

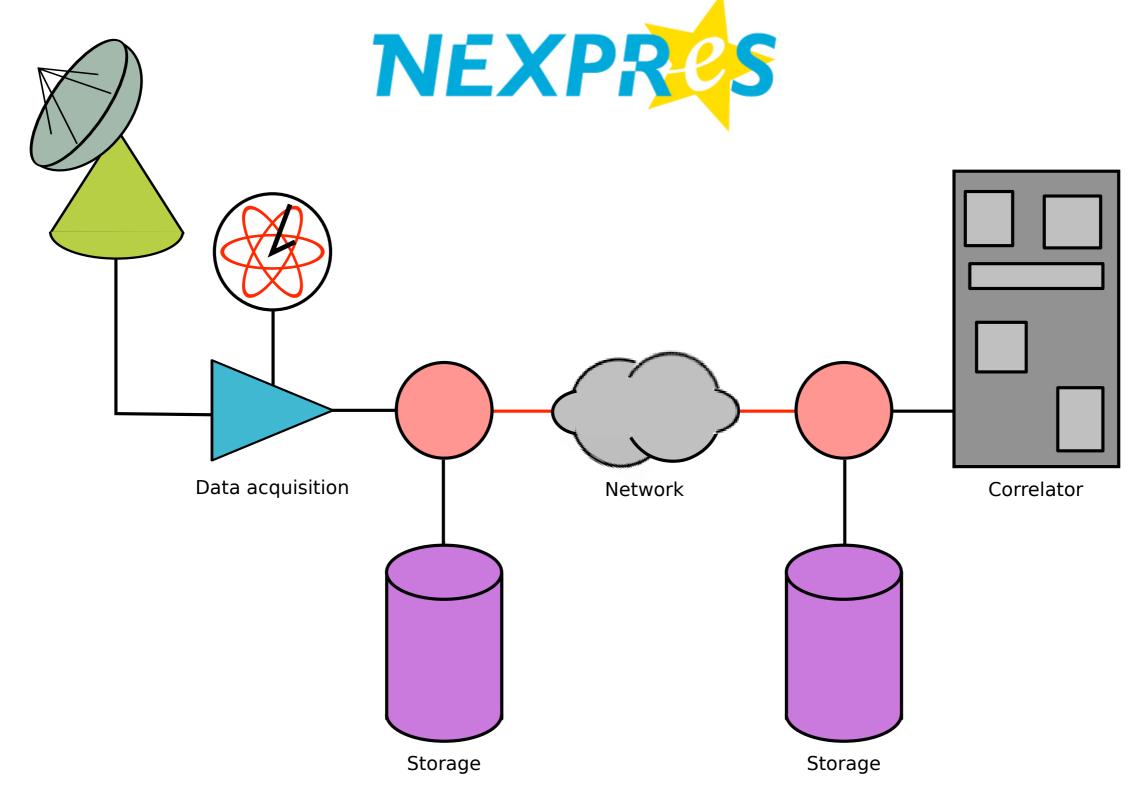
### WP6, 'High Bandwidth on Demand' - NSI implementation



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

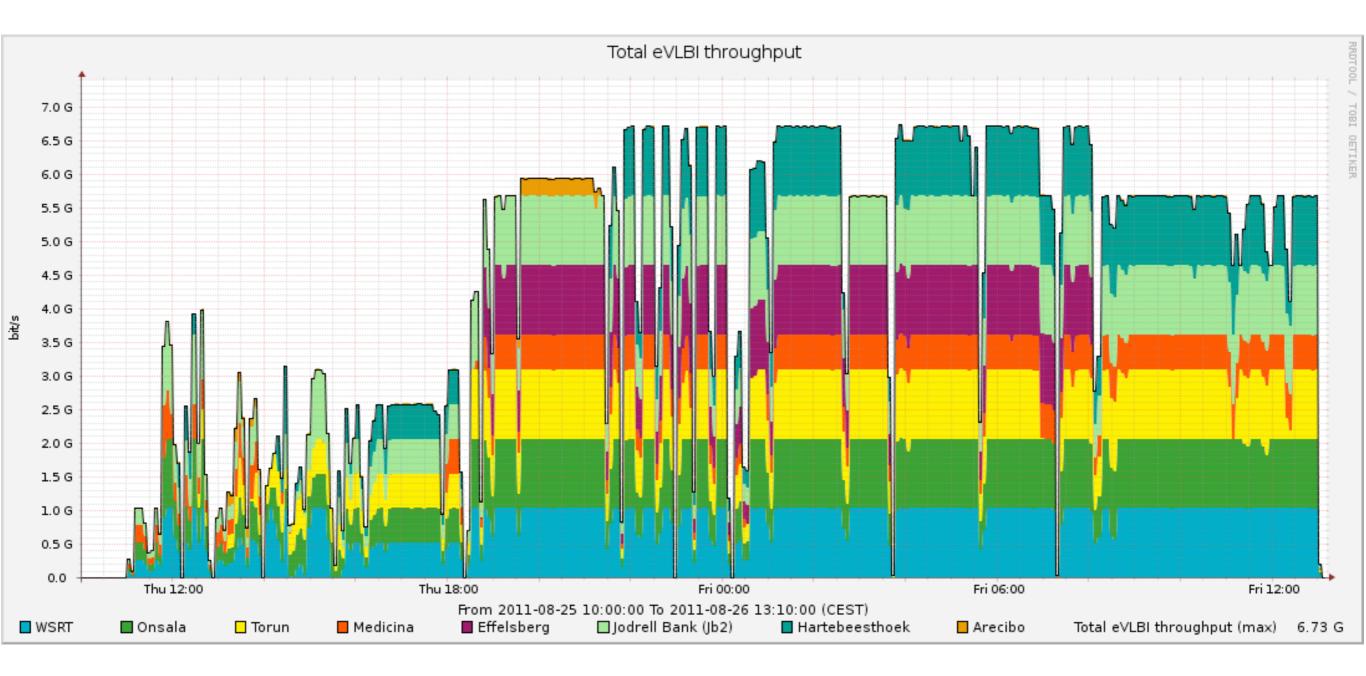
### Paul Boven, JIVE

### 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



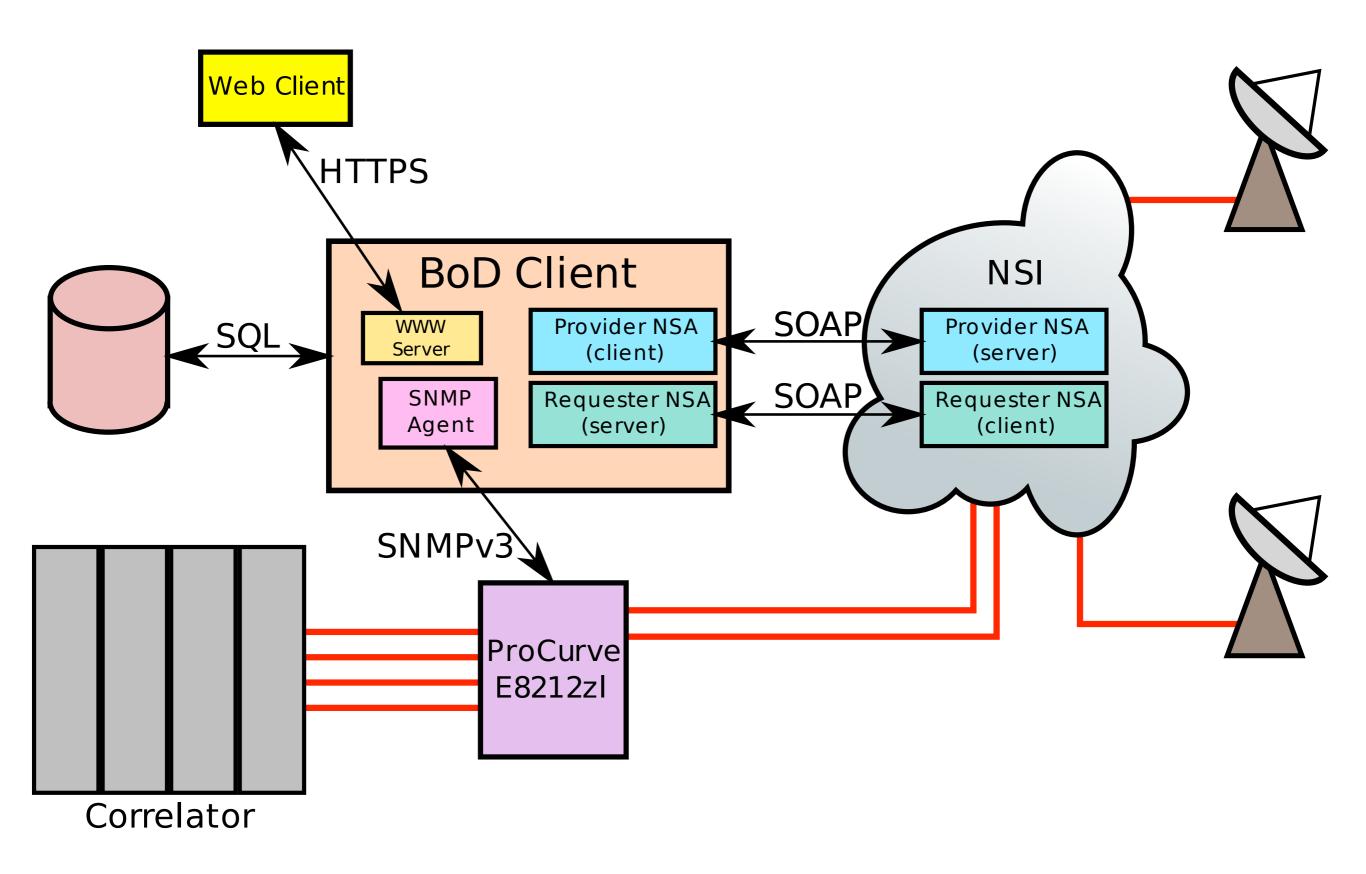


- NEXPReS is a three-year project aimed at further developing
  e-VLBI services of the European VLBI Network (EVN), with the goal of incorporating e-VLBI into every astronomical observation conducted by the EVN.
- 15 Astronomical Institutes and NRENs participating: JIVE, ASTRON, SURFnet, Nordunet, DANTE, PSNC (pl), TUM (de), INAF (it), MPG (de), UMAN (uk), OSO (se), VENT (lt), FG-IGN (es), AALTO (fi), CSIRO (au)

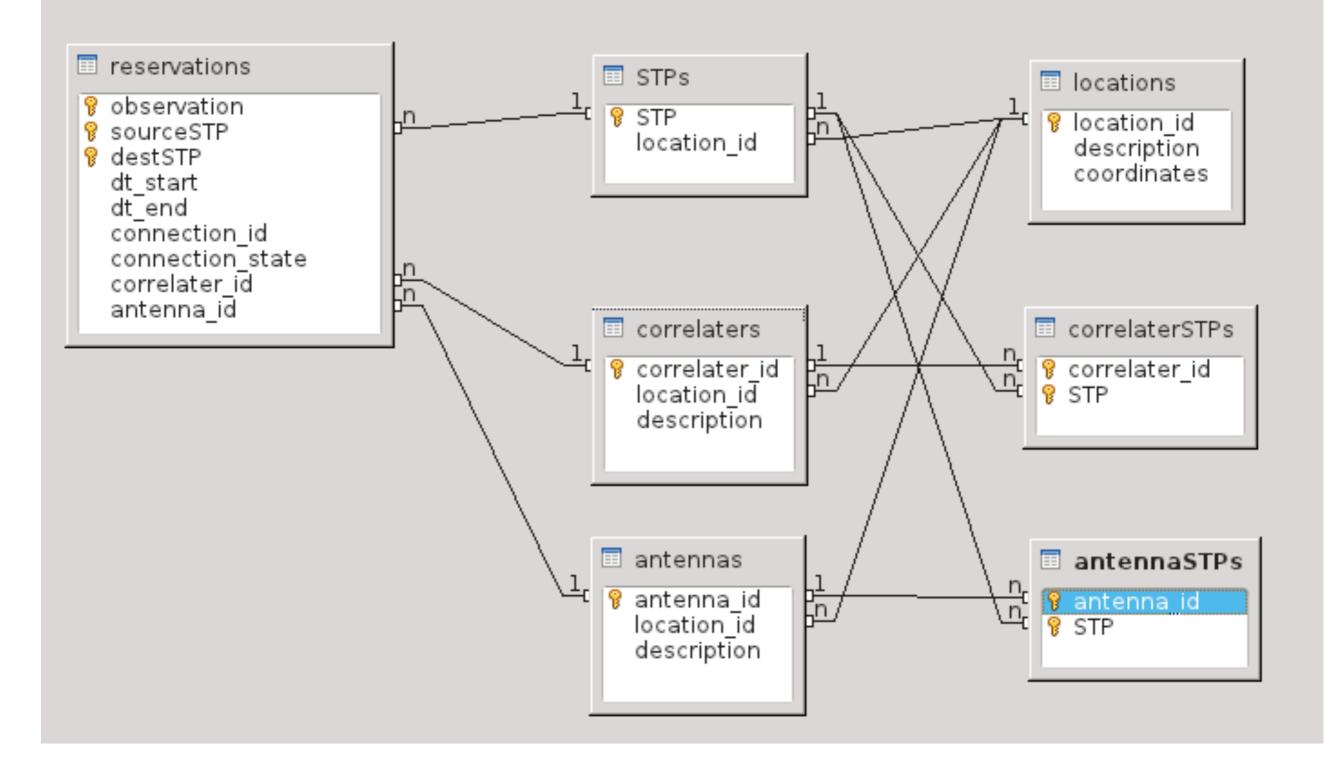
NEXPReS is an Integrated Infrastructure Initiative (I3), funded under the European Community's Seventh Framework Programme (FP7/2007-2013) under grant agreement n° RI-261525 NEXPReS. This material reflects only the author's views, and the European Union is not liable for any use that may be made of the information contained therein.



## NEXPReS NSI agent



# NSI agent ER model



## Screenshots

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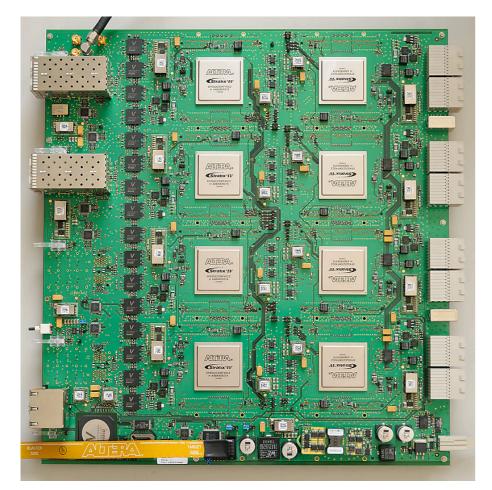
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## NSI questions

- 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