

IGS Products for GNSS Applications

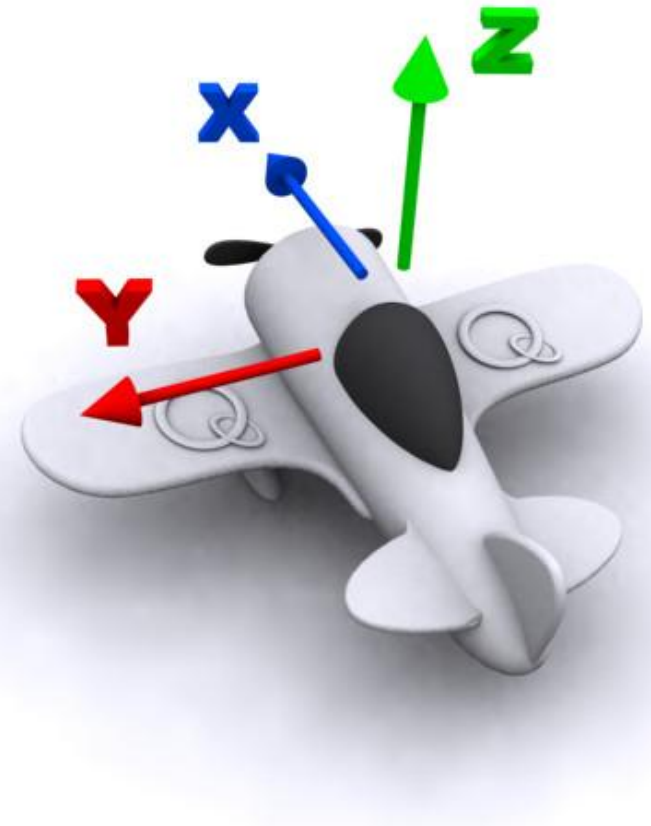
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IGS Workshop 2012

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- Deliver highest quality data and products
 - Reliable
 - Rapidly available
 - Highest accuracy
- Serve a wide range of user communities
 - Earth science research
 - Multidisciplinary applications
 - Education
- Orbit and clocks products provide convenient access to the ITRF



We should keep this in mind in all we do as IGS!

- GPS + GLONASS combined products
 - Available from ACs but not from the IGS
 - IGS may be **"the reference"**
- Real-time products
 - Several good commercial solutions
 - IGS pilot project doing well
 - But are we **"the reference"**
- New GNSS signals and systems
 - We are "sleeping" through C2/L2C, ...
 - ...C5/L5, and....
 - ...Galileo, QZSS, Compass...
 - Lots to do to qualify as **"the reference"**



These are some of the prime issues for this workshop

- Several good commercial solutions
 - FUGRO, TRIMBLE, VERIPOS, ...
- IGS internal concerns and conflicts of interest
- IGS pilot project has achieved a lot but many issues remain
 - No products available
 - Data formats
 - Orbit and clock quality
 - GPS only vs GPS + GLONASS
- A long way to go to become **"the reference"** in the real-time arena!

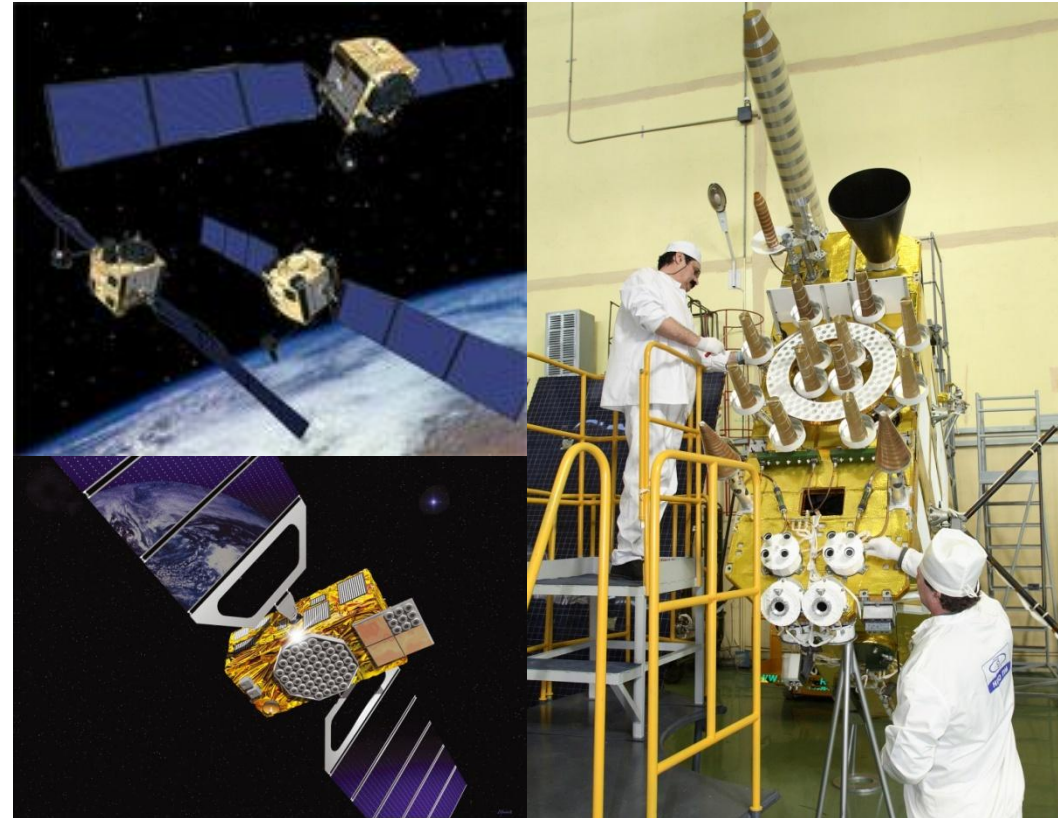


Multi-Signal and Multi-GNSS

- Many new signals
 - GPS C2/L2C, C5/L5
 - GALILEO E1, E5, E7, E8...
- New systems
 - Galileo, QZSS, Compass
- What are we doing with them?!

- Many issues
 - Data format
 - Tracking stations
 - Biases

- MGEX is starting to address these issues but we have to do more!



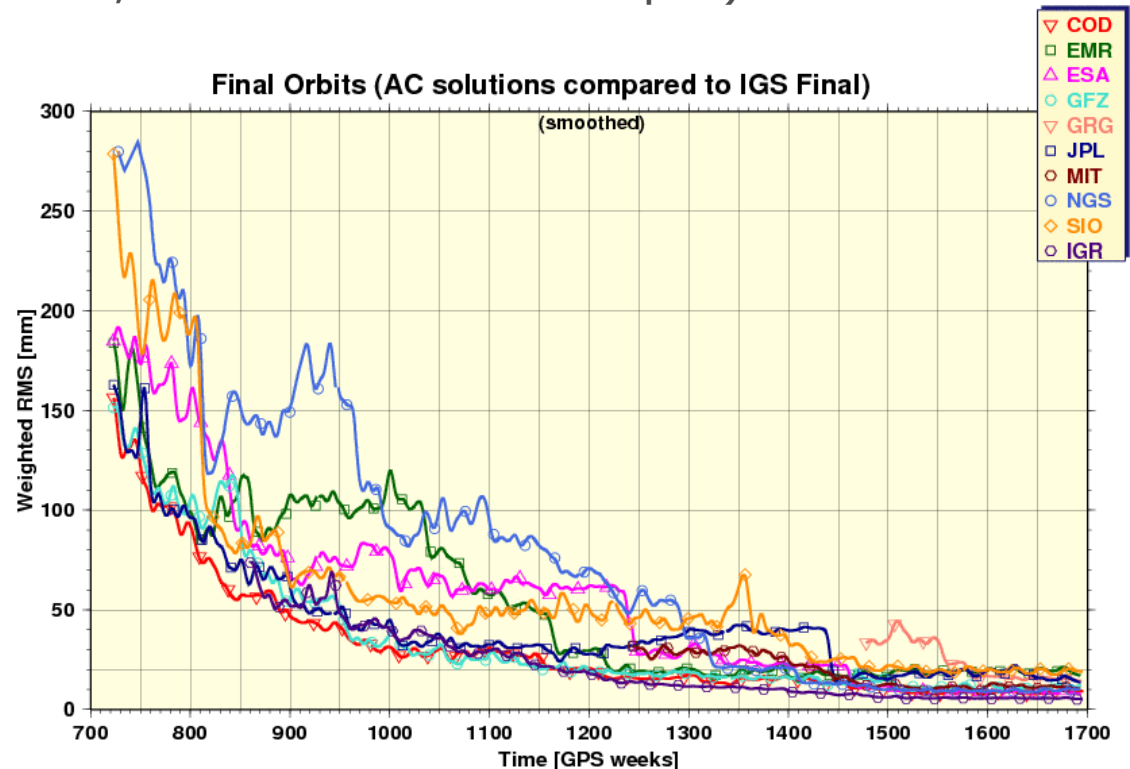
- New signals and systems
 - Affect RINEX and Real-Time data formats
 - But a very important question is also:
 - Which signals must be in the data files
 - People are looking towards the IGS for guidance
 - So far little to none is given (L2C, L5, Galileo)
- Changes in data formats (e.g. RINEX) may cause other changes down the road
 - E.g. to which signals do the clocks refer
 - Currently P1/P2 but this will change
 - Biases!!
- The RINEX working group is working on the format issues
- We need to study and address the signal (and bias) issues

Improvements and Enhancements



- To remain **"the reference"** we must be in constant development
 - Bigger (more stations, more signals, more GNSS systems)
 - Better (products)
 - Faster (turn around time, real-time but also repro)

- Achieved through **friendly competition**
- Where would we have been without it?



- Many and very Significant Challenges
 - Real-Time products
 - New signals and new GNSS systems
 - Data format standardization
- In all we do and especially during this workshop we should consider that the IGS is **"the reference"**
 - If we are not we should ask
 - How can we become the reference
 - How can my organization support the IGS

The IGS is doing well but we could do much better!

THANK YOU

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