CPF & CRD v2 Implementation August NESC Update

Randy Ricklefs
The University of Texas at Austin

CPF v2 Implementation Status

- There is at least one prediction provider distributing daily v2 predictions for each satellite. Only one regular provider (MCC) has not converted. (Their only products are LARETS predictions, which are also provided by DGFI, NSGF, and Peraton (.hts).)

- So far about 16 stations are verified to be using CPF v2 files, and there are probably more.

- On Oct 1, 2021, predictions providers will be allowed to cease producing CPF v1 files. This date is firm.

- Additional reminders will be sent to the stations around September 1, 15, and 29.

CRD v2 Implementation Status – Work Thus Far

- The OCs and Data Centers have been accepting and distributing CRD v2 files for about 2 years. They vet the contents of the normal point and full rate data for compliance with the format

- To help stations develop and test their CRD v2 files, a tool is available on the EDC website to test the content of CRD files, i.e., format and range of variable fields.

- Van Husson and others are checking the contents of the files for more subtle compliance issues (e.g., is the value really always -1, or should it be "na"; why is this field's value always 3?)

CRD v2 Implementation Status – Vetting Orbit Residuals

- Stations must provide CRD v1 and v2 files in parallel until files from all the stations are vetted

- The ASC will vet the stations' normal points in batches of 10 or more stations at a time

- There are currently 11 stations that are providing CRD v2 files. Some include too few LAGEOS, LARES, and ETALON passes to allow validation, leaving only 5 stations that meet ASC testing criteria

- Since there are no critical changes to the core normal point records, the stations may instead be vetted by the type of comparisons the OCs and Van Husson are doing.

- Six to eight more stations are expected to provide CRD v2 data within the next couple of months.

CRD v2 Implementation Status – More on Vetting Orbit Residuals

- Stations will need to provide adequate data in CRD v1 & v2 format for a meaningful comparison of results, especially the agreement of normal point epochs, ranges, and residuals

  - Satellites preferred are LAGEOS I & II, LARES, ETALON I & II, although Starlette, Stella, and Ajisai will be used if there are too few of the others

  - The criteria is a minimum of 4 consecutive weeks of date – more is preferred and will be used if available

- The goal is to complete the conversion effort by the end of 2021, although that may be optimistic

NESC - ILRS

Update on meteorological devices and calibration at SLR sites and the travelling met device campaign

August 2021

C. Courde

Meteorological devices and calibration

For example, at Grasse, we have 3 Vaisala met devices:
- 2 PTU303 calibrated (June & November 2020) => NM & SLUM
- 1 PTU200=> JMT

Telescope	JMT	NM	SLUM
T(°C) :	15.03	15.1	15.1
P(HPa) :	876.91	876.8	876.8
H(%) :	57.7	55.5	55.8

The "JMT" met device gives measurement less consistant with the two other calibrated

Travelling met device campaign - What for ?

Compare the met data from different devices to:

1) Check each station met device and check how are they referenced to the reference points of the systems

2.1 meters of height difference

Met device

For example at Grasse, the met data in the CRD are corrected as follow :
Pressure at the cross axes = pressure measured + 0.1176(hPa/m) x height difference (2.1m)

2) Compare the relative errors between the various met sensors

7840

7827

7845

Traveling barometer as the reference common

8834
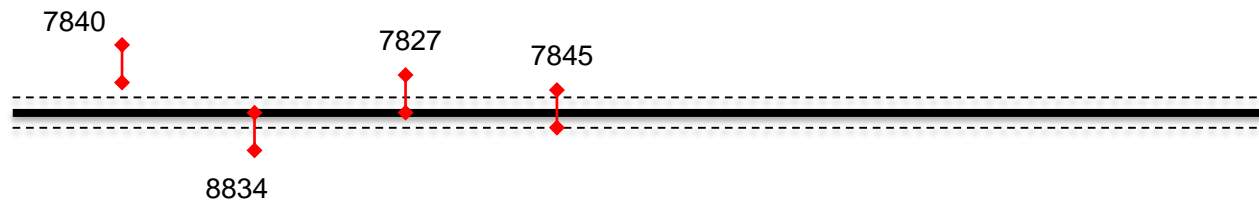
Travelling met device campaign

What is needed ?
1) Install the travelling met device near the local met device(s)
2) Register the data from the different met devices for comparison
    1) How long ? 1, 2, 3 weeks ?
    2) At different positions: for example two weeks near the local met device and few days near the reference point to check the correction ?
    3) Where are stored the data ? EDC-CDDIS ?
    4) Are the data recording parameters fixed or left open (the com port number, the rate etc) ?

We are preparing the package sent to each station interested to participate.
The content
1) The Vaisala PTU303 (RS232 communication)
2) 1 executable for windows, 1 for Linux and/or the RS232 protocol ?
3) Other equipment ?