The LOFAR EoR Key Science Project:

Experience, feedback and wishes for the future

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Experience with LOFAR (operations)

- Scheduling & Observing: Projects LC2_019 (200h) and LC3_028 (500h)

Excellent communications with RO staff
Useful & fast feedback: email + on-line 'autoplots'

- Initial data processing (CEP2)

Very little need for CEP2 processing resources
More space (on CEP2/4) needed during periods of heavy observing (eg Xmas)

- Datatransfer, archiving & data access

Direct (via Target) CEP2 → EOR transfer has been very useful
Very helpful assistance from a.o. Yan Grange (DOME)
Still remaining Target archiving issues (solved at end of Cycle 3 ?)

NB: Because the data from our project go 'straight' to the EoR cluster we
need to spend time on administration (processing, metadata, SIPs)

Future data transfer patterns for EoR project

As of Sep 2015 we have our new EoR-2.0 cluster operational at CIT/Landleven
It is located next to EoR 1.0

It will be connected to the LOFAR network via 4x10 Gbps (to CEP2/4)

There will be 2 x 10 Gbps lines to TARGET (which connects to SARA and Julich)

There will be 1 x 10 Gbps to the general RuG network

Data storage:

1.5 PB storage on the new EoR 2.0 (32 nodes) cluster alleviating congestion on CEP2/4

There will be 10 Gbps to the EoR storage at ASTRON (a.k.a. LOFARCORE01)

Facilitating more frequent use of all International Stations

- Having 8 (now 9) International Stations has regrettably been rare

- There has been frequent data loss on one or more IS, if they participated

- Exciting wide-field imaging requires a better geometric model

Some concerns/suggestions for the future (Cycle 5 + 6)

- Enable observations in RCU mode6 (160-240 MHz) (for z_{HI} = 6-7)

- Reliable ingest/retrieval from LOFAR archives (TARGET and/or SARA)

- Make CS013 a useful station :   4% sensitivity + better uv coverage ! !

- Harmonize station gains: still factor 1.5 between best/worst station

- Routine monitoring of station beams ('Brentjens-Heald' holography mode)

New functionality

- Faster switching (<10s) between HBA and LBA