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DBNet Station Operator Survey

- Summary of survey results
- Information from manufacturers about circular polarization issue



Operator survey

- Survey conducted in July-August 2016
- Aim was to provide up-to-date information on:
 - Processing Software and Facilities
 - Receiving Station Capabilities, in particular reception of Left-hand Circular Polarization signal
- Full results provided in meeting document
- No responses from CMA, CONAE, Singapore
- A number of non-operating stations identified, e.g. Fiji, Nouv Caledonie, Caracas, Fortaleza



Operator survey

- Processing Software and Facilities
 - AAPP processor versions varying between 7.5 and 7.13
 - CSPP generally v2.2
 - A few operators report limited capabilities for installing processors in general (IMD, HKO) and several report limited capabilities for FY3PP
 - Varying H/W configurations, RAM between 8 and 132 GB!
 - OS mainly Redhat and Centos 6.3
 - Network capacity issues reported (TBC) for Papeete, St Denis, Antarctica (AU)



Operator survey

- **Reception Capabilities**
 - **Reception Band**
 - Standard system is now combined L/X band
 - Few L-band-only systems still exist, but are being replaced by L/X systems in most areas



Operator survey

- Reception Capabilities

- Circular polarization (CP)

- L/X band system are all RHCP only
 - A few old L-band systems with both LHCP and RHCP are operating (CP switch was recognized backup mode on older NOAA satellites)
 - Lannion (TBC) and CMA stations (info from EUMETSAT, TBC) have X-band LHCP operating
 - New INPE stations (Dartcom) will support LHCP
 - EUMETSAT, MF, NOAA, BoM, NIWA, KMA have confirmed technical feasibility of upgrade
 - Conclusion (TBC): LHCP is currently not generally supported by DBNet and most operators do not have firm plans for LHCP adaptation



Operator survey

- **Manufacturer Feedback**

- **Orbital systems**

- The Orbital X/L-band feed for DB from Earth observation missions is currently RHCP only in both bands. However, they have other feeds for other type missions providing RHCP/LHCP switching capability, so they fully master the technology..
 - Orbital System CEO mentioned during NOAA conf that they will not want to start producing Dual Polarity L&X Band Feeds until CMA polarization plans for FY-3E are clear.
 - They would develop an X/L-band feed for DB from Earth observation missions with RHCP/LHCP switching capability, if specifically requested
 - Estimated cost 40-50k per antenna

- **Manufacturer Feedback**
 - **Kongsberg Spacetec**
 - Currently Spacetec do not have a feed of their own, but buy from Orbital.
 - Spacetec is in the process of developing a new feed with the capability to switch between RHCP/LHCP in both L- and X-band.
 - The feed will be mechanically and electrically compatible with existing Orbital X/L-band antennas
 - Upgrade cost ~ 50k per antenna

- **Manufacturer Feedback**
 - Dartcom
 - Provides stations to INPE
 - Stated explicitly (<http://www.dartcom.co.uk/products/x-band-eos-system/technical-summary>) that they only provide selectable polarization for the X-band system, whereas the L/X band system provides only RHCP.
 - No info on upgrades of existing systems