



EPN real-time activities

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- **Status RT in the EPN**
- **IGS RT-PP - status**
- **New activities**
 - **Motivation**
 - **Goals**
 - **Topics**
 - **Timescale**



➤ **New EPN RT data streams since last TWG**

- **DENT (RTCM 3.0)**
- **FLRS (RTCM 3.0)**
- **FUNC (RTCM 3.0; was 'Test')**
- **GRAZ (RTCM 3.0 instead of RAW)**
- **HFL2 (RTCM 3.0; instead of HLFK (RAW))**
- **LPAL (RTCM 3.0 instead of 2.3)**
- **MALA (RTCM 3.0 instead of 2.1)**
- **NICO (RTCM 3.0; was 'Test')**
- **WSRT (RTIGS)**



➤ **New features at caster igs-ip**

- **New RT streams of AUCK, DUND, WGTN (New Zealand), NTUS (Singapore); CEEU, SJRP (Brasil)**
- **Streaming of GIOVE signals**

Goal. Small global network

**Concepcion (CHL), Fredericton (CAN), Sydney (AUS),
Wettzell (DEU)**

Format is “Custom” (internal ASCII format)

Converter to RINEX written by DLR



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BKG Ntrip Client (BNC) Version 1.6

File Help

BKG Ntrip State Space Server (BNS) Version 1.0

File Help

Proxy General RINEX Ephemeris Clocks & Orbits Ephemeris Corrections RINEX Clocks SP3 Orbits

Host Port Password

Mountpoint 1 System Save (full path)

Mountpoint 2 System Save (full path)

Produce broadcast ephemeris corrections, upload to caster, reference system, local storage.

Status

RINEX Ephemeris: 0 byte(s) Ephemeris Corrections: 0 byte(s)
Clocks & Orbits: 0 byte(s)

Start Stop Help=Shift+F1

08-10-31 11:44:03 DIEP1: Received message type 1012
08-10-31 11:44:03 DIEP1: Received message type 1004

Add Mountpoints Delete Mountpoints Start Stop Help=Shift+F1

ns

types

S05

ns

- **9 additional proposals to the IGS RT-PP following the IGS workshop**
- **First draft proposal for RT format (June, 27, 2008)**
 - Two categories**
 - **Category 1: exchange format between the IGS RT-PP ACs**
Basing on SP3 and Clock RINEX
 - **Category 2: streaming format for combination product (to user)**
 - To be discussed within RTCM**
- **Participation of Ken McLeod for IGS RT WG at RTCM meeting in September**

➤ **Telecon October, 9**

- **About ACs status, formats and protocols, RT product accuracy and latency targets, ionosphere product**
- **RT network still unsatisfactory**
- **Time schedule still foresees**
 - **end of January 2009 for Category 1 products, and**
 - **end of March 2009 for Category 2 products**

➤ **5 contributions (SP3, CLK) so far**

- **NRC since 1488**
- **DLR since 1489**
- **ESOC since 1489**
- **BKG since 1498**
- **GMV since 1500**

➤ **Next telecon end of November**

- **GNSS real-time data streaming has been successfully developed within EUREF**
 - **Special Project “EUREF-IP” was created in 2002**
 - **Currently ~ 94 EPN stations with real-time data (49 GPS+GLO)**
 - **SP EUREF-IP moved towards EPN routine operations end of 2007**

- **Visibility of RT activities within EUREF should be ensured**

➤ **Setup of a new Special Project**

- **By EPN Coordination Group**
- **Needs**
 - **Description on the web**
 - **CfP**
 - **Announcement via EUREF mail**

➤ **Goals for the new SP**

- **General goal: get more experience with real-time analysis**
- **Extension or modification of existing EPN products**
- **Coming up with new EPN products or services**



➤ **Potential topics within the new SP**

- **Analysis**
 - **Derivation of GPS+GLONASS clock corrections for Europe**
 - **Precise Point Positioning**
 - **Troposphere, ionosphere parameters**
- **Standardization issues**
- **Dissemination**
 - **Streaming of orbit and clock corrections**
 - **Streaming of other products**
- **Other issues**
 - **Consistent modelling**
 - **Intermediate products**

➤ **First / next steps**

- **General announcement at the EUREF symposium ✓**
- **Paper to present at the TWG meeting Nov '08 ✓**
- **Implementation of a EPN RT webpage**
- **Announcement via EUREF mail**