

EUREF-IP Pilot Project Status Report

EUREF TWG Meeting, March 14-15, Brussels

The following list of items is provided to describe the current status of the EUREF-IP Pilot Project.

- (1) EUREF-IP established a specific IP address for its Ntrip Broadcaster service at www.euref-ip.net.
- (2) An additional Ntrip Broadcaster has been installed by EUREF-IP at www.rtcn-ntrip.org. Its only purpose is to provide access/links to any other known Ntrip Broadcaster installation world-wide.
- (3) The total number of known Ntrip Broadcasters is app. 25. South Africa and the US NGS are following with setting up their own Ntrip Broadcaster. The total number of reference stations available via Ntrip technology amounts to app. 650.
- (4) The EUREF-IP real-time GNSS network accessible via www.euref-ip.net further develops towards global coverage. The next contributions are expected from
 - Australia, 1..2 streams from State of Victoria RTK network
 - Washington, 1..2 streams from Seattle Public Services Network
 - NOAA/NGS, about 100 of the 500 CORS stations in the US are likely to go on-line soon (probably streaming RINEX data).
- (5) Topcon currently includes an NtripClient in its GPS receiver firmware (GPS plus GLONASS).
- (6) DLR Germany developed a multi-stream NtripClient and RTCM Decoder under GNU General Public License for Linux systems. This will become an important tool for those interested in real-time global estimation of ionosphere, orbits, clocks, satellite health monitoring, or regional troposphere estimation.
- (7) Two abstracts were submitted to ION 2005 where EUREF-IP contributes:
 - “Networked Transport of RTCM via Internet Protocol (Ntrip) - IP-Streaming for Real-Time GNSS Applications”
 - “Towards an Accurate Real-Time Global Ionospheric Specification System”
- (8) The current EUREF-IP efforts focus on
 - Developing a real-time Ntrip Monitoring/Notification system to reach and maintain a professional level of service availability.
 - Further develop Ntrip towards full HTTP compatibility and introduce UPD as an additional option for IP multicast via e.g. Digital Radio Mondial (DRM).
 - Encourage more EPN station operators to participate in EUREF-IP with real-time raw or RTK data (in addition to differential corrections).
- (9) Further EUREF-IP plans are to
 - Extend EUREF’s Terms of Reference to integrate real-time EPN stations.

- Transfer the EUREF-IP Pilot Project into a EUREF Service.
- (10) The EUREF-IP workshop planned for March this year had to be postponed to September/October due to lack of resources.
- (11) A – so far personal – wish would be that CODE might contribute to EUREF-IP and IGS with real-time satellite clock information. We had a discussion about this a few weeks ago in Bern. Werner and Johannes may like to report more on that.

Prague, March 13, 2005

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EUREF-IP Pilot Project