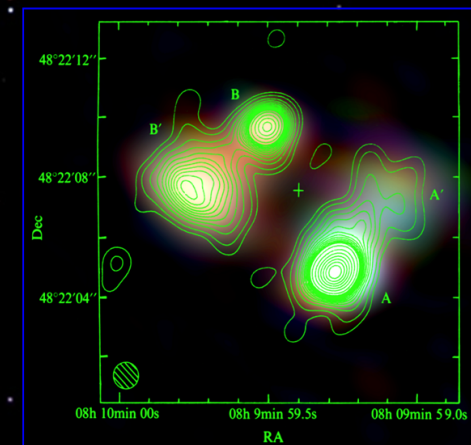
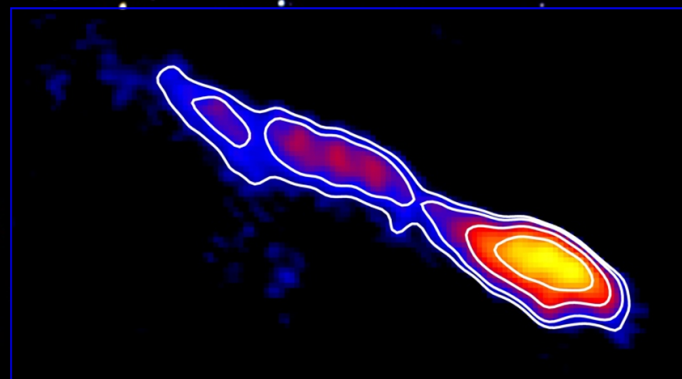
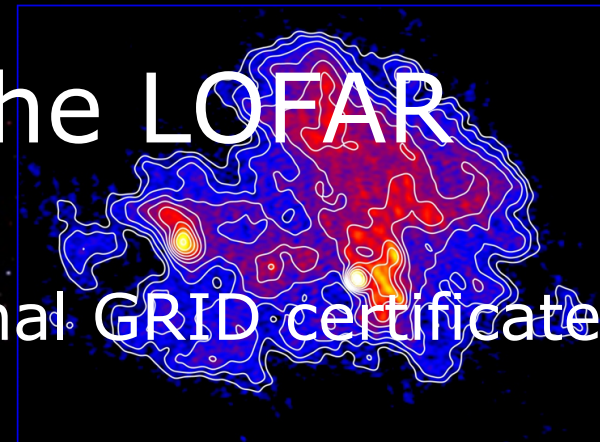
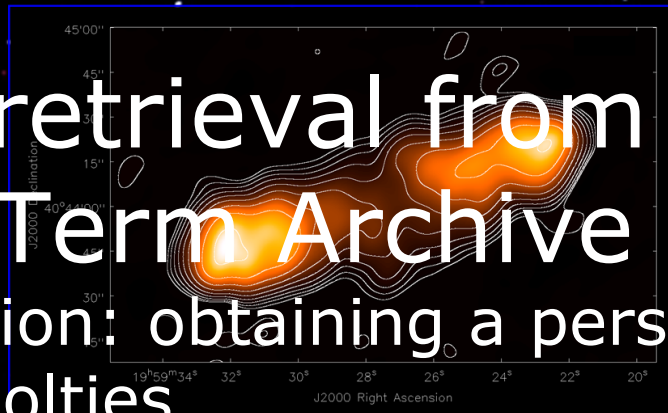


## Data retrieval from the LOFAR Long Term Archive I

Preparation: obtaining a personal GRID certificate  
Hanno Holties



November 17, 2014

# Preparation for this session:

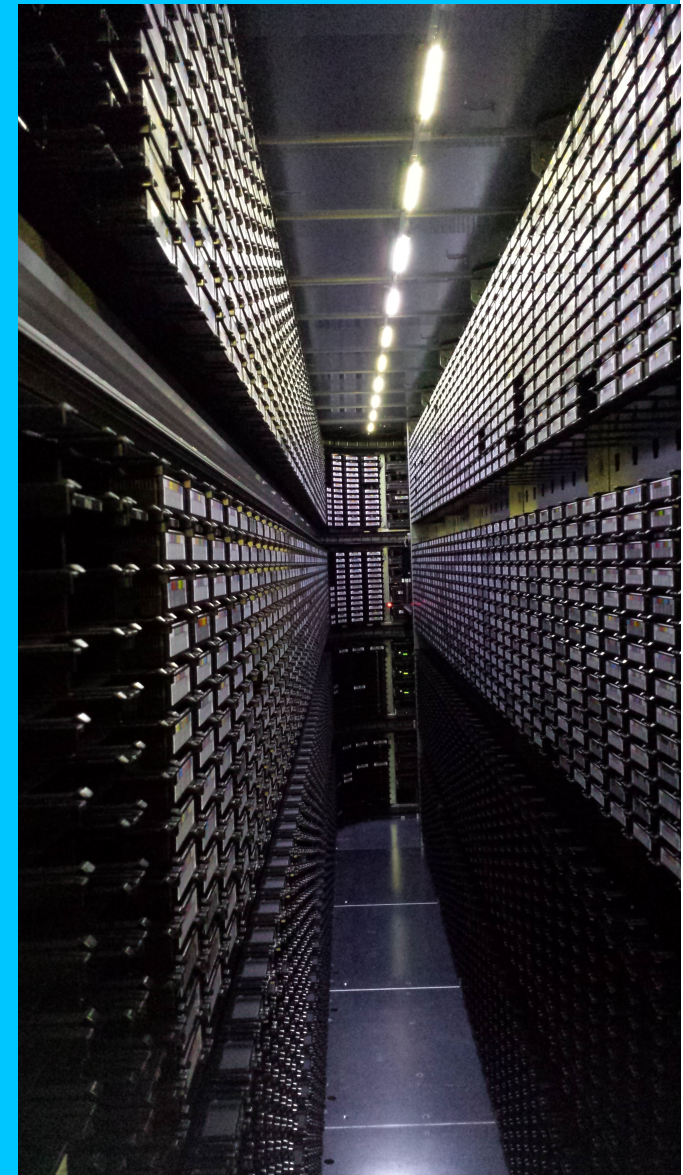


- Download the tutorial document:  
<http://www.astron.nl/lofarschool2014/lectures.php>  
Open/download T5\_Preparations.pdf
- It may help if the links are functional (otherwise copy/paste)  
E.g. on MAC OS open in "Preview" (works for me...)  
NB Watch for double-dash ("--") in URLs  
If needed, replace with single dash ("-")
- Document has explanatory text. For a walkthrough, just follow the numbered steps.
- Critical: you have access to your mail
- For completion of form: you have a personal ID (tomorrow)

# The LOFAR Long Term Archive (LTA)



- The LTA builds on GRID infrastructure
  - For performance use grid middleware/clients
    - Requires personal certificate!***
      - >>> *Have one?* <<<
      - > Fast forward to III - 9
  - For smaller volumes HTTP download possible
    - Single server per LTA site



# Data retrieval from the LTA

## Prerequisites



Need before Thursday afternoon:

### A. A LOFAR account

- i. Register at <http://lofar.astron.nl/proposal>
- ii. Notify [sciencesupport@astron.nl](mailto:sciencesupport@astron.nl) of new account and request LTA access authorization
- iii. Follow instructions in mail with subject "ASTRON Identity Management password change notification"
- iv. Try: Log in to <http://lofar.target.rug.nl>

### B. A personal grid certificate (optional but recommended!)

***Next***



# Obtaining a personal grid certificate

## I) Options



1. At your institute (not now...)
2. Via <https://tcs-escience-portal.terena.org/>  
Check!
3. Via Dutchgrid/ASTRON:

Access to a workstation/server with JAVA installed?

- I. Browse to <http://ca.dutchgrid.nl/start>  
or when this does not work:
- II. X-terminal/ssh  
> `javaws http://ca.dutchgrid.nl/start/jgridstart.jnlp`

# Obtaining a personal grid certificate

## II) Pick a system to work on



- Do you have JAVA installed on your laptop?  
If not, try and do so now:  
<http://java.com/en/download>
- Fail: do you have X-terminal access to a system with a personal account, JAVA installed, and access to the public internet?
- `> ssh -Y <you>@<your_system>`  
Test X connection:
  - `> xlogo`
  - `> xclock`
- Fail: use CEP3 (one user per account)

# Obtaining a personal grid certificate

## III) Steps



4. Click "request a new certificate"  
Fill in requested information  
NB If institute not available: Choose ASTRON
5. Click "Next" -> "Display Form"  
Fill in remaining information and "Save as PDF"
6. Mail PDF (only) to [lofarschool@astron.nl](mailto:lofarschool@astron.nl)  
or  
Store PDF (only) on CEP3 in /tmp/requestforms

NB Keys are personal!!!

- Use strong password
- Do not store in a public folder (default is \$HOME/.globus)
- Restrict access to owner (chmod 600 userkey.pem)

## If on CEP3

- Move your key to a personal system:
  - > `scp $HOME/.globus/*.pem <you>@<yoursystem>:`
  - > `rm $HOME/.globus/userkey.pem`

# Obtaining a personal grid certificate

## IV) Your not finished, yet!



7. Tomorrow during coffee or lunch:  
Come to desk with your ID: form validated & processed
8. When signed certificate received...  
  
DIY (see PDF):
9. Install certificate in the directory with your key & request  
> mv usercert.pem \$HOME/.globus/  
> chmod 600 \$HOME/.globus/\*.pem
10. Load the certificate into your browser  
Check tutorial; ask support scientist or me for help
11. Apply for membership of LOFAR Virtual Organisation at  
<https://voms.grid.sara.nl:8443>



# Obtaining a personal grid certificate

V) Now

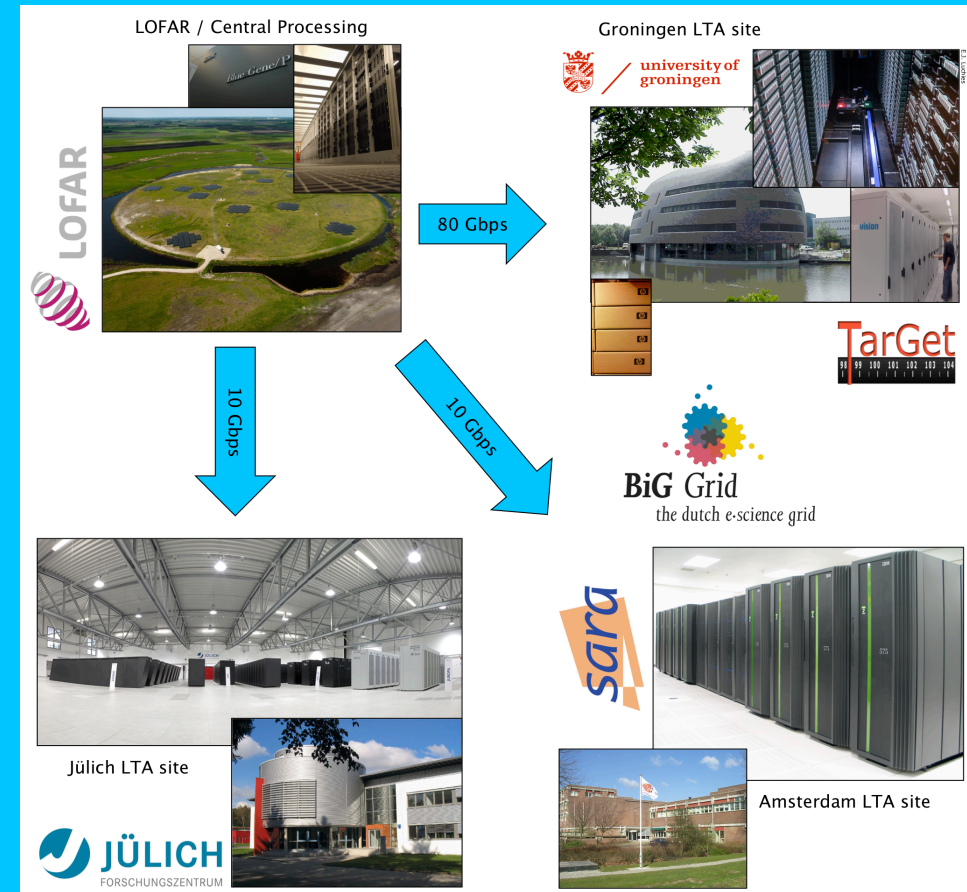


***Enjoy Dinner!***

# The LOFAR Long Term Archive (LTA)



- LOFAR generates 6 petabyte of science data per year
- A single dataset has
  - hundreds of dataproducts
  - a volume of up to several terabyte
- The LTA is distributed
  - Amsterdam: SURFsara
  - Jülich: FZJ
  - Groningen: TARGET (RUG)



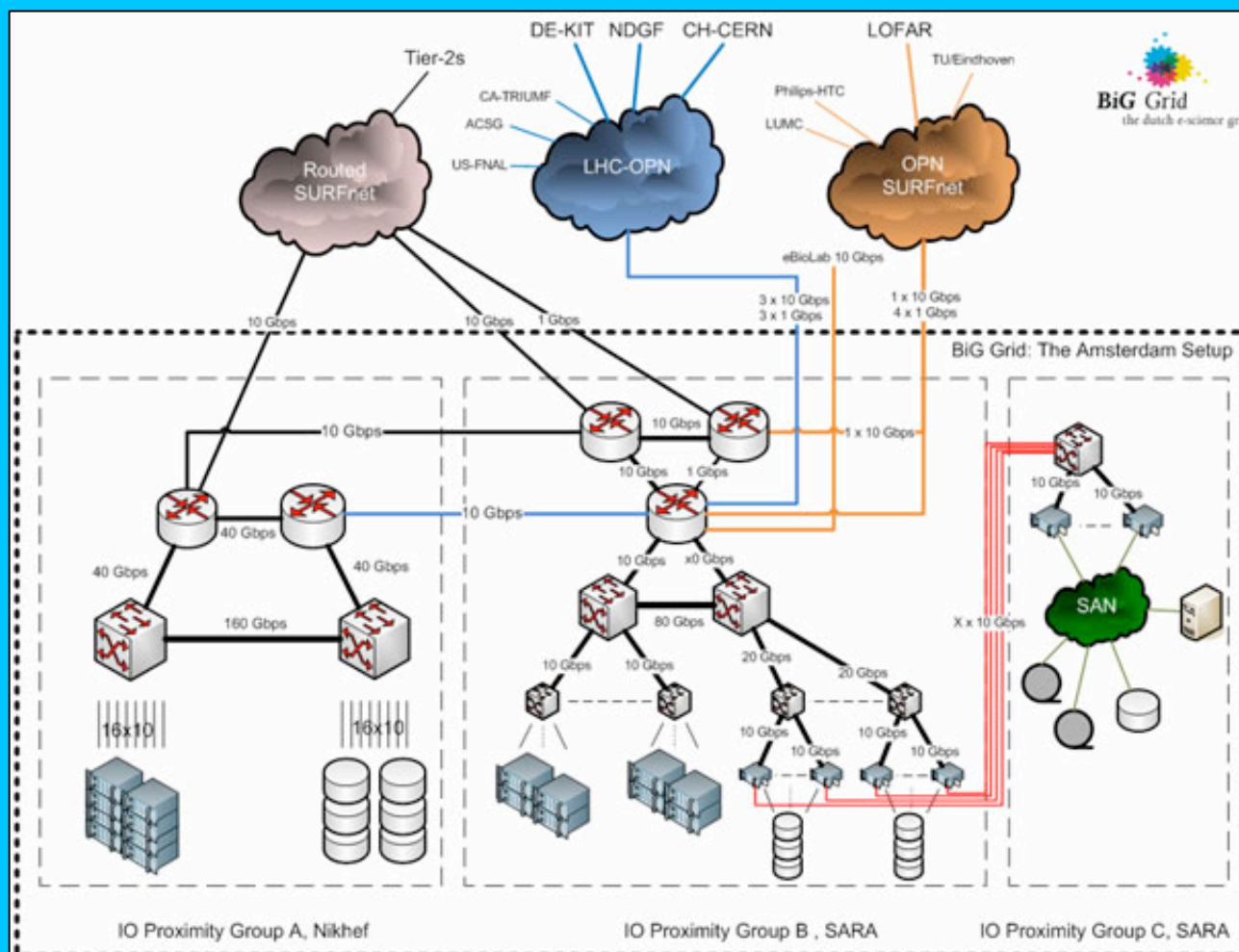
# The LOFAR Long Term Archive (LTA)

## Plan your data retrieval



ASTRON

- Do not stage/request more than can be retrieved within a week (typically 10 TB)
- Be aware that connections can (will) not be stable on timescales of many days
- Theoretical limit:
  - 100 Mbps:  
1 TB/day
  - 1 Gbps:  
10 TB/day
- In practice lower



# The LOFAR Long Term Archive (LTA)



- The LTA builds on GRID infrastructure
  - For performance use grid middleware/clients
  - Requires personal certificate!***
    - >>> *Have one?* <<<
    - > Fast forward to III - 9
  - For smaller volumes HTTP download possible
    - Single server per LTA site
- Data is stored on tape
  - Stage (restore) to disk before retrieval: *Part 2 on Thursday*
  - Staging can take up to several days

