

LOFAR technical working group (TWG)

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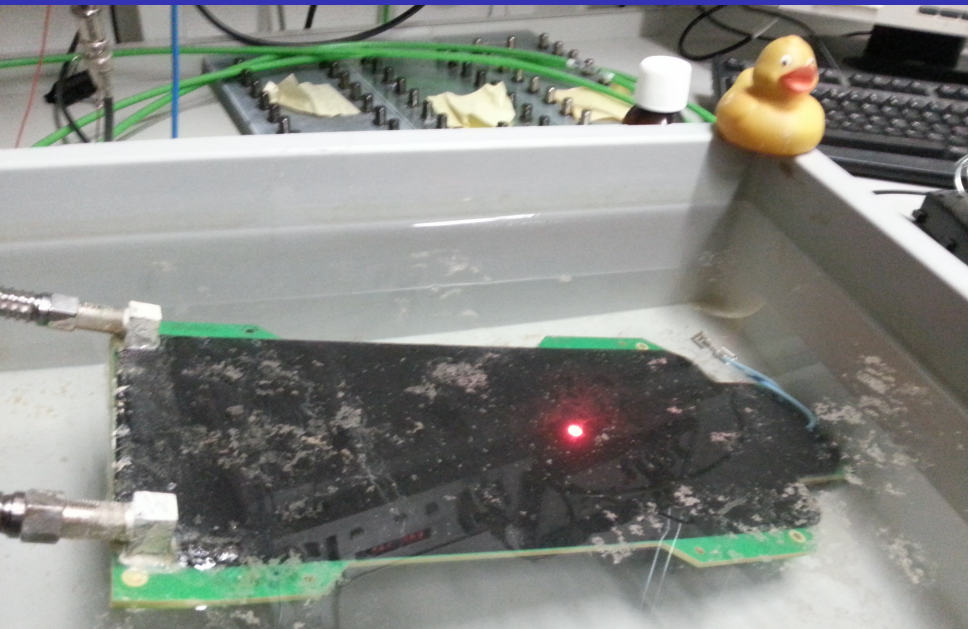
- The TWG responds to **technical questions** posed in the context of policy, investment, or development decisions to be taken by the ILT Director or Board by the **ILT**; may be asked to prepare background **documentation** or **recommendations** for such issues
- The TWG may of its own accord discuss or embark on studying specific technical issues identified as being of **substantial importance** to **LOFAR** astronomical **functionality**. May raise recommendations and conclusions with the ILT Director
- Under responsibility of the Observatory the TWG functions as the **review panel** to provide to the PC and the Consortia allocation panels unbiased **technical assessments** of all observing **proposals**.

Members

- Michiel Brentjens (chair)
- Ger de Bruyn
- Adam Deller
- Jason Hessels
- Andreas Horneffer
- Neal Jackson
- Roberto Pizzo
- Sander ter Veen
- Christian Vocks
- Michael Wise

Wiki

- <http://www.lofar.org/operations/doku.php?id=dm:start>
- Reports
- Supporting documents
- Calculations



Element beam model

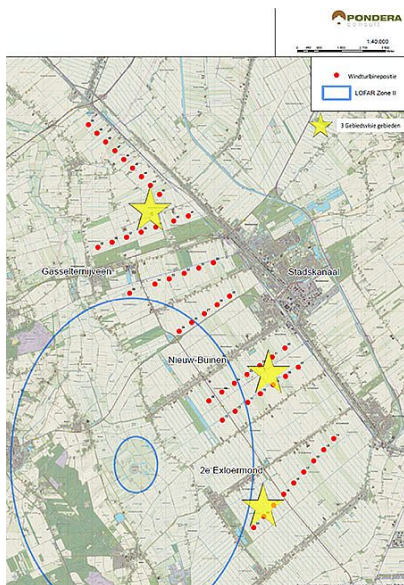
- Plainly incorrect
- Assumed same for all dipoles
- Encumbers absolute flux calibration
- Incorrect – but salvageable – off-the-bat polarization calibration

Digital beam model

- Not normalized by total power across sky
- Incorrect gain predictions, particularly at high HBA frequencies
- No mutual coupling
- Somewhat degraded far side lobe predictions

Activities

- R&D (Fiorelli & Wijnholds) made detailed plans for new beam modeling effort.
- Antenna engineer appointed, but not yet allowed to begin work on this issue.
- Dirty fix normalization in beam lib, not rolled out.
- Antenna holography works, but not yet operational.
- This month: drone measures cuts through analogue beam: validation data set.

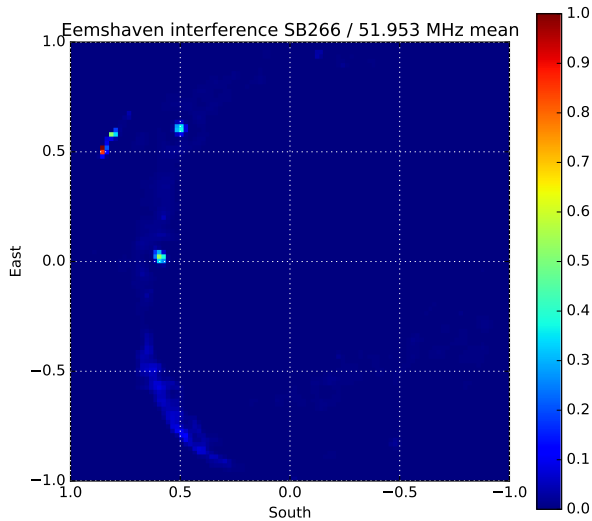


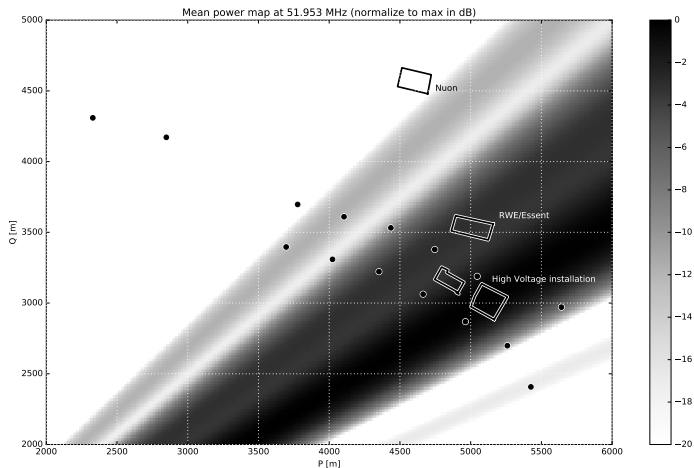
Minister Kamp's decision

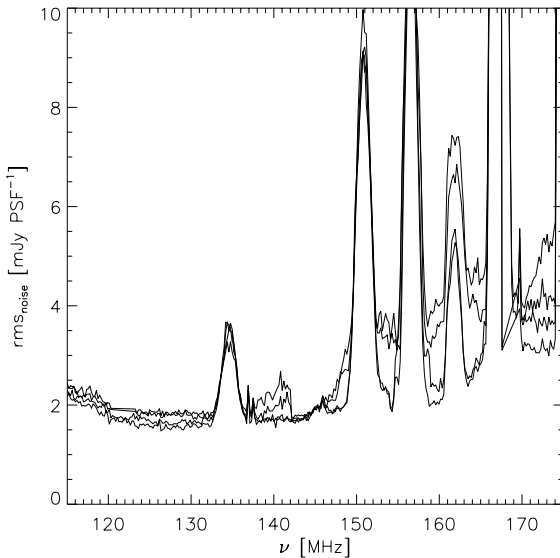
- 50 × 3 MW at 200 m tip height
- 7 turbines in LOFAR zone 2
- decision still stands

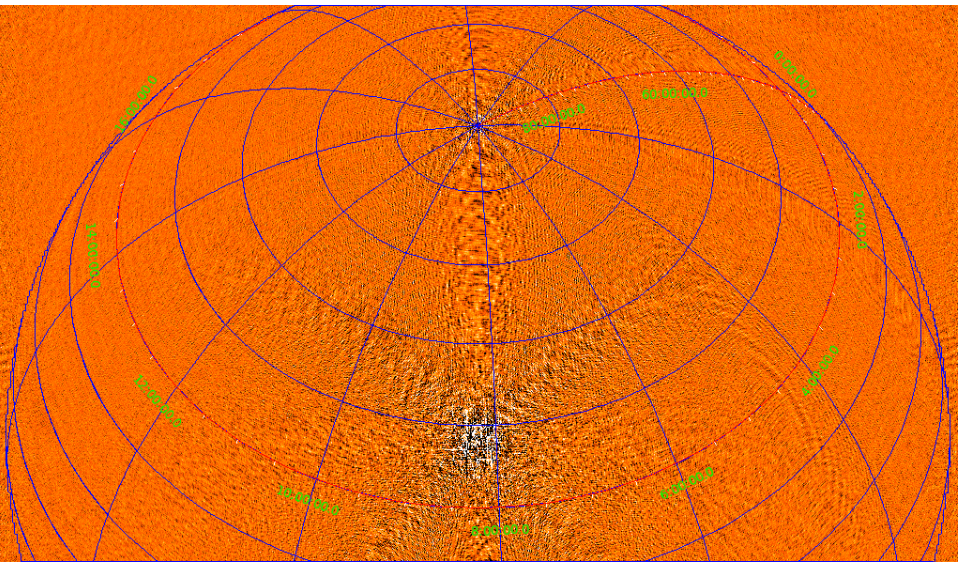
Investigation RS509

- Previous assessment report commissioned by economic affairs is flawed
- Main cause of interference: reflection of sources close to turbines
- Eemshaven: 700 MW transformer station.



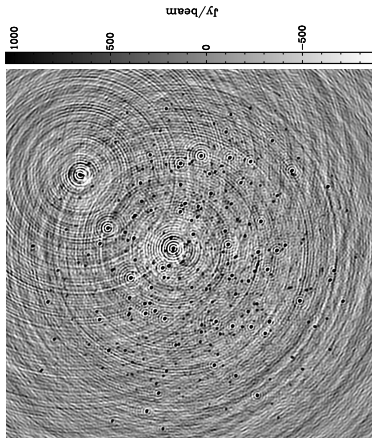


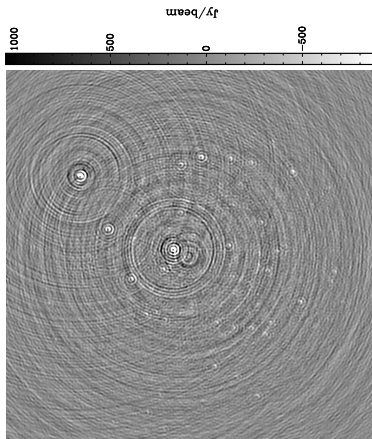


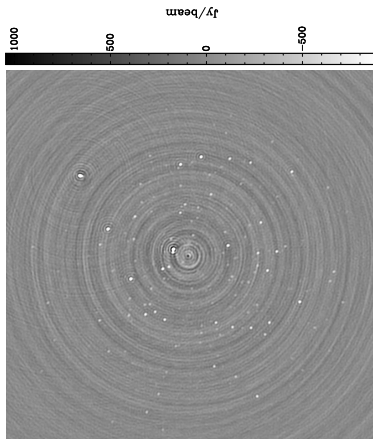


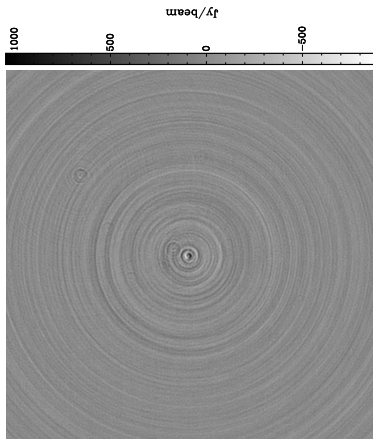
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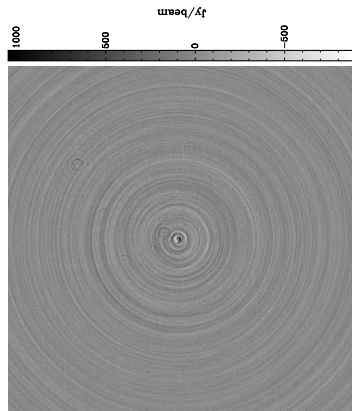












- New source of (indirect) interference
- Affects HBA low at up to 10 mJy level
- Invisible at baselines larger than a few km
- Pulsar observing potentially unaffected
- Smart choice of observing frequencies helps
- Filtering techniques may be possible and are being investigated

Progress

- CEP4 tender and commissioning
- Clock offsets remote and international stations
- Explore clock distribution improvements/extension

No progress

- Polarization-aware phase-up of core