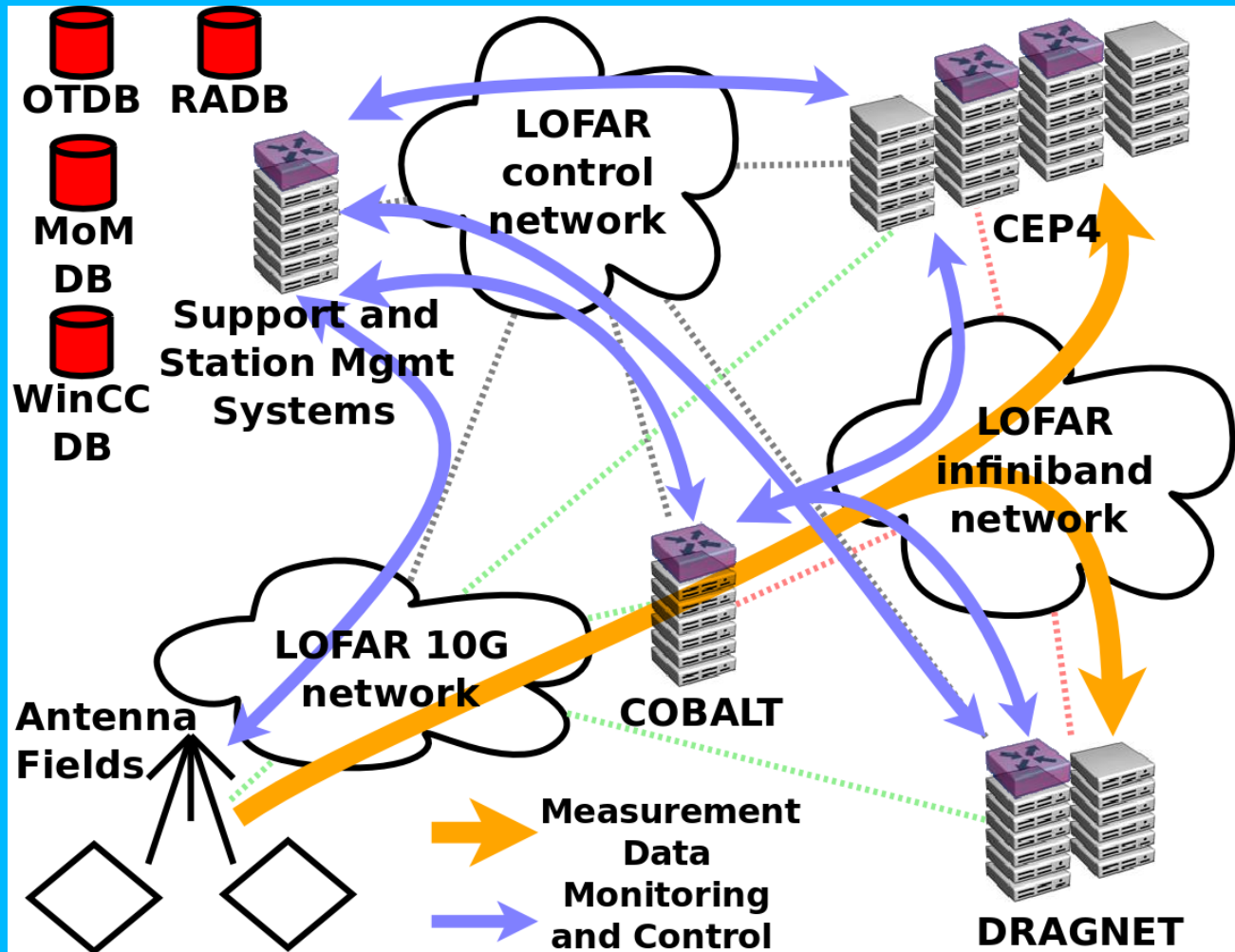
DRAGNET

DRAGNET in LOFAR Operations

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DRAGNET Cluster in LOFAR Operations

DRAGNET support: dragnet@astron.nl (instead of <PI>@... or amesfoort@...)
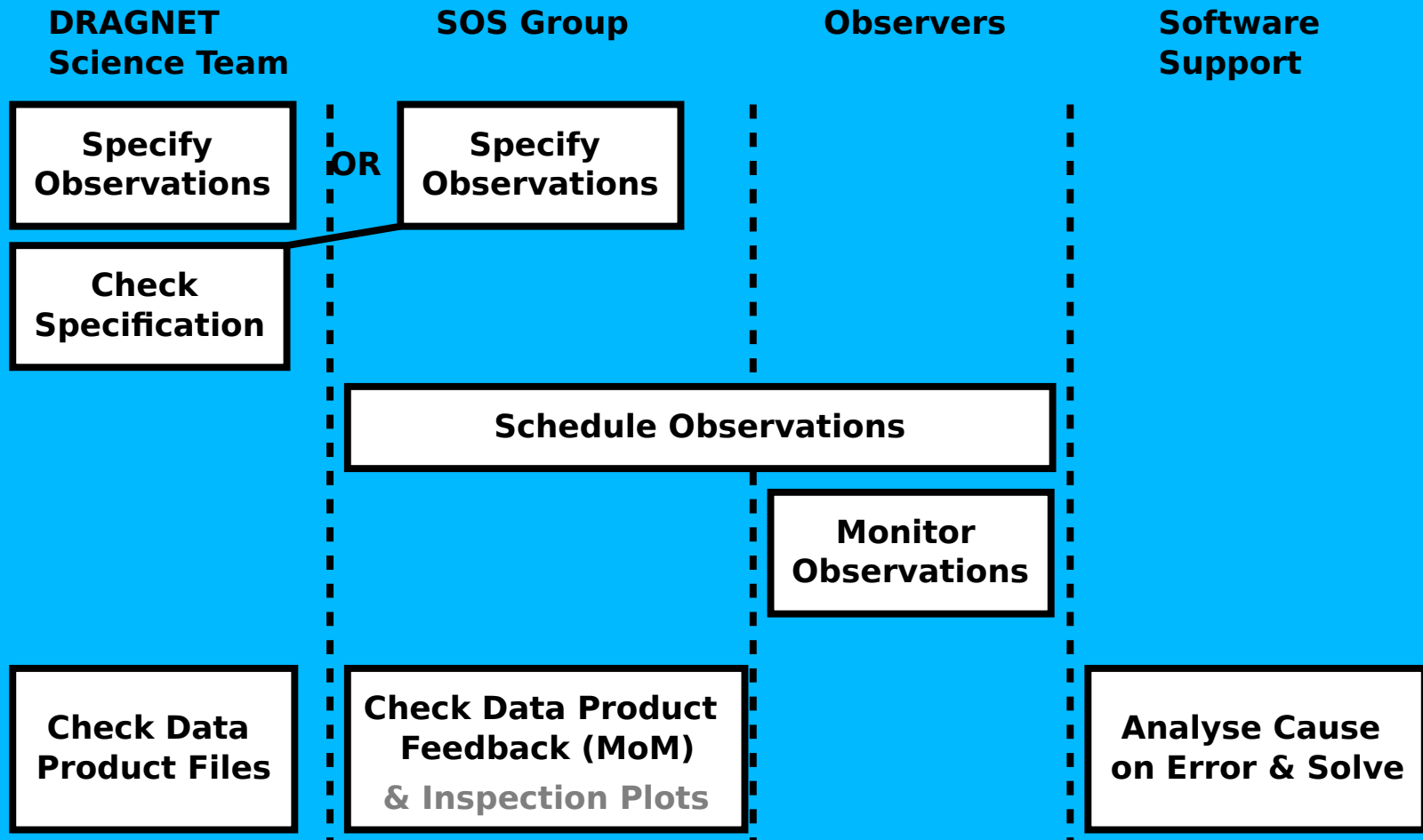
Outline

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Pass 1

- How to observe to DRAGNET

- How to maintain observing capability to DRAGNET

Pass 2

- Open discussion

  - I'll add notes and send slides around

Observe to DRAGNET

Observe to DRAGNET: specification

- xmlgen: observation BLOCK

    cluster = DRAGNET

  doc: https://www.astron.nl/lofarwiki/doku.php?id=operator:xml_generator

- Or edit XML for each SAP and data product type

```
<storageCluster>
   <name>DRAGNET</name>
   <partition></partition>
</storageCluster>
```

Observe to DRAGNET: schedule & conflicts

- Resource "web" scheduler

- On status="conflict"

  find conflicting claim(s)

Task 77587

observation log
view observation parset

Claims

status	claimed (or conflict)
resource_name	drg01_storage:/data1
...	...

- Or use the `resourcetool` command-line utility

Observe to DRAGNET: during & after

- Observation monitoring
  - WinCC/Navigator support for CEP4 & DRAGNET (Arthur)

- After observation to DRAGNET
  - No *observatory* pipelines: intentional
  - No inspection plots, also no beamlet statistics: doable
    - Discussed: run on DRAGNET to copy beamlet statistics & provide beamformed data file sizes
  - No LTA user ingest for beamformed data: really missing

Observe to DRAGNET: resource allocation database

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- Resource Allocation database ("RADB")

- Already scheduled tasks **not** affected on later RADB changes

- StorageQueryService and CleanupService not used on DRAGNET
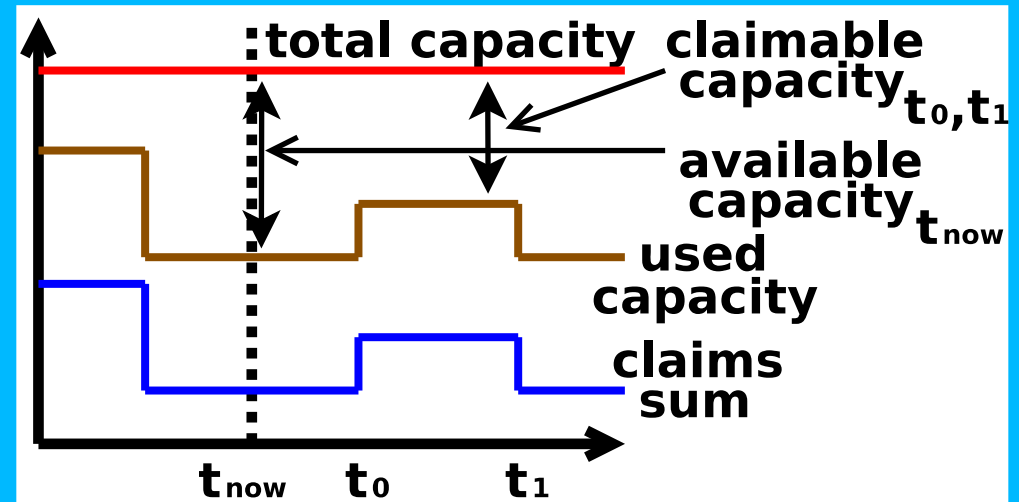
- Storage claim end time initially set to task end time + 1 year

- Periodically end storage claims and update available capacity

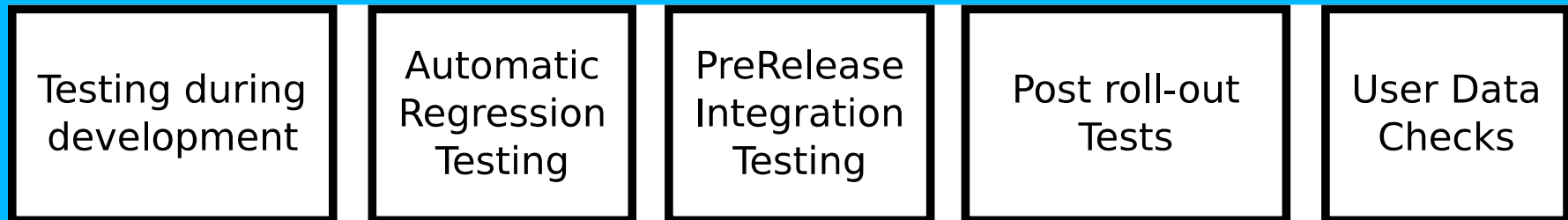 - `[drg01 ~]$ resourcetool --broker=scu001 -E -U`

    doc: `https://www.astron.nl/lofarwiki/doku.php?id=operator:resourcetool`

- `resourcetool` also useful for diagnosis and maintenance
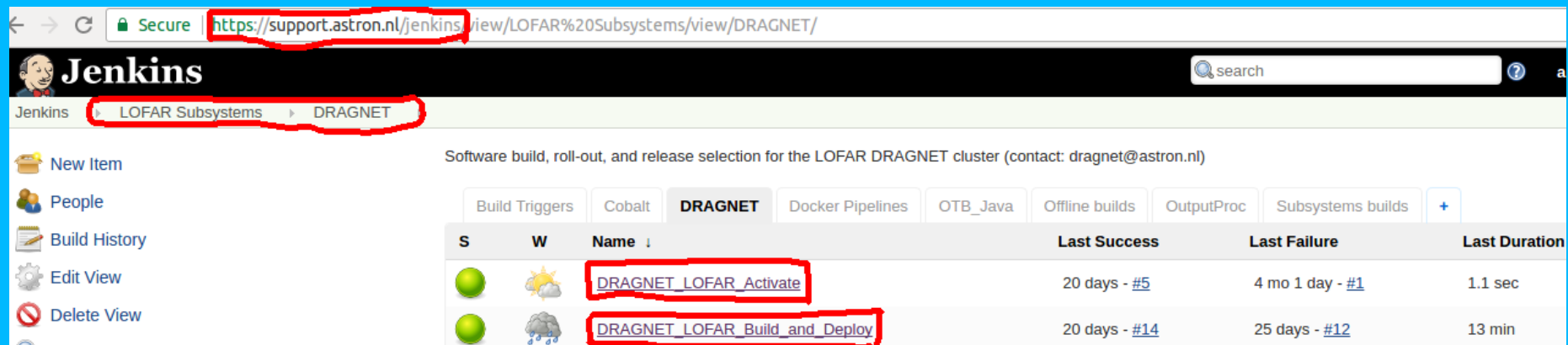
Maintaining DRAGNET in Operations

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- Minimize breakage

  - Inform DRAGNET team on changes

  - But LOFAR is complex: parts break from time to time

Testing during development	Automatic Regression Testing	PreRelease Integration Testing	Post roll-out Tests	User Data Checks

- Detect breakage early at minimum effort

  - Testing in various stages

  - More testing per stage: diminishing returns

  - Test diverse cases: achieve high(er) test "coverage"

- DRAGNET in PreRelease, post roll-out tests? Discussed: yes & how

Maintaining DRAGNET: software roll-out

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- Software release roll-out dates and release notes:

  `https://www.astron.nl/lofarwiki/doku.php?id=public:important_dates`

  `https://www.astron.nl/lofarwiki/doku.php?id=maintenance:lofar_release_notes`

- LOFAR packages on DRAGNET:

  - Keep `Online_Cobalt` in sync on COBALT/CEP4 and DRAGNET!

- To test PreRelease ~~switch to it & back, or~~ designate a test node
- Vlad, Cees may need access to Jenkins, Redmine, LOFAR svn, ...

Maintaining DRAGNET: resource changes

- Node or disk unavailable (broken or into test system)

- Use `resourcetool --broker=scu001 drg01_storage:/data1 False`

- Inform observers to reschedule already scheduled observations!

- Change total or available resource capacity

- Use `resourcetool --broker=scu001 drg01_storage:/data1 100000000,100000000`

  - and adjust periodic auto-update

- Ability to work around the system is *intentional*

Maintaining DRAGNET: other changes

- Stop-days

  - DRAGNET not in stop-days (but portal & switches are)

  - Discussed: tests to DRAGNET after stop-days ("genvalobs")

- LOFAR build breakage

  - Install new dependencies on DRAGNET

- Discussed: Reconsider pipeline preemption via slurm or service

DRAGNET Dependency List

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- LOFAR repository packages

  `LOFAR/trunk/CMake/variants/variants.dragnet`

  From `LOFAR/trunk/SubSystems/Dragnet/CMakeLists.txt`

  `lofar_package(Dragnet DEPENDS `**`Online_Cobalt Offline ResourceTool XML_generator`**`)`

- StaticMetadata antenna positions, ...

- Jenkins, Redmine/JIRA, resource scheduler, ResourceAssignmentService

- casacore measures/IERS tables from ASTRON FTP (auto-update)

- qpid messaging middleware settings for:

  - observation feedback

  - `resourcetool` --broker=scu001.control.lofar ...

- Usual network services: DNS, NIS, mail server, inet gateway, ...

- Lustre client kernel module settings

End of Pass 1

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- DRAGNET now part of operational LOFAR system
    - Interactions between and roles of stakeholders

- DDT8-001: all 3 observations today finished fine ("heel gegeven")

- On to Pass 2: Open discussion (discussed items added/updated)