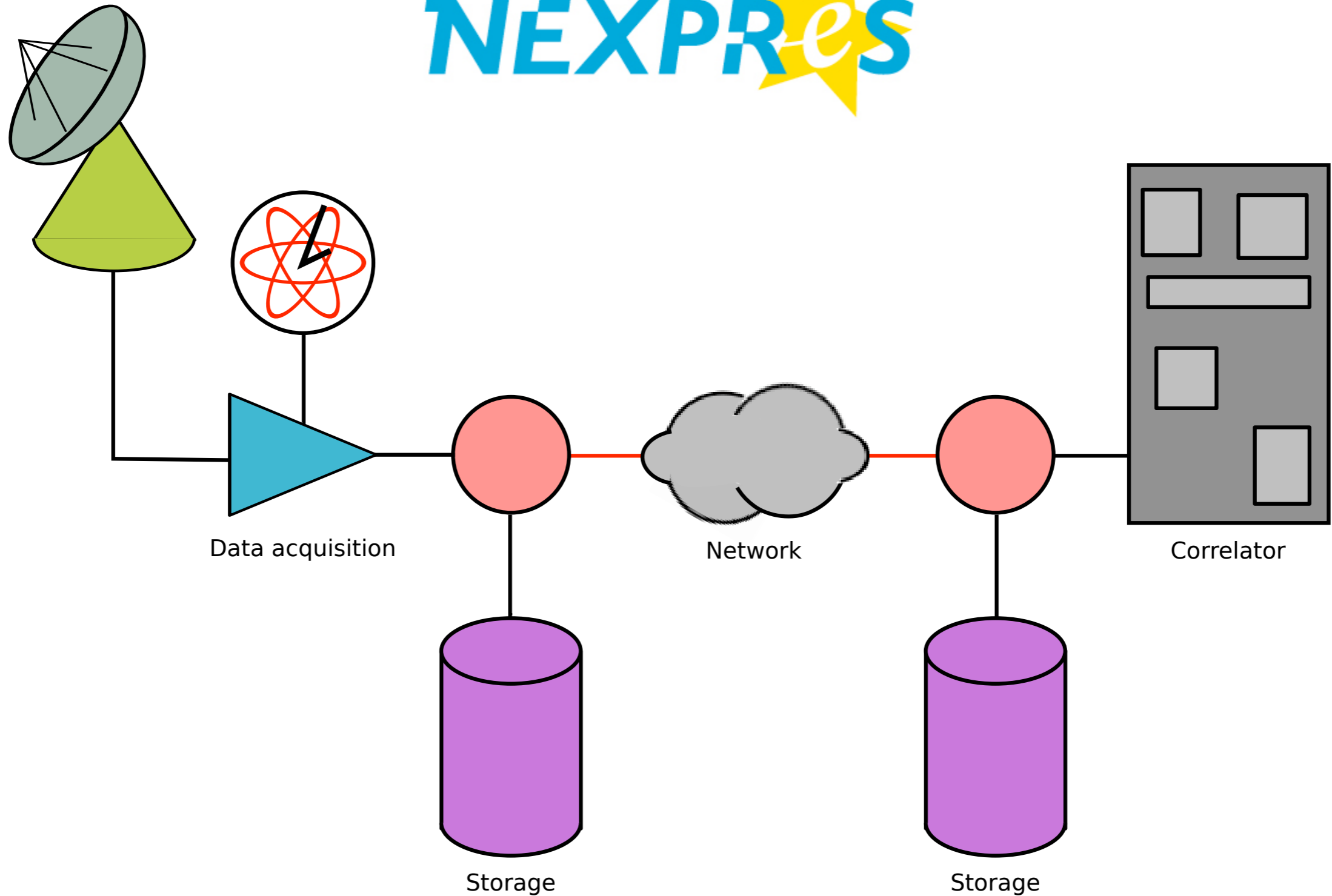# The NEXPReS project
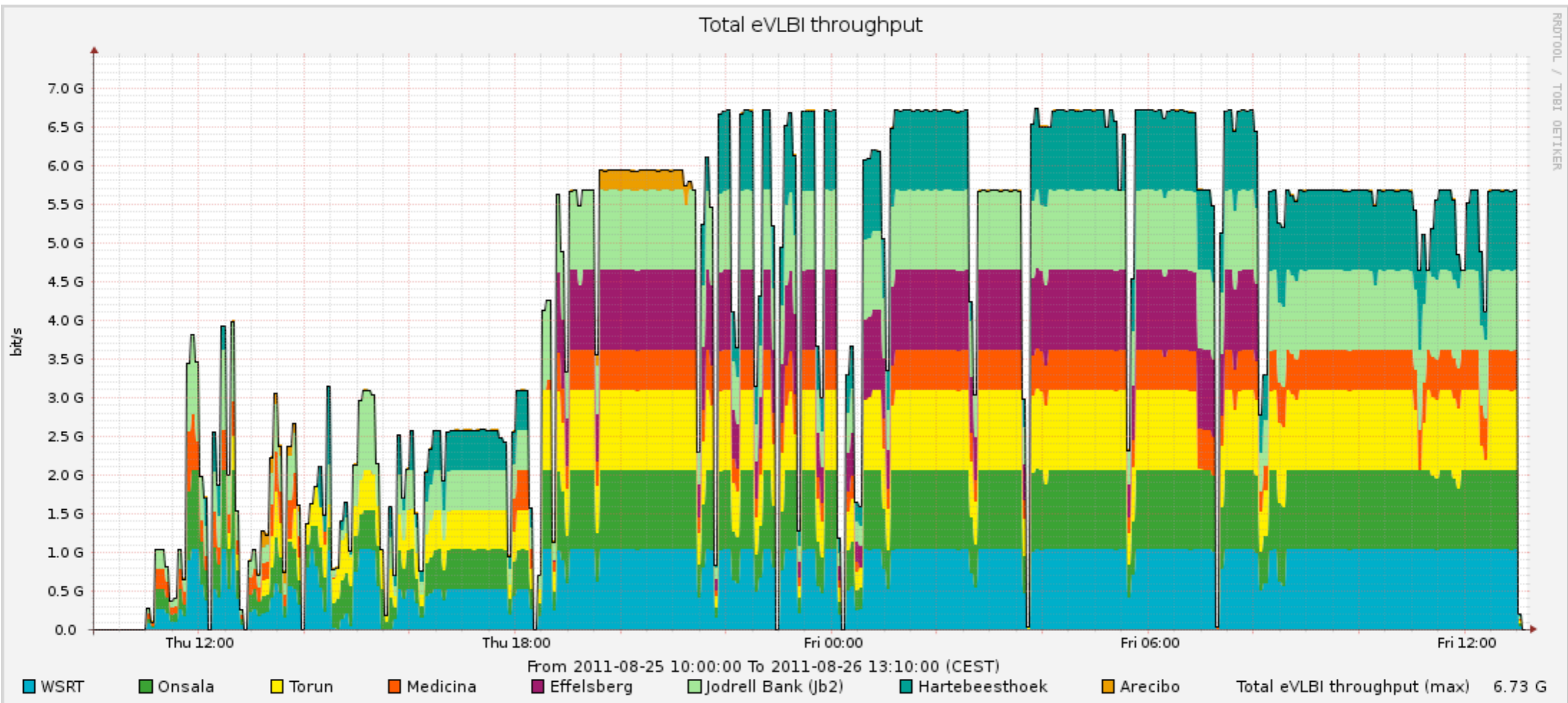
WP6, 'High Bandwidth on Demand' - NSI implementation

Image by Paul Boven (boven@jive.nl). Satellite image: Blue Marble Next Generation, courtesy of Nasa Visible Earth (visibleearth.nasa.gov).

Paul Boven, JIVE   GLIF 2011, Rio de Janeiro

- Record data at telescope,

- Transmit in real-time as much as network allows

- Use Bandwidth-on-Demand to increase flexibility, efficiency of network

A recent e-VLBI observation

Total eVLBI throughput

From 2011-08-25 10:00:00 To 2011-08-26 13:10:00 (CEST)

WSRT ■ Onsala ■ Torun ■ Medicina ■ Effelsberg ■ Jodrell Bank (Jb2) ■ Hartebeesthoek ■ Arecibo   Total eVLBI throughput (max)   6.73 G

- NEXPReS is a three-year project aimed at further developing e-VLBI services of the European VLBI Network (EVN), with the goal of incorporating e-VLBI into every astronomical observation conducted by the EVN.

- 15 Astronomical Institutes and NRENs participating:

  JIVE, ASTRON, SURFnet, Nordunet, DANTE, PSNC (pl), TUM (de), INAF (it), MPG (de), UMAN (uk), OSO (se), VENT (lt), FG-IGN (es), AALTO (fi), CSIRO (au)
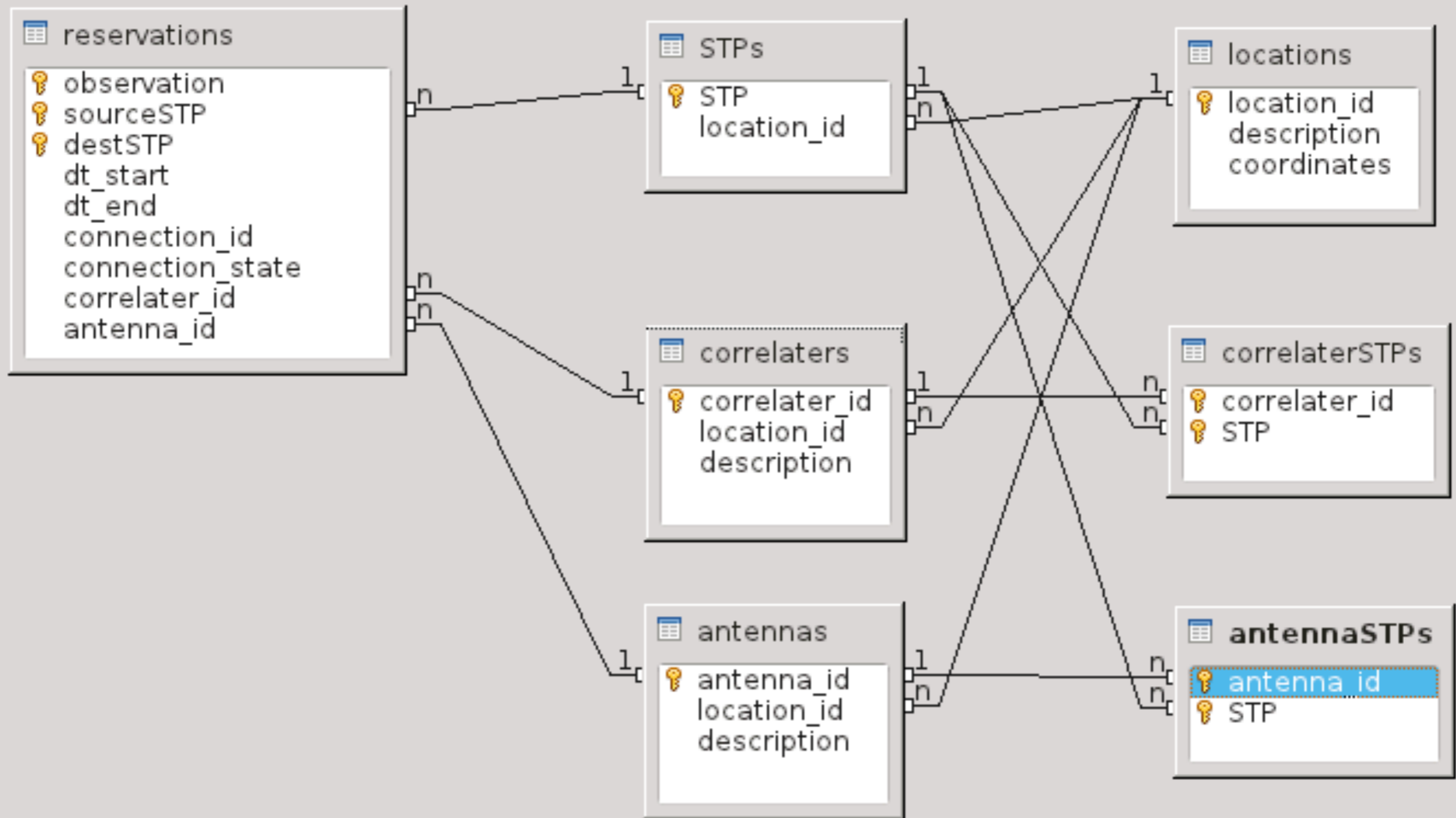
NEXPReS NSI agent
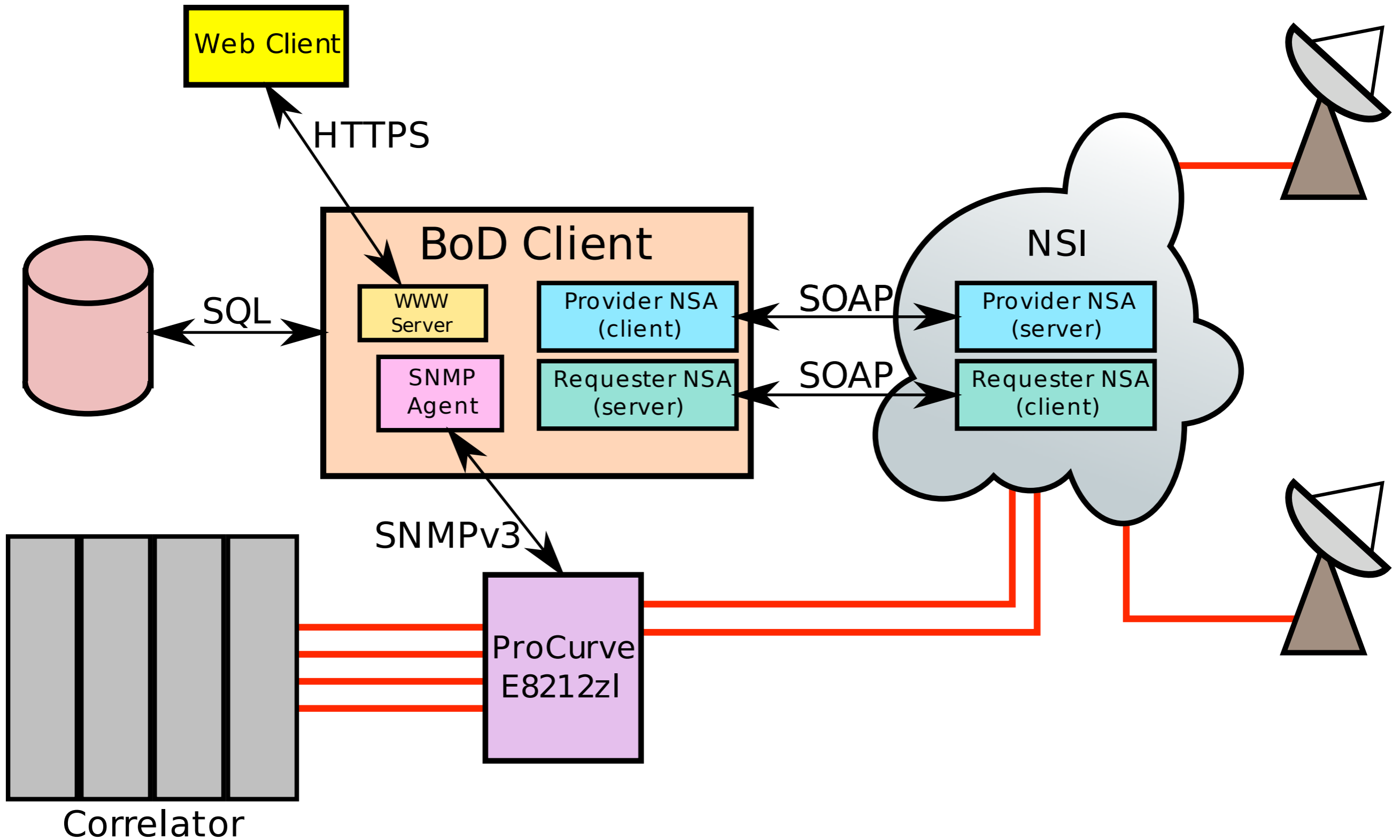
NSI agent ER model

Screenshots

NSI questions

- Should we (JIVE) build a 'requester' or full requester/provider ?
  - Full NSI client, to also control JIVE central switch/router

- We (JIVE) don't really need pathfinding (yet)
  - Just a few paths, decided on in advance

- Can we have multiple paths on a 10G?

- Waiting for a 'final' version of NSI
  - How much change should we still expect?

- Testing a link in advance - needs path stability
  - Reduce speed to 0 for part of the reservation?

The future of the EVN

- More telescopes to join (Europe, Asia, Africa, ...)

- New correlator based on FPGAs (UniBoard)

- Higher observing bandwidths (4 Gb/s, 8 Gb/s, ...)

- NEXPReS: combined real-time and disk-based VLBI
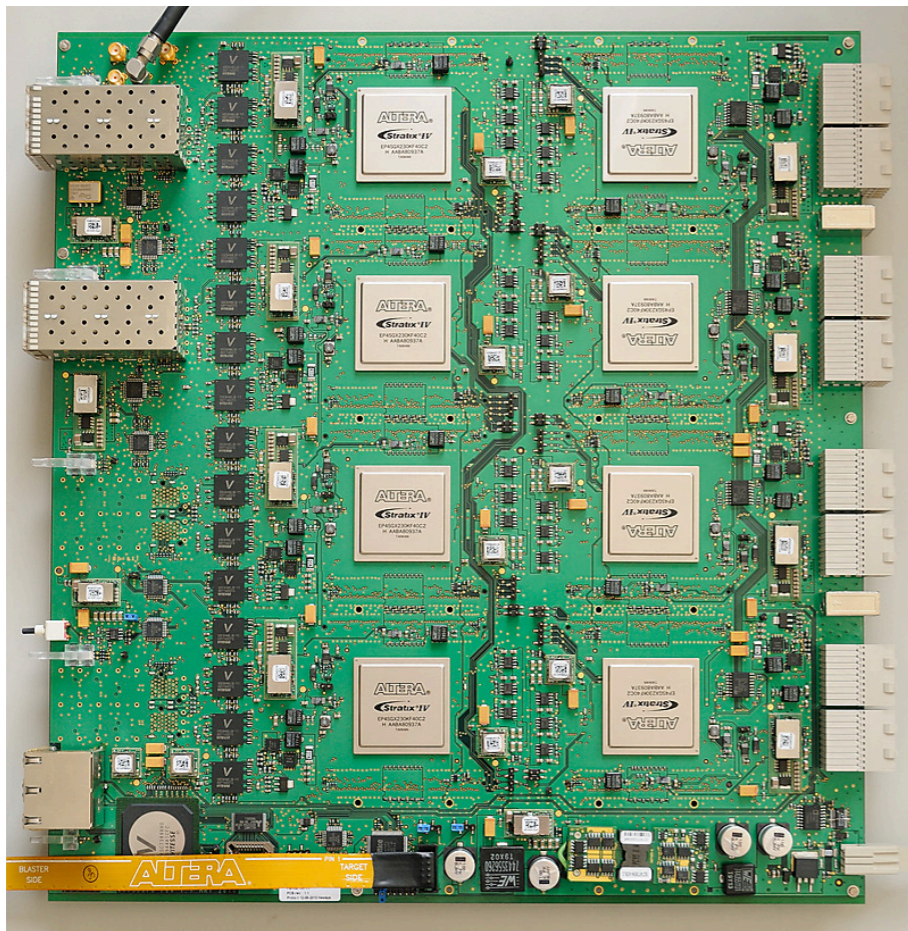
Uniboard

New telescope in Sardinia