

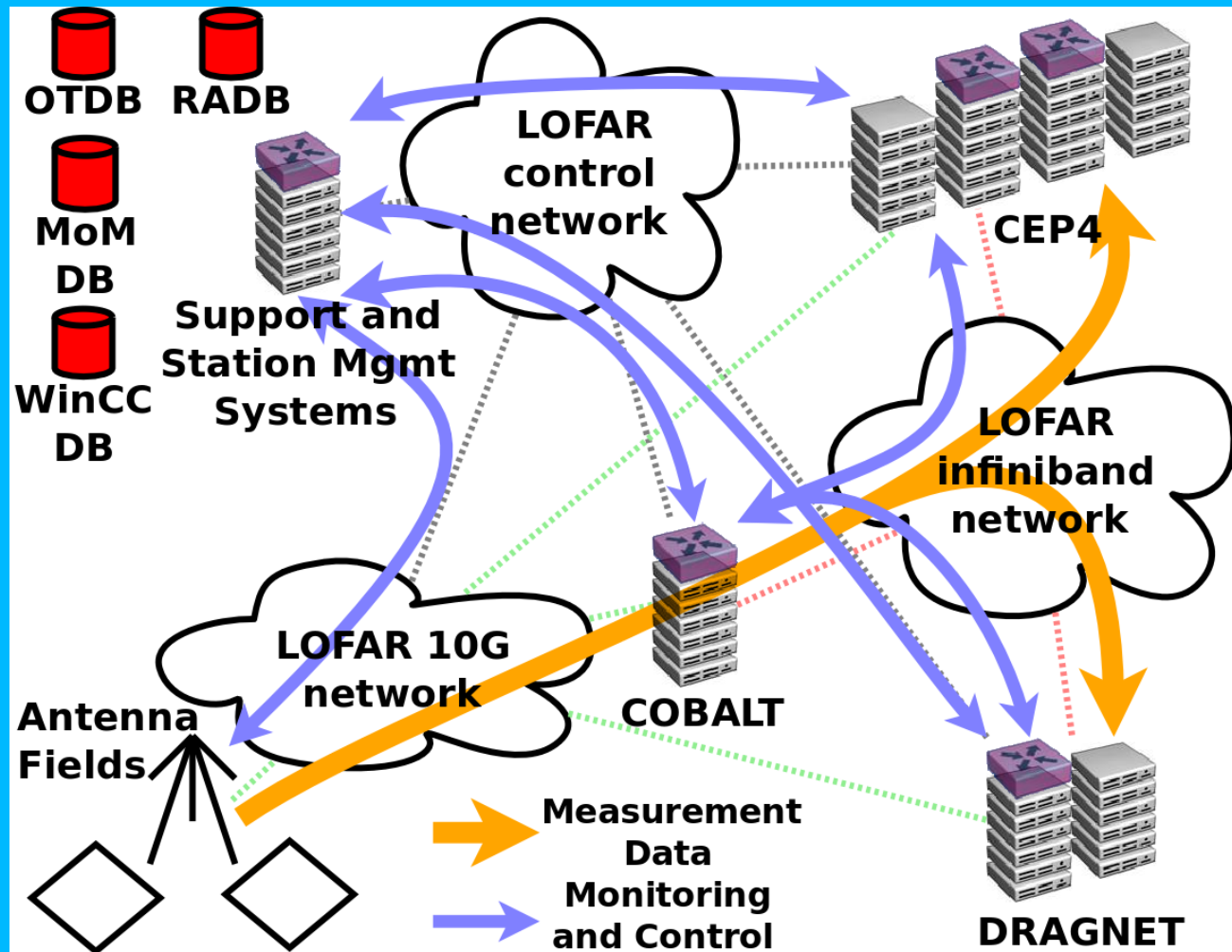
# DRAGNET

## DRAGNET in LOFAR Operations

*Alexander S. van Amesfoort*

July 3, 2017

# DRAGNET Cluster in LOFAR Operations



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

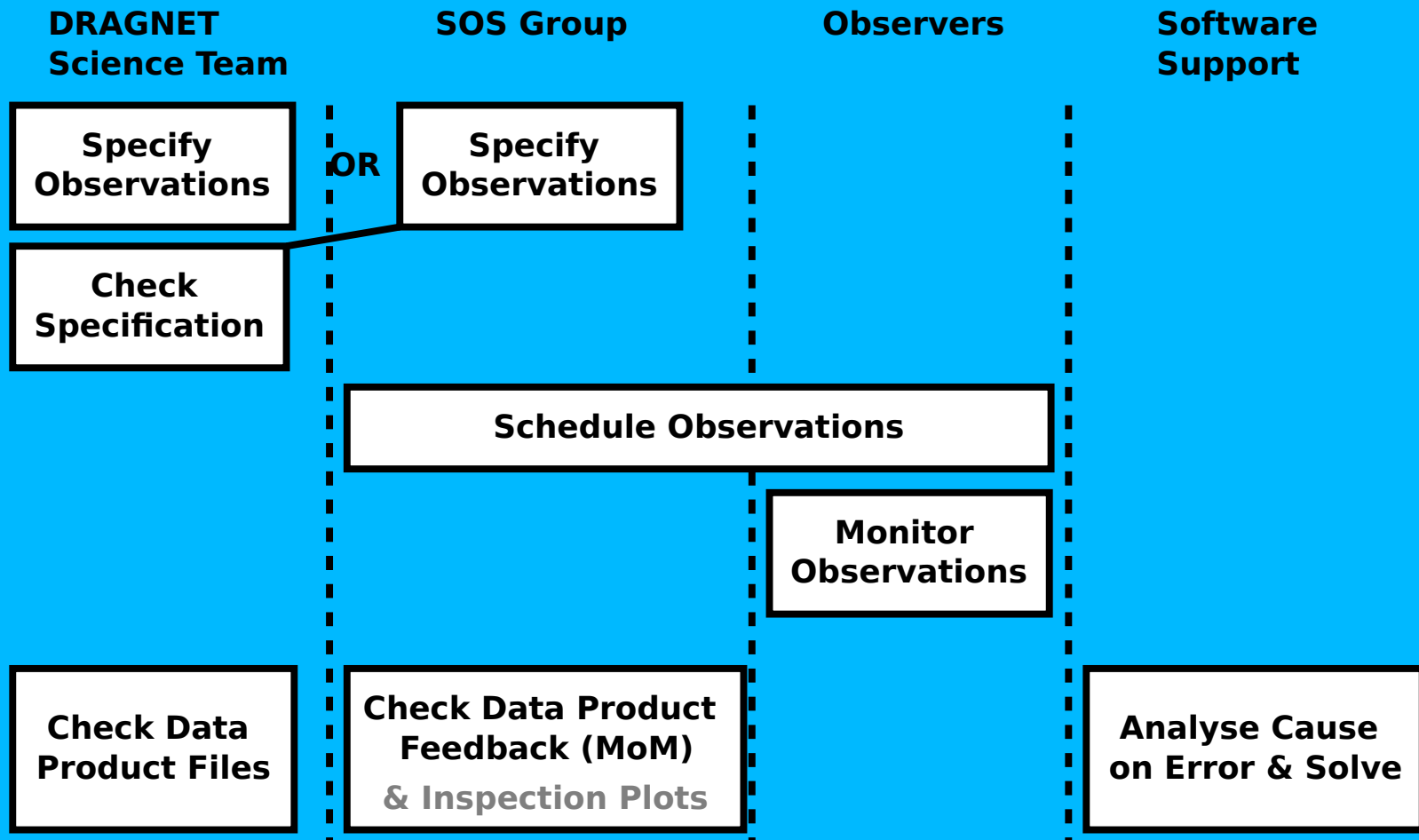
## Pass 1

- 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



- xmlgen: observation BLOCK

```
cluster = DRAGNET
```

**doc:** [https://www.astron.nl/lofarwiki/doku.php?id=operator:xml\\_generator](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

Name	Project	Start	End	Duration	Status	Info	Type	Size	Group ID	MoM ID	SAS ID	RADB ID	Cluster
J0652+47/1/TO	DDT8_001	2017-07-03 09:00:00	2017-07-03 09:20:00	00:20:00	scheduled		observation		796119	796120	598805	77587	DRAGNET
J0652+47/2/TO	DDT8_001	2017-07-03 09:50:00	2017-07-03 10:10:00	00:20:00	scheduled		observation		796119	796122	598807	77588	DRAGNET
J0652+47/3/TO	DDT8_001	2017-07-03 10:40:00	2017-07-03 11:00:00	00:20:00	scheduled		observation		796119	796124	598809	77589	DRAGNET

- 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



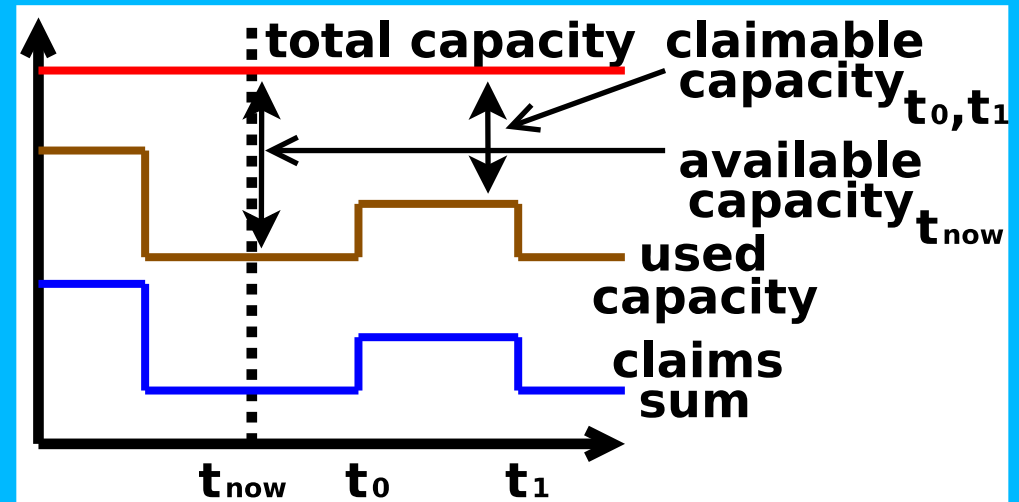
- Observation monitoring
  - WinCC/Navigator support for CEP4 & DRAGNET (Arthur)
  
- After observation to DRAGNET
  - No *observatory* pipelines: intentional
  - No inspection plots, also no beamlet statistics: doable
    - Discussed: run on DRAGNET to copy beamlet statistics & provide beamformed data file sizes
  - No LTA user ingest for beamformed data: really missing

# Observe to DRAGNET: resource allocation database

- 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>

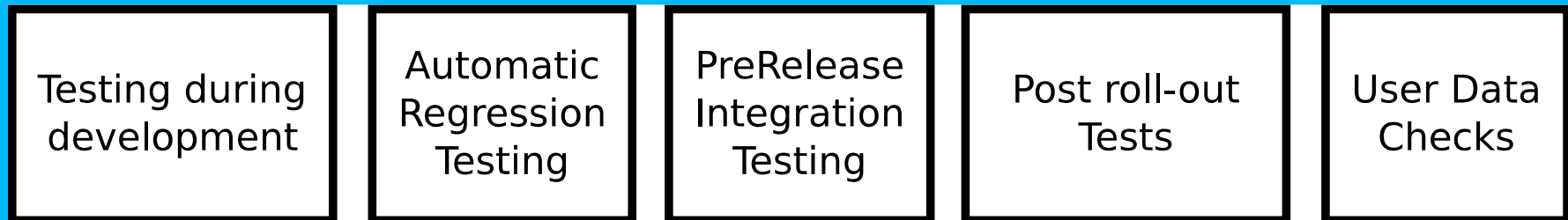
- `resourcetool` also useful for diagnosis and maintenance



# Maintaining DRAGNET in Operations



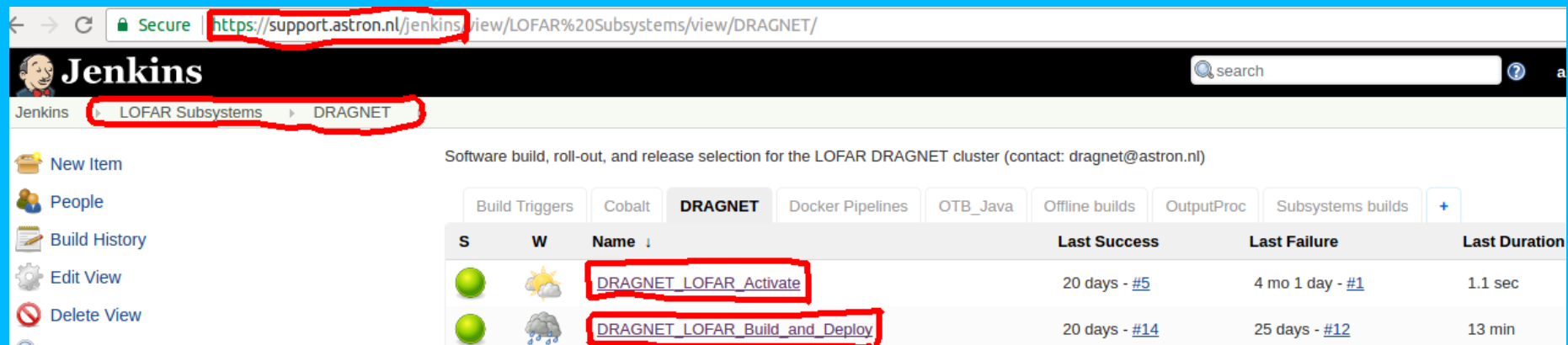
- Minimize breakage
  - Inform DRAGNET team on changes
  - But LOFAR is complex: parts break from time to time



- 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

- 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=public:important_dates)  
[https://www.astron.nl/lofarwiki/doku.php?id=maintenance:lofar\\_release\\_notes](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!



Secure <https://support.astron.nl/jenkins/view/LOFAR%20Subsystems/view/DRAGNET/>

Jenkins **LOFAR Subsystems** **DRAGNET**

Software build, roll-out, and release selection for the LOFAR DRAGNET cluster (contact: dragnet@astron.nl)

S	W	Name ↓	Last Success	Last Failure	Last Duration
●	☀️	<b>DRAGNET_LOFAR_Activate</b>	20 days - #5	4 mo 1 day - #1	1.1 sec
●	☁️	<b>DRAGNET_LOFAR_Build_and_Deploy</b>	20 days - #14	25 days - #12	13 min

- 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



- 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)

- qpud 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

- 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)