



The Real-Time Pilot Project and Transitioning to a New IGS Real-Time Service

Mark Caissy

For the

Real-Time Working Group and Real-Time Pilot Project



Outline

- Introduction including our history with real-time
- Importance of this workshop
- Results of a questionnaire
- Best practices
- Real-Time Service Products



Introduction



- IGS vision for a real-time service
 - Enabling real-time precise point positioning globally through the availability of raw data and satellite clock and orbit correction information as a public and scientific good, openly and in real-time.
- IGS goal
 - Multidisciplinary real-time service for (positioning, timing, GNSS performance monitoring, natural hazards, ...)



History of Real-Time



- First discussed in 1998 at the Annapolis Network Workshop and further in 2000 at the Oslo Workshop
- Ottawa Workshop in 2002 lead to a prototype design
- Pilot project began in 2007
- Miami workshop in 2008 resulted in a decision that saw the IGS becoming a member of RTCM
 - NTRIP, State Space Representation (SSR) and Multiple Signal Messages (MSM)
- Newcastle workshop in 2010 recommended that the lack of robustness in data delivery and product generation had to be addressed



Importance of This Workshop

1/2

- The pilot project has reached “Initial Operating Capability” (IOC) – March 2011
 - Recommendations from Newcastle have been implemented
 - <http://rtigs.net/docs/IGS-Report-2011-RTWG-RTPP.pdf>
 - RT orbit and clock products are available and are meeting targets for accuracy and availability
 - <http://rtigs.net/products.php>
 - recommended to governing board that an IGS Real-Time Service be launched before the end of this calendar year.



Importance of This Workshop

2/2

- We are here to identify gaps in the current pilot project IOC service that must be addressed before the official service is launched.
 - are best practices being used?
 - our focus will be the examination of the infrastructure design of the service.
 - Tracking stations / rt-analysis centres / rt-combination centres / global rt data centres
- Splinter meeting will be the start of this exercise
- Prepare a list of recommendations for addressing any significant gaps that are found

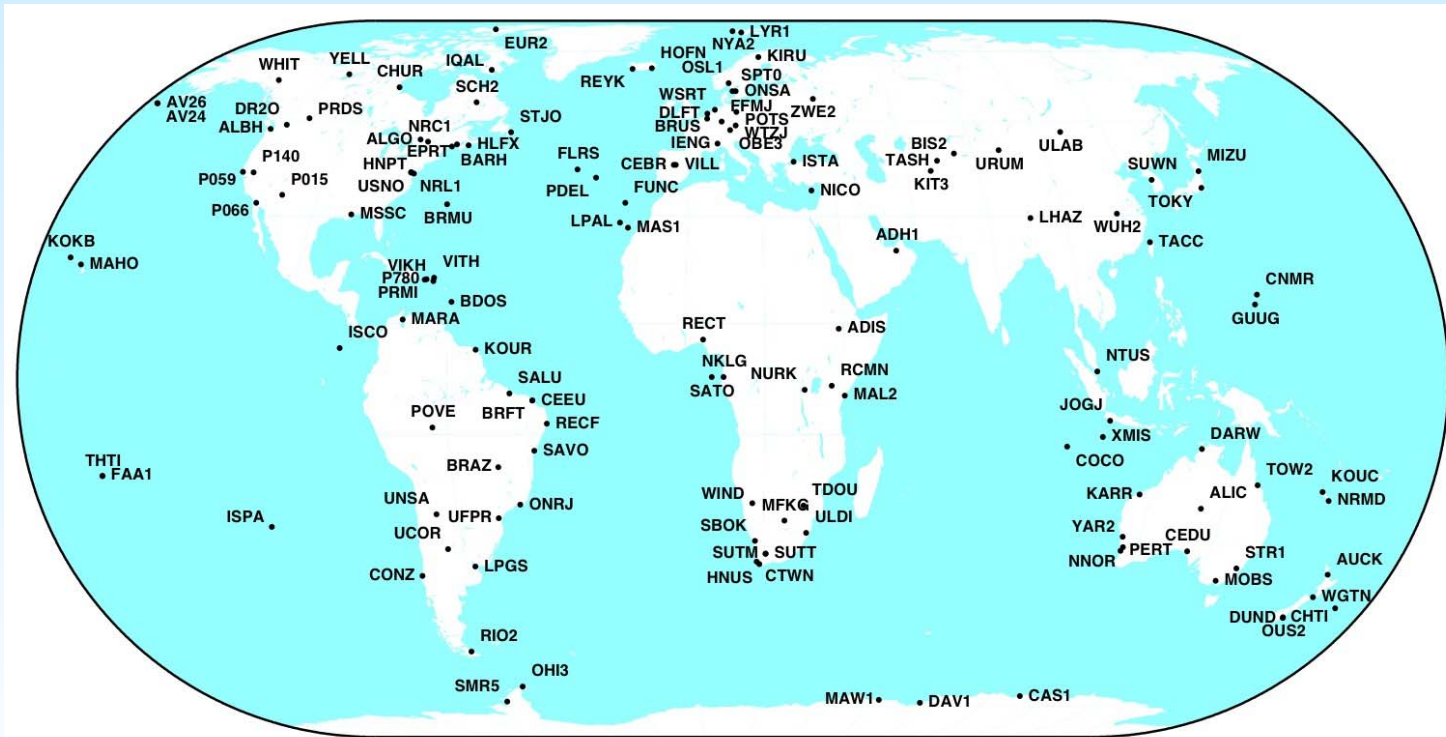


Results of a Questionnaire To Agencies Contributing to the Pilot Project

- 50% have responded and the following commitments to the future service have been received
 - No responses to withdraw
 - 2 real-time analysis centre coordinators
 - 8 real-time analysis centres
 - 2 associate analysis centres
 - 90+ real-time stations
 - 1 global data centre confirmed



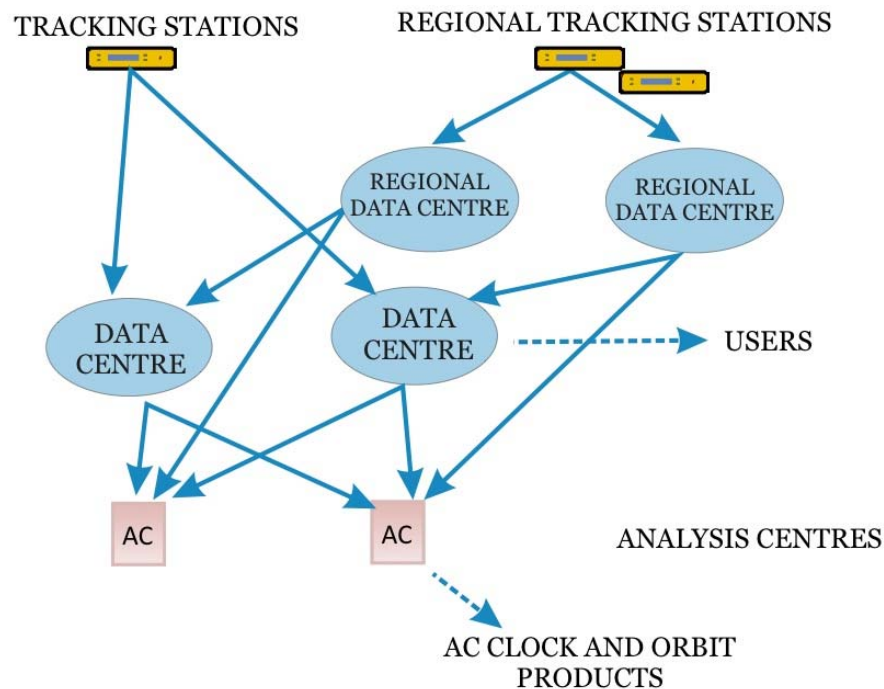
Real-Time Network



- 130 globally distributed stations
- 1 hertz data in RTCM 3 format latencies of 1 – 3 seconds



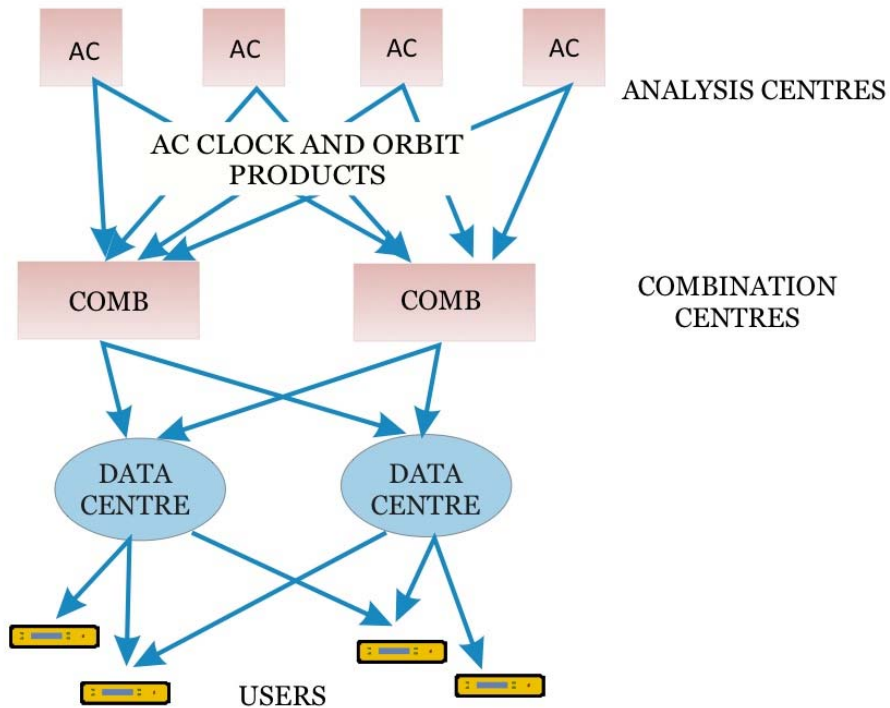
Best Practices: rt-data flow



- Reliable data flow throughout the data delivery chain is needed.
- Reducing the likelihood of total failure is the goal
- Redundant data paths is part of the solution
- As many ref. frame stations as possible



Best Practices: rt-product flow



- Reliable product flow throughout the delivery chain is needed.
- Redundant paths is part of the solution



IOC Service Will Offer The Following

Category of Product	Format	Data Rate
GNSS Data	RTCM-3 including HP-MSM	Every second
GPS Orbit Corrections	RTCM SSR	Every 5 or 60 seconds
GPS Clock Corrections	RTCM SSR	Every 5 seconds

Possibly of interest:

<http://www.gpsworld.com/gnss-system/augmentation-assistance/innovation-coming-soon-13044>