



USGS International Connectivity Resources and Program Requirements

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Existing Resources

- **StarLight connectivity – DS3 from Sioux Falls**
- **I2 connectivity**
 - **NGIX-E (University of Maryland) – 150 MB**
 - **NGIX-W (NASA Ames) - OC3 x 2**
 - **CALREN (via Stanford University) – DS3**
- **Satellite (for instrumentation and data collection)**
- **I1 connectivity**

International Offices

- **USGS Offices Outside of 50 States**
 - Trust Territories (Saipan and Guam)
 - Puerto Rico (San Juan, Cayey, Mayaguez)
 - Guatemala
 - Honduras
 - Middle East (Israel, UAE, SA) – *currently these offices are closed*
 - Others (changes over time)

International Programs

- **International Programs/Collaborations**
 - **Micronesia (endangered species monitoring)**
 - **Antarctic (mapping projects)**
 - **Belize (Manatee monitoring)**
 - **Greece (water management)**
 - **Turkey (water management)**
 - **Galapagos (Giant Tortoise studies)**
 - **China (invasive species modeling and monitoring)**
 - **Russia (minerals, biology, flood mgmt, mapping)**
 - **Mexico (seamless border initiative)**

International Programs

- **CircumPacific Rim (multiple nations) – seismic and volcanic hazards, tsunamigenic earthquake warning collaborations (NOAA), mapping, invasive species**
- **Middle East**
 - **Jordon (ground water management)**
 - **Saudi Arabia (minerals, Saudi Geological Survey consultation)**
 - **Abu Dhabi (hydrology of arid environments)**

International Programs

■ Africa

- Botswana (village flood watch)
- Cameroon (CO2 buildup in Lake Nye)
- Ethiopia (ground water studies)
- Mali and Senegal (agric and carbon sequestration in soils)
- Morocco (geological and geochemical mapping)
- Southern Africa (flood early warning detection)
- West Africa (desertification)
- South Africa (Global Seismic Network)

Future Plans (3 year)

- **Seattle GigaPOP presence (Westin Co-lo facility) – DS3 via Vancouver G3 node**
- **Establish secured VPN environments using commercial and education infrastructure with IPSec or GRE tunnels**
- **Continued discussions with APAN to try to establish fiber drops in Trust Territories and other Pacific Island nation countries**

Possible JET Involvement

- Assist in developing a network infrastructure the Pacific (e.g. Trust Territories/Guam) – APAN is pulling fiber between Sydney and Tokyo with the potential for an intermediate drop
 - Identify other opportunities to resource share on joint collaborations
 - Help develop security standards for facilitating collaboration while maintaining agency security requirements
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Effect of Other FedNets

- **Resources sharing**

- **USGS/NOAA private network for tsunami warning**
- **USGS/NASA interagency circuits (OC12)**
- **Use DOD DREN resources within Hawaii (HIC) and to transit to CONUS**
- **Share network resources with collocated bureaus/agencies (NPS, FWS, BLM, DOE INEL, etc)**