NETWORK REPORT

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Summary of GSN Activities 2003-2004

The IRIS Global Seismographic Network has 137 stations following the completion of RAO, Raoul Island, TRIS Tristan da Cunha, DGAR Diego Garcia and FUNA Funafuti, Tuvalu. RAO and FUNA are joint stations with NIED Japan, and TRIS is a joint station with Geoscope France. Two new affiliate stations ATTU Alaska and VNDA Antarctica, and three newly affiliated arrays TXAR Texas, PDAR Wyoming, and ILAR Alaska were added through cooperation with the AFTAC. In cooperation with Southern Methodist University the NVAR array in Nevada joined as a GSN affiliate site. The GSN station SPA at South Pole was closed, replaced by QSPA. The GSN is comprised of 77 IRIS/USGS, 39 IRIS/IDA, and 12 IRIS/University Network stations, plus 9 GSN Affiliate stations and arrays. In addition to seismometers, microbarographs are installed at 40 sites, and GPS instrumentation is co-located at 17 sites (8 with meteorological packages). Internet or VSAT satellite connectivity has been established to 83% of the GSN; 13% of the sites have dial-up communications links, and 4% have no communication link and depend solely upon mailing physical media to a data collection center. Thirteen new telemetry links were implemented in the prior year. Internet connections have been established to DGAR Diego Garcia, GRFO Grafenburg, ERM Erimo, and WRAB Australia. Working with Geosciences Australia, CASY Antarctica has been linked to their national satellite network and to the Internet. A new VSAT link has been installed at JOHN Johnston Atoll, in cooperation with the US National Weather Service Tsunami Warning Program. CTBTO VSATs are now being used for GSN telemetry at SJG Puerto Rico, JTS Costa Rica, SDV Venezuela, TEIG Mexico, LVC Chile, SUR Sutherland, TSUM Namibia,

LSZ Zambia, KMBO Kenya, BORG Iceland, and TRIS Tristan da Cunha. IRIS and Honeywell/USGS contracts with CTBTO to connect GSN sites to the International Monitoring System are proceeding smoothly. Seismic station coverage in the United States is being enhanced through new USArray funding as part of the EarthScope facility.

New GSN Stations during the last year

Station	*Site*	*Location*	*Operator*	*Type*
RAO	Raoul Island	Kermadec Islands	ASL	Vault
TRIS	Tristan da Cunha	S. Atlantic Ocean	ASL	Vault
DGAR	Diego Garcia	Indian Ocean	IDA	Vault
FUNA	Funafuti	Tuvalu	ASL	Vault

Network & Station Operators

ASL	USGS Albuquerque Seismological Laboratory
IDA	University of California, San Diego SIO/IGPP IDA Project

Installations

The map shows the current GSN station (red stars), planned sites (red-white stars) for completion in the coming years, new affiliate arrays (orange stars), and the newest GSN sites (green stars) in the last year. FDSN Network stations are also shown (purple). Many GSN stations are cooperative with other networks, indicated by the symbol on the 'shoulder' of the star. GSN sites with microbarograph are shown in the following map.

Telecommunications

The current status of GSN telemetry is shown in two maps. We are moving toward full real-time telemetry at most sites, but still have some dial-up stations. New GSN telemetry links since the July 2003 FDSN meeting are highlighted in the first map. The GSN uses a wide variety of telemetry systems coordinated with many organizations and hosts, illustrated in the second GSN telemetry map. Cooperation with the Comprehensive Nuclear Test Ban Treaty Organization in sharing their Global Communication Infrastructure system is an important new and growing component of telemetry.

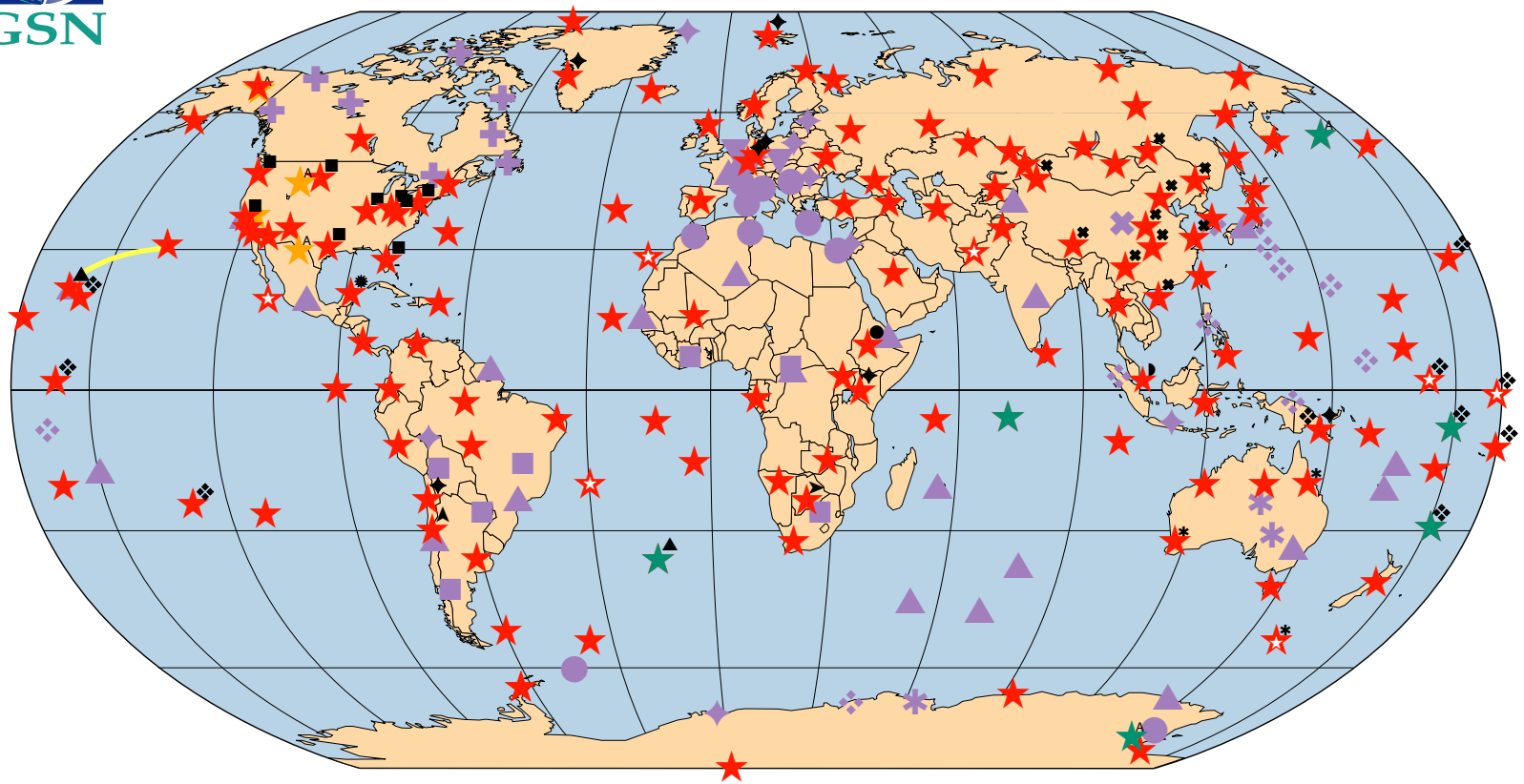
USArray Component of the Advanced National Seismic Network Backbone

IRIS has received funding from the US National Science Foundation to expand the coverage of seismic stations in the United States. These new stations form a permanent, backbone network for the USArray imaging component of the EarthScope Facility, and are a component of the USGS Advanced National Seismic Network being installed by the USGS Albuquerque Seismological Laboratory. The map shows the ANSS Backbone, highlighting the USArray component.

GLOBAL SEISMOGRAPHIC NETWORK

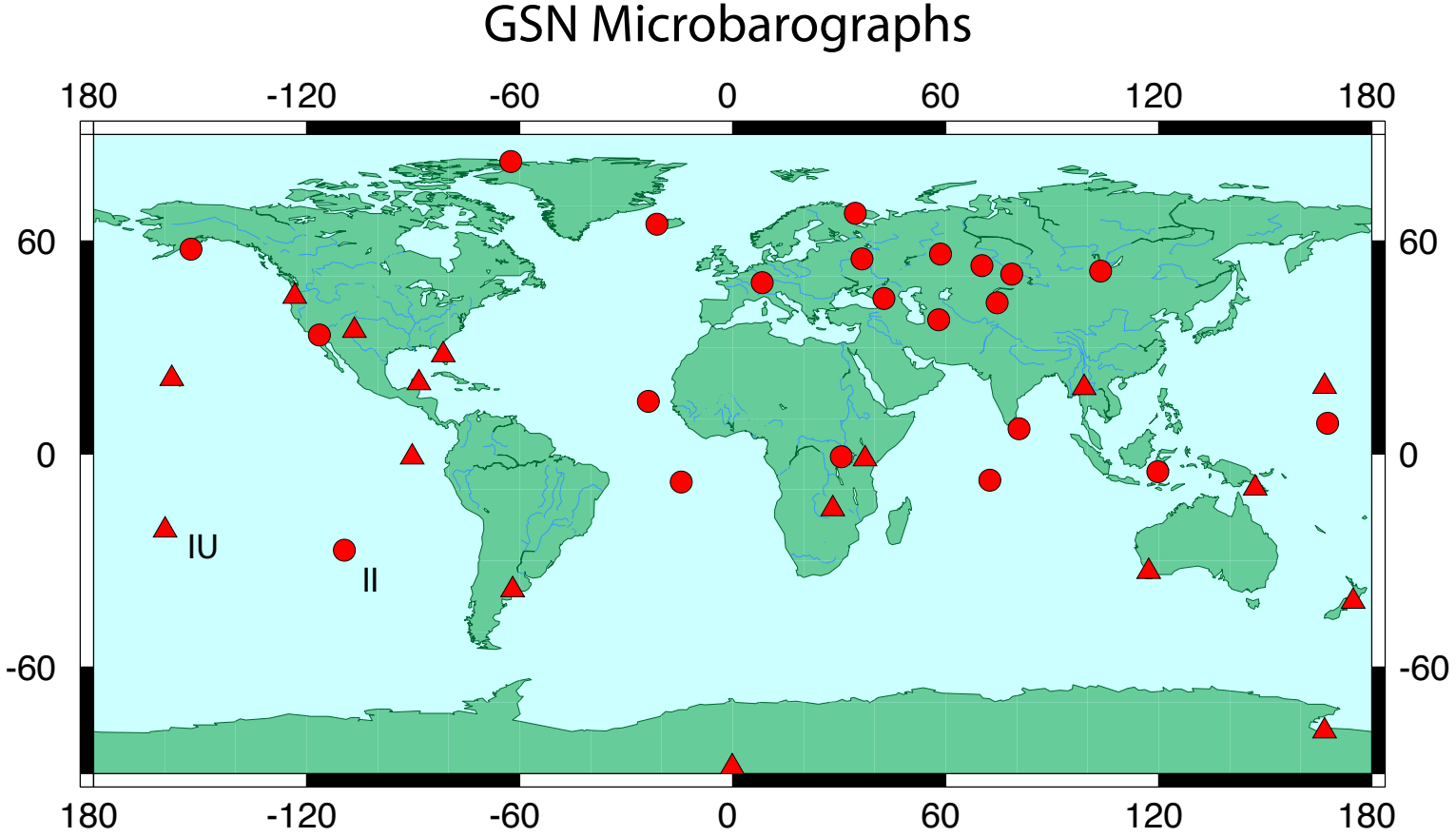
& FEDERATION OF DIGITAL BROADBAND SEISMIC NETWORKS

GSN

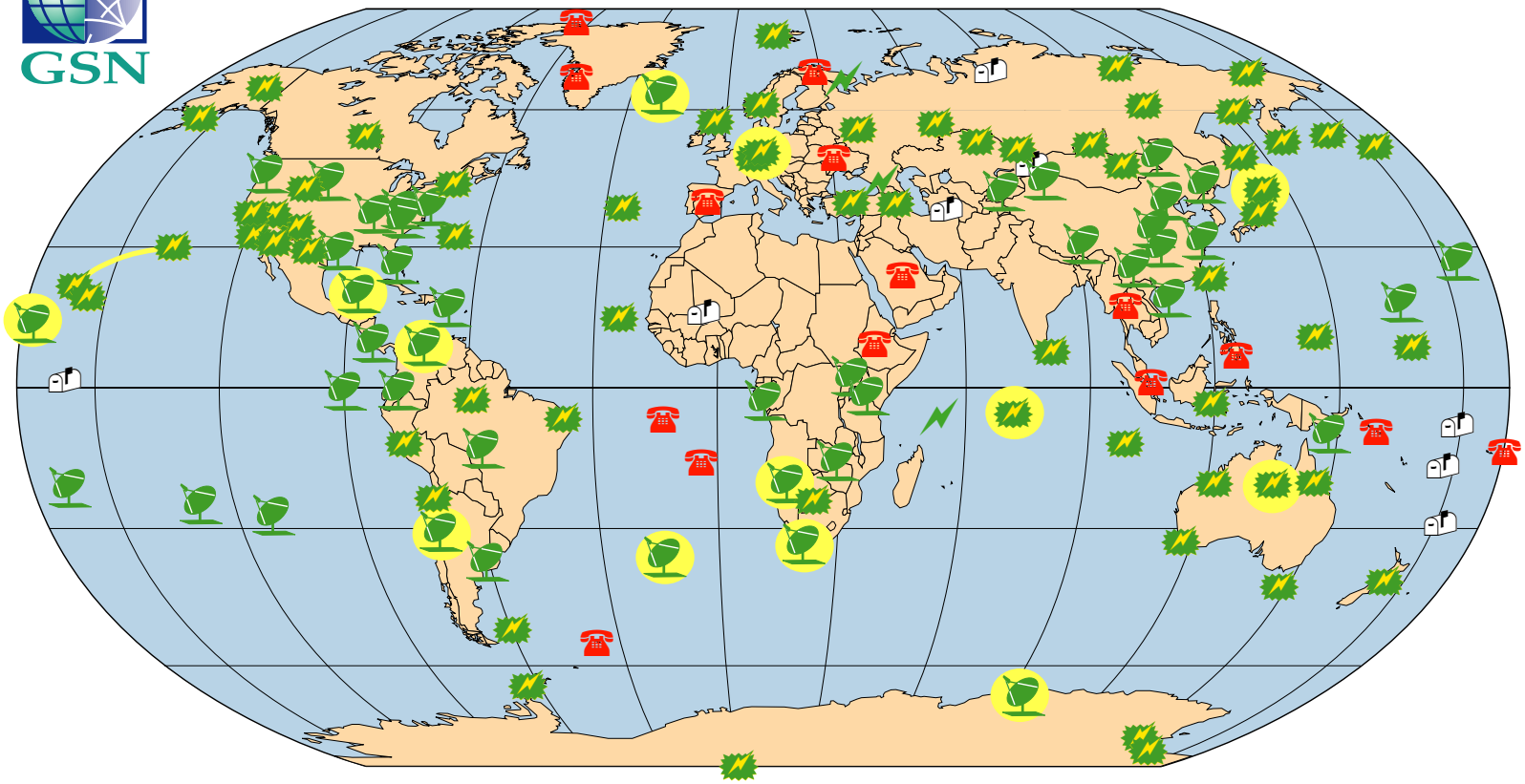


IRIS International & National Cooperative Sites

IRIS Current	Affiliate Array	Geoscope	Japan	Mednet	Geofon/AWI/BGR/BFO	China/USGS	Mexico	Singapore	Botswana	Andes	Australia	ANSS	AFTAC	SMU


GSN Microbarographs
180
-120
-60
0
60
120
180
60
0
-60
IU
II

GSN COMMUNICATIONS



VSAT

Internet

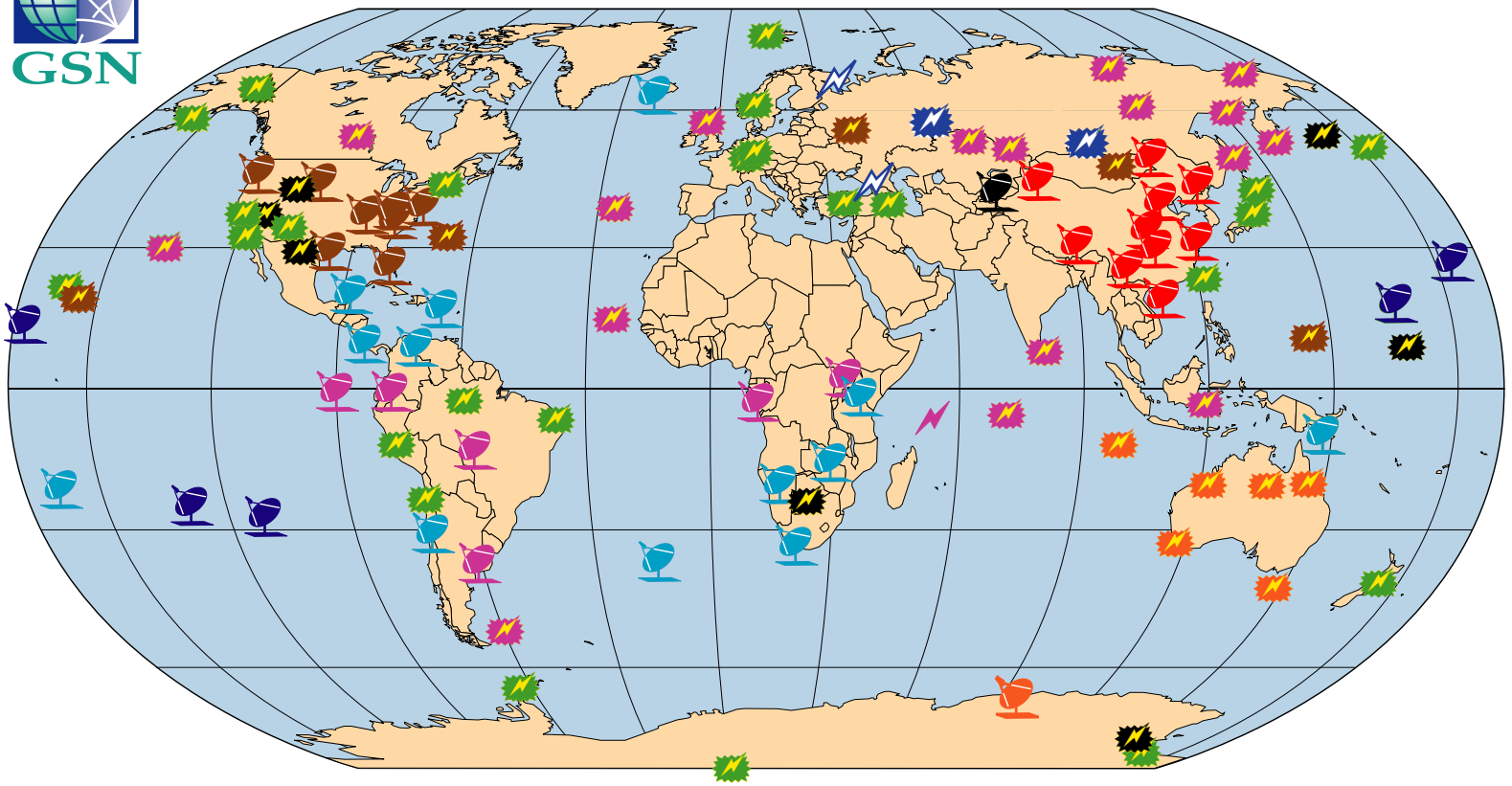
Internet link with limited data

Dial-up data

Data shipped via mail

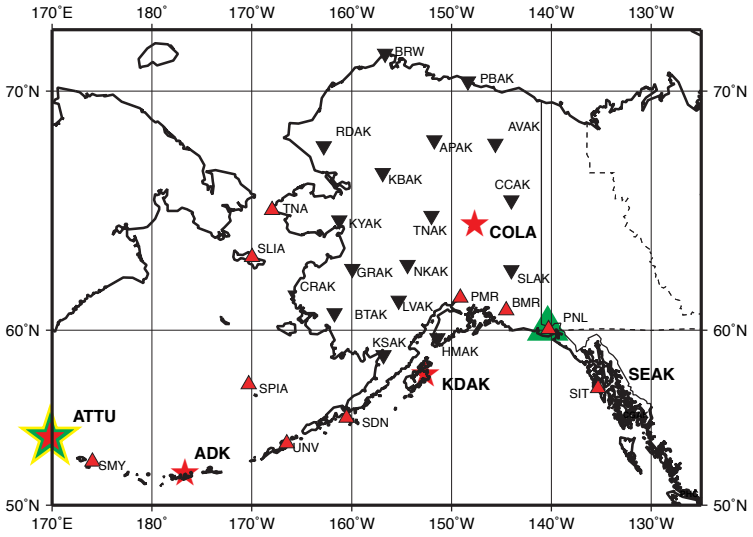
NEW TELEMETRY SINCE JULY 2003

GSN TELEMETRY



	IRIS/NSF	NWS	USGS	China	Australia	Russia	AFTAC/DoD	CTBTO	GSN Host
VSAT	✓	✓	✓	✓	✓		✓	✓	
High-speed Internet	✓		✓		✓	✓	✓		✓
Low-speed Internet	✓					✓			

ANSS Backbone



Current GSN

Current NSN

ANSS planned

USArray Component of the Backbone

GSN borehole (IMS/AEDS-Affiliates)

New GSN borehole (NSN - Upgrade)

New GSN borehole

New GSN vault

NSN Upgrade

GSN Quality Upgrade

New Backbone site