

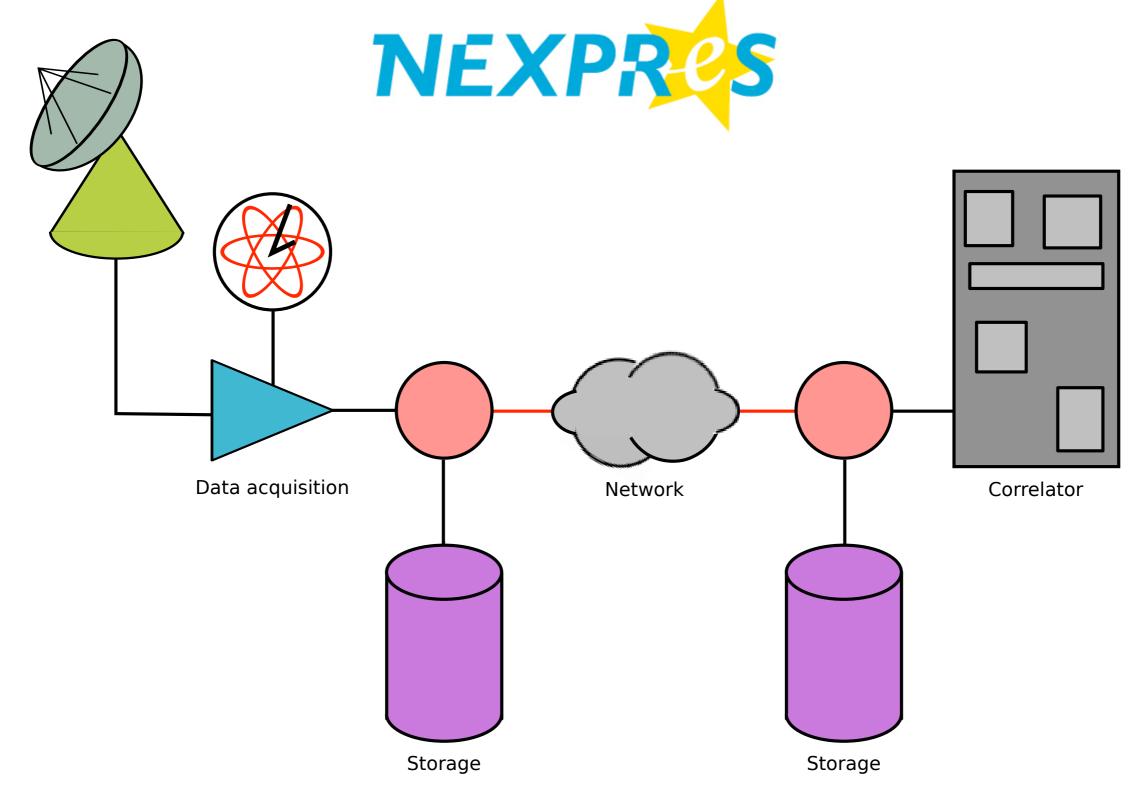
WP6, 'High Bandwidth on Demand' - NSI implementation



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

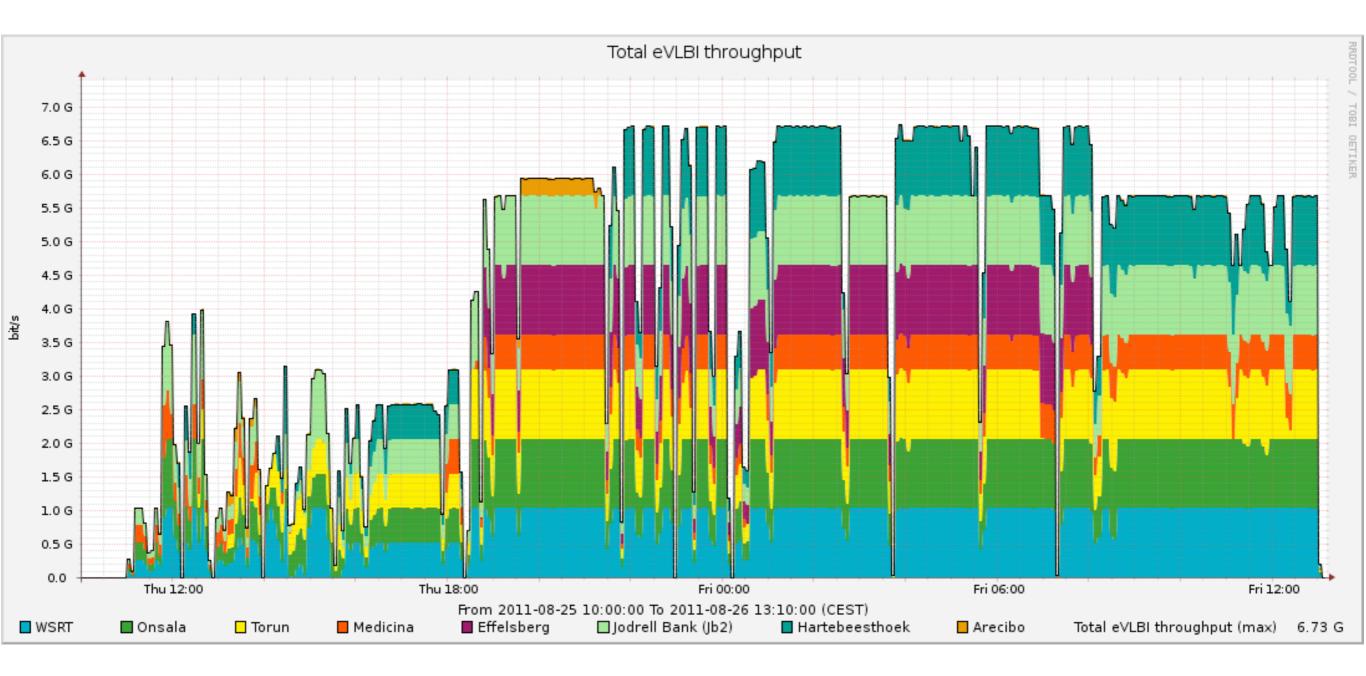
Paul Boven, JIVE

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



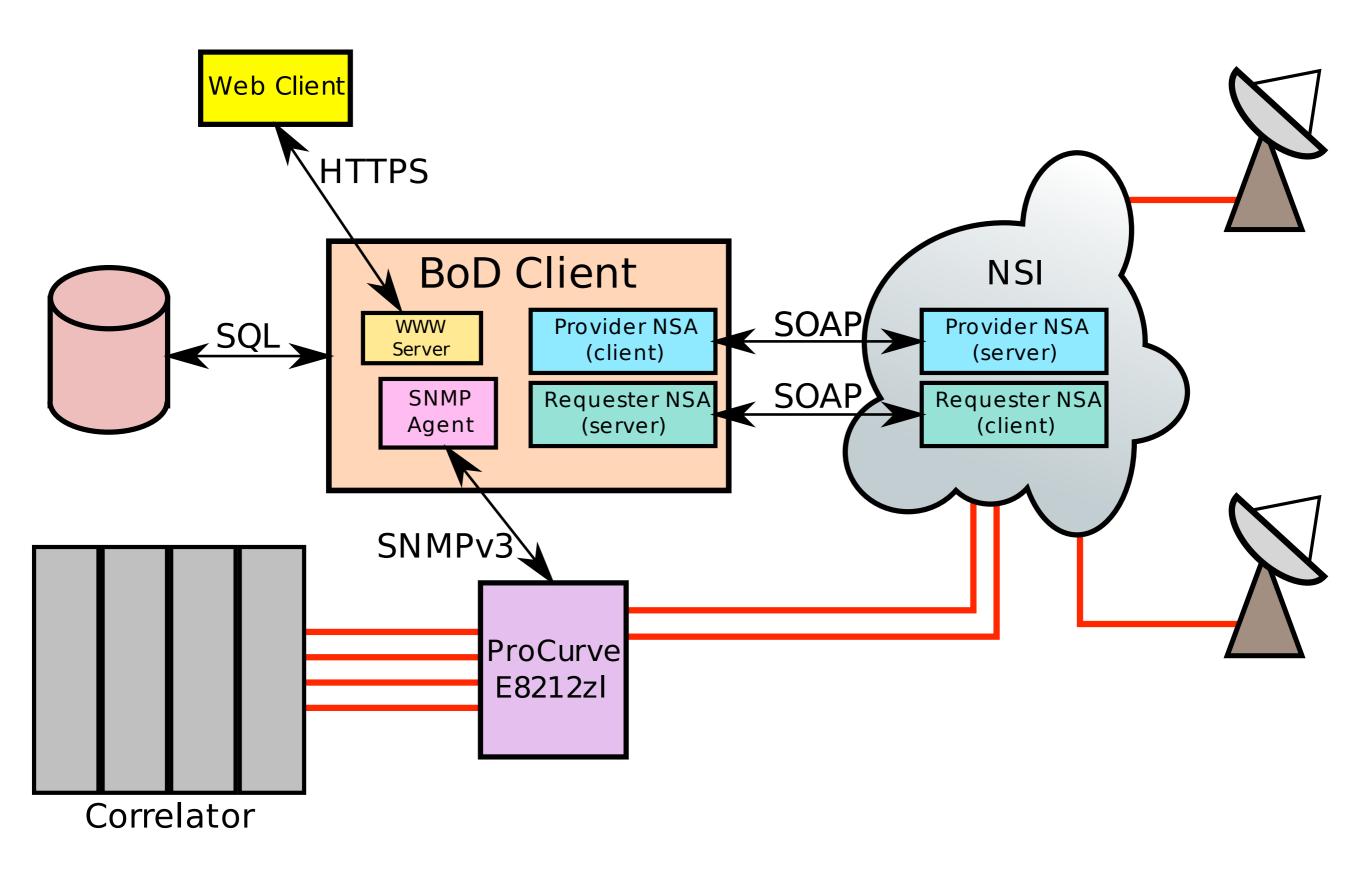


- NEXPReS is a three-year project aimed at further developing
 e-VLBI services of the European VLBI Network (EVN), with the goal of incorporating e-VLBI into every astronomical observation conducted by the EVN.
- 15 Astronomical Institutes and NRENs participating: JIVE, ASTRON, SURFnet, Nordunet, DANTE,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

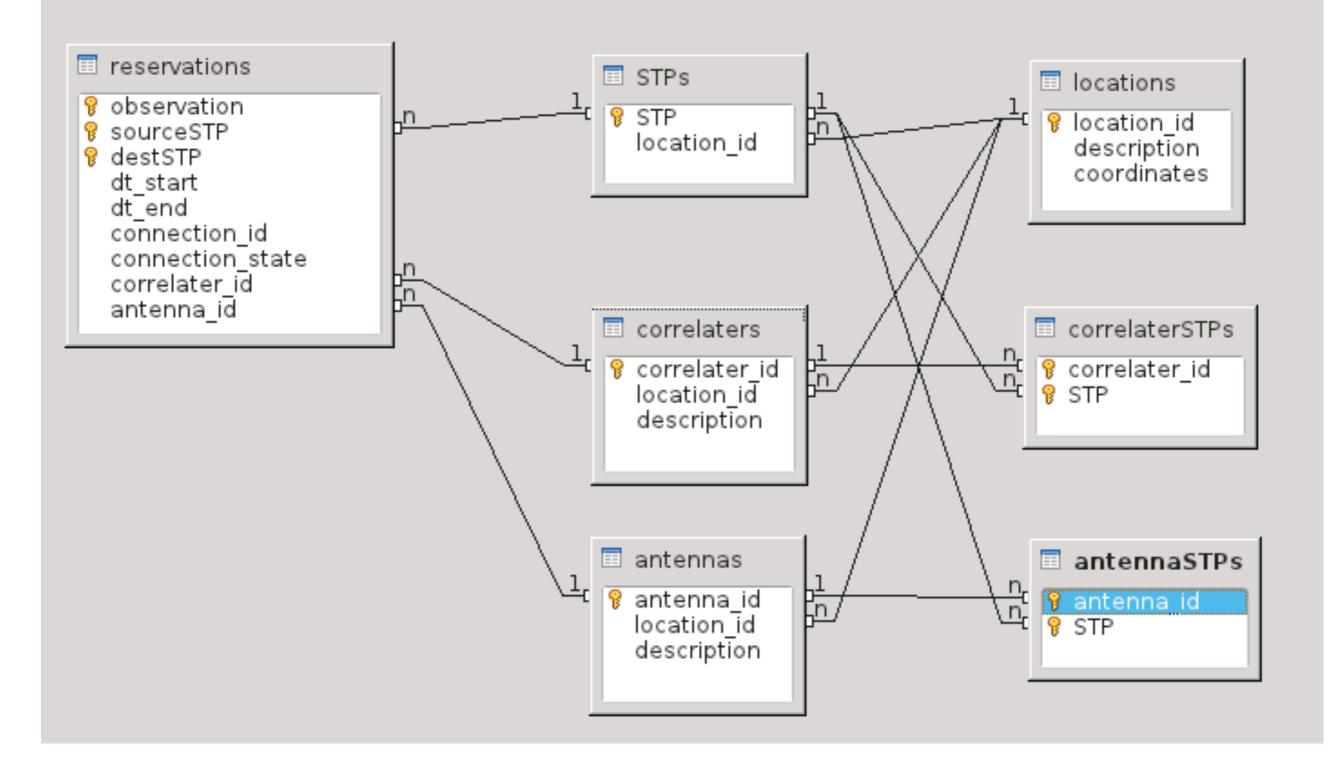
NEXPReS is an Integrated Infrastructure Initiative (I3), funded under the European Community's Seventh Framework Programme (FP7/2007-2013) under grant agreement n° RI-261525 NEXPReS. This material reflects only the author's views, and the European Union is not liable for any use that may be made of the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



NEXPReS NSI agent



NSI agent ER model



Screenshots

| ation | {DW | /3} | {DW5} | | |
|-------|-----|---|-------|--|--|
| ation | | /CD11 | | | |
| ation | | New Reservation | _ 🗆 X | | |
| ation | N | ISA | | | |
| ation | | Requester | | | |
| ation | | | • | | |
| ation | | Provider | | | |
| ation | | | • | | |
| | C | Period From 2011-07-01 00:00:00 To 2011-08-01 01:00:30 Observation Name Test observation | | | |

| | - , |
|-------------------------|-------|
| on ATTSA COP | 13 |
| on 📄 Change Reservation | _ 🗆 × |
| on NSA | |
| on Requester | |
| on {GR1} | |
| on Provider | |
| on {DW5} | |
| Period | |
| From | |
| 2011-07-01 00:00:00 | |
| То | |
| 2011-08-01 01:00:30 | |
| Observation | |
| Submit | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |

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