

Coordinating Center Report

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Abstract This report summarizes the activities of the IVS Coordinating Center during the calendar years 2019 and 2020 and provides an outlook on activities planned for the next two years.

1 Coordinating Center Operation

The IVS Coordinating Center is based at the Goddard Space Flight Center and is operated by NEOS (National Earth Orientation Service), a joint effort for VLBI by the U.S. Naval Observatory and the NASA Goddard Space Flight Center.

The mission of the Coordinating Center is to provide communications and information for the IVS community and the greater scientific community and to coordinate the day-to-day and long-term activities of IVS.

The Web server for the Coordinating Center is provided by Goddard. The address is

<https://ivscc.gsfc.nasa.gov>.

2 Activities during 2019 and 2020

During the period from January 2019 through December 2020, the Coordinating Center supported the following IVS activities:

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Coordinating Center

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- **Directing Board support:** Coordinated, with local committees, two in-person IVS Directing Board meetings: Las Palmas de Gran Canaria, Spain (March 2019) and Bonn, Germany (September 2019). Due to the coronavirus pandemic, no in-person meeting was held in 2020; in its place four shorter ersatz meetings were organized in the form of Zoom video teleconferences (March, June, September, and December 2020). Notes from each meeting were published on the IVS website.
- **Observing Program Committee (OPC):** Coordinated meetings of the OPC to monitor the observing program, review problems and issues, and discuss changes.
- **Master Schedules for 2019 and 2020:** Generated and maintained the Master Observing Schedules for 2019 and 2020. Coordinated VLBI resources for observing time, correlator usage, and disk modules. Coordinated the usage of Mark 5 and Mark 6 systems at IVS stations and efficient deployment of disk modules.
- **2021 Master Schedule:** Generated the proposed Master Schedule for 2021 and received approval from the Observing Program Committee.
- **VGOS:** Supported the activities for establishing the VLBI Global Observing System (VGOS) through participation in the VGOS Technical Committee (VTC) and organizing meetings of the VGOS Operations and Resources group and the VGOS Correlators.
- **Communications support:** Maintained the Web pages, e-mail lists, and Web-based mail archive files. The mailing lists are slated to be migrated to a new host organization within NASA as well as upgraded to the newest list manager in the beginning of 2021. It is anticipated that all membership

information and list options will be rolled over and that the list names will remain unchanged. The mail archives and web interface will no longer be accessible to the general public (i.e., non-NASA users). Maintained the 24-hour and Intensive session Web pages including the data acquisition, correlation, analysis, and performance summaries.

- **Publications:** Published the 2017+2018 Biennial Report in fall 2019/2020. Published six editions of the IVS Newsletter in the months of April, August, and December of 2019 and 2020. All publications are available in electronic form only.
- **Meetings:** Coordinated, with the Local Committee, the tenth IVS Technical Operations Workshop, held at Haystack Observatory in May 2019, and chaired the Program Committee.



Fig. 1 Logo of the tenth IVS Technical Operations Workshop.



Fig. 2 Participants of the tenth IVS Technical Operations Workshop at MIT Haystack Observatory in May 2019.

The eleventh IVS General Meeting plus several splinter meetings were planned for the last week of March 2020. The meetings were canceled two



Fig. 3 Logo of the eleventh IVS General Meeting originally planned to be held in Annapolis, MD, USA. The event was canceled because of the onset of the coronavirus pandemic.



Fig. 4 Planned venue of the eleventh IVS General Meeting (Historic Inns of Annapolis).

weeks prior to commencement due to the onset of the coronavirus pandemic with travel bans and lockdowns. Extensive discussions were undertaken about whether the event could be organized in a virtual setting or postponed to a later date. Eventually it was decided to cancel outright the General Meeting proper but hold part of the splinter meetings virtually.

- **Continuous VLBI Campaign 2017 (CONT17):** Wrote a paper on the organization of the campaign as part of the special issue on CONT17 in the *Journal of Geodesy*. The paper was published in October 2020: D. Behrend, C. Thomas, J. Gipson, E. Himwich, K. Le Bail, “On the organization of CONT17”, *J. Geod.*, 94:100, 2020, doi:10.1007/s00190-020-01436-x, <https://rdcu.be/b8q0I>. More information about CONT17 can be found on the IVS website under the URL <https://ivscc.gsfc.nasa.gov/program/cont17>.

- **Data Center ingest software:** Worked with Data Center personnel from CDDIS, BKG, and OPAR on new ingest software for the Data Centers. As the VLBI data and product ingest software at the CDDIS has to be integrated into a larger suite that supports all geodetic techniques, it is not feasible to create a software suite that can be ported in its entirety to BKG and OPAR. However, pieces can be used as building blocks for a second suite that basically replicates features of the CDDIS software at BKG and OPAR. The new software suites are written in Python3. In addition to the filename check, which was already done with the original software, the new ingest software added a validation step (QC) into the processing chain. That means that the data type of every submitted file is validated prior to the addition of the file to the data repository. If a submitted file fails the name check or the validation check, it is rejected. The validation routines and the accompanying data description files (DDFs) form the modular pieces that are exchanged between the Data Centers. The CDDIS has started to use the new suite, while BKG and OPAR will make the transition in 2021.

3 Staff

The staff of the Coordinating Center is drawn from individuals who work at Goddard. The staff and their responsibilities during 2019 – 2020 are listed in Table 1.

Table 1 IVS Coordinating Center staff.

Name	Title	Responsibilities
Dirk Behrend	Director	Web site and e-mail system maintenance, Directing Board support, meetings, publications, session Web page monitoring
Cynthia Thomas	Operation Manager	Master Schedules (current year), resource management and monitoring, meeting and travel support, special sessions
Mario Bérubé	Offsite Consultant	Session processing scripts, Data Center support
Karen Baver	General Programmer and Editor	Publication processing programs, LaTeX support and editing, Data Center support
Kyla Armstrong	Data Technician and Editor	Publications support and Web site support

4 Plans for 2021 and 2022

The Coordinating Center plans for 2021 and 2022 include the following:

- Maintain the IVS Web site and e-mail system. Monitor the transition of the e-mail system to the new host and list manager.
- Publish the 2019+2020 Biennial Report (this volume).
- Coordinate the eleventh IVS Technical Operations Workshop together with MIT Haystack Observatory as a virtual meeting in May 2021.
- Coordinate, with the local committee, the twelfth IVS General Meeting to be held in Helsinki, Finland in March 2022. This meeting may be organized as a hybrid event (in-person and virtual attendance).
- Implement the new ingest software at all three Data Centers and work on a clean-up of the data holdings. Ensure that the mirroring among the Data Centers works properly.
- Publish the Proceedings volume of the twelfth IVS General Meeting.
- Support Directing Board meetings in 2021 and 2022.
- Coordinate the 2021 and 2022 Master Observing Schedules and IVS resources.
- Publish Newsletter issues in April, August, and December of 2021 and 2022.
- Support the VGOS activities within the VTC, the VGOS Operations and Resources group, and the VGOS Correlators.