Transition to vgosDB

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What's Happening…

After a long and glorious history the use of Mark3-DB is coming to an end.

Mark3-DB have been the default format for transmitting, storing and archiving VLBI data since the 1970s.

But Mark3-DB is inadequate for modern VLBI data. vgosDB was designed to replace Mark3DB.

The transition to vgosDB has taken longer than anyone expected. But….

In May of 2018 the Bonn Correlator stopped producing Mar3-DB. The tranisition to vgosDB is happening right now:

Whether we like it or not.

Whether we are ready or not.

How will we handle the transition?

Two main topics:

- vgosDB availability
  - Where can you get data in vgosDB format now.
  - Where can you get it in the future.
- vgosDB production
  - How will vgosDB data be produced.
  - Roadmap to complete transtition.

The Goddard VLBI group will assist in both areas until the transition is complete.

Availability of vgosDB Data

CDDIS does not currently accept vgosDB.

- Many reasons for this which I won't discuss here.
- Hopefully they will be able to accept sometime in 2019.
- In the meantime the IVS Coordinating Center at GSFC will make all of the IVS sessions available at:

https://vlbi.gsfc.nasa.gov/output/vgosDB_IVS/

- When CDDIS can accept vgosDB data, the IVS Coordinating Center will inform the IVS.

Making 'version 4' vgosDB

Version 4 data is edited and ambiguity resolved. This is the starting point for most ACs. But only a few ACs actually produce v4 data that the rest of the IVS uses.

Two paths to making v4 vgosDB:

- Conversion of existing Mark3DB to vgosDB.
  - db2vgosDB will take a Mark3DB and convert it vgosDB.
  - This works fine if you have a Mark3DB to work with.
- Start with v1 vgosDB and process it.
  - Currently the only software (that I am aware of) that can produce v4 starting with v1 vgosDB is *nuSolve*

Both db2vgosDB and nuSolve are freely available from GSFC.

Use of version 4 vgosDB

In the past years many (most?) VLBI software packages have been adapted to use vgosDB.

This work needs to be completed as soon as possible, and all stages in the processing checked.

People who have made the transition comment on the flexibility and speed of vgosDB.

CONT17 VGOS data will only be available in vgosDB!

Calc/Solve & nuSolve vgosDB Testing

For many years GSFC has been modifying calc/solve and associated programs to handle vgosDB.

In May 2018 the Goddard VLBI group exhaustively tested vgosDB at all stages in the processing chain.

In the process we found and fixed some problems. For example, some scripts did not work with vgosDB. Earlier testing 'by-hand' did not encounter these issues.

GSFC will release the latest version of this software after the IVS general meeting.

IVS AC @ GSFC Transition Plans (1)

Until June 30, 2018 we will do the following for the IVS sessions we are responsible for:

- If v1 data is available in Mark3DB format we will process it using the standard Mark3-DB chain. At the end of processing we will submit to CDDIS.

- If v1 data is only available in vgosDB format, we will process it in vgosDB format and make it available at the URL mentioned previously.

In addition, we will translate any IVS session posted to CDDIS in Mark3-DB format into vgosDB and make it publicly available.

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After June 30, 2018 we will do the following for the sessions we are responsible for.

- If v1 data is available in vgosDB format, we will process it in vgosDB format and make it available at the URL mentioned above.

  - These sessions will not be available in Mark3-DB format.

- If v1 data is only available in Mark3 format, we will process it in Mark3 format.

  - This should only happen if a correlator cannot produce vgosDB. We only know of one such case and are actively working with the correlator.

We will continue translating any IVS session that appears on CDDIS in Mark3 format into vgosDB format.

Transition plans for other ACs

If you are an AC responsible for providing IVS sessions please do the following:

- If you can process the session and produce a v4 session (either in Mark3DB or vgosDB format) please do so.
  - If it is in Mark3DB format, submit it to CDDIS as usual
    - GSFC will pick up it from CDDIS and convert to vgosDB.
  - If it is in vgosDB format, tell GSFC where we can pick it
    - GSFC will then make it publicly available.

Transition plans for other ACS (2)

- If you responsible for a session in vgosDB format and cannot process it, let GSFC know.
  - GSFC will process it and make it available.
- If you can not process vgosDB, please download the latest version of calc/solve & nuSolve.
  - GSFC will provide assistance in installation.

The End (of Mark3DB) is Near

Complete transition to vgosDB by September 30.

- Correlators that cannot produce produce vgosDB:
  - Please work to make this possible ASAP.
- ACs responsible for v4 data.
  - If you cannot produce vgosDB, please work to do so.
  - Easiest approach is to use calc/solve & nuSolve
- ACs that cannot use vgosDB in analysis
  - Work on modifying your software
  - **New Mark3DB and NGS cards won't be produced.**

Questions & Comments

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