Planning of the Continuous VLBI Campaign 2017 (CONT17)

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Introduction

The Continuous VLBI Campaign 2017 (CONT17) will be a continuation of the series of very successful continuous VLBI campaigns that were observed at irregular intervals since 1994. The most recent CONT campaigns were observed in roughly three-year intervals: CONT17 will be observed from 0 UT on November 28 to 24 UT on December 12 of 2017:

December 2017

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<th>Monday</th>
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The main features of CONT17 can be summarized as follows:
- continuous VLBI: 15 consecutive days with 3 minutes between days for schedule changes
- UT-day observing: days running from 0 UT to 24 UT
- two legacy S/X networks to probe the accuracy of the VLBI estimates of the EOP and to investigate possible network biases
- one VGOS broadband demonstration network to be observed for about a third of the CONT17 period (e.g., five days from December 4 to December 8) as an initial indication of VGOS capabilities
- no optimal coverage in Africa and South America
- rapid turnaround: sessions: the equivalents of the R1 and R4 sessions will be shipped/é-transferred and processed rapidly (using the data of the Legacy-1 network)

Observing Networks

There will be 28 VLBI sites participating in the campaign. As Wetzell will observe with two legacy antennas and one VGOS antenna (triple point) as well as Kokee, Onsala and Yeles with both one legacy and one VGOS antenna, the overall number of stations participating in CONT17 will be 33.

Two legacy S/X networks (Legacy-1 and Legacy-2) of 26 stations at 25 sites:

VGOS demonstration network (VGOS-Demo) of eight stations at eight sites:

Simulation Results: EOP Formal Errors

A covariance analysis without velocity estimation resulted in the following EOP formal errors:

<table>
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<tr>
<th>Network</th>
<th>X-pole (µas)</th>
<th>Y-pole (µas)</th>
<th>UT1 (µas)</th>
<th>PSI (µas)</th>
<th>EPS (µas)</th>
</tr>
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<tbody>
<tr>
<td>Legacy-1</td>
<td>13.0</td>
<td>13.7</td>
<td>0.9</td>
<td>36.0</td>
<td>13.1</td>
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<tr>
<td>Legacy-2</td>
<td>15.0</td>
<td>17.5</td>
<td>0.8</td>
<td>37.6</td>
<td>14.3</td>
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<tr>
<td>VGOS-Demo</td>
<td>22.1</td>
<td>22.5</td>
<td>0.8</td>
<td>43.2</td>
<td>18.1</td>
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</tbody>
</table>

The actuals for the EOP formal errors of the 13-station CONT17 campaign are at about: X-pole (12.9 µas), Y-pole (13.1 µas), UT1 (0.7 µas), PSI (33.5 µas), EPS (13.8 µas).

Future Work

The next steps in the preparation of CONT17 include:
- determination of the media requirements
- request of additional media purchases, if necessary
- check-out of recording modes at all stations
- determination of station check times and assignment of appropriate Intensive slots
- preparation of final observing schedules

More information about CONT17 will be made available on the IVS Web site at the URL:
http://ivscc.gsfc.nasa.gov/program/cont17/