Report from NESC meeting on Thursday 25th February 2021

The NESC held a meeting on Thursday 25th Feb on Microsoft Teams with 44 participants online.

Clément Courde reminded the NESC of the requirements for the Galileo GASTON campaign, which aims to use the atomic clocks onboard these GNSS satellites to look for dark matter passing the Earth. The EUROSTAT real-time display software was discussed and NASA stations are joining the service. Clément said that he was pleased with the amount of data recorded so far by the network during this campaign. It was agreed that a email would be drafted to the stations thanking them for their efforts and asking them to keep going for the remaining weeks.

Van Husson presented some slides discussing the metrics used to consider the 'quality' of the data produced by ILRS stations. In particular, data volume, calibration RMS, single-shot RMS and the range bias stability as produced by Analysis Centers. These values varied considerably for stations and Van stated that it is the range bias stability that stations need to focus on. These stability values are presented in a table on the ILRS website and updated each month. It was suggested that a time-series of these values could be helpful.

Van also showed the NESC the newly updated station pages on the ILRS website. Plots have been recomputed by a team led by Justine Woo and include Meteorological Data, LAGEOS Performance, 7-day Track and Satellite Data. A guide to the new plots is available here https://ilrs.gsfc.nasa.gov/network/stations/active/overview_of_station_plots.html

Zhipeng Liang presented a status update from the San Juan station in Argentina. The station was established in 2006 and was very productive with a 50mJ, 20Hz laser. The station stopped producing data in 2014. The plan to upgrade the station with a 1kHz, 1.2 mJ laser and new event timer, has been on hold for the past year due to the pandemic. The station would consider other laser applications in the future, such as laser communications and lunar laser ranging. The NESC agreed that having such a productive station back in the network would have an impact and the importance of site stability was mentioned as equally important to productivity.

José Rodriguez presented slides about the factors used to calculate the centre-of-mass corrections required by analysts. The Site logs and Station Change History logs are vital to ensure the quality of ILRS products. José discussed the examples of the Tahiti and Simosato stations. Some discontinuities were shown in the Simosato range bias time series, some of which related to changes recorded in the logs. Shun-ichi Watanabe from the Simosato station commented on the recent upgrades to the laser and detector.

Meteorological devices at stations were discussed. It was pointed out that humidity must also be recorded and some stations/devices seem to cut off at higher values, this was shown on plots on the ILRS website.

The date for the next meeting was agreed as **Thursday 15th April** at **1300UT**. Requests for future presentations included an update from the AGGO station and the Russian network.

Toshi Otsubo told the NESC that a new round of Virtual Tour locations will be arranged and an email will go out soon requesting participating stations.

The presentation slides from the meeting will be available here
https://ilrs.gsfc.nasa.gov/network/newg/newg_activities.html

If you missed the meeting and would like to catch up, please send me an email (matwi@nerc.ac.uk) and I can provide the recording.