The Need for a Planetary Spatial Data Clearinghouse

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PSDI

Planetary Spatial Data Infrastructure

J. R. Laura et al. “Towards a Planetary Spatial Data Infrastructure”. In: *ISPRS International Journal of GeoInformation* 6.6 (2017), p. 181. DOI: 10.3390/ijgi6060181.

The Problem: Finding Data

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Data portals

Archives

Mission Team Services

Where do researchers start?

Experienced researchers have some knowledge.

New Researchers could easily feel lost.

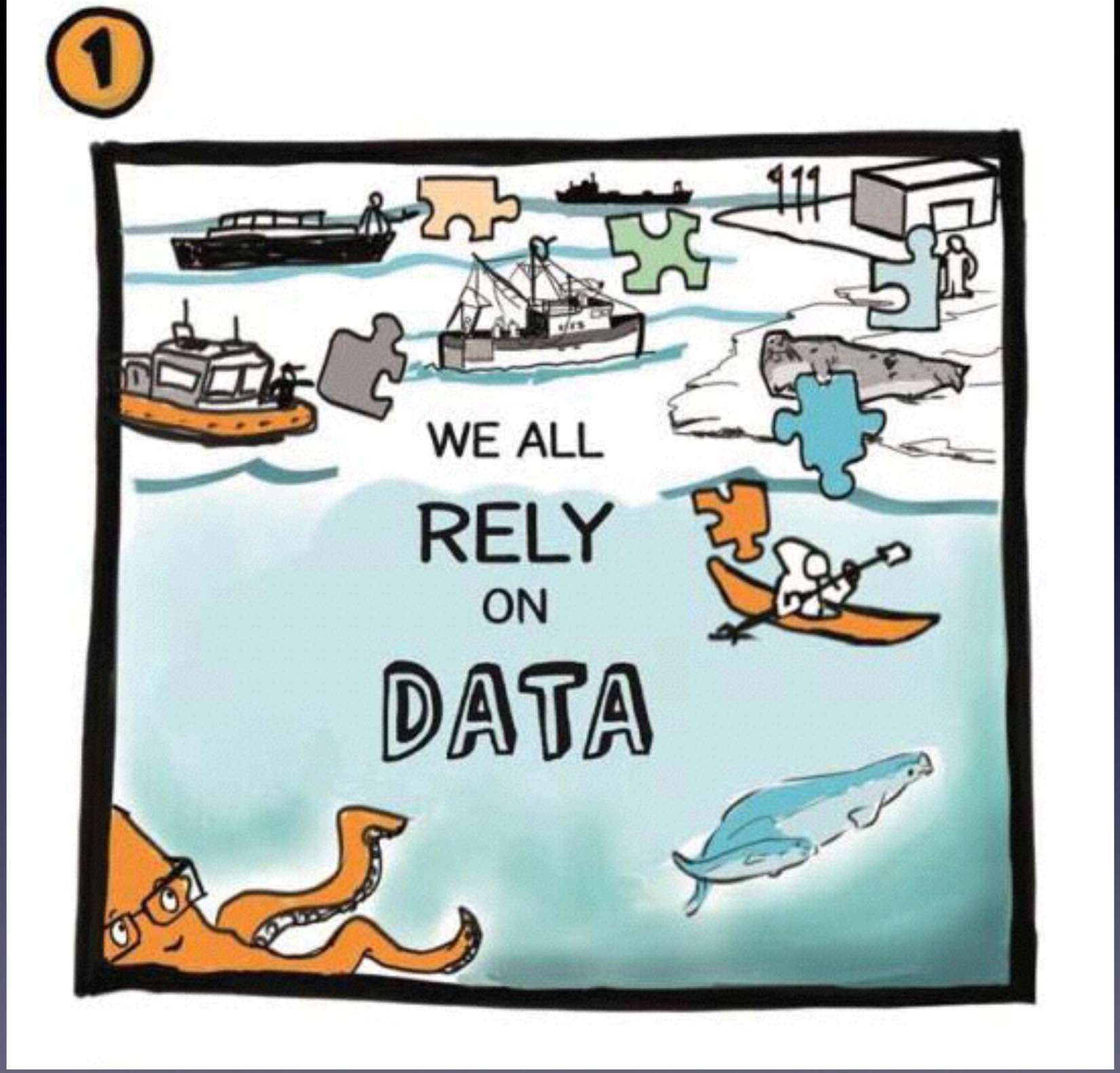
Both are in jeopardy of either

- reproducing spatial data that already exists
- or not using the best they could

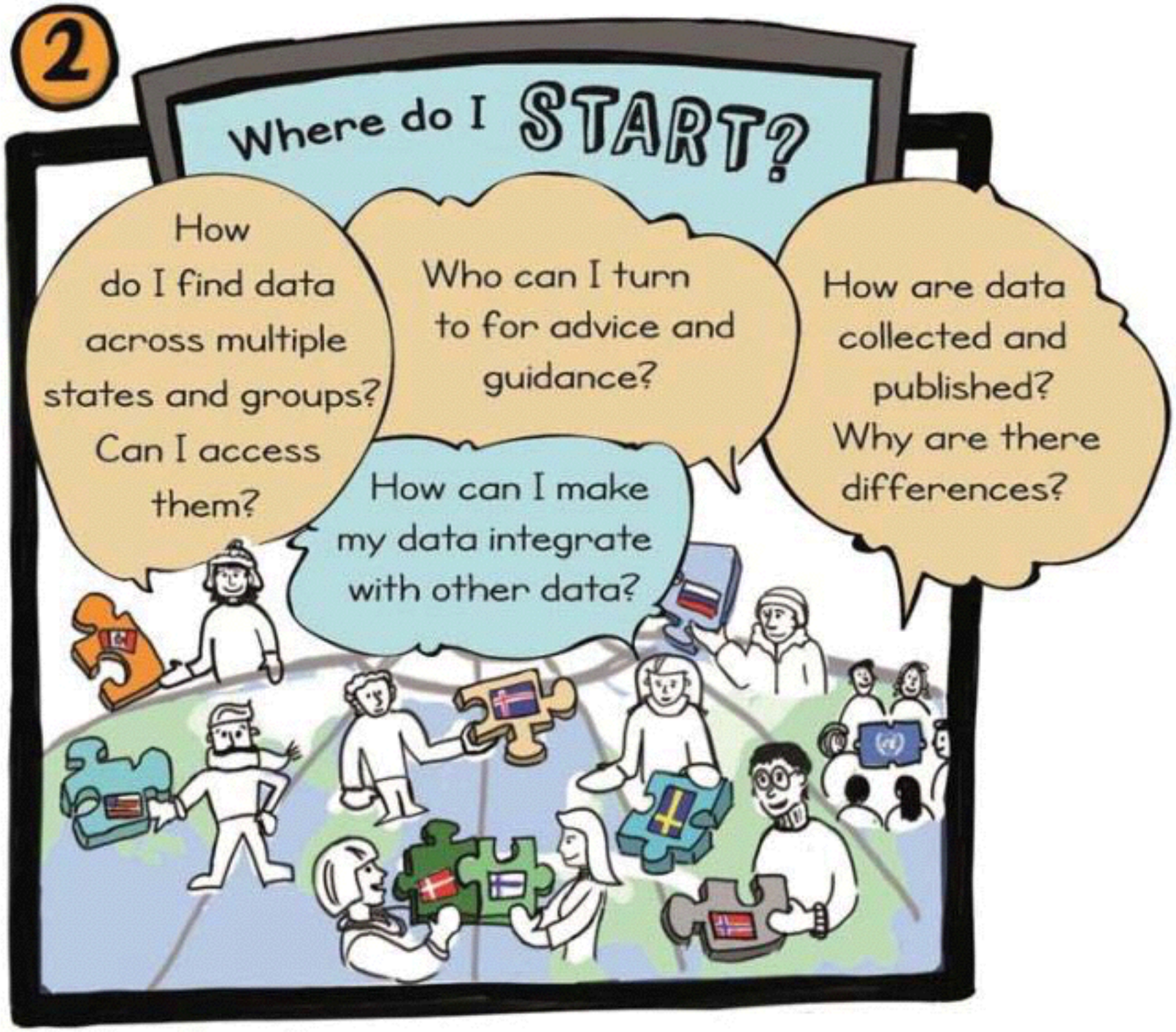
Space Agencies have a similar problem

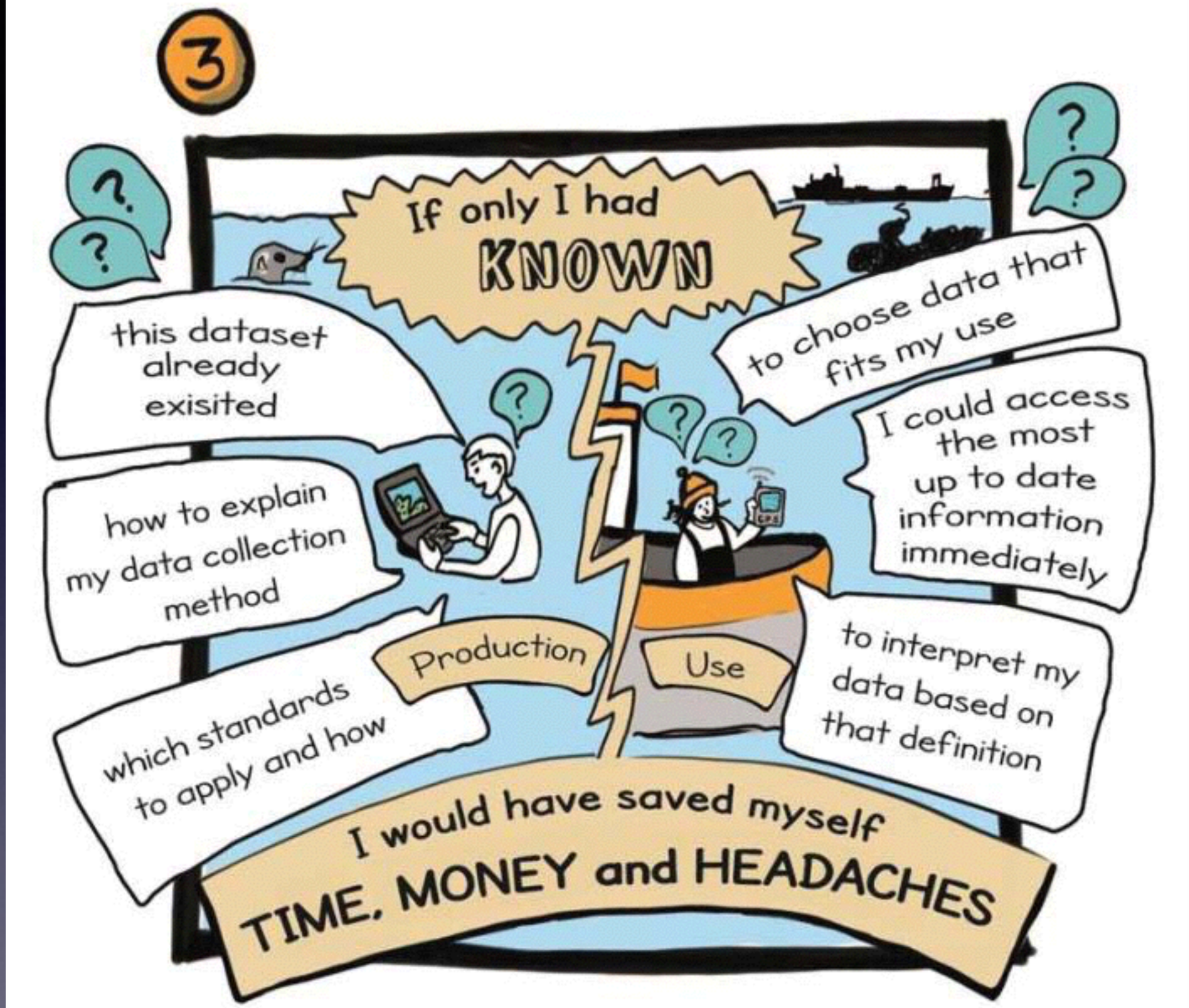
- What Planetary Spatial Data already exists?
- What must they fund to create?

How do Earth Scientists deal with this problem?



from the Arctic Spatial Data Infrastructure document, 2016, under the Open Government License – Canada


2
Where do I START?
How do I find data across multiple states and groups? Can I access them?
Who can I turn to for advice and guidance?
How can I make my data integrate with other data?
How are data collected and published? Why are there differences?


3
If only I had
KNOWN
this dataset already exisited
to choose data that fits my use
I could access the most up to date information immediately
how to explain my data collection method
Production
Use
which standards to apply and how
to interpret my data based on that definition
I would have saved myself
TIME, MONEY and HEADACHES

The order that established the US SDI and a National Spatial Data Clearinghouse

Federal Register
Vol. 59, No. 71
Wednesday, April 13, 1994

Presidential Documents

Title 3—

The President

Executive Order 12906 of April 11, 1994

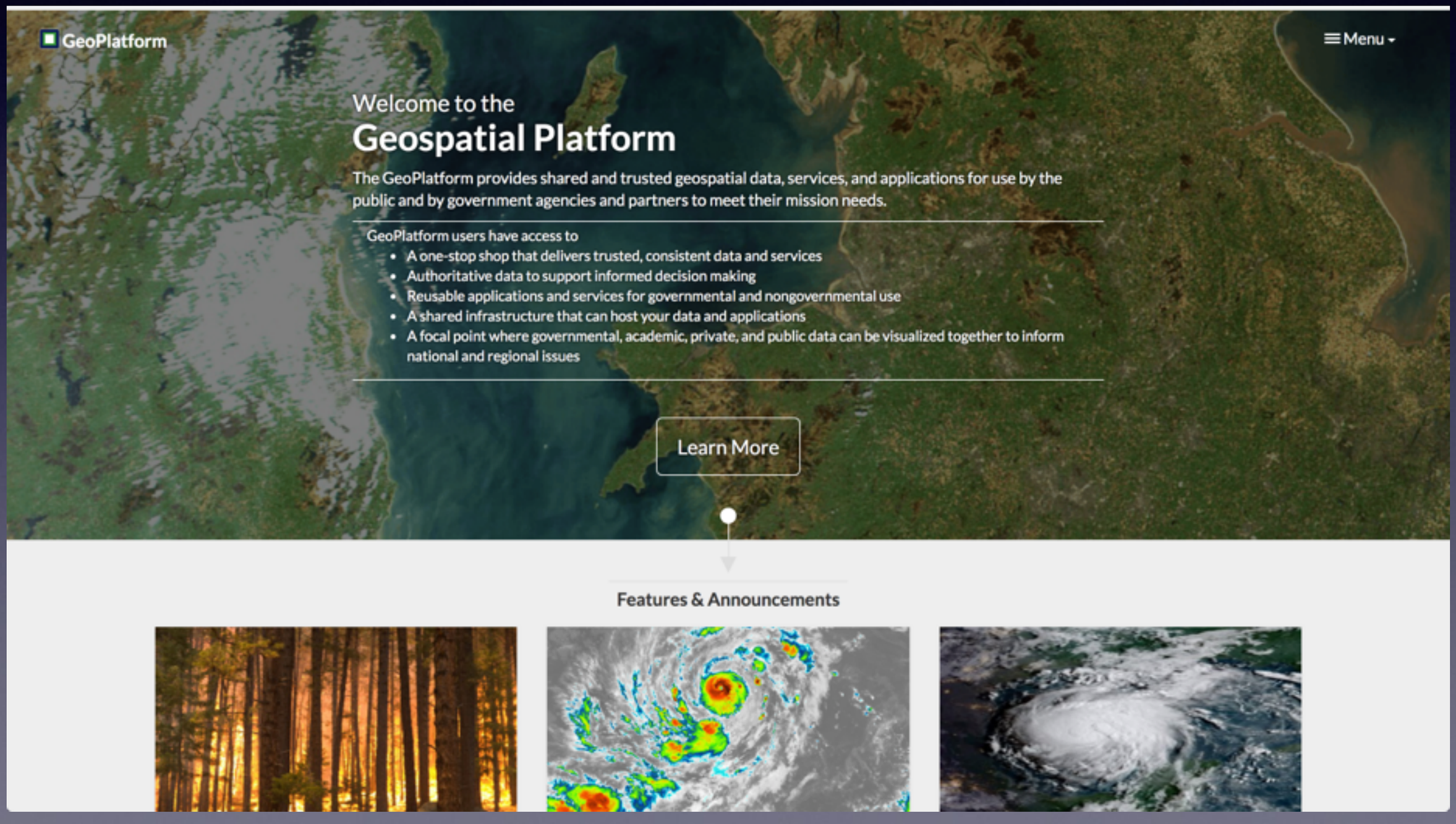
Coordinating Geographic Data Acquisition and Access: The National Spatial Data Infrastructure

Geographic information is critical to promote economic development, improve our stewardship of natural resources, and protect the environment. Modern technology now permits improved acquisition, distribution, and utilization of geographic (or geospatial) data and mapping. The National Performance Review has recommended that the executive branch develop, in cooperation with State, local, and tribal governments, and the private sector, a coordinated National Spatial Data Infrastructure to support public and private sector applications of geospatial data in such areas as transportation, community development, agriculture, emergency response, environmental management, and information technology.

NOW, THEREFORE, by the authority vested in me as President by the Constitution and the laws of the United States of America; and to implement

National Geospatial Data Clearinghouse

https://www.geoplatform.gov



National Geospatial Data Clearinghouse
https://www.geoplatform.gov

- Does not primarily archive data
- Acts as a catalog of available data sets
- Providers know that submission of their metadata benefits their work

What might a Planetary Spatial Data Clearinghouse be like?

Laura et al. (2017) define three foundational data themes for planetary spatial data:

- geodetic coordinate systems
- elevation data
- orthoimages

Imagine:
a planetary spatial data clearinghouse
with elevation and orthoimage information

Mars Researcher

Mars Researcher

Topography Search returns:

- MOLA gridded data products
- merged HRSC/MOLA map
- regional terrain models created for landing sites
- local terrain models created by researchers for their individual ROSES grants

Mars Researcher

Orthoimage Search returns:

- USGS MDIM products
- various USGS geologic maps
- THEMIS mosaics hosted at ASU
- local mosaics and thematic maps that were created for published papers that are being hosted by journals or universities

Planetary Spatial Data Clearinghouse

- acts as a table of contents
- allows for broader discovery than PDS searches alone
- requires curation and community involvement
- would enable planetary science research
- important piece of realizing a PSDI