magicGNSS' CONTRIBUTION TO
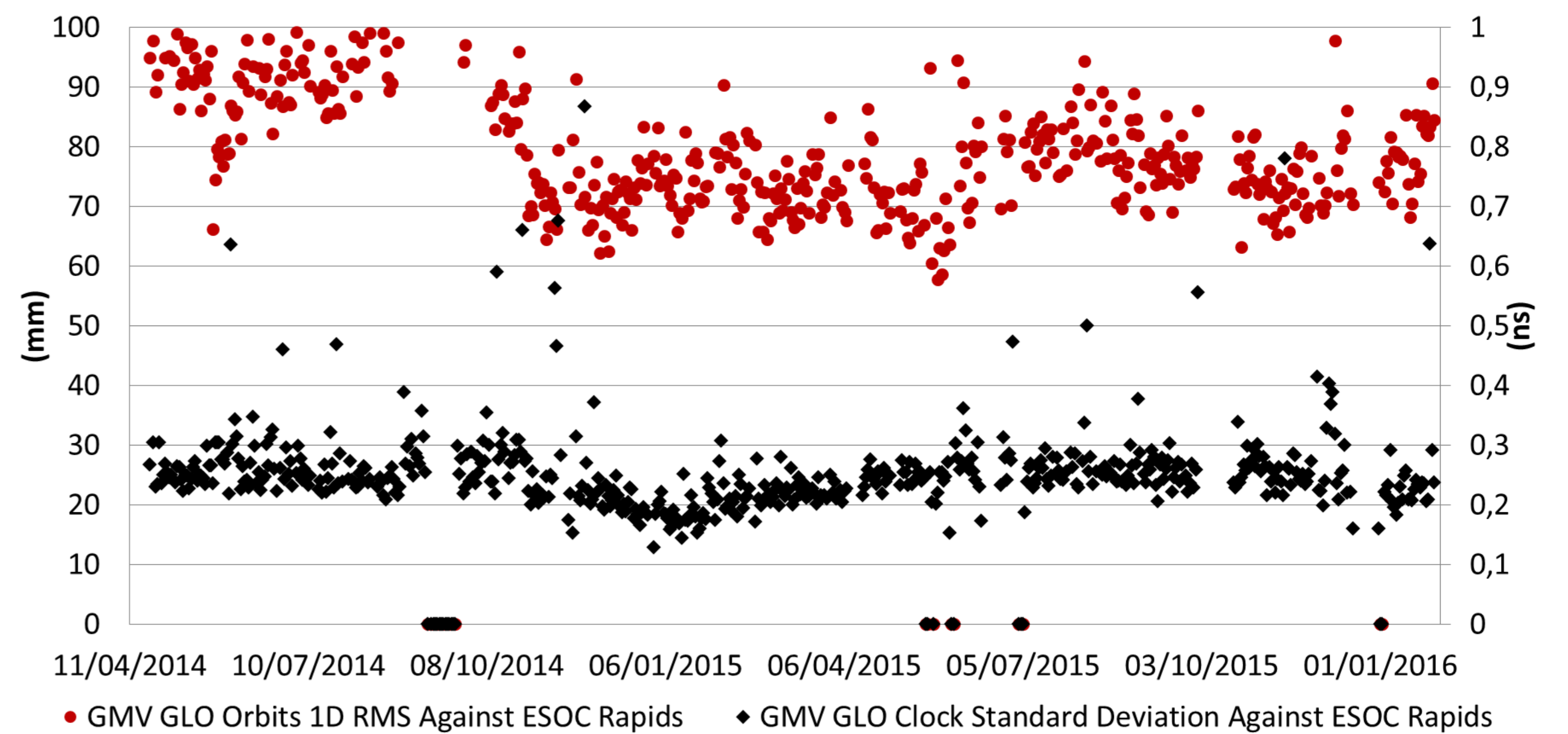# REAL TIME IGS SERVICE

HISTORICAL PERFORMANCES

• GMV GPS Orbits 1D RMS Against IGS Rapids   ◆ GMV GPS Clock Standard Deviation Against IGS Rapids

• GMV GLO Orbits 1D RMS Against ESOC Rapids   ◆ GMV GLO Clock Standard Deviation Against ESOC Rapids
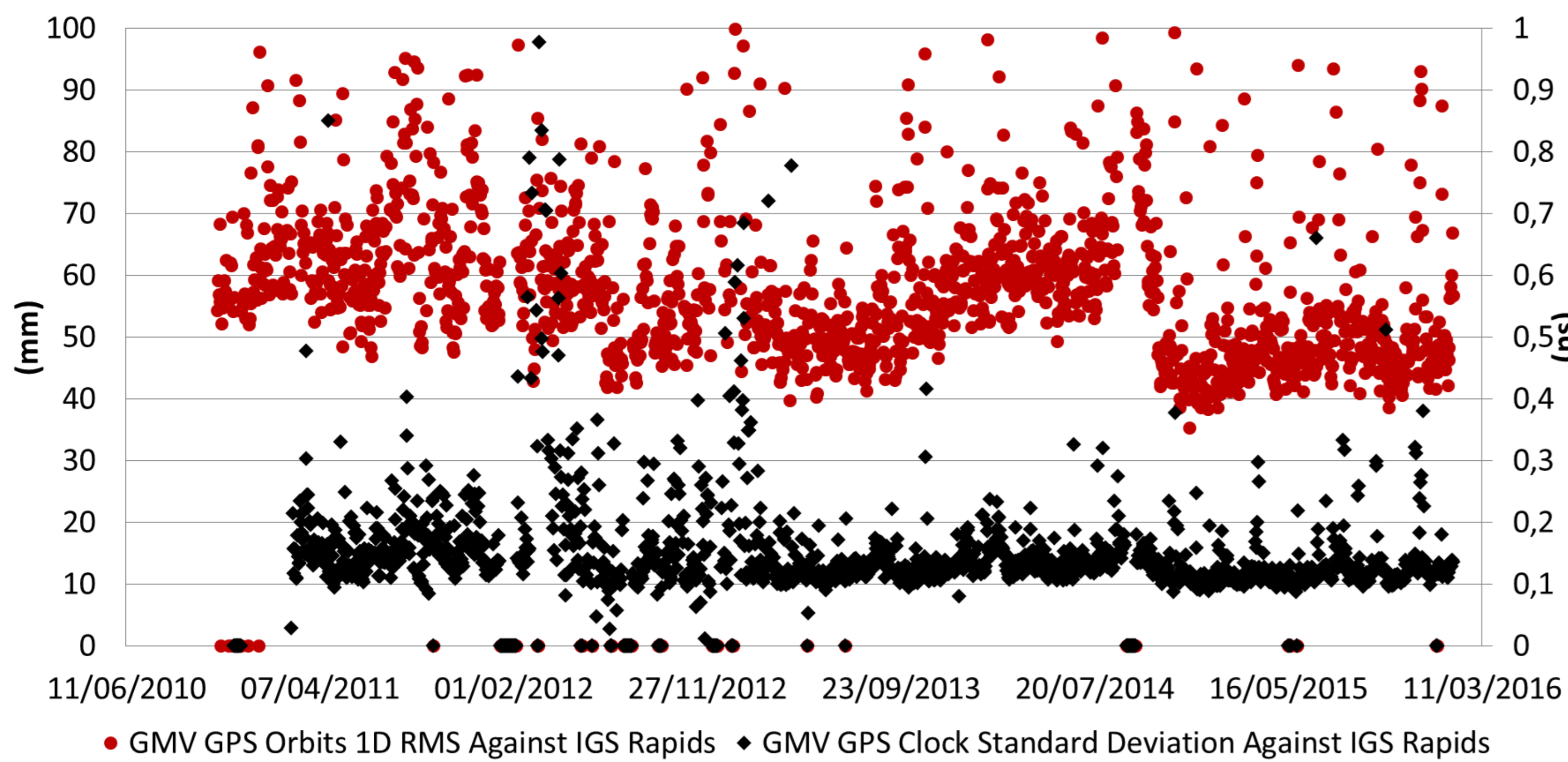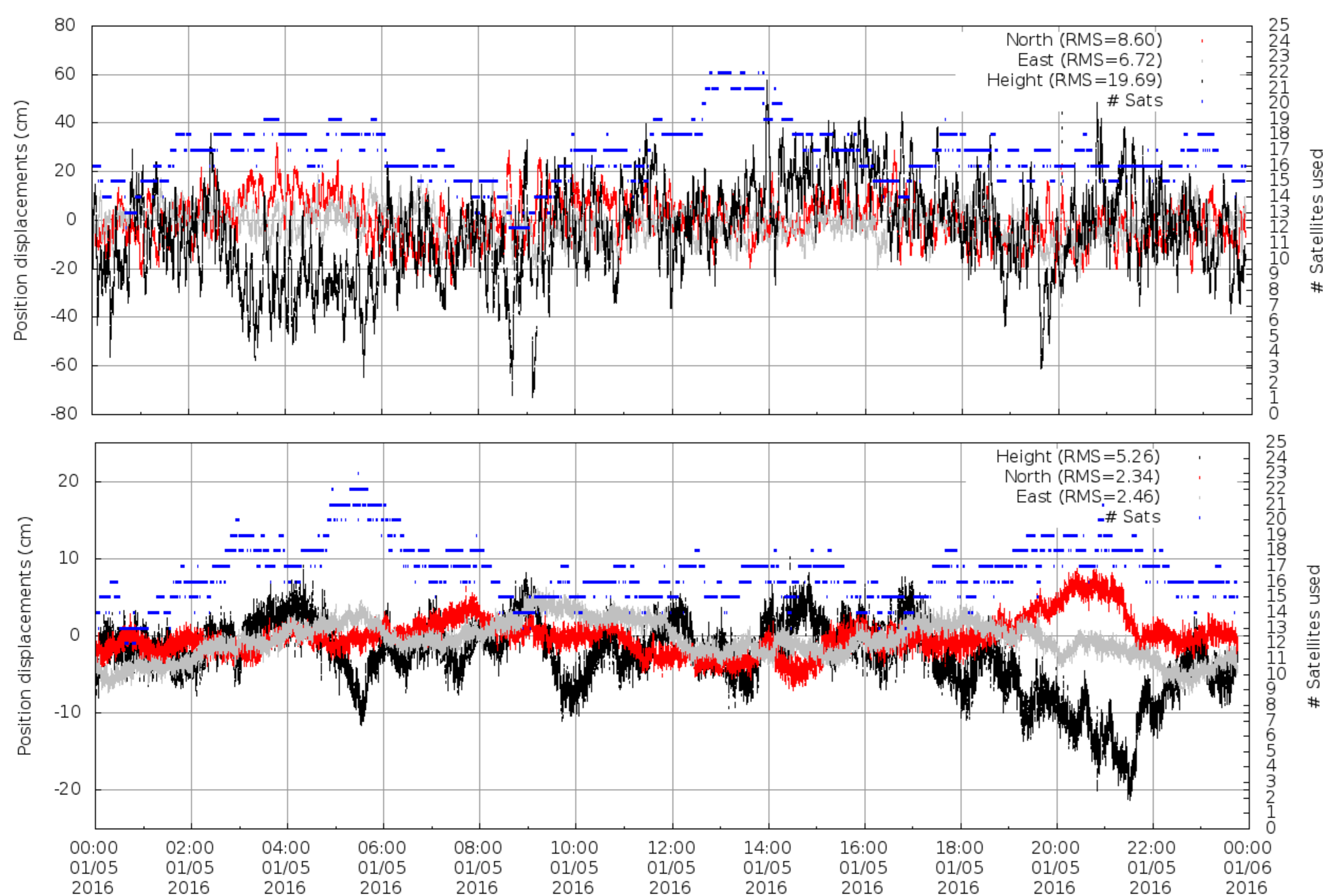
PROCESS ROBUSTNESS

- Server redundancy
- Product quality checks
- Notifications handling (NANUs, NAGUs, outages)
- Online configuration (GSS changes)
- Storage of process indicators
- **Quality monitoring via RT PPP Monitoring Service**

REFERENCE PRODUCTS

- GMV's contribution to Real Time IGS
- **GPS + GLONASS** combined process
- Based on 80 IGS RTCM station network
- Orbit update every 15 minutes
- Clock estimation @ 1-sec rate
- RTCM ephemeris corrections
- Real-time Orbit and Clock estimations computed with *magicGNSS* engine

GNSS Observations over Internet
GNSS Navigation over Internet
RTCM Ephemeris Corrections
Precise GNSS products
Service Access Request

REAL TIME PPP PERFORMANCES

- End performances evaluated at user level both for:
  - **Double-frequecy**: 3cm HRMS, 6cm VRMS
  - **Single-frequency**: 15cm HRMS, 25cm VRMS
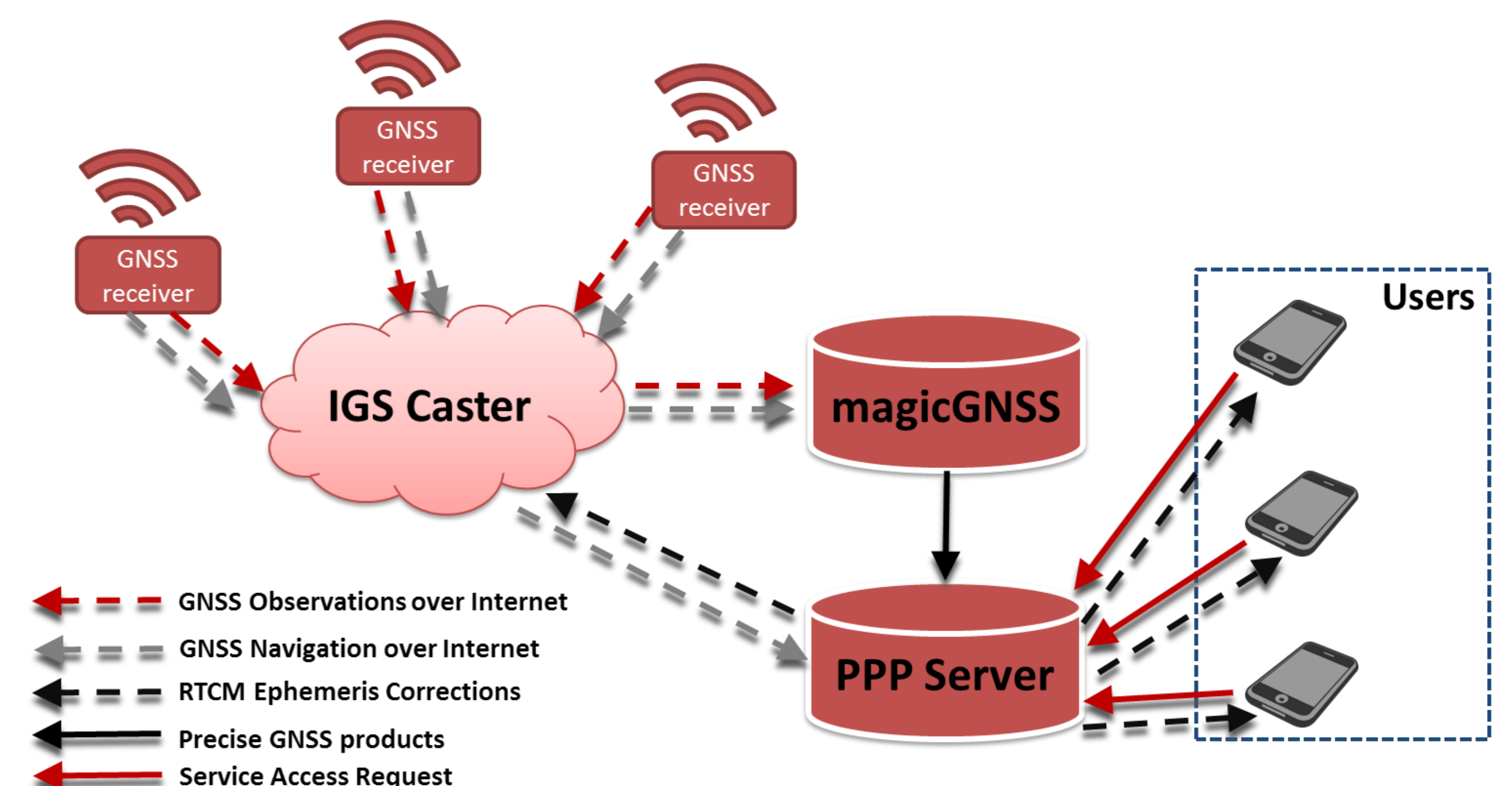
MULTI-GNSS SOLUTION

- Multi-GNSS solution based on RTCM MGEX data processing
- **GPS + GLONASS + Galileo + BeiDou + QZSS** combined process
- Sequential constellation processing approach for computation time reduction
- Usage of **draft RTCM messages** for BeiDou ephemeris and Galileo ephemeris corrections

RTCM messages availability

	GPS	GLONASS	Galileo	BeiDou	QZSS
Observations (MSM)	YES	YES	YES	YES	YES
Ephemeris	YES	YES	YES	YES	YES
Ephemeris corrections	YES	YES	YES	NO	NO

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