ZWURM, 22-02-2021 14:00 (ZWURM through Zoom because of #COVID19 house quarantaine/wk50)

Present eBob, Paul, Ilse, Mark, Des, Harro

Aard is on leave but has sent an update of his activities - included below.

General remarks:
- the link to Jodrell is 5.5 Gbps, so a little packet loss exercising the link at >= 5 Gpbs might be possible, need to keep an eye on this.
- thank you to people sharing tripreports through technicalops@jive.eu; that's what the email address is for, sharing info (conferences, administrative stuff (Harro) within our group)
- ASTRON is organising virtual social events, do not dismiss upfront to have the chance to interact with ASTRON colleagues for a change

eBob: Finished XML files for NorthStar ToO/OoS observing tool, deployed for drBob to test with (but scheduling session is taking up his time atm). Compared drupalized and direct scripts on archive: functionality equal, most changes are in CSS; new tech? [Des: Python based options are flask and Django, prefer flask as Django quite opinionated about system]. After some discussion what the archive interface would actually mean decide to have separate meeting outside ZWURM.

Ilse: Was in many meetings (EHT, JIVE, diversity related); created plot for EHT (took some time, more time expected). Missed the VO wrap-up Friday because of EHT ombudsperson business, but will contact YanG (ASTRON). LOFAR school (end of March) will have several VO lectures too. This week participates in ngEHT five-day workshop, presenting on Tuesday.

Des: Started implementation of combining polarizations in fringefit but decided to contact GeorgeM before continuing - blubbering around in someone else's code; will list agenda item for next CASA VLBI coordination mtng; build of wideband fringefit failed on NRAO server, node died, likely unrelated to wideband fringefit - had to restart build; if package ready, will distribute to MichaelJ for test/verification. Started investigating linking NorthStar and archive database (running locally on archive; if archive is up, database MUST be up too). If time remains this week (< 5 workdays, it's school holiday) work on fringefit memo.

Mark: Continued experimenting with polconvert solution through generic Jones matrix; generic matrix not frequency dependent, hacked bandpass into application (polconvert requires bandpass dependency), still cannot reproduce results - TBC. Participated DiFX workshop fragment on eVLBI, presented JIVE approach; WalterB presented VLBA real-time fringes at 128 Mbps - all 10 sites connected at 200 Mbps minimum, implemented fully parallel solution to EVN/JIVE: separate sending, receiving programs from scratch, modified DiFX. At ESCAPE

WP3 IAA presented full workflow of reducing (old) VLA data using CASA for flagging + imaging, other tools for masking (SOFiA) and Jupyter for plotting — all figures from publication have separate notebook to reproduce for sharing/experimenting/citing. East—Asia VLBI workshop accepted talk!

Paul: Jupyterhub installed and has O/S, what's next; waiting for JUMPING JIVE monitoring system Ansible playbook (didn't get one yet). Shares network packet loss test results — some m—nodes remain problematic; main problem was identified as regression: fixed before but not persistified (personal circumstances) and then power outage last autumn meant fix was lost, but even after reapplying fix and upgrading firmware some 1% packet loss to some nodes remains. [Mark: 1% pkt loss can cause serious performance hit for HPC system. Paul: yes, will investigate to solve this]. Upgraded firmware on 10 switches over the weekend (6x microblade, 4x Mellanox); the microblade f/w fixes fan spinning issue and improved MLAG (indeed visible in network test graphs); upcoming: Mellanox v3 —> v4 upgrade, but is full reinstall since filesystem on switch changed from btrfs to ext4.

Aard: Found the random—crash—bug in sliced integrations! Race condition due to lockfree multithreading combined with compiler reordering instructions because of optimization, value of one variable not updated before boolean monitored by other thread was — thread continues with old (incorrect) value of variable = crash! [Mark: requires memory barrier. Harro: or c++11 atomics with defined ordering.]

Harro: Created localized vex parser which is merge of official new VEX1.5/VEX2 compatible parser from FieldSystem and local maintained version to accept unofficial $THREADS block; the other unofficial block in use at JIVE — $BITSTREAMS — was added to VEX2 and thus did not need merging. Initial testing seems to hint that produced MeasurementSets are similar whether VEX1.5 or VEX2 file is used.