

Providing Free and Open Source Access to Geoscience Data Worldwide

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USGIN Foundation, Inc.

USGIN

US Geoscience Information Network



Data integration framework

Open source, open access, interoperable

Nationwide federal-state-university partnership

Powering the National Geothermal Data System



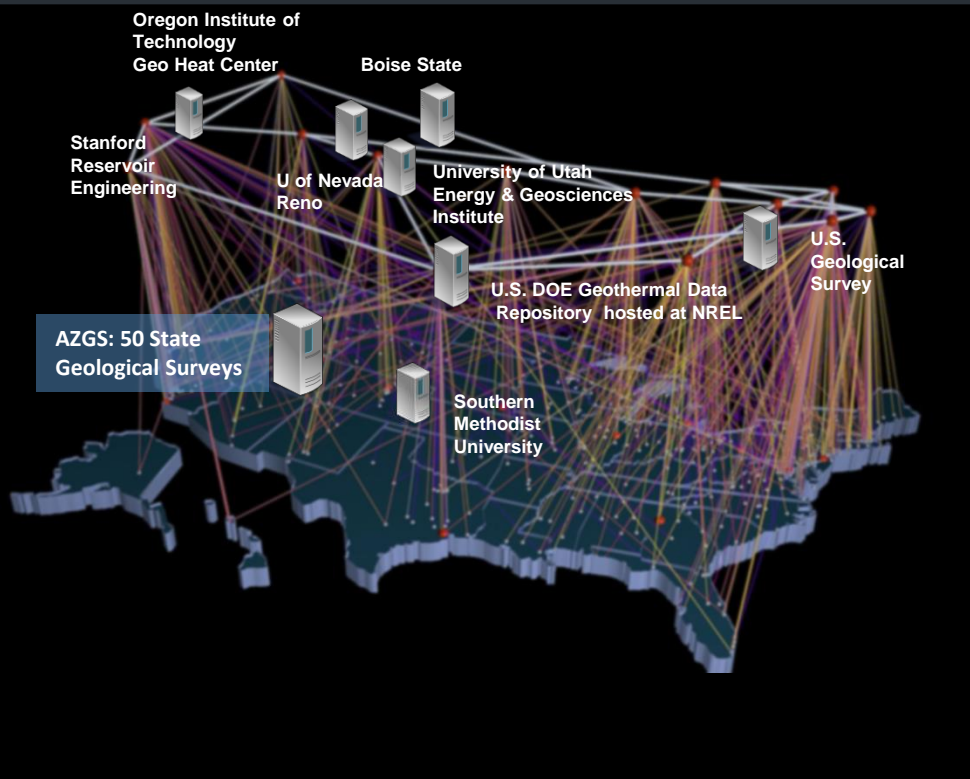
National Geothermal Data System



FREE online access to:

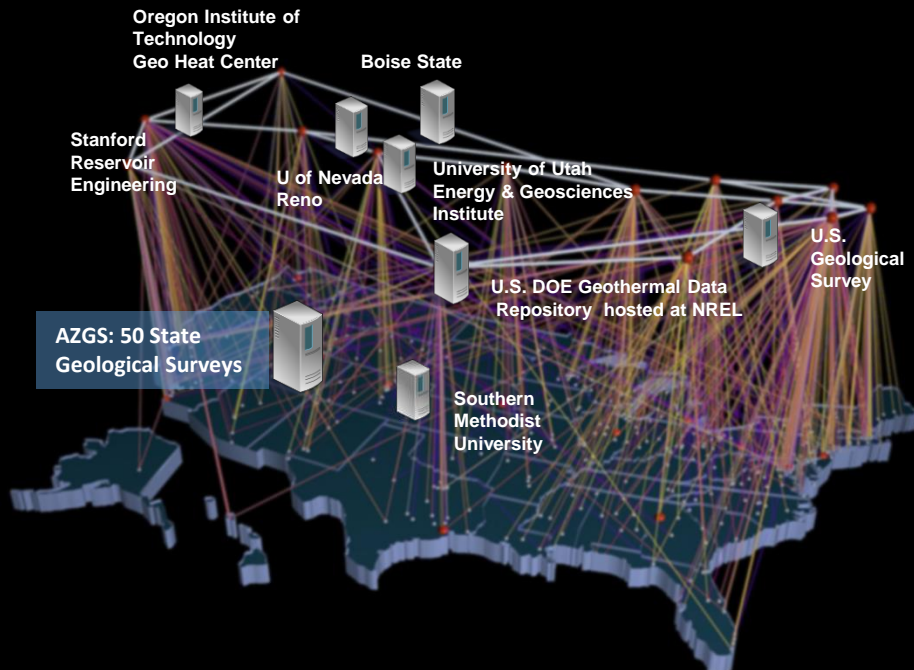
**Maps, data, & documents
from 65+ providers nationwide**

- >10 million data records
- >3 million oil & gas wells
- >1 million water wells
- >47,000 maps & reports



Powered by USGIN

National Geothermal Data System



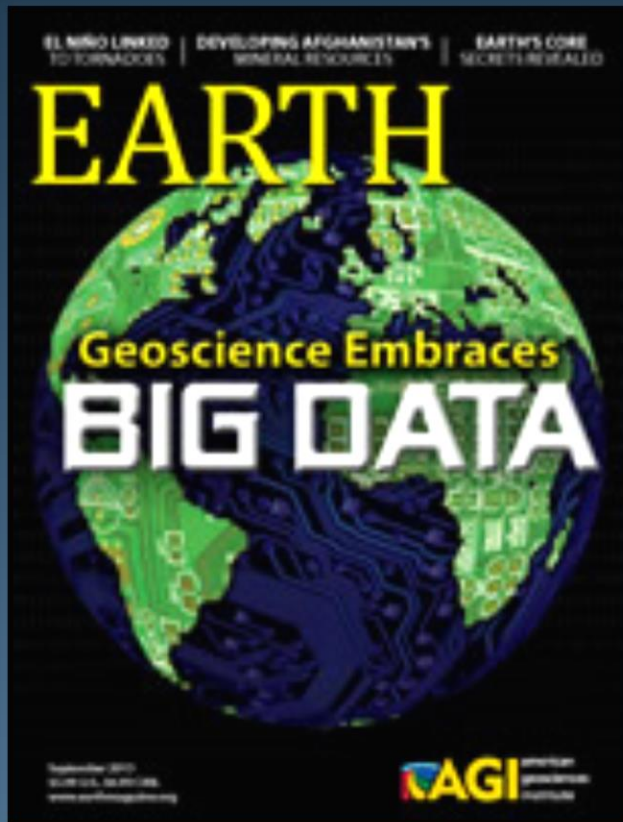
- data “nodes” digitize, archive, manage, and provide content independently
- open source software and standard protocols
- distributed framework and a unified catalog search interface
- regional server hubs

Not a central database

DATA TYPES – Interchange Formats

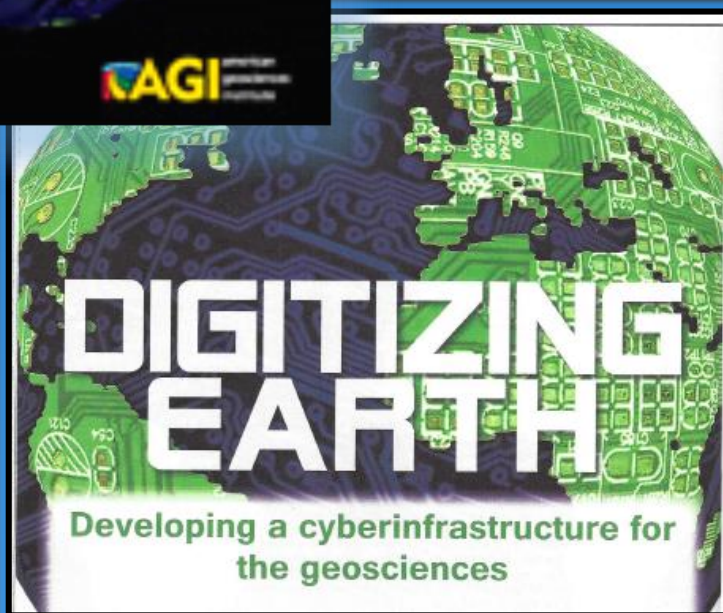
Active Fault/Quaternary Fault
Borehole Lithology Interval Feature
Direct Use Feature
Fluid Flux Injection and Disposal
Geologic Units
Geothermal Metadata Compilation
Heat Flow
Physical Sample
Radiogenic Heat Production
Thermal Conductivity Observation
Well Fluid Production
Well Tests
Aqueous Chemistry
Borehole Temperature Observation
Drill Stem Test Observations (deprecated)
Geologic Contact Feature
Geothermal Area

Geothermal Power Plant Facility
Heat Pump Facility
Powell Cummings Geothermometry
Rock Chemistry
Thermal/Hot Spring Feature
Well Header Observation
Borehole Lithology Intercepts
Contour Lines
Fault Feature / Shear Displacement Structure
Geologic Reservoir
Geothermal Fluid Production (deprecated)
Gravity Stations
Hydraulic Properties
Power Plant Production
Seismic Even Hypocenter
Volcanic Vents
Well Log Observation



“One of the most successful programs to date is the National Geothermal Data System...”

EARTH magazine, Sept. 2013



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New Geothermal Data System Could Open Up Clean-Energy Reserves

Forgotten and filed away decades ago, millions of documents on geothermal research are now helping scientists make harvesting Earth's energy affordable

By William Ferguson

White House Energy Datapalooza



Energy Sec. Ernie Moniz
launches NGDS

US Open Data Access Initiative

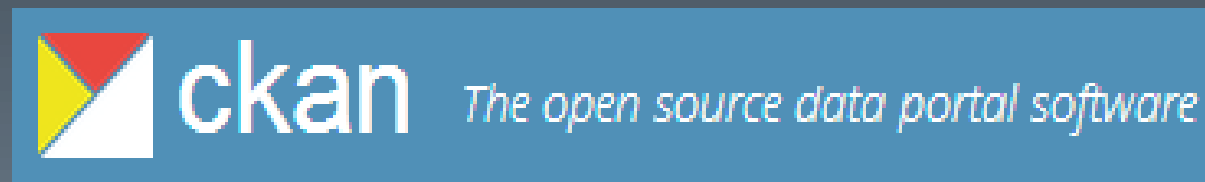
Presidential executive order:

All federally-funded research and all federal data must be

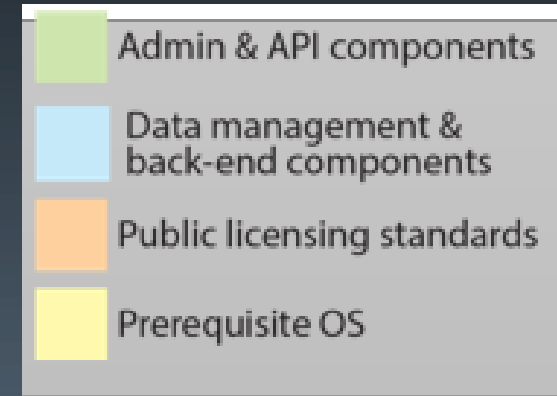
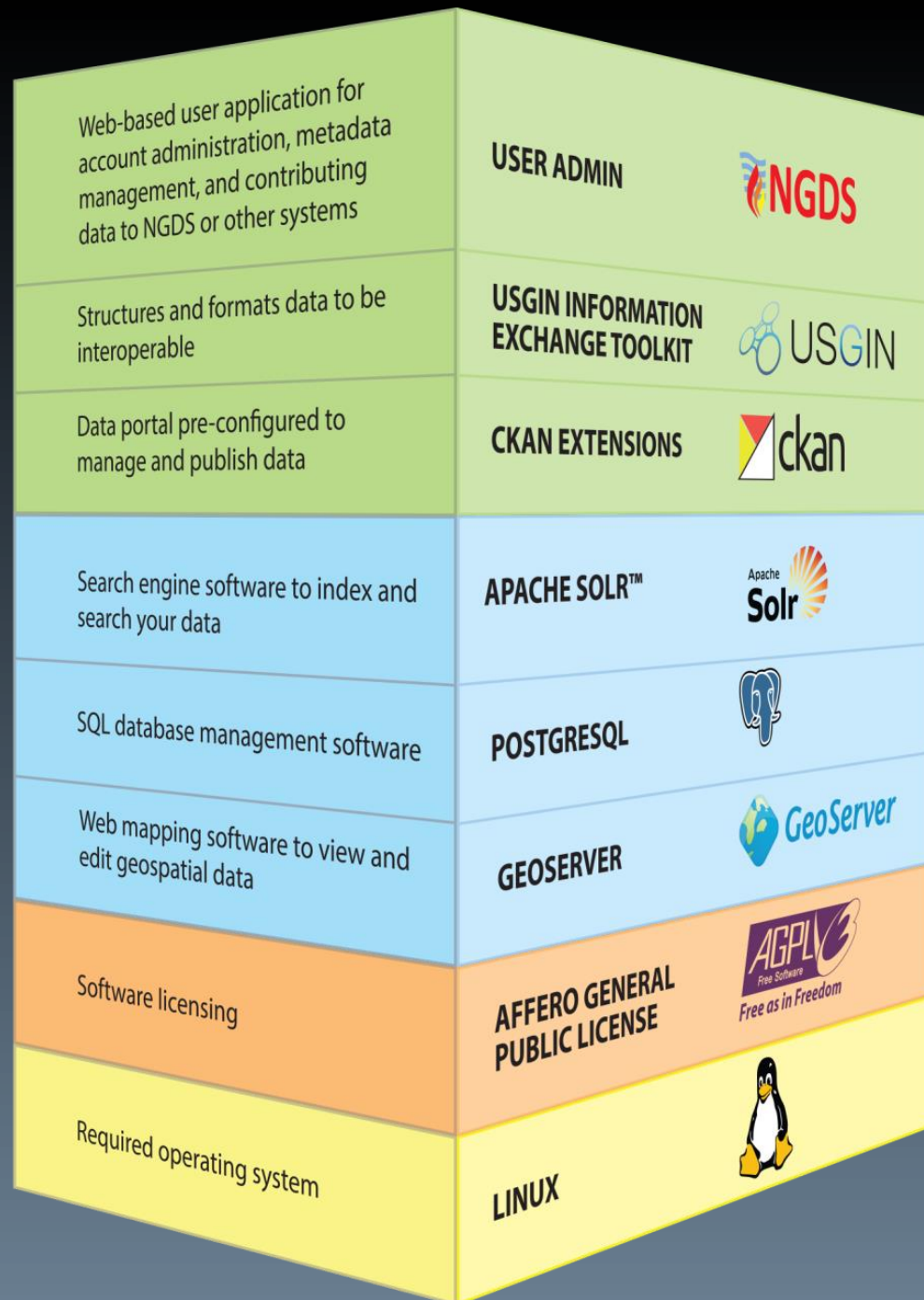
- Open access (free)
- Open source
- Machine-readable
- Interoperable



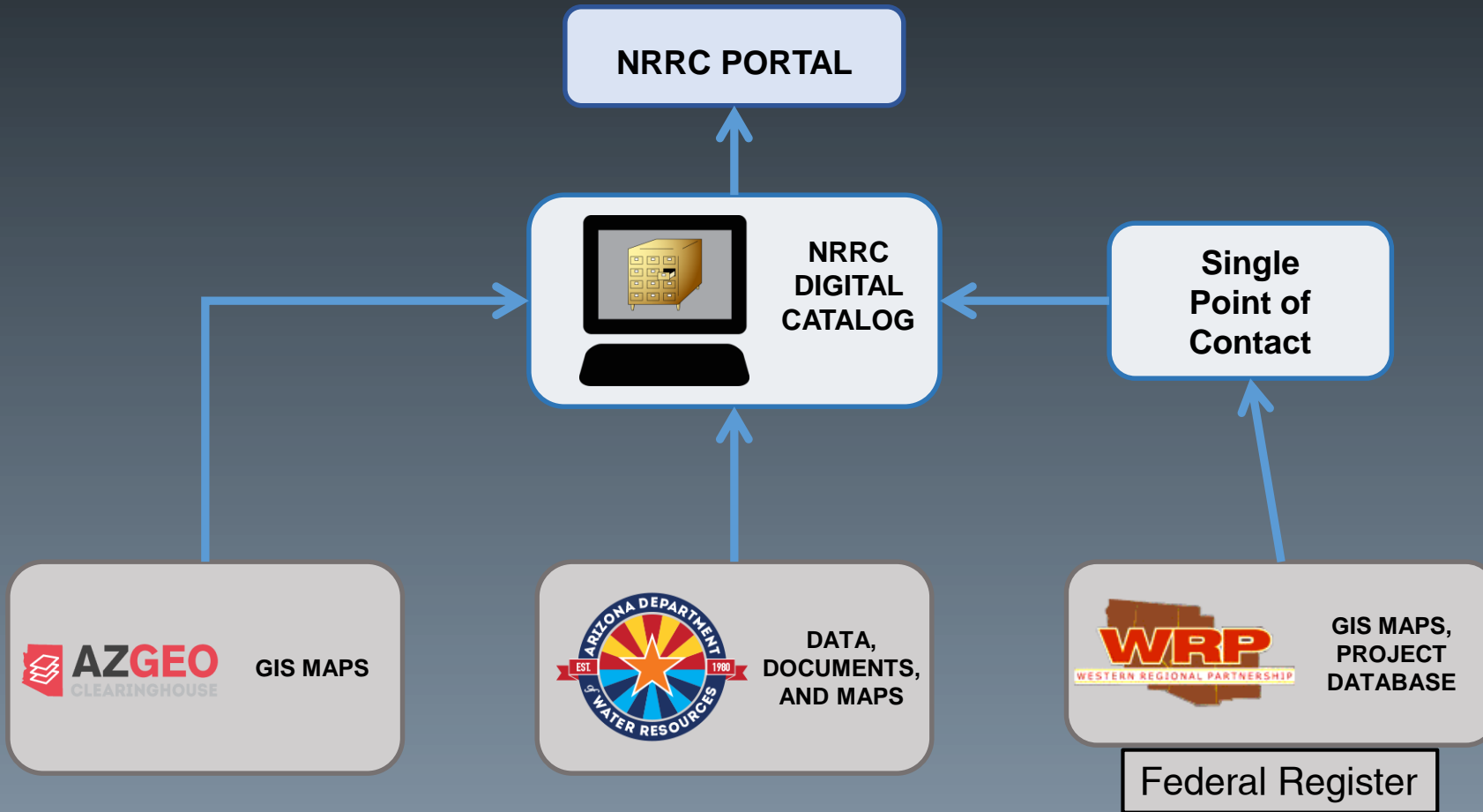
GIN-stack “node-in-a-box” components free, downloadable, executable



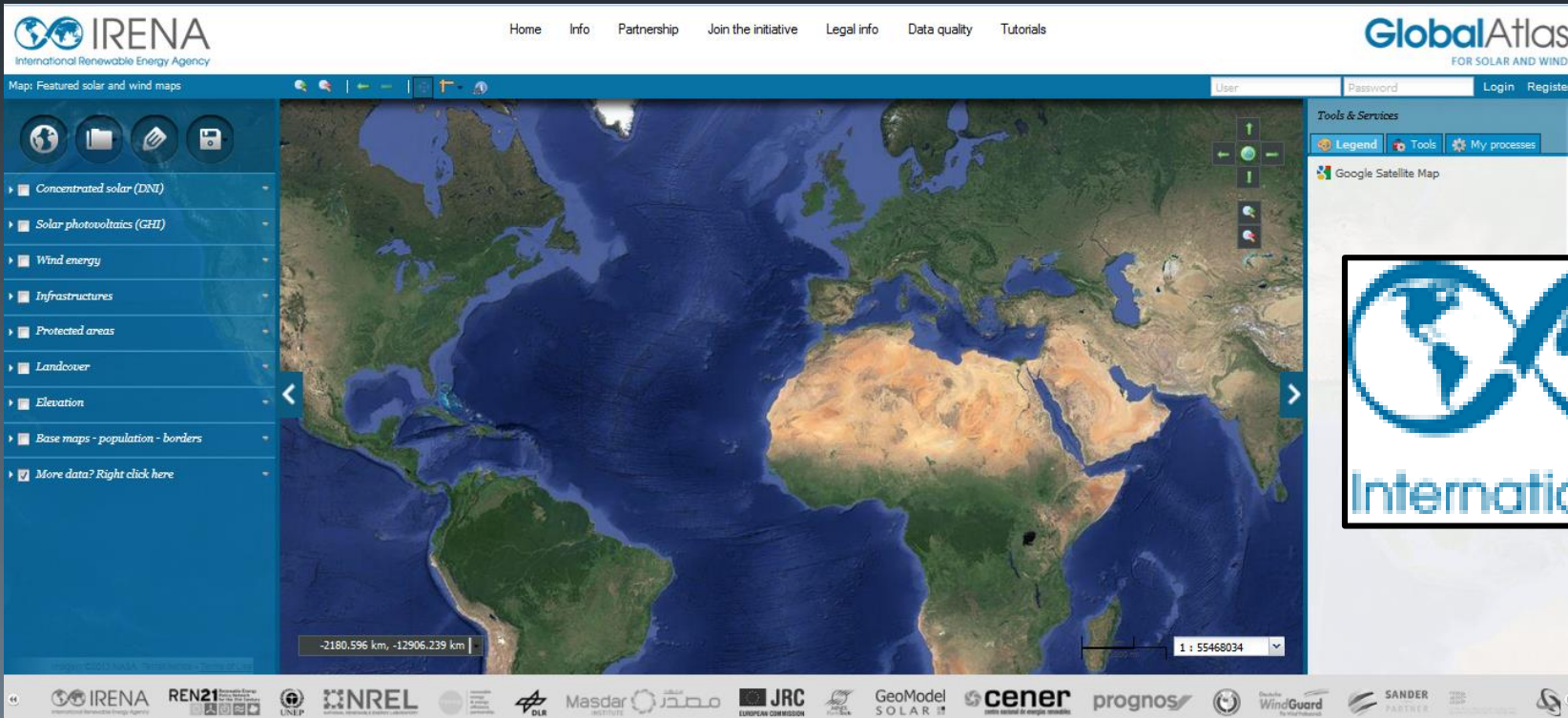
GIN-stack



Arizona Natural Resources Review Council Decision Support System *powered by USGIN*



Streaming data to Global Atlas of Renewable Energy



The screenshot displays the IRENA Global Atlas web interface. The top navigation bar includes links for Home, Info, Partnership, Join the initiative, Legal info, Data quality, and Tutorials. The main content area features a world map with various data layers overlaid. A left sidebar lists categories such as Concentrated solar (DNI), Solar photovoltaics (GHI), Wind energy, Infrastructures, Protected areas, Landcover, Elevation, Base maps - population - borders, and More data? Right click here. The right sidebar shows the GlobalAtlas logo and a list of tools and services, including Legend, Tools, My processes, and Google Satellite Map. The bottom of the page features a row of logos for partner organizations, including IRENA, REN21, UNEP, INREL, Masdar, JRC, GeoModel SOLAR, cener, prognos, WindGuard, SANDER, and others.



USGIN – compliant with 117-nation OneGeology platform

The screenshot displays the OneGeology Portal interface. At the top, the logo "ONE Geology" is on the left, and navigation links "Catalogues", "Vocabularies", "Help", and "About" are on the right. Below the navigation links, it says "Automatically display layers depending on scale and location". The main area features a global geological map with various colored regions. A toolbar with icons for zooming, panning, and other map functions is positioned above the map. A semi-transparent text box in the center of the map reads "Providing access to geoscience data globally". Below the main map, there is a smaller map showing the South Pacific Ocean, South Atlantic Ocean, and Indian Ocean. At the bottom, a scale bar indicates 4000 km, and a scale dropdown shows "Scale: 1 : 112 500 000". The SRS is set to "2D Latitude / Longitude (WGS84)", and the coordinates are "X : -238.23" and "Y : 54.65".

ONE Geology Providing geoscience data globally

Catalogues Vocabularies Help About

Automatically display layers depending on scale and location

OneGeology Portal

Providing access to geoscience data globally

NORTH NORTH ATLANTIC OCEAN

SOUTH PACIFIC OCEAN SOUTH ATLANTIC OCEAN INDIAN OCEAN

4000 km Scale: 1 : 112 500 000 SRS : 2D Latitude / Longitude (WGS84) X : -238.23 Y : 54.65



The background features a dynamic blue gradient with light rays emanating from the left. Overlaid on this is a pattern of binary code (0s and 1s) that appears to be receding into the distance, creating a sense of depth and digital connectivity.

Geosciences are leading
the data integration revolution

Emerging convergence on
a global cyberinfrastructure
and data management

Geoinformatics Division

Business Meeting: Tuesday, Oct. 21, 5-6 pm

Reception and Award Ceremony: Tuesday, 6-8 pm

Hyatt Grouse & Seymour Rooms