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

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

|                         |                     | 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   | Gravity |   |  |  |               |
| North America           |                     |         |     |      |       |         |      |               |        |       |         |      |     |                |         |         |   |  |  |               |
|                         | GGAO (GSFC)         | VGOS    | L   | MC   | D     |         |      | VGOS          | KHz    | MC    | D       |      |     | VGOS           | KHz     | MC      | D |  |  | NASA          |
|                         | Haystack            | VGOS    | -   | MC   | -     |         |      | VGOS          | -      | MC    | -       |      |     | VGOS           | -       | MC      | - |  |  | NASA/MIT      |
|                         | McDonald            | -       | L   | GPS  | -     |         |      | VGOS          | KHz    | MC    | -       |      |     | VGOS           | KHZ     | MC      | - |  |  | NASA/Utex     |
|                         | Monument Peak       | -       | L   | GPS  | -     |         |      | -             | Closed |       |         |      |     | -              |         |         |   |  |  | NASA          |
|                         | Ensenada, Mexico    |         |     |      |       |         |      | -             | Tochka | MC    | -       |      |     | -              | Tochka  | MC      | - |  |  | OJC/RPC/PSI   |
|                         | Yellow Knife        |         |     |      |       |         |      | VGOS          | KHz    | MC    |         |      |     | VGOS           | KHz     | MC      |   |  |  | NRCAN         |
| South America           |                     |         |     |      |       |         |      |               |        |       |         |      |     |                |         |         |   |  |  |               |
|                         | Brasilia, Brazil    | -       | L   | MC   | -     |         |      | -             | L      | MC    | -       |      |     | VGOS           | KHz     | MC      | - |  |  | OJC/RPC/PSI   |
|                         | Northern Brazil     | -       | -   | -    | -     |         |      | -             | -      | -     | -       |      |     | VGOS           | KHz     | MC      | - |  |  | NASA/IMPE     |
|                         | La Plata, Argentina | S/X     | L   | MC   | -     |         |      | S/X           | L      | MC    | -       |      |     | S/X            | L       | MC      | - |  |  | BKG (Germany) |
|                         | San Juan, Argentina | -       | L   |      | -     |         |      | S/X           | KHz    | MC    | -       |      |     | S/X            | KHz     | MC      | - |  |  | CAS/FAAO      |
|                         | Arequipa, Peru      | -       | L   | MC   | -     |         |      | -             | L      | MC    | -       |      |     | -              | L       | GPS     | - |  |  | UNSA/NASA     |
| Central Pacific Region  |                     |         |     |      |       |         |      |               |        |       |         |      |     |                |         |         |   |  |  |               |
|                         | Haleakala           | -       | L   | GPS  | -     |         |      | -             | L      | MC    | -       |      |     | -              | KHz     | MC      | - |  |  | NASA          |
|                         | Kokee Park          | VGOS    | -   | New  | D     |         |      | VGOS          | -      | MC    | -       |      |     | VGOS           | -       | MC      | - |  |  | USNO/NASA     |
| Australia/South Pacific |                     |         |     |      |       |         |      |               |        |       |         |      |     |                |         |         |   |  |  |               |
|                         | Yarragadee          | S/X     | L   | MC   | D     |         |      | VGOS          | L      | MC    | D       |      |     | VGOS           | KHz     | MC      | D |  |  | GA/NASA       |
|                         | Mt Stromlo          | -       | Int | MC   | D     |         |      | -             | Int    | MC    | D       |      |     | -              | Int     | MC      | D |  |  | GA/EOS        |
|                         | Katherine           | S/X     | -   | MC   | -     |         |      | VGOS          | -      | MC    | -       |      |     | VGOS           | -       | MC      | - |  |  | NCRIS         |
|                         | Parkes              | S/X     | -   | GPS  | -     |         |      | S/X           | -      | GPS   | -       |      |     | S/X            | -       | GPS     | - |  |  | CSIRO/CASS    |
|                         | Hobart              | S/X     | -   | GPS  | -     |         |      | VGOS          | -      | GPS   | -       |      |     | VGOS           | -       | GPS     | - |  |  | NCRIS         |
|                         | Warkworth           | S/X     | -   | GPS  | -     |         |      | S/X           | -      | GPS   | -       |      |     | S/X            | -       | GPS     | - |  |  | NCRIS         |
|                         | Tahiti              | -       | L   | GPS  | -     |         |      | VGOS          | L      | MC    | D       |      |     | VGOS           | Tochka  | MC      | D |  |  | GRGS/UFP/NASA |
|                         |                     |         |     |      |       |         |      |               | Tochka |       |         |      |     |                | Tochka  |         |   |  |  | OJC/RPC/PSI   |
|                         | Java Indonesia      |         |     |      |       |         |      |               | Tochka | MC    |         |      |     |                | Tochka  | MC      |   |  |  | OJC/RPC/PSI   |
| Africa                  |                     |         |     |      |       |         |      |               |        |       |         |      |     |                |         |         |   |  |  |               |
|                         | Hartebeesthoek, SA  | S/X     | L   | GPS  | D     |         |      | VGOS          | L/Int  | MC    | D       |      |     | VGOS           | KHz/Int | MC      | - |  |  | NRF           |
|                         |                     |         | Int |      |       |         |      |               |        |       |         |      |     |                |         |         |   |  |  | OJC/RPC/PSI   |
|                         | Malindi, Kenya      | Spec.   | -   | -    | -     |         |      | -             | -      | -     | -       |      |     | VGOS           | KHz     | MC      | - |  |  | ASI/NASA      |
| Europe                  |                     |         |     |      |       |         |      |               |        |       |         |      |     |                |         |         |   |  |  |               |

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|-------------------------|--|---------|-----|------|-------|------------|---------|---------|------|-------|------------|---------------|---------|------|-------|------------|---------|---------|------|-------|------------|----------------|---------|------|-------|------------|---------|---------|------|-------|------------|---------------|
|                         |  | VLBI    | SLR | GNSS | Doris | Gravity    | VLBI    | SLR     | GNSS | Doris | Gravity    | VLBI          | SLR     | GNSS | Doris | Gravity    | VLBI    | SLR     | GNSS | Doris | Gravity    | VLBI           | SLR     | GNSS | Doris | Gravity    | VLBI    | SLR     | GNSS | Doris | Gravity    |               |
| Wetzell, Germany        |  | VGOS(2) | KHz | MC   | D     | SCGr, ABGr | VGOS(2) | KHz     | MC   | D     | SCGr, ABGr | VGOS(2)       | KHz     | MC   | D     | SCGr, ABGr | VGOS(2) | KHz     | MC   | D     | SCGr, ABGr | VGOS(2)        | KHz     | MC   | D     | SCGr, ABGr | VGOS(2) | KHz     | MC   | D     | SCGr, ABGr | BKG/FESG      |
| Grasse, France          |  | -       | L   | GPS  | D     |            | -       | L       | GPS  | D     |            | -             | L       | GPS  | D     |            | -       | L       | GPS  | D     |            | -              | L       | GPS  | D     |            | -       | L       | GPS  | D     |            | GRGS          |
| Matera, Italy           |  | S/X     | L   | MC   | -     | ABGr       | VGOS    | KHz     | MC   | -     | ABGr       | VGOS          | KHz     | MC   | -     | ABGr       | VGOS    | KHz     | MC   | -     | ABGr       | VGOS           | KHz     | MC   | -     | ABGr       | VGOS    | KHz     | MC   | -     | ABGr       | ASI           |
| Medicina                |  | S/X     | -   | GPS  | -     | SCGr       | S/X     | -       | GPS  | -     | SCGr       | S/X           | -       | GPS  | -     | SCGr       | S/X     | -       | GPS  | -     | SCGr       | S/X            | -       | GPS  | -     | SCGr       | S/X     | -       | GPS  | -     | SCGr       | IRA           |
| Noto, Italy             |  | S/X     | -   | GPS  | -     |            | VGOS    | -       | MC   | -     |            | VGOS          | -       | MC   | -     |            | VGOS    | -       | MC   | -     |            | VGOS           | -       | MC   | -     |            | VGOS    | -       | MC   | -     |            | IRA           |
| Yebeles, Spain          |  | VGOS    | -   | MC   | -     | SCGr, ABGr | VGOS    | KHz     | MC   | -     | SCGr, ABGr | VGOS          | KHz     | MC   | -     | SCGr, ABGr | VGOS    | KHz     | MC   | -     | SCGr, ABGr | VGOS           | KHz     | MC   | -     | SCGr, ABGr | VGOS    | KHz     | MC   | -     | SCGr, ABGr | IGN           |
| Flores, Azores          |  | -       | -   |      | -     |            | -       | -       | MC   | -     |            | -             | -       | MC   | -     |            | -       | -       | MC   | -     |            | -              | -       | MC   | -     |            | -       | -       | MC   | -     |            | IGN           |
| Santa Maria, Azores     |  | S/X     | -   |      | -     |            | VGOS    | -       | MC   | -     |            | VGOS          | -       | MC   | -     |            | VGOS    | -       | MC   | -     |            | VGOS           | -       | MC   | -     |            | VGOS    | -       | MC   | -     |            | IGN           |
| Tenerife, Canary Is     |  | -       | -   |      | -     |            | VGOS    | Tochka  | MC   | -     |            | VGOS          | Tochka  | MC   | -     |            | VGOS    | Tochka  | MC   | -     |            | VGOS           | Tochka  | MC   | -     |            | VGOS    | Tochka  | MC   | -     |            | IGN           |
| Onsala, Sweden          |  | S/X     | -   | Y    | -     | SCGr, ABGr | VGOS    | -       | MC   | -     | SCGr, ABGr | VGOS(2)       | -       | MC   | -     | SCGr, ABGr | VGOS(2) | -       | MC   | -     | SCGr, ABGr | VGOS(2)        | -       | MC   | -     | SCGr, ABGr | VGOS(2) | -       | MC   | -     | SCGr, ABGr | OSO           |
| Herstmonceu-, GB        |  | -       | KHz | MC   | -     | ABGr       | -       | KHz     | MC   | -     | ABGr       | -             | KHz     | MC   | -     | ABGr       | -       | KHz     | MC   | -     | ABGr       | -              | KHz     | MC   | -     | ABGr       | -       | KHz     | MC   | -     | ABGr       | NERC          |
| Graz, Austria           |  | -       | KHz | MC   | -     |            | -       | KHz     | MC   | -     |            | -             | KHz     | MC   | -     |            | -       | KHz     | MC   | -     |            | -              | KHz     | MC   | -     |            | -       | KHz     | MC   | -     |            | OEAW          |
| Zimmerwald, Switzerland |  | -       | Int | MC   | -     |            | -       | Int     | MC   | -     |            | -             | Int     | MC   | -     |            | -       | Int     | MC   | -     |            | -              | Int     | MC   | -     |            | -       | Int     | MC   | -     |            | AIUB          |
| Potsdam, Germany        |  | -       | KHz | MC   | -     |            | -       | KHz     | MC   | -     |            | -             | KHz     | MC   | -     |            | -       | KHz     | MC   | -     |            | -              | KHz     | MC   | -     |            | -       | KHz     | MC   | -     |            | GFZ           |
| Borowiec, Poland        |  | -       | L   | MC   | -     |            | --      | L       | MC   | D     |            | -             | L       | MC   | -     |            | -       | L       | MC   | -     |            | -              | L       | MC   | -     |            | -       | L       | MC   | -     |            | SRC/PAS       |
| Metsahovi, Finland      |  | S/X     | -   | MC   | D     |            | VGOS    | KHz     | MC   | D     |            | VGOS          | KHz     | MC   | D     |            | VGOS    | KHz     | MC   | D     |            | VGOS           | KHz     | MC   | D     |            | VGOS    | KHz     | MC   | D     |            | SCGr, Agr     |
| NY Alesund, Norway      |  | S/X     | -   | MC   | D     | SCGr, ABGr | VGOS(2) | KHz     | MC   | D     | SCGr, ABGr | VGOS(2)       | KHz     | MC   | D     | SCGr, ABGr | VGOS(2) | KHz     | MC   | D     | SCGr, ABGr | VGOS(2)        | KHz     | MC   | D     | SCGr, ABGr | VGOS(2) | KHz     | MC   | D     | SCGr, ABGr | NMA           |
| Simiezi, Ukraine        |  | S/X     | L   | GPS  | -     |            | S/X     | L       | GPS  | -     |            | S/X           | L       | GPS  | -     |            | S/X     | L       | GPS  | -     |            | S/X            | L       | GPS  | -     |            | S/X     | L       | GPS  | -     |            | CRAO          |
| Kiev, Ukraine           |  |         | L   |      |       |            |         | L       |      |       |            |               | L       |      |       |            |         | L       |      |       |            |                | L       |      |       |            |         | L       |      |       |            |               |
| Riga, Latvia            |  |         | L   | MC   | ABGr  |            |         | L       | MC   | ABGr  |            |               | L       | MC   | ABGr  |            |         | L       | MC   | ABGr  |            |                | L       | MC   | ABGr  |            |         | L       | MC   | ABGr  |            | IA/UL         |
| Asia                    |  |         |     |      |       |            |         |         |      |       |            |               |         |      |       |            |         |         |      |       |            |                |         |      |       |            |         |         |      |       |            |               |
| Shanghai, China         |  | S/X     | KHz | MC   | -     |            | VGOS    | KHz     | MC   | -     |            | VGOS          | KHz     | MC   | -     |            | VGOS    | KHz     | MC   | -     |            | VGOS           | KHz     | MC   | -     |            | VGOS    | KHz     | MC   | -     |            | SHAO          |
| Changchun, China        |  | -       | KHz | MC   | -     |            | -       | KHz     | MC   | -     |            | -             | KHz     | MC   | -     |            | -       | KHz     | MC   | -     |            | -              | KHz     | MC   | -     |            | -       | KHz     | MC   | -     |            | NAOC/CAS      |
| Beijing, China          |  | -       | KHz | MC   | -     |            | -       | KHz     | MC   | -     |            | -             | KHz     | MC   | -     |            | -       | KHz     | MC   | -     |            | -              | KHz     | MC   | -     |            | -       | KHz     | MC   | -     |            | CASM          |
| Kunming, China          |  | -       | KHz | MC   | -     |            | -       | KHz     | MC   | -     |            | -             | KHz     | MC   | -     |            | -       | KHz     | MC   | -     |            | -              | KHz     | MC   | -     |            | -       | KHz     | MC   | -     |            | Yunnan Obs    |
| Urumqi, China           |  | S/X     | -   | MC   | -     |            | S/X     | KHz     | MC   | -     |            | S/X           | KHz     | MC   | -     |            | S/X     | KHz     | MC   | -     |            | S/X            | KHz     | MC   | -     |            | S/X     | KHz     | MC   | -     |            | CAS           |
| Sanyo, China            |  |         |     |      | -     |            | -       | KHz     | MC   | -     |            | -             | KHz     | MC   | -     |            | -       | KHz     | MC   | -     |            | -              | KHz     | MC   | -     |            | -       | KHz     | MC   | -     |            |               |
| Wuhan China             |  | -       | L   | MC   | -     |            | -       | KHz     | MC   | -     |            | -             | KHz     | MC   | -     |            | -       | KHz     | MC   | -     |            | -              | KHz     | MC   | -     |            | -       | KHz     | MC   | -     |            | IS/CSB        |
| Sejong, Korea           |  | S/X     | KHz | MC   | -     |            | S/X     | KHz     | MC   | -     |            | S/X           | KHz     | MC   | -     |            | S/X     | KHz     | MC   | -     |            | S/X            | KHz     | MC   | -     |            | S/X     | KHz     | MC   | -     |            | KASI/NGII     |
| Java, Indonesia         |  | -       | -   | -    | -     |            |         | Trochka | MC   |       |            |               | Trochka | MC   |       |            |         | Trochka | MC   |       |            |                | Trochka | MC   |       |            |         | Trochka | MC   |       |            | IPIE (Russia) |
| Aira                    |  | closed  | -   | MC   |       |            |         |         |      |       |            |               |         |      |       |            |         |         |      |       |            |                |         |      |       |            |         |         |      |       |            | GSI           |
| Chichijima              |  | closed  |     | MC   |       | ABGr       |         |         |      |       |            |               |         |      |       |            |         |         |      |       |            |                |         |      |       |            |         |         |      |       |            | GSI           |
| Koganei, Japan          |  | S/X     | L   | GPS  | -     |            | S/X     | L       | GPS  | -     |            | S/X           | L       | GPS  | -     |            | S/X     | L       | GPS  | -     |            | S/X            | L       | GPS  | -     |            | S/X     | L       | GPS  | -     |            | NICT          |
| Simosato, Japan         |  | -       | L   | GPS  | -     |            | -       | L       | GPS  | -     |            | -             | L       | GPS  | -     |            | -       | L       | GPS  | -     |            | -              | L       | GPS  | -     |            | -       | L       | GPS  | -     |            | SHO/JCG       |
| Shintotsukawa, Japan    |  | closed  |     | MC   |       | closed     |         |         |      |       |            |               |         |      |       |            |         |         |      |       |            |                |         |      |       |            |         |         |      |       |            | GSI           |
| Tanegashima, Japan      |  | -       | L   | MC   |       |            | -       | KHz?    | MC   |       |            | -             | KHz?    | MC   |       |            | -       | KHz?    | MC   |       |            | -              | KHz?    | MC   |       |            | -       | KHz?    | MC   |       |            | JAEA          |
| Mizusawa                |  | S/X     |     | MC   |       | SCG        | S/X     |         | MC   |       | SCG        | S/X           |         | MC   |       | SCG        | VGOS    |         | MC   |       | SCG        | VGOS           |         | MC   |       | SCG        | VGOS    |         | MC   |       | SCG        | NAOJ          |

