

IGS Component Reports 2010

Component Name (IGS Real-time Working Group and IGS Real-time Pilot Project):

Date of establishment: RTWG: 2001; RTPP: 2007

Chair: Mark Caissy, Natural Resources Canada, Canada, caissy@nrcan.gc.ca

Working Group Membership:

Loukis Agrotis (ESA)
Pedro Alfaro (ESA)
Lou Estey (UNAVCO)
Georg Weber (BKG)
Martin Schmitz (GEO++)
Gerhard Wubbena (GEO++)
Ken Macleod (NRCan)
Alvaro Mozo Garcia (GMV)
Manuel Hernandez-Pajares (UPC)
Andre Hauschild (DLR)
IGS Working Group Chairs
IGS Analysis Center Representatives
ex officio: R. Neilan (JPL), Jim Ray (NGS)

Pilot Project Participants: Updated (November 2010)

RTPP(Station Operators): www.rtigs.net/rtpp_StationOperators.php

RTPP(Data Centers): www.rtigs.net/rtpp_DCs.php

RTPP(Analysis Centers): www.rtigs.net/rtpp_A_Cs.php

RTPP(Associate Analysis Centers): www.rtigs.net/rtpp_AACs.php

RTPP(Analysis Center Coordinator): www.rtigs.net/rtpp_ACC.php

RTPP(Network Management/Monitoring): www.rtigs.net/rtpp_NC.php

RTPP(Users): www.rtigs.net/rtpp_users.php

Working Group Charter: 2010 (Consolidated for Working Group and Pilot Project)

Activities in 2010:

The Working Group and members of the Pilot Project continued to implement the recommendations from the Miami and Newcastle workshops. The recommendations and associated activities are compatible with actions necessary to implement Strategy 2 of the IGS Strategic Plan.

--action: Develop new classes of products needed by IGS users, such as products to support real-time tsunami warning systems,

--action: Promote participation in the IGS real-time activities and encourage upgrade of IGS station capabilities to provide data in real time; encourage the use of real-time products for emerging applications; engage with GNSS equipment manufacturers to develop highly capable products and proactively develop relevant standards.

Key accomplishments:

The RTWG has attended three RTCM meetings in 2010. Brief presentations were made by the IGS representatives at each meeting.

- February 2010 -- Loukis Agrotis
- May 2010 -- Ken MacLeod
- September 2010 -- Ken MacLeod

RTCM – MSM (Multiple Signal Messages) These are high precision (RTCM -- HP)

- (a) All manufacturers agreed on the new RINEXv3 compatible messages. There is no discussion in RTCM about alternatives. The MSM draft is complete – including a draft for the 1045 message for Galileo ephemeris. The only significant question remaining is the quarter cycle.
- (b) From the implementation/effort point of view the phase alignment issue is of minor importance. It needs to be solved but it is not a technical issue.
- (c) Ashtech's MSM draft is being followed by both NRCan and BKG who are implementing encoding and decoding functions. These functions will be updated once the final draft is released.
- (d) BKG and NRCan are planning to stream RTCM – MSM messages from their networks in 2011. In BKG's case, rt-Galileo (Giove-A/B) will be available from a few stations.

RTCM -- SSR (State Space Representation)

Results of the November 3rd vote: Because there were several NO votes an amendment will be presented at the 9-10 February 2011 RTCM meeting. The amendment is expected to resolve outstanding issues. The Real-time Working Group does not see any problem in following the upcoming final RTCM decision on SSR messages. The encoding/decoding software used in the Pilot Project and maintained by BKG, DLR and NRCan will be updated accordingly.

Continued Activities (2011 – 2012)

Short term Goal: -- To initiate an IGS Real-time GPS Correction Product (IOC) June 2011.

Task #1: Newcastle Recommendation: Solve issues related to a lack of robust data distribution to real-time analysis centres.

Solution: Implement Proposed Real-Time Analysis Center Data Collection model. www.rtigs.net/data_access.php

- Robustness is the goal and the diagram illustrates one possible scheme. RTAC's may choose another scheme.

Task #2: Newcastle Recommendation: Implement a robust real-time clock combination product.

Solution: Implement Proposed RTIGS Product Distribution Model. www.rtigs.net/product_access.php

- RTACC to manage processes at each combination centers. This is required to ensure consistency among the various combined solutions.

Task #3: Newcastle Recommendation: Quality assurance of real-time orbit and clock corrections.

Solution: Implement internal monitoring of inputs and products together with an email warning system.

Near term Goal: -- 4+ RTAC's generating Real-time Glonass clocks by December 2011.

Task #1: Increase the number of stations contributing real-time Glonass data.

- Several agencies have plans to begin real-time Glonass data delivery in 2011
- Requires Glonass predicted orbits. (official IGS Glonass Ultra's)

Near term Goal: -- stream RTCM MSM → convert to RINEX (IGS Adopted) data and archive at Global Data Centres. By December 2011

-- Variation: stream RTCM MSM → convert to RINEX 3.0 data and archive at selected Regional Data Centres. By December 2011

Longer term Goal: -- To transition the IGS Real-time GPS Correction Product to (FOC) June 2012.

Long term Goal: -- Galileo (more than two years)

Web Page Development: Based on teleconference discussions.

The web pages for both the Pilot Project and Working Group have recently been modified in an effort to address concerns raised during recent teleconferences. This work is ongoing.

The official IGS Real-time Pilot Project home page is now:
www.rtigs.net

The official homepage for Real-time Working Group is now:
www.rtigs.net/rtigswg/index.php

Task: Maintain these pages on the current server hosted at NRCan. Once the new IGS website has been released, the pilot and working group web pages will be modified to reflect the new look.

Task: To implement a content management environment that is accessible to activity leaders so they can manage web content pertaining to their activity. The pilot and working group web pages will contain links to the content managed by the activity leaders.