

Long Term View

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As a task under the GGOS Bureau of Networks and Observations, with the help of the Geodetic Services, we have developed another projection of the estimated space geodesy network 5 and 10 years ahead. This includes present and projected new stations with VLBI and/or SLR, some estimate of their level of technology, and whether they have or will have GNSS, DORIS, and gravity field measurements. The projection tables also include the responsible agency for each. These projections will be used by the PLATO Standing Committee (and anyone else who wants to use them) to estimate the capability of the networks at these points in time.

Unfortunately, the large geographic gaps in Africa, Latin America, and Ocean areas will still be a major issue.

We have also generated a table of the colocations between DORIS ground stations and GNSS. Contact Mike Pearlman if you want a copy.

PROJECTED SPACE GEODESY NETWORK
(includes only stations with a VLBI or and SLR)

S/X and VGOS, (2) denotes two VLBI Systems
 Legacy (<50Hz), Intermediate (50 - 500 Hz) , Kiloertz, Tochka (Russian Station with 2 SLR systems)
 GPS, Multiconstellation (MC)
 Superconducting (SCGr), Absolute (ABGr)

Terminology VLBI SLR GNSS Gravimeter
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	Current		2017		5 years hence		2022		10 years hence		2027		Sponsor		
	VLBI	SLR	GNSS	Doris	Gravity	VLBI	SLR	GNSS	Doris	Gravity	VLBI	SLR		GNSS	Doris
North America															
GGAO (GSFC)															
Haystack															
McDonald															
Monument Peak															
Ensenada, Mexico															
Yellow Knife															
South America															
Brasilia, Brazil															
Northern Brazil															
La Plata, Argentina															
San Juan, Argentina															
Arequipa, Peru															
Central Pacific Region															
Haleakala															
Koike Park															
Australia/South Pacific															
Yarragadee															
Mt Stromlo															
Katherine Parkes															
Hobart															
Warkworth															
Tahiti															
Java Indonesia															
Africa															
Hartebeesthoek, SA															
Mallindi, Kenya															
Europe															

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Terminology VLBI
 SLR
 GNSS
 Gravimeter

	Current	2017		5 years hence		2022		10 years hence		2027	Doris	Gravity	Sponsor
		VLBI	SLR	GNSS	Doris	Gravity	VLBI	SLR	GNSS				
Wetzell, Germany	VGOS(2)	KhZ	MC	D	SCGr, ABGr	MC	D	SCGr, ABGr	VGOS(2)	KhZ	MC	D	BKG/FESG
Grasse, France	-	L	GPS	D	ABGr	GPS	D	ABGr	-	L	GPS	D	GRGS
Matera, Italy	S/X	L	MC	-	ABGr	MC	-	ABGr	VGOS	KhZ	MC	-	ASI
Medicina	S/X	-	GPS	-	SCGr	GPS	-	SCGr	S/X	-	GPS	-	IRA
Noto, Italy	S/X	-	GPS	-	SCGr	GPS	-	SCGr	VGOS	-	MC	-	IRA
Yebees, Spain	VGOS	-	MC	-	SCGr, ABGr	MC	-	SCGr, ABGr	VGOS	KhZ	MC	-	IGN
Flores, Azores	-	-	-	-	-	MC	-	-	VGOS	-	MC	-	IGN
Santa Maria, Azores	S/X	-	-	-	-	MC	-	-	VGOS	-	MC	-	IGN
Tenerife, Canary Is	-	-	-	-	-	MC	-	-	VGOS	Tochka	MC	-	IGN
Onsala, Sweden	S/X	-	Y	-	SCGr, ABGr	MC	-	SCGr, ABGr	VGOS(2)	-	MC	-	OSO
Herstmonceux, GB	-	KhZ	MC	-	ABGr	MC	-	ABGr	-	KhZ	MC	-	NERC
Graz, Austria	-	KhZ	MC	-	-	MC	-	-	-	KhZ	MC	-	OEAW
Zimmerwald, Switzerland	-	Int	MC	-	-	MC	-	-	-	Int	MC	-	ALUB
Potsdam, Germany	-	KhZ	MC	-	-	MC	-	-	-	KhZ	MC	-	GFZ
Borowiec, Poland	-	L	MC	-	-	MC	-	-	-	L	MC	-	SRC/PAS
Metsahovi, Finland	S/X	-	MC	D	-	MC	D	-	VGOS	KhZ	MC	D	FGRI (NIS)
NY, Alesund, Norway	S/X	-	MC	D	SCGr, ABGr	MC	D	SCGr, ABGr	VGOS(2)	KhZ	MC	D	NIMA
Simiez, Ukraine	S/X	L	GPS	-	-	GPS	-	-	S/X	L	GPS	-	CRAO
Kiev, Ukraine	-	L	-	-	-	L	-	-	-	L	-	-	-
Riga, Latvia	-	L	MC	-	ABGr	L	MC	ABGr	-	L	MC	ABGr	IA/UL
Asia	-	-	-	-	-	-	-	-	-	-	-	-	-
Shanghai, China	S/X	KhZ	MC	-	-	KhZ	MC	-	VGOS	KhZ	MC	-	SHAO
Changchun, China	-	KhZ	MC	-	-	KhZ	MC	-	VGOS	KhZ	MC	-	NAOC/CAS
Beijing, China	-	KhZ	MC	-	-	KhZ	MC	-	VGOS	KhZ	MC	-	CASM
Kunming, China	-	KhZ	MC	-	-	KhZ	MC	-	-	KhZ	MC	-	Yunnan Obs
Urumqi, China	S/X	-	MC	-	-	KhZ	MC	-	S/X	KhZ	MC	-	CAS
Sanyo, China	-	L	MC	-	-	KhZ	MC	-	-	KhZ	MC	-	IS/CSB
Wuhan China	-	L	MC	-	-	KhZ	MC	-	-	KhZ	MC	-	-
Sejong, Korea	S/X	KhZ	MC	-	-	KhZ	MC	-	S/X	KhZ	MC	-	KAS/NGII
Java, Indonesia	-	-	-	-	-	KhZ	MC	-	-	KhZ	MC	-	IPIE (Russia)
Aira	closed	-	MC	-	-	-	-	-	-	-	-	-	GSI
Chichijima	closed	-	MC	-	ABGr	-	-	-	-	-	-	-	GSI
Koganei, Japan	S/X	L	GPS	-	-	L	GPS	-	S/X	L	GPS	-	NICT
Simosato, Japan	-	L	GPS	-	-	L	GPS	-	-	L	GPS	-	SHO/JCG
Shintoshikawa, Japan	closed	-	MC	-	closed	-	-	-	-	-	-	-	GSI
Tanegashima, Japan	-	L	MC	-	-	-	MC	-	-	KhZ?	MC	-	JAEA
Mizusawa	S/X	-	MC	-	SCG	S/X	MC	SCG	VGOS	MC	MC	SCG	NAOJ

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Terminology	Current		2017		5 years hence		2022		10 years hence		2027		Sponsor	
	VLBI	SLR	GNSS	SLR	VLBI	SLR	GNSS	Doris	Gravity	VLBI	SLR	GNSS		Doris
Tsukuba	closed	-	GPS	-	-	-	-	-	-	-	-	-	-	-
Kashima, Japan	S/X	-	GPS	-	VGOS	-	GPS	-	ABGr	VGOS	-	GPS	-	-
Ishioaka, Japan	S/X	-	MC	-	VGOS	-	MC	-	ABGr	VGOS	-	MC	-	ABGr
Chiang Mai, Thailand	-	-	-	-	-	-	-	-	-	VGOS	-	MC	-	-
Ponnundi, India	-	L	-	Int	-	Int	-	-	-	-	KHz	-	-	INARIT
Mt Abu, India	-	L	-	Int	-	Int	-	-	-	-	KHz	-	-	ISRO
Russia	-	-	-	-	-	-	-	-	-	-	-	-	-	ISRO
Svetloe	S/X	Int	MC	-	VGOS	Int	MC	-	-	VGOS	Int	MC	-	IAA/RAS
Badary	S/X	Int	MC	D	VGOS	Int	MC	D	-	VGOS	Int	MC	D	IAA/RAS
Zelenchukskaya	S/X	Int	MC	-	VGOS	Int	MC	-	-	VGOS	Int	MC	-	IAA/RAS
Altay	-	Int	MC	-	-	Int	MC	-	-	-	Int	MC	-	IPIE
Arkhyz	-	Int	MC	-	-	Int	MC	-	-	-	Int	MC	-	OIC/RPC/PSI
Balkonur, Kazakhstan	-	Int	MC	-	-	Int	MC	-	-	-	Int	MC	-	OIC/RPC/PSI
Irkutsk	-	Int	MC	-	-	Tochka	MC	-	-	-	Tochka	MC	-	FSUZ
Mendelevo	-	Int	MC	-	-	Tochka	MC	-	-	-	Tochka	MC	-	FSUZ
Komsomolsk	-	Int	MC	-	-	Int	MC	-	-	-	Int	MC	-	OIC RPC PSI
Antarctica	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Syowa	S/X	-	MC	D	VGOS	-	MC	D	ABGr/SCG	VGOS	-	MC	D	ABGr/SCG
O'Higgins	S/X	-	GPS	-	S/X	-	GPS	-	-	S/X	-	GPS	-	BKG/DLR