

Space Requirements

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Global Geodetic Observing System
Retreat 2007

February 19–21, 2007
Oxnard, California

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Table 7. Current and future requirements for radiometric observables, geodetic coordinates and related calibration parameters. The future columns are speculative, and will ultimately depend on specific mission requirements.

Tracking Error Source (1 sigma Accuracy)	units	current capability	2005 reqt	2010 reqt	2020 reqt	2030 reqt
Doppler/random (60s)	mm/s	0.03	0.05	0.03	0.03	0.02
Doppler/systematic (60s)	mm/s	0.001	0.05	0.003	0.003	0.002
Range/random	m	0.3	0.8	0.5	0.3	0.1
Range/systematic	m	1.1	0.6	2	2	1
Delta-VLBI	nrad	2.5	5	2	1	0.5
Troposphere zenith delay	cm	0.8	1	0.5	0.5	0.3
Ionosphere	TECU	5	5	5	3	2
Earth orientation (real-time)	cm	7	30	5	3	2
Earth orientation (after update)	cm	5	5	3	2	0.5
Station locations (geocentric)	cm	3	3	2	2	1
Quasar coordinates	nrad	1	1	1	1	0.5
Mars ephemeris	nrad	2	-	3	2	1