

Swedish LOFAR

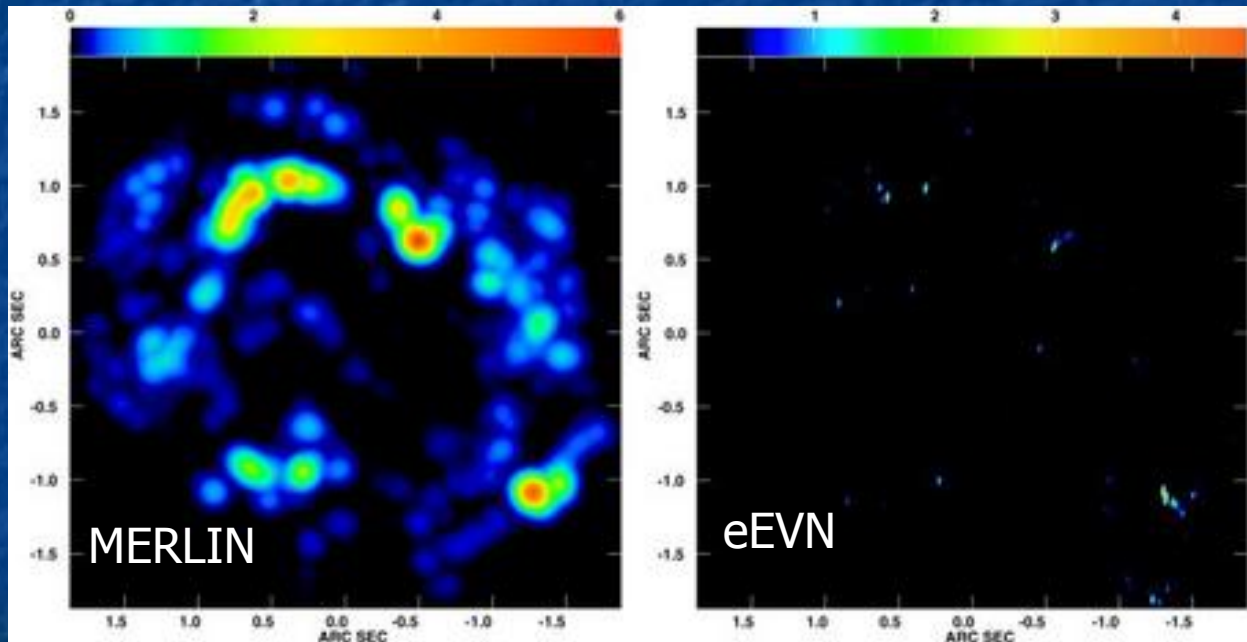
John Conway

Emmen, April 25th, 2007

- Onsala Space Observatory, Swedish national facility for radio astronomy
- Long time interest in interferometry, VLBI, ALMA etc
- Synergy with eVLBI activities at cm wavelengths

eVLBI

- Have since 2004 1Gbit/s 'dark fibre' from site to Gothenburg
- EVN first science, of OH masers at 18cm, first transatlantic eVLBI (0.5Gbit/s). Onsala did first transatlantic tape recording VLBI in 1968.



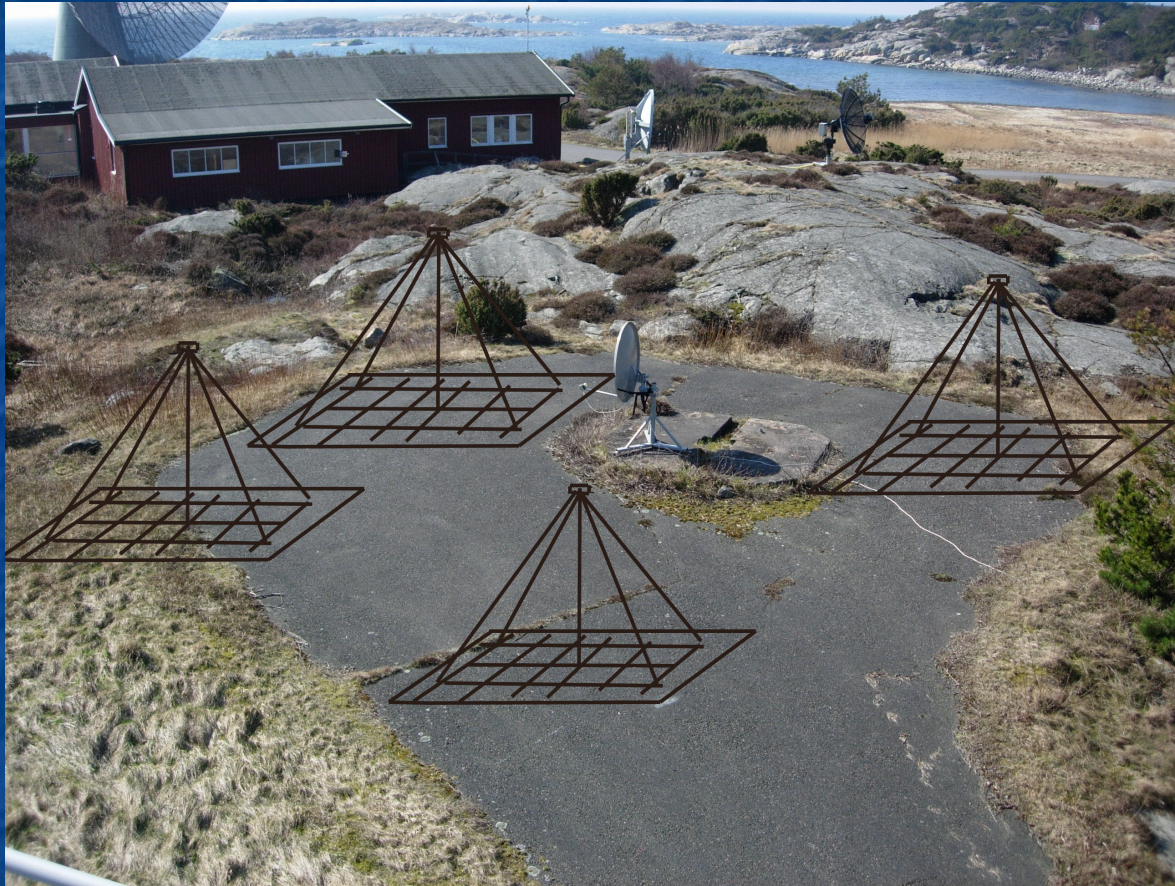
EU funded EXPReS project. Internet inteferometry

Onsala goals 4Gbit/s to eMERLIN and 3Gbit/ to LOFAR, 1man-year plus hardware funding

Present LOFAR activity

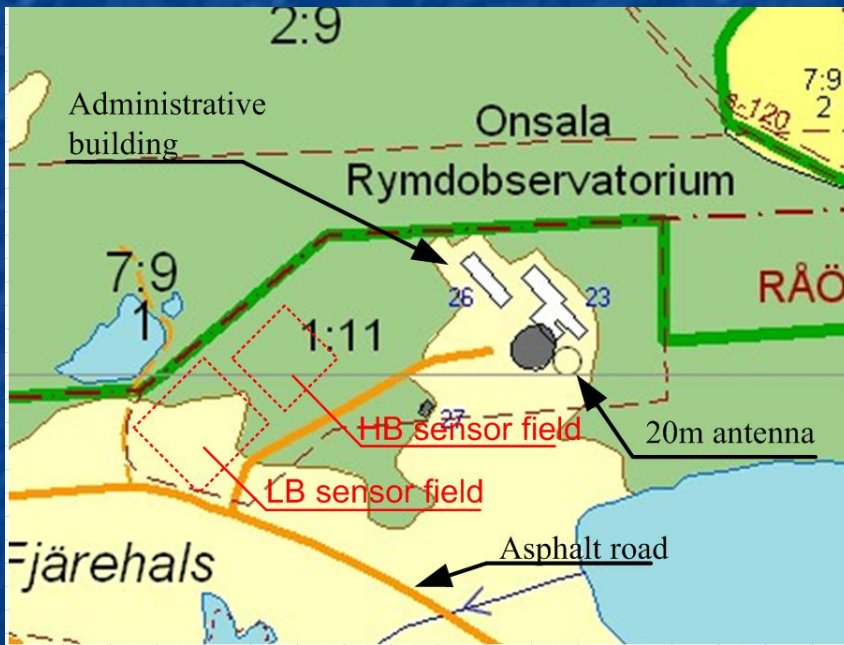
- VR planning grant for 2006/2007 (600kKr = 70kEuro).
- Funds trips/contact with ASTRON/LOFAR
- June 2006, RFI (radio frequency interference) test of our site by ASTRON—positive result
- First test station (4 LBA antennas just arrived), preparation of site (optic fibres to control room, electrical power etc).
- Adding general observatory funding - can grow to a 16 element LBA station by end of 2007.
- Detect first fringes CasA etc to Bonn/Exloo end of year, monitor closure phases. IPM etc

Onsala PR department



4 LBA antennas arrived yesterday and presently being assembled, as we grow to 16 antenna moves to permanent LOFAR position

Site for Full LOFAR



LOFAR funding application

- Recent midterm funding review of Nat Facility, seemed positive – especially in context of e-interferometry and SKA pathfinder
- Applied last week to research council for 0.6MEuro for a full LOFAR station, results November, funding starts Jan 2008.
- Funds already for PhD students, also masters students will work and contribute to LOFAR project.

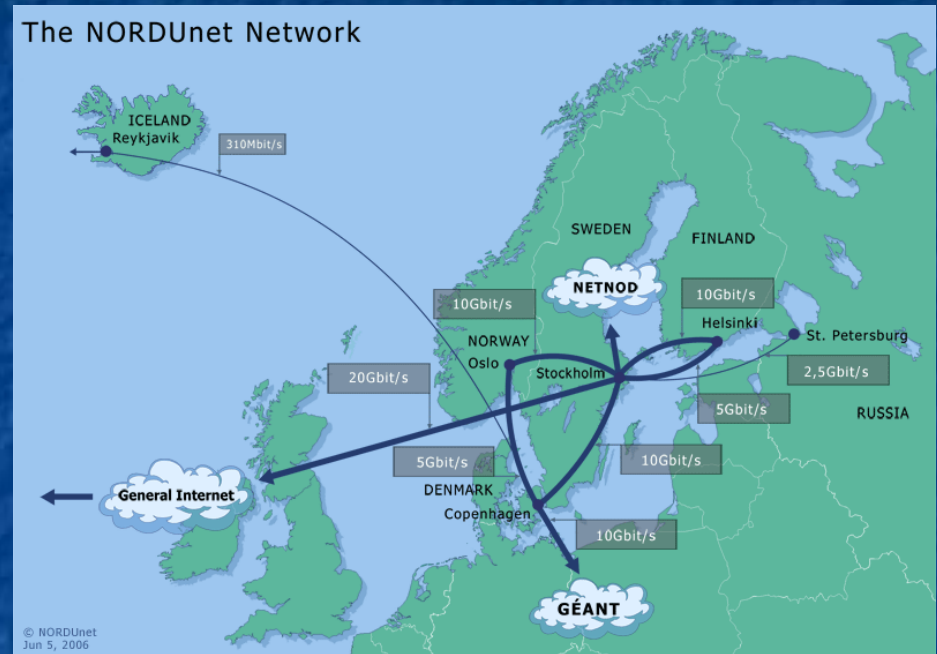
Connectivity

- Very good, local trench dug and fibres put in ground 2004, no 'last-mile problem'.
- Present 1Gbit/s over switched network, need to upgrade to 10Gbit/s lightpath. SUNET installs equipment to light our fibre and onward lightpath to Stockholm.
- Then NORDUnet from Stockholm – Amsterdam OR Stockholm-Hamburg then joint Dutch SURFnet cross border link to Groningen
- EU will pay half of connectivity costs till March 2009 as part of EXPRoS. Also one man-year to work on internet connectivity, hiring now
- Have 10G lightpath link to Stockholm by October this year.

OPTOSUNET



NORDUnet



- Dual switched/lightpath network with 40G backbones. Operational April 2007

Science use

- G. Mellema, EOR key project – Stockholm
- J. Conway, deep galaxy surveys for high z starbursts. Local star-forming galaxies, spectra, Radio-recombination lines
- Other interests, Cluster sources (SZ effect, mm-increment/decrement). Transient sources. Lens cosmology.
- Need clear decision and agreement soon on MoU on access rules.
- Prefer some form of privileged access say to galaxies survey data, after core key science members, before general release.
- If we get resources back in return for our investment, can we 'spend' our national observing time by giving back to key projects in return for entry to key projects etc.