Normas del Consorcio Geoespacial Abierto y Computación en Nube

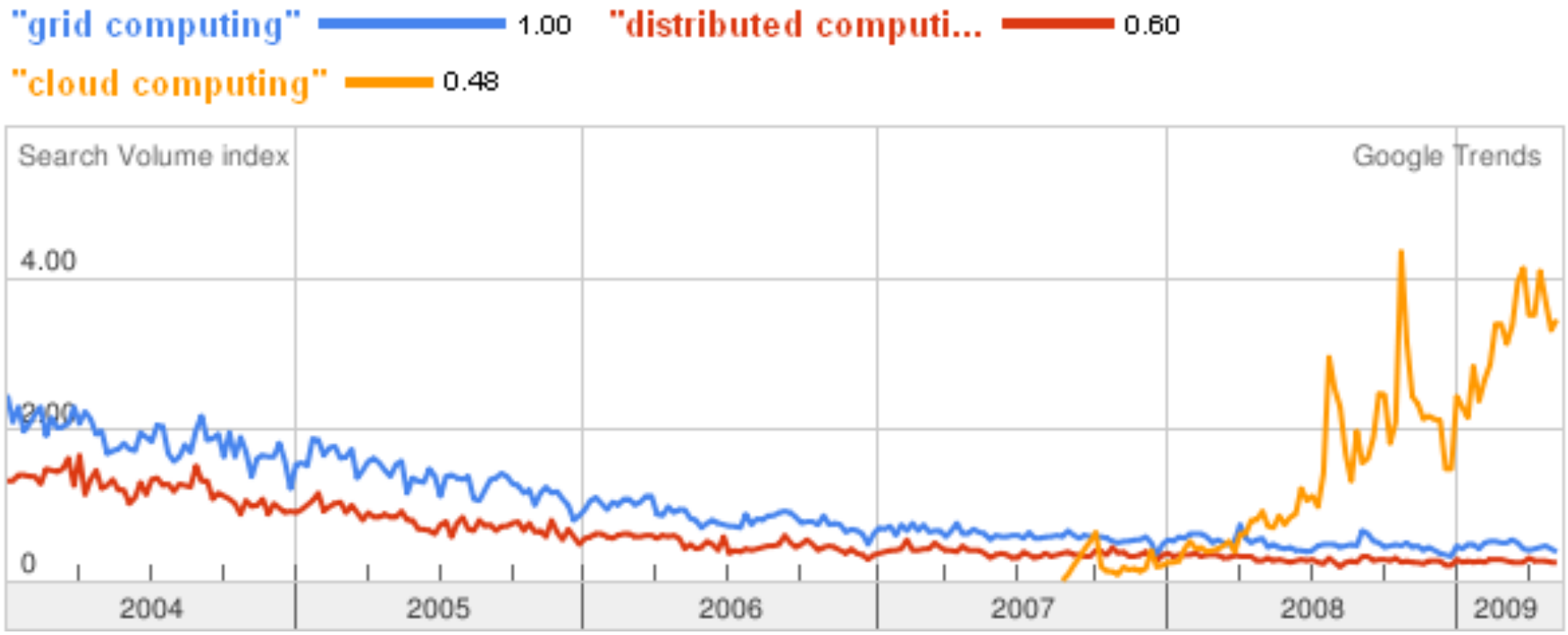
Luis Bermudez

Director Interoperability Certification

April 4, 2013

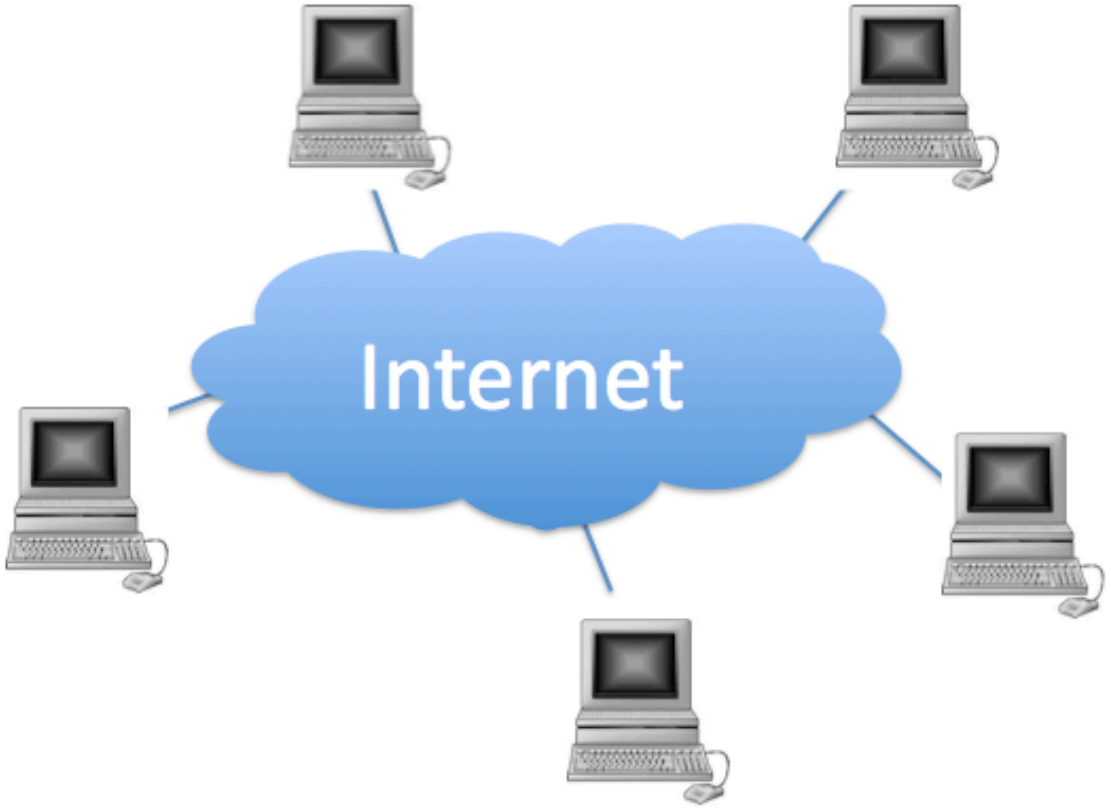
Mundo Geo Webinar

Computación en la nube



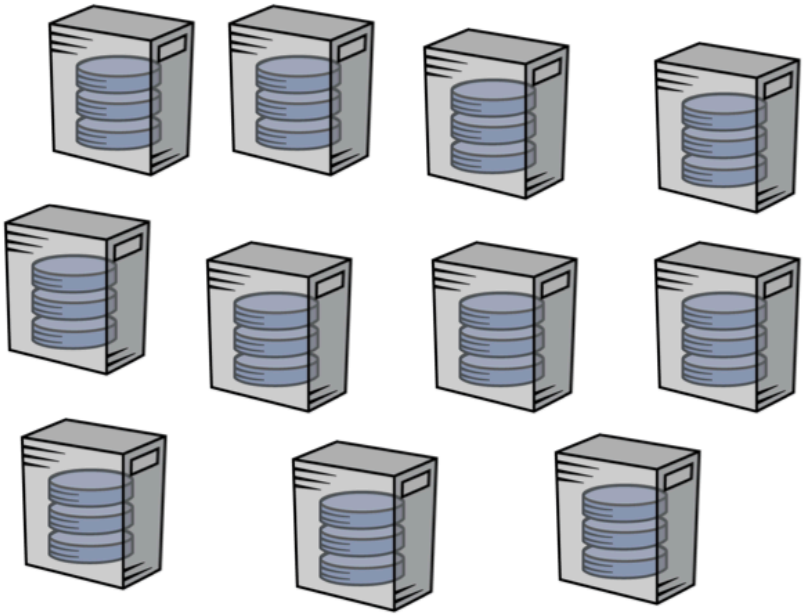
Tendencia Emergente

Computación en la nube



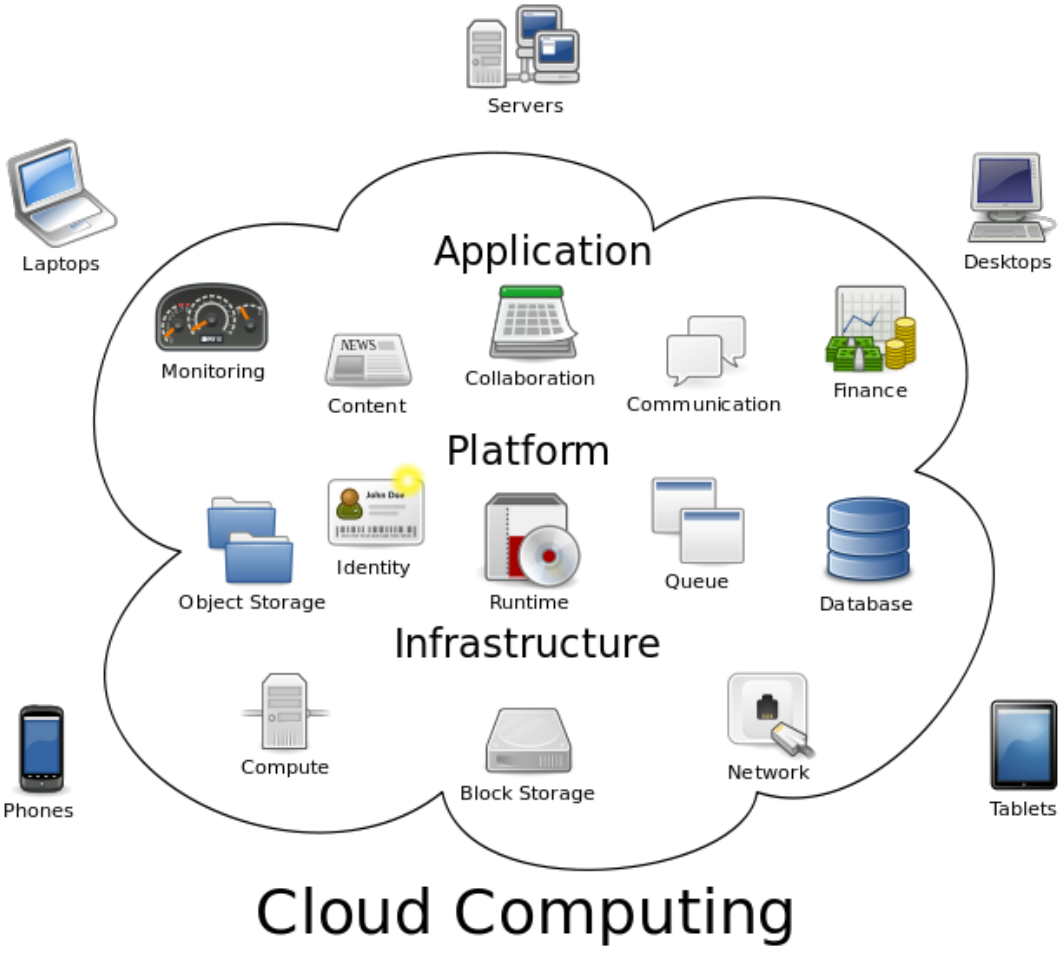
Computación en la nube

Gran beneficio de la computación en la nube



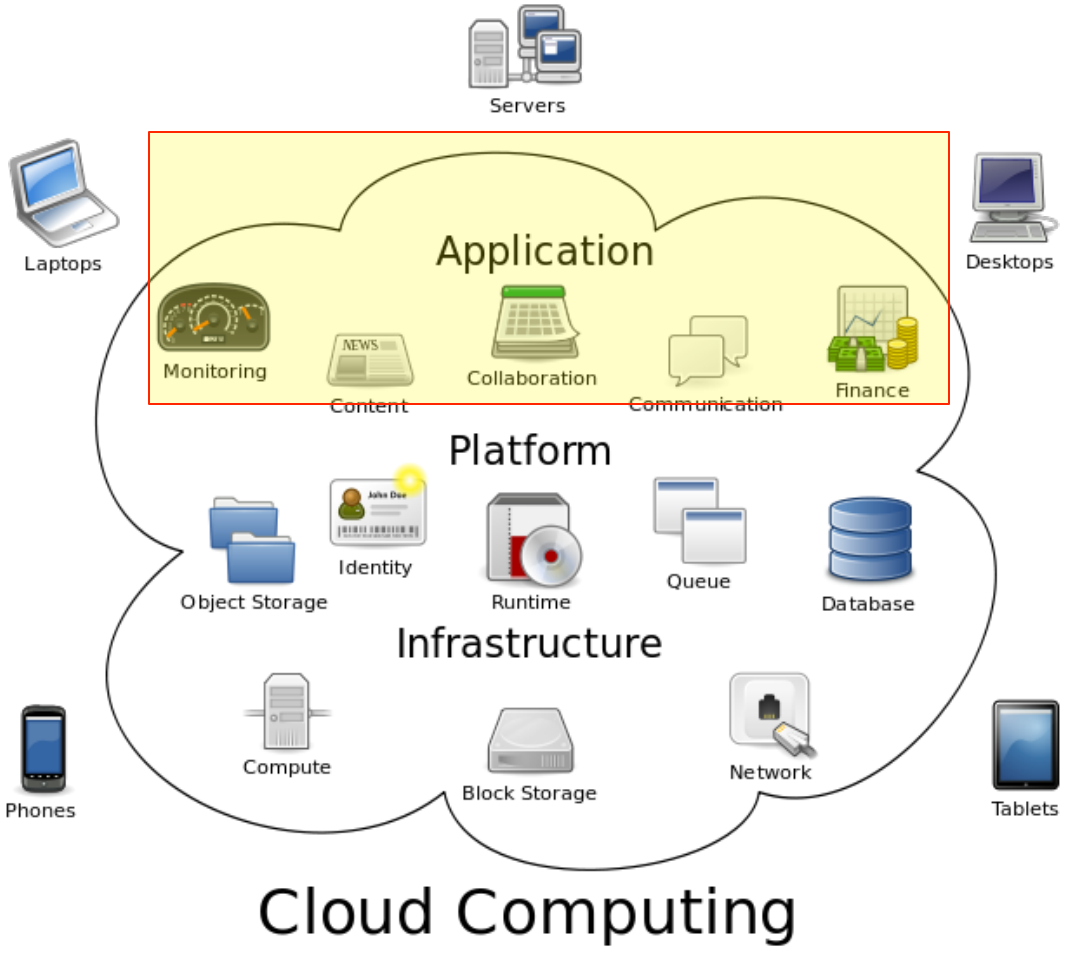
Disminución del costo para acceder al poder computacional
Infraestructura se arrienda
No hay necesidad de comprar, instalar …

Computación en la nube



By Sam Johnston [CC-BY-SA-3.0 (http://creativecommons.org/licenses/by-sa/3.0)], via Wikimedia Commons

Software como Servicio



By Sam Johnston [CC-BY-SA-3.0 (http://creativecommons.org/licenses/by-sa/3.0)], via Wikimedia Commons

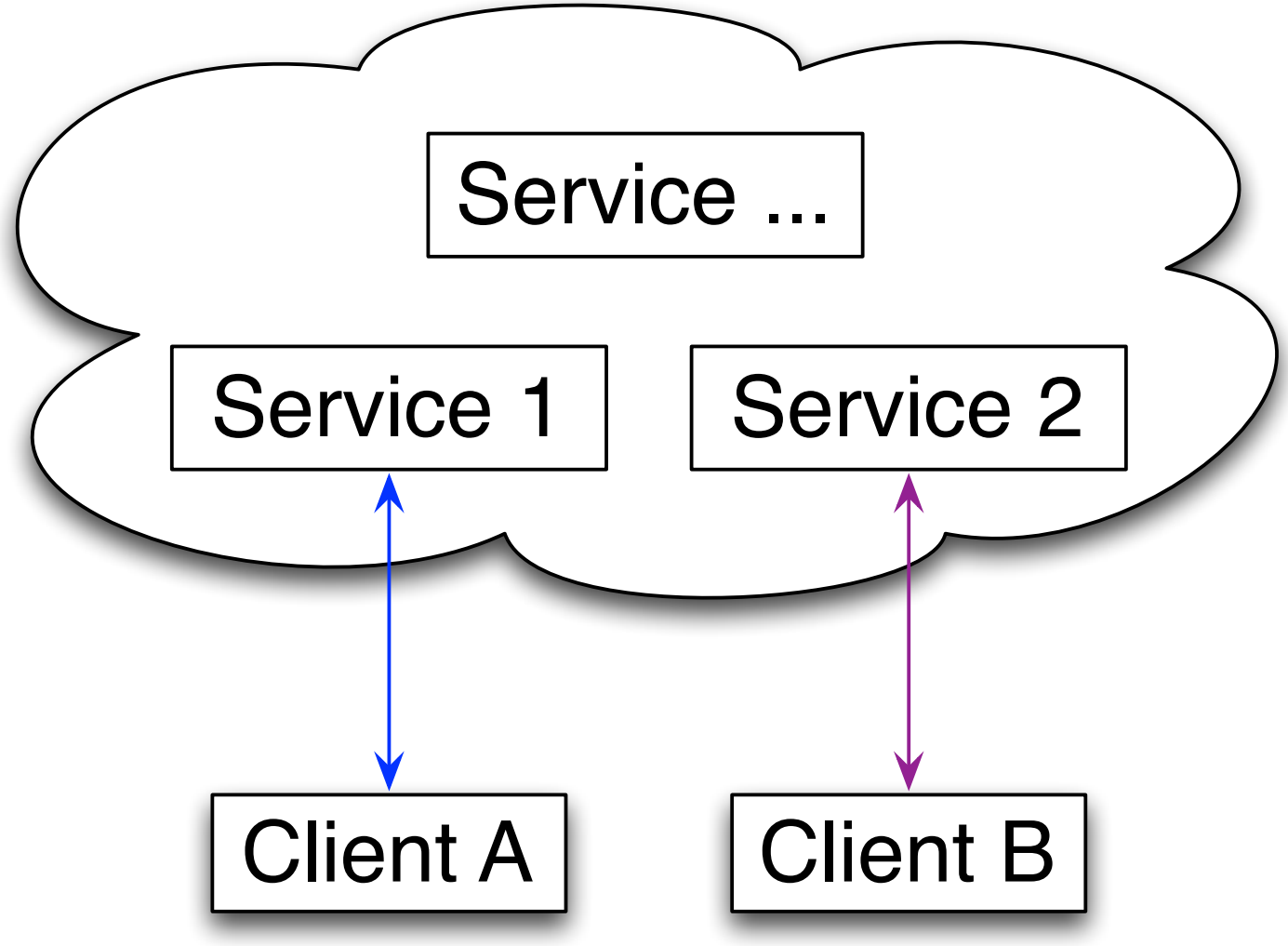
Información que necesita ***Localización***

Información que necesita ***Localización***

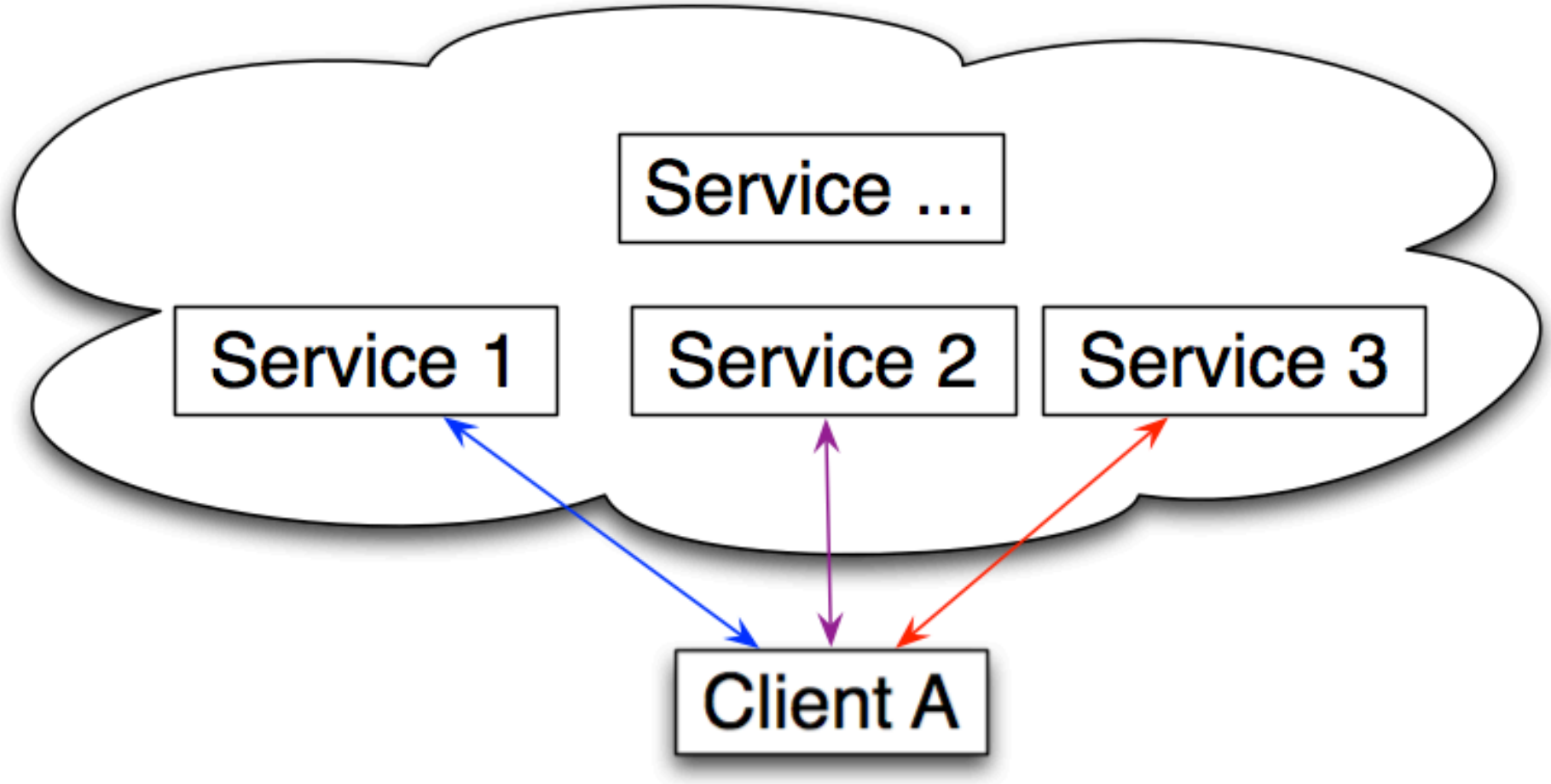
Que tipos de servicio?

- Publicación de datos
  - Raster (imágenes satelitales)
  - Vectores (hidrografía, carreteras, regiones)
  - Sensores (observaciones y sensores)
- Procesamiento de datos
  - Interpolación
  - Categorización
  - …
- Visualizacion, simbolización
  - Mapas
- Descubrimiento de datos y servicios
  - Catálogos

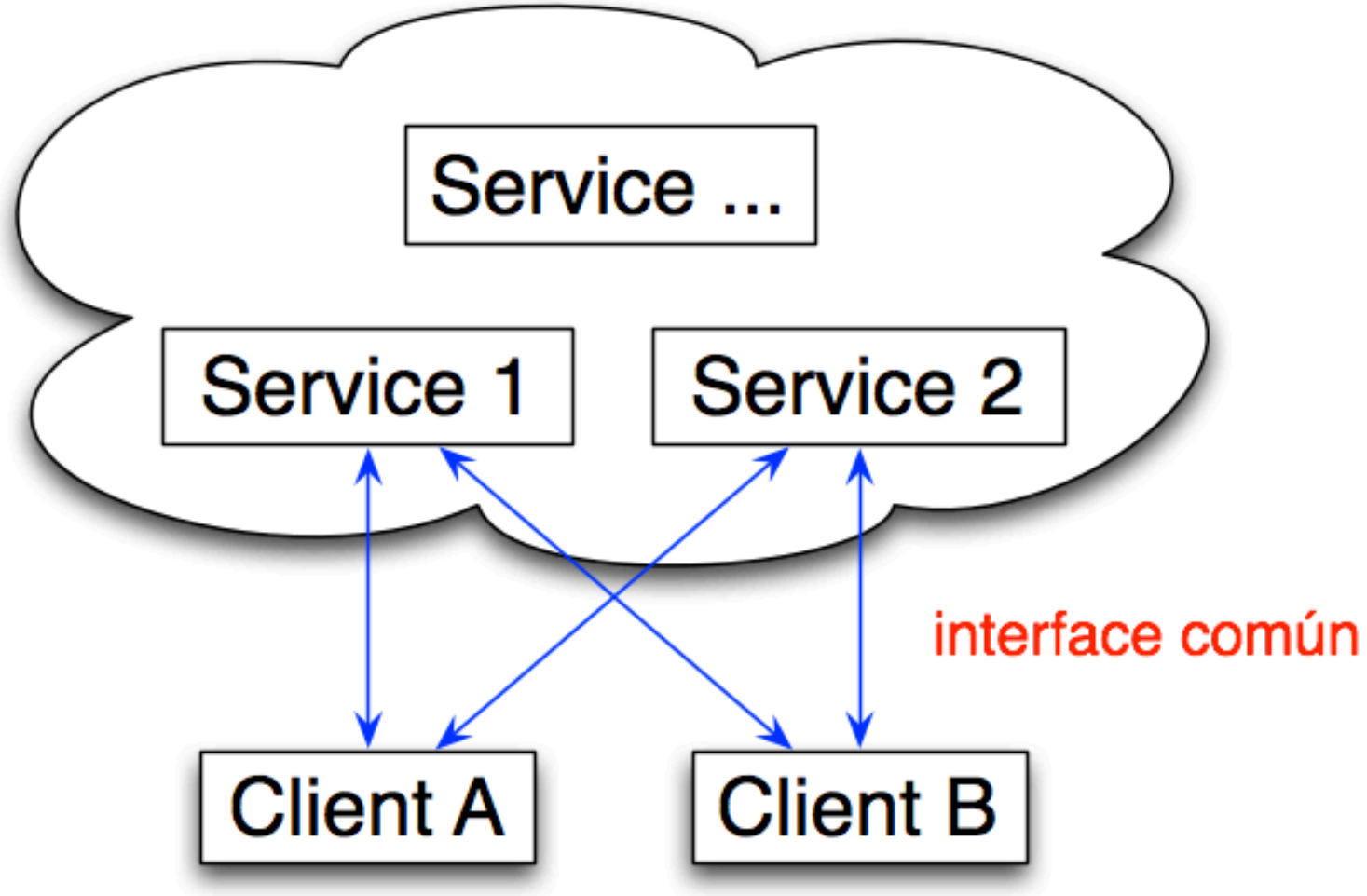
Sin interfaces acordadas



Sin interfaces acordadas



Con interfaces acordadas

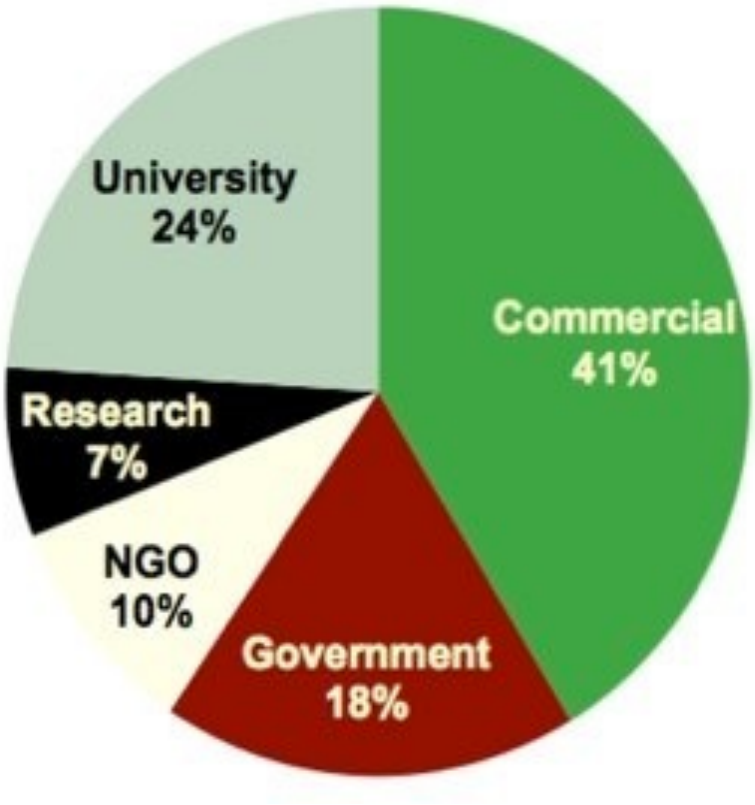


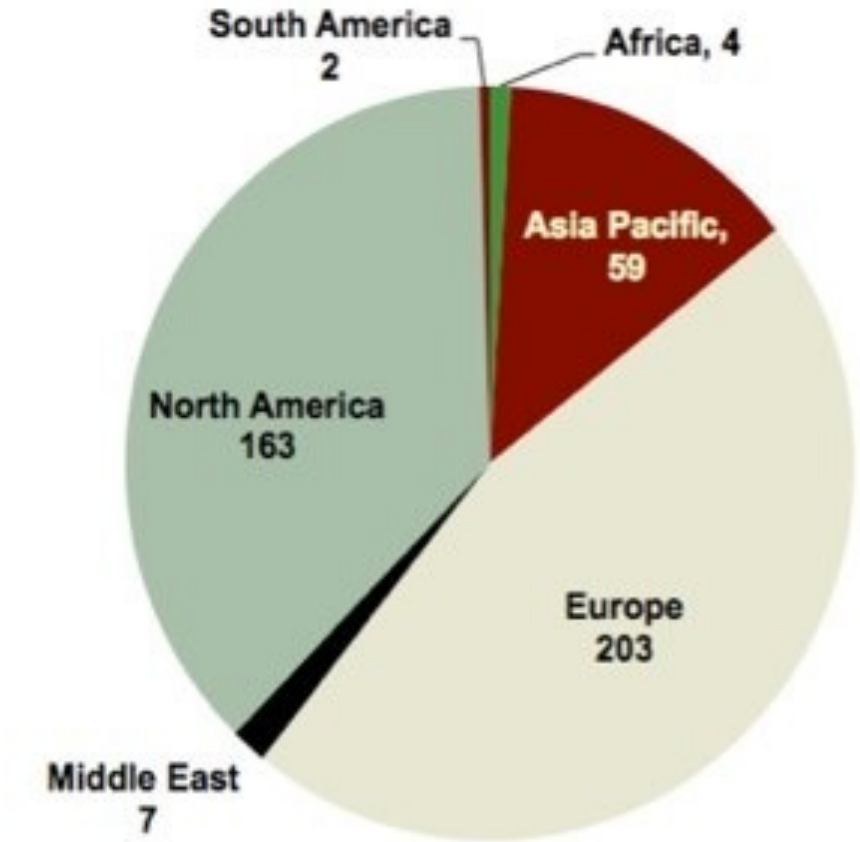
Consorcio Geoespacial Abierto

Unica organización con miembros en la industria que se enfoca en estandares de localización

Foro + Proceso

450 Organizaciones & 4000 Individuos





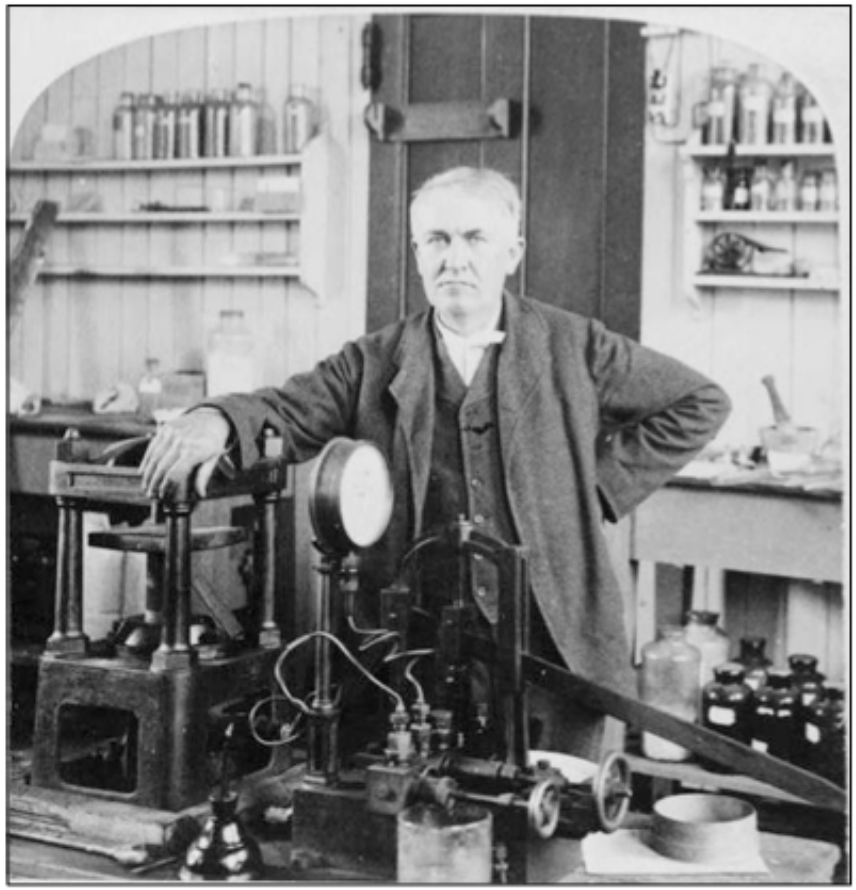
Info as 2012-05

Miembros en América Latina

- Fundação CPqD (Brazil)
- Instituto Geográfico Agustín Codazzi (Colombia)
- Ministerio de Bienes Nacionales - Secretaria Ejecutiva SNIT (Chile)
- INFOCAM (México)
- Instituto Nacional de Estadística y Geografíca INEGI (México)
- CentroGeo (México)
- Universidad Autónoma del Estado de México (México)

Dominios

Programa de Interoperabilidad



“ No he fracasado. He encontrado 10,000 soluciones que no funcionan. ”

Thomas Edison

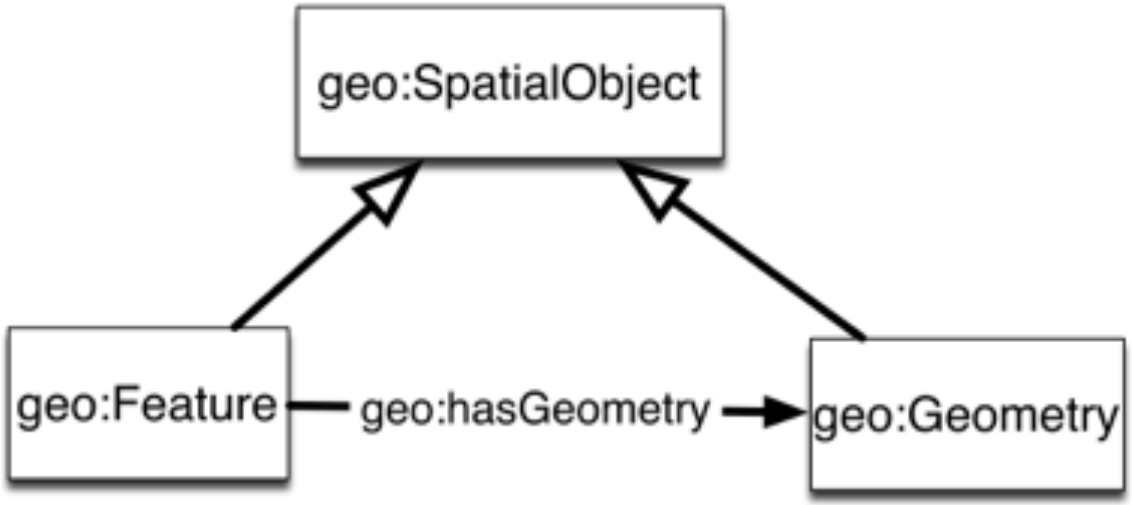
Program de Certificación

700 implementing products

190 compliant products in the market

Colaboración y Coordinación

OGC y W3C



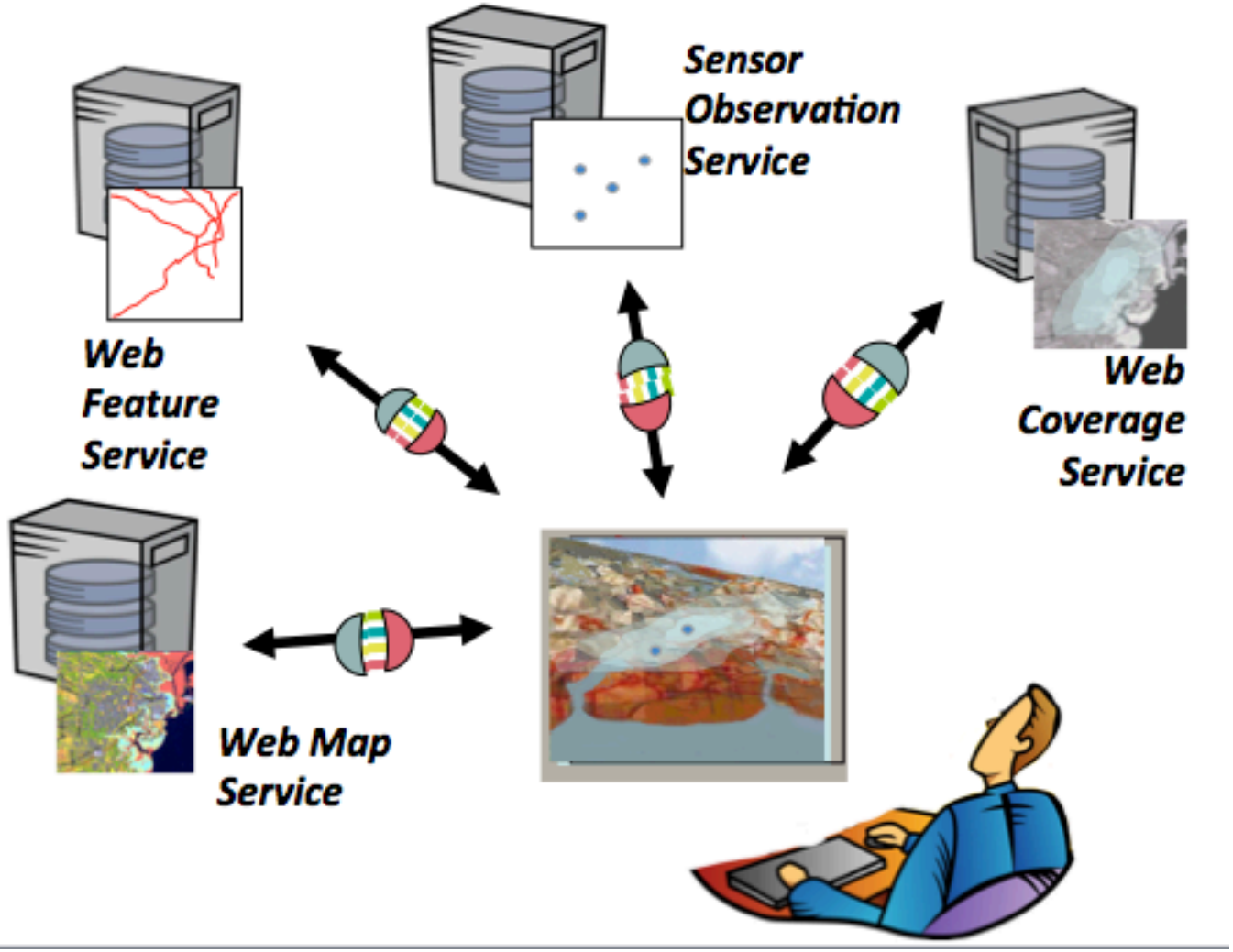
GeoSPARQL = OGC GML + W3C RDF

OGC y ISO

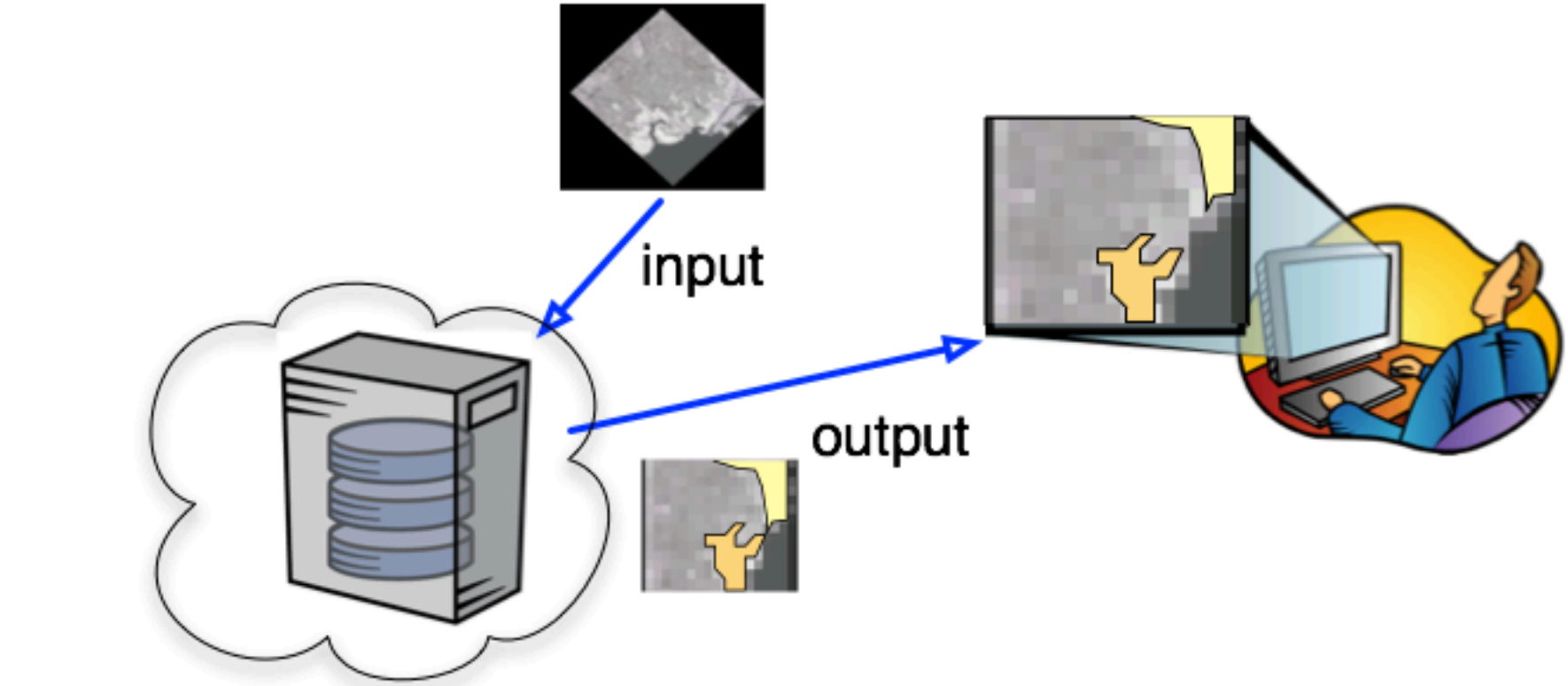
Que tipos de servicio?

- Publicación de datos
  - Raster (imágenes satelitales)
  - Vectores (hidrografía, carreteras, regiones)
  - Sensores (observaciones y sensores)
- Procesamiento de datos
  - Interpolación
  - Categorización
  - …
- Visualizacion, simbolización
  - Mapas
- Descubrimiento de datos y servicios
  - Catálogos

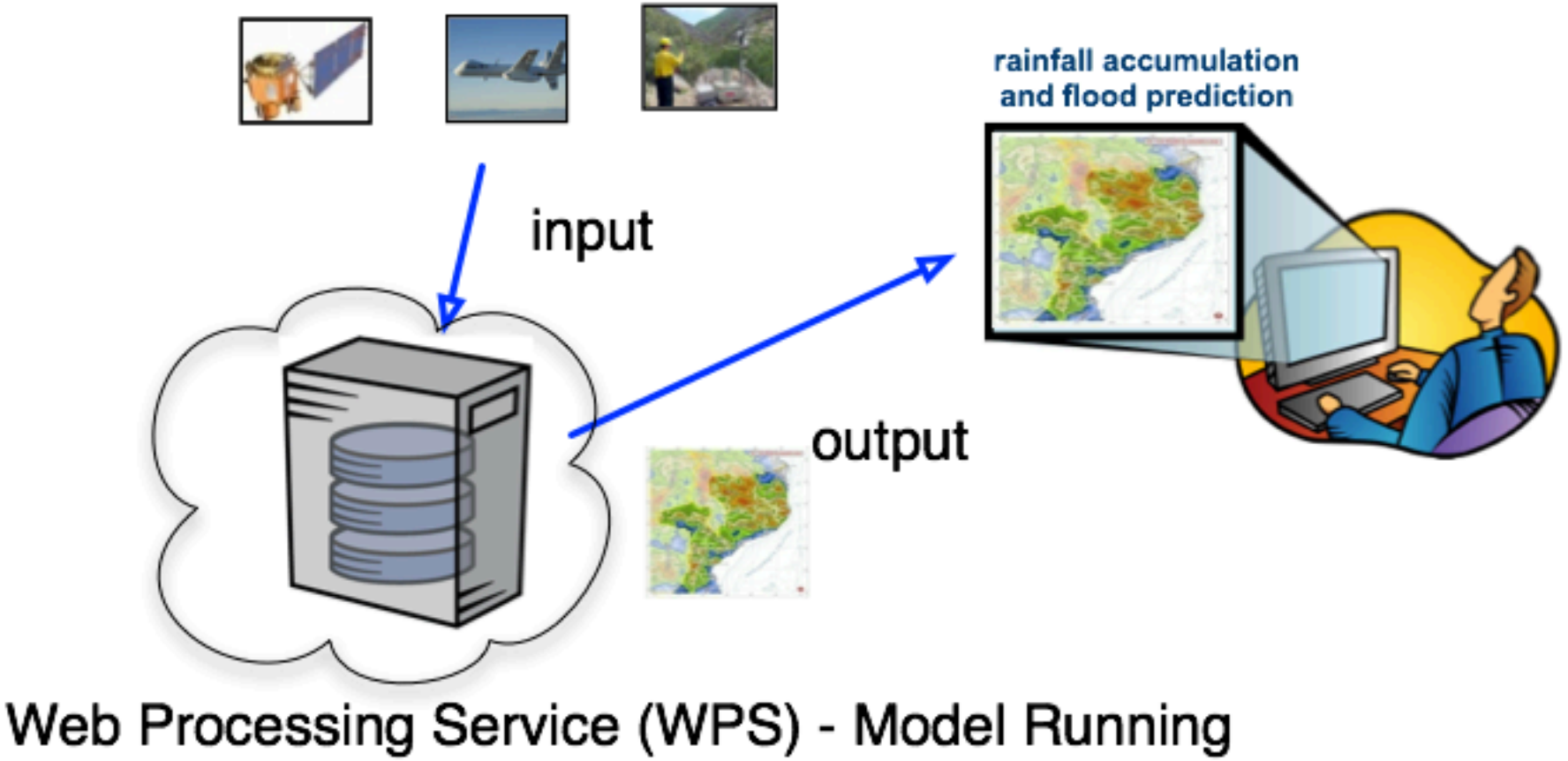
Interfaces OGC para acceso de datos y visualización



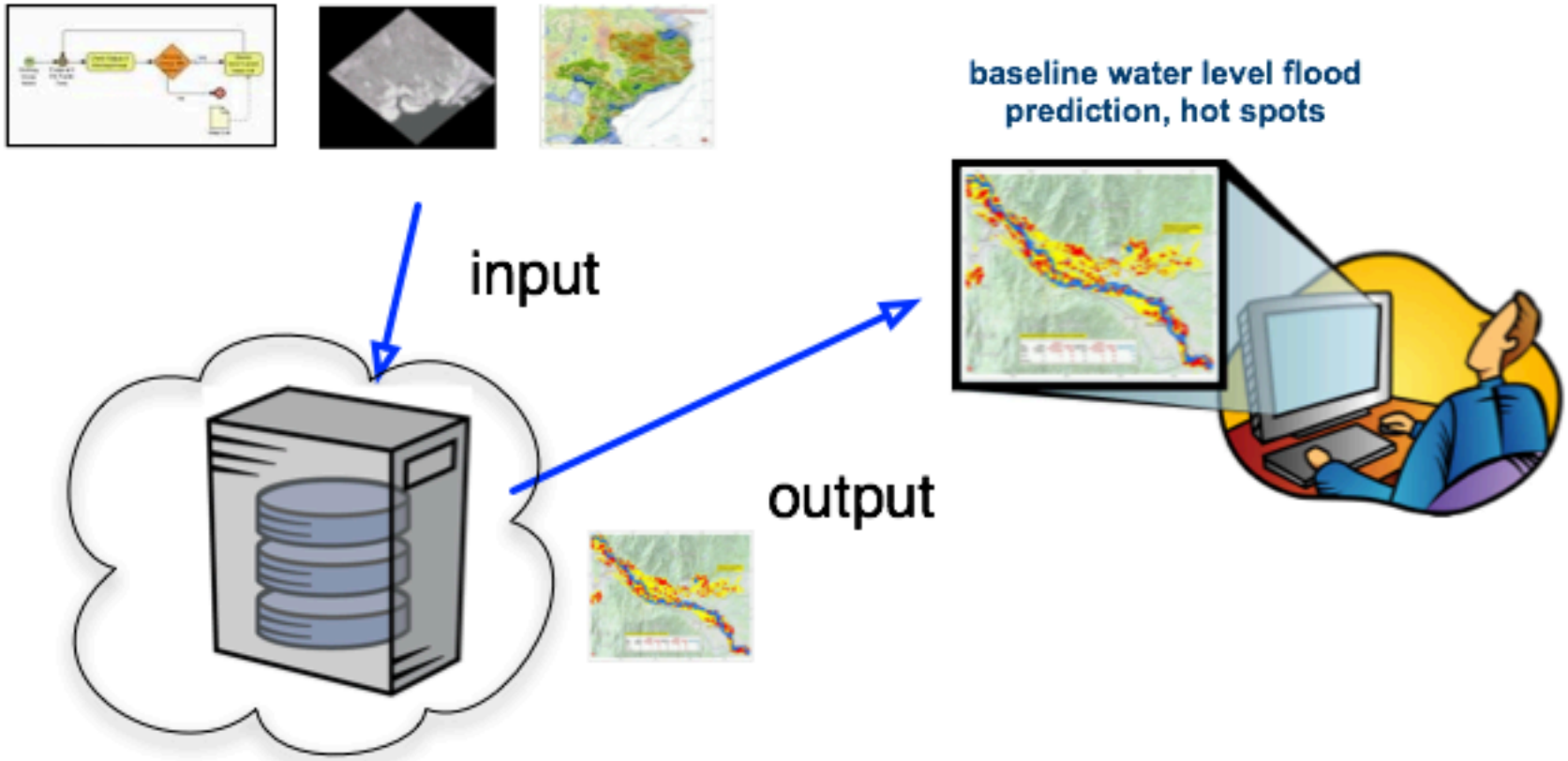
Interfaces OGC para procesamiento de datos



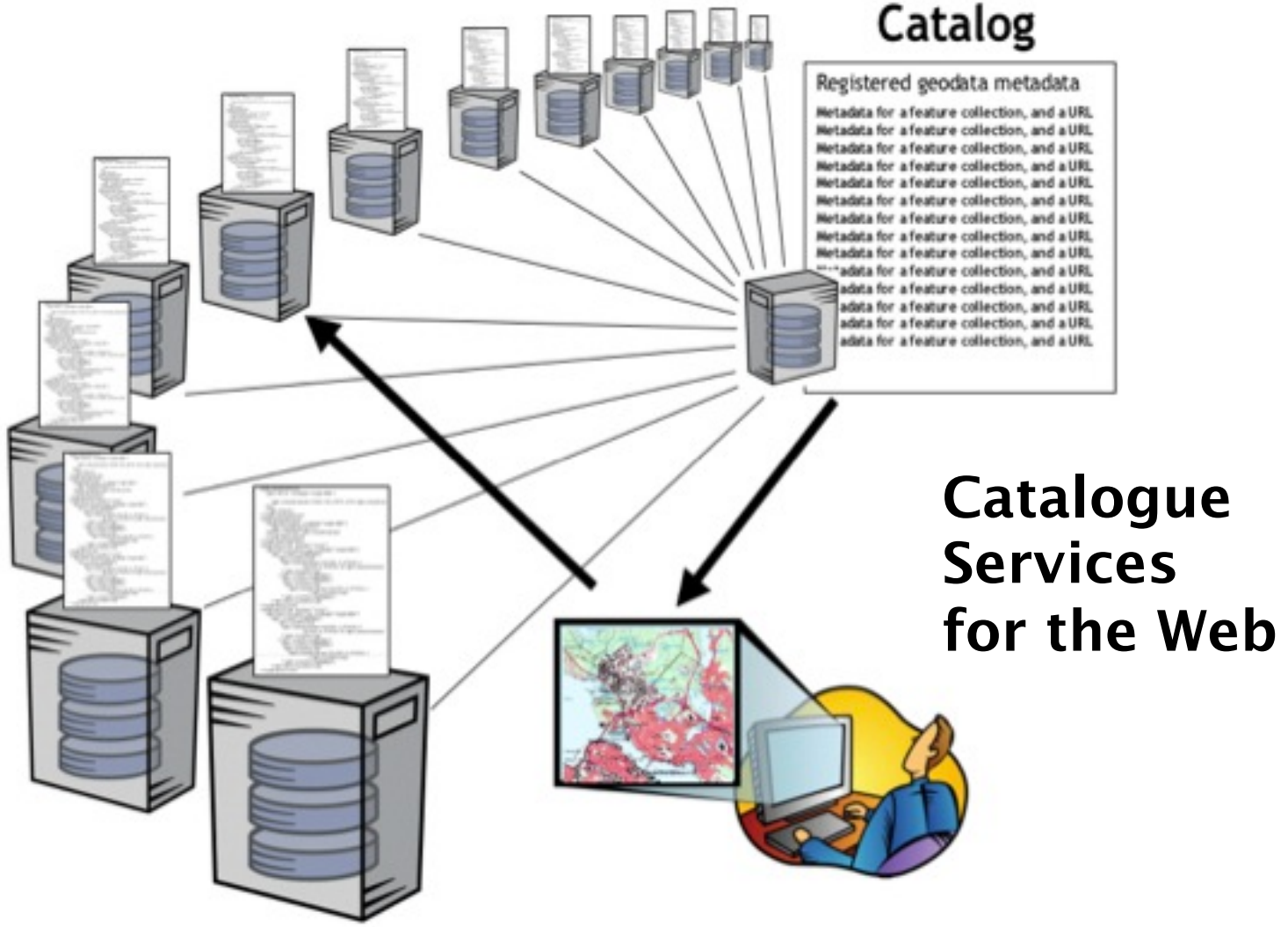
Interfaces OGC para procesamiento de datos



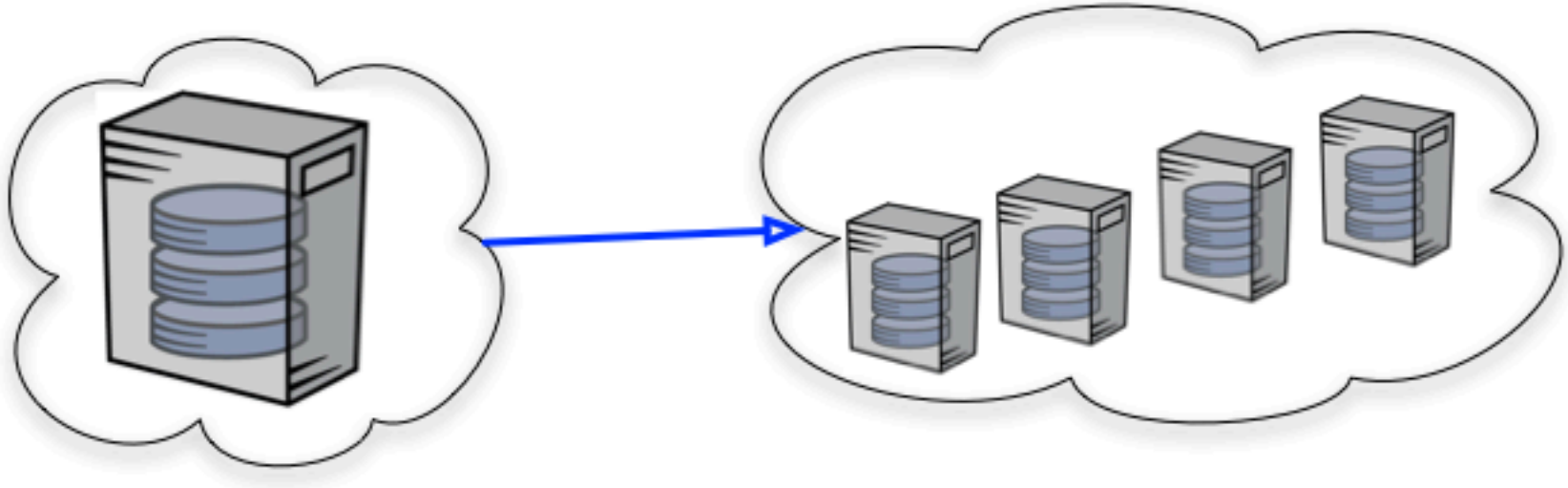
Interfaces OGC para procesamiento de datos



Interfaces OGC para busqueda de datos y servicios

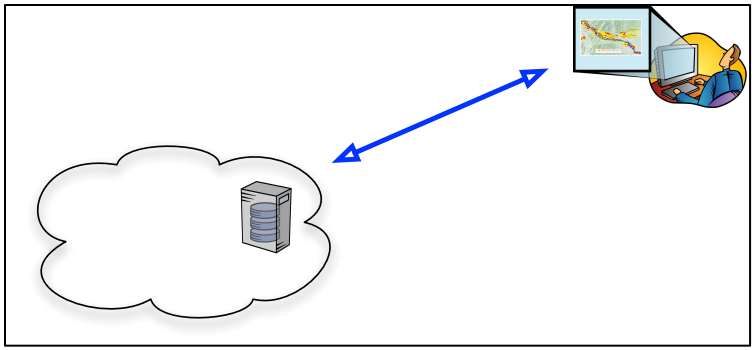


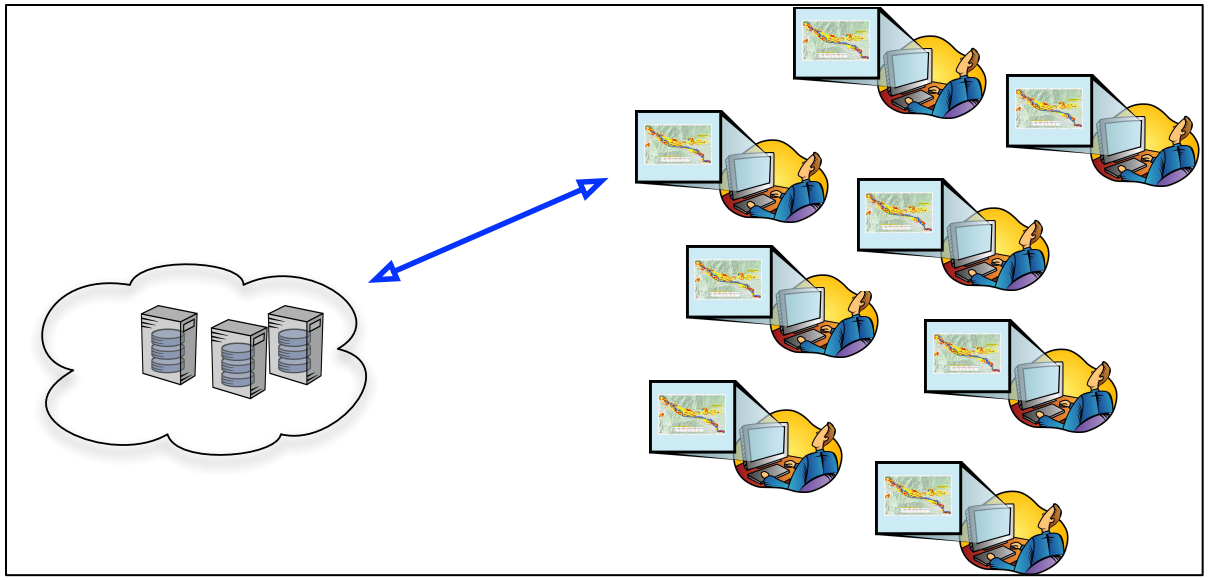
Porque la nube?



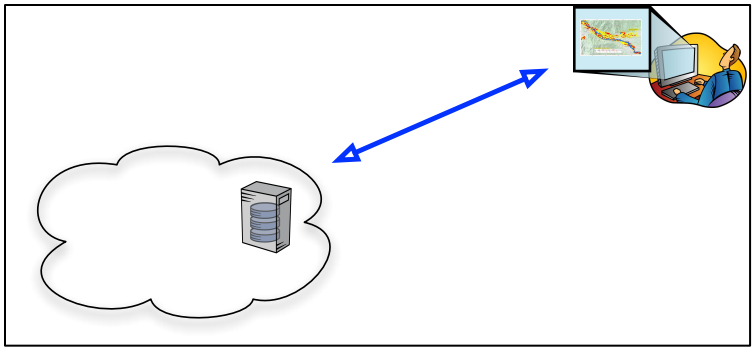
Escalabilidad
Flexibilidad
Rendimiento

Escalabilidad y Flexibilidad

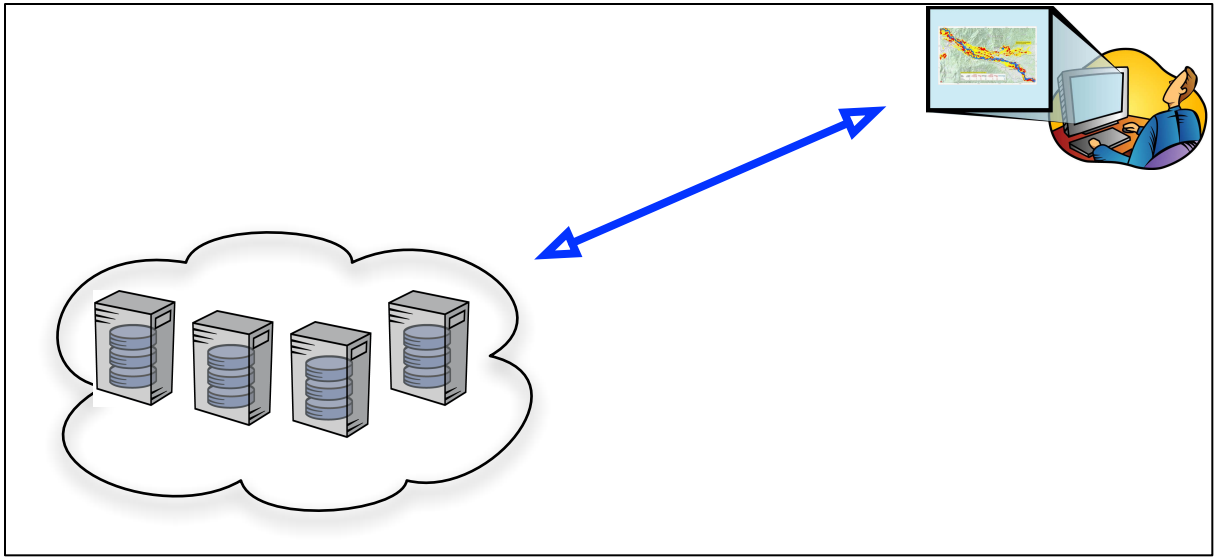




Escalabilidad y Flexibilidad



Petición poderosa



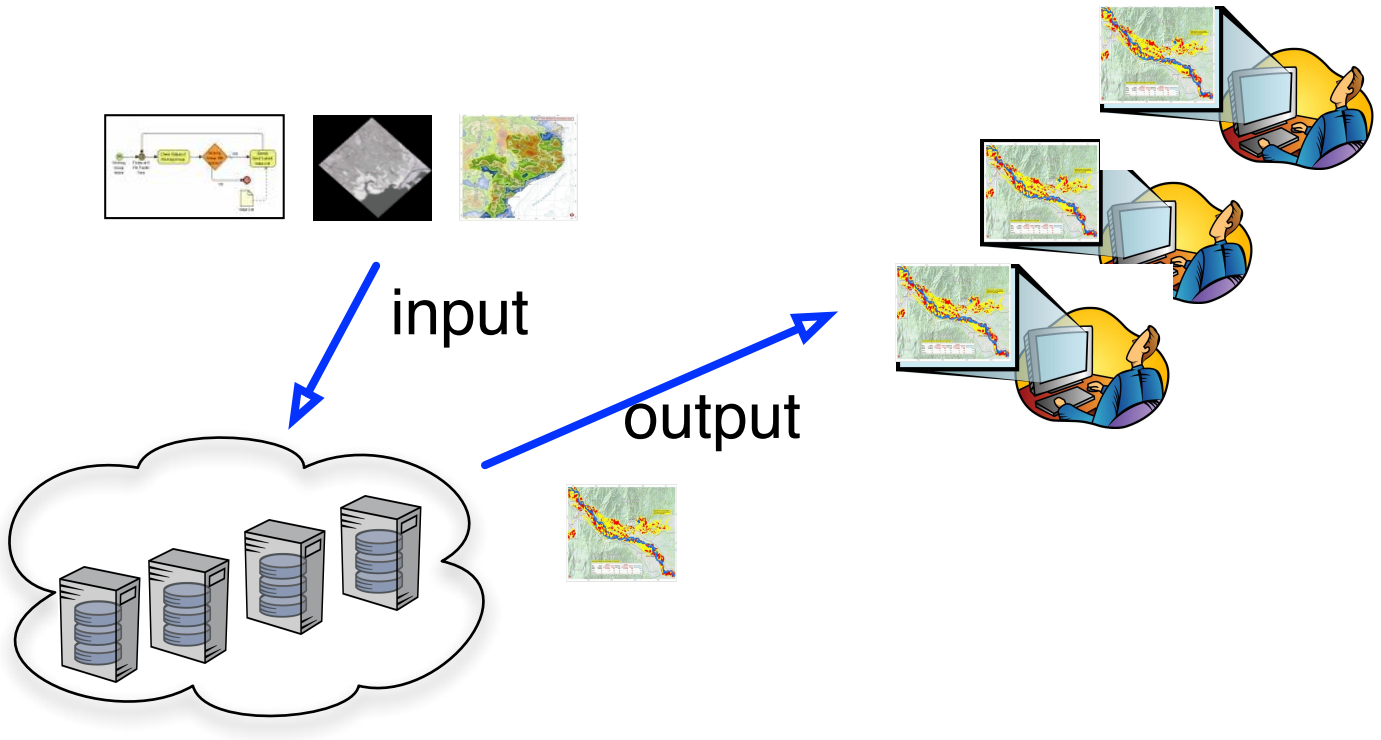
Rendimiento puede ser obligatorio

- INSPIRE de Europa
  - Consultas de busqueda (e.g. CSW)
    - Máximo 3s de tiempo de respuesta*
    - Manejo de 30 solicitudes paralelas por segundo
  - Descarga de Imágenes (e.g. WMS)
    - Máximo 5 s de tiempo de respuesta*
    - Manejo de 20 solicitudes paralelas por segundo
  - En general el servicio 99% de disponibilidad (362 días / año de tiempo de actividad)

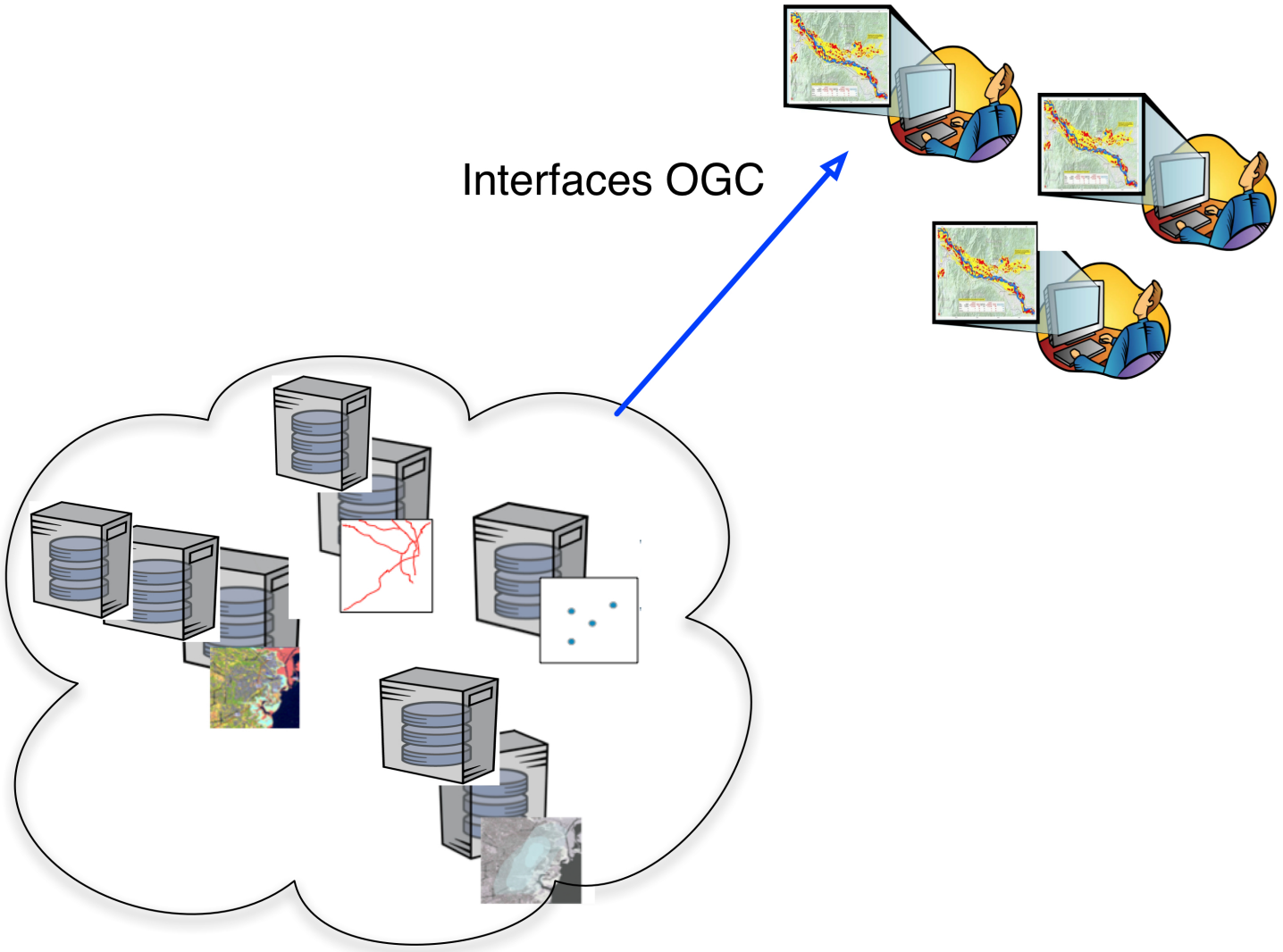
* Durante tráfico normal (90% de tiempo de actividad).

Beneficios para servicios de proceso (WPS)

Los flujos de trabajo complejos pueden ser proporcionados como un servicio que se adapta según la necesidad.



Beneficios para servicios de acceso de datos



Comparación de nubes en el uso de WPS

A COMPARISON OF PLATFORM AS A SERVICE (PAAS) CLOUDS WITH A DETAILED REFERENCE TO SECURITY AND GEOPROCESSING SERVICES

Byron Ludwig* and Serena Coetzee

Department of Computer Science, University or Pretoria, Pretoria, 0002, South Africa - byronludwig@gmail.com, scoetzee@cs.up.ac.za

Commission IV, WG IV/5

KEY WORDS: platform as a service, PaaS, geoprocessing, cloud computing, distributed computing, service level agreement, SLA, security

ABSTRACT:

Cloud computing is an emerging computing paradigm aimed at running services over the internet to provide scalability and flexibility. The advantages in using the cloud for start-up and small businesses that lack infrastructure have been shown to far outweigh the disadvantages. Cloud platform services, also known as Platform as a Service (PaaS), provide a computing platform or solution stack on which software can be developed for later deployment in a cloud. However, there are a number of security challenges because users of the cloud have to rely on third party companies to provide confidentiality, integrity and availability. Geoprocessing is the manipulation of geographic information, ranging from simple feature overlays and geocoding to raster processing and advanced climate modelling. The Open Geospatial Consortium's (OGC) Web Processing Service (WPS) defines a standardized interface that facilitates the publishing of geospatial processes. Parallelization and distribution of geoprocessing services

http://www.isprs.org/proceedings/XXXVIII/4-W13/ID_57.pdf

Estandares en la nube de OGC para monitoreo

A SOA based debris flow monitoring system

Author(s): Lan-Kun Chung
Geographic Inf. Syst. Res. Center, Feng Chia Univ., Taichung, Taiwan

ABSTRACT

Taiwan is located at the collision boundary of the Philippine sea plate and the Eurasian plate. The mountain terrain is precipitous and the region, on the whole, is characterized by fragile rocks and frequent seismic activity. In addition, the concentrated torrential rainfall brought by typhoons cause extensive disasters, debris flow, the most serious disaster caused by torrential rainfall, lead to very heavy casualties in recent years. There are 17 fixed debris flow monitoring stations and 2 mobile stations deployed in Taiwan. However, the whole architecture was designed in late 2000 and implemented by traditional and proprietary methodologies. Hence, several interoperability issues have been unveiled in the recent years when the needs of interoperability increased. In this study, we propose a whole new and open standards based debris flow monitoring architecture following the service oriented architecture (SOA) paradigm. Relevant open geospatial consortium (OGC) standards (for example Web processing service, WPS specification and sensor web enablement, SWE technologies) and advancements from grid computing where lead into the proposed architecture. The use of open standards and distributed computing technologies in the proposed architecture enables heterogeneous resources (data, processing and computing power) interoperability. This study also implements an OGC WPS grid processing profile that was developed in the OGC Web services, Phase 6 (OWS-6) initiative of the OGC interoperability program.

http://ieeexplore.ieee.org/xpl/login.jsp?tp=&arnumber=5293549&url=http%3A%2F%2Fieeexplore.ieee.org%2Fxpls%2Fabs_all.jsp%3Farnumber%3D5293549

Geoprocesamiento en nubes híbridas

Geoprocessing in Hybrid Clouds

Theodor Foerster, Bastian Baranski, Bastian Schäffer & Kristof Lange

Institute for Geoinformatics, University of Münster, Germany

{theodor.foerster; bastian.baranski;schaeffer; kristof.lange}@uni-muenster.de

Abstract. Meeting specific Quality of Service parameters in distributed architectures is one of the key requirements to build an operational infrastructure. This applies especially to SDIs, which offer geoprocessing functionality. This paper describes Hybrid Clouds as a means to meet these requirements in a efficient way by scaling the processing base load on internal (Private Cloud) and peak loads to external (Public Cloud) Cloud Computing infrastructure. The paper describes an architecture for Hybrid Clouds and a scenario performing image processing at a data center by the means of a Hybrid Cloud.

http://www.theodor-foerster.de/articles/Geoinformatik2010_foerster_etal_final.pdf

WMS en el Google App Engine

GIS in the cloud: implementing a web map service on Google App Engine

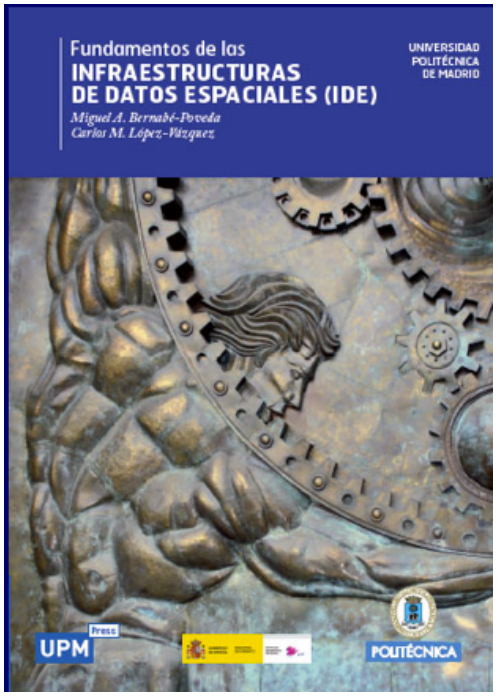
Author: J. D. Blower University of Reading, United Kingdom

Many producers of geographic information are now disseminating their data using open web service protocols, notably those published by the Open Geospatial Consortium. There are many challenges inherent in running robust and reliable services at reasonable cost. Cloud computing provides a new kind of scalable infrastructure that could address many of these challenges. In this study we implement a Web Map Service for raster imagery within the Google App Engine environment. We discuss the challenges of developing GIS applications within this framework and the performance characteristics of the implementation. Results show that the application scales well to multiple simultaneous users and performance will be adequate for many applications, although concerns remain over issues such as latency spikes. We discuss the feasibility of implementing services within the free usage quotas of Google App Engine and the possibility of extending the approaches in this paper to other GIS applications.

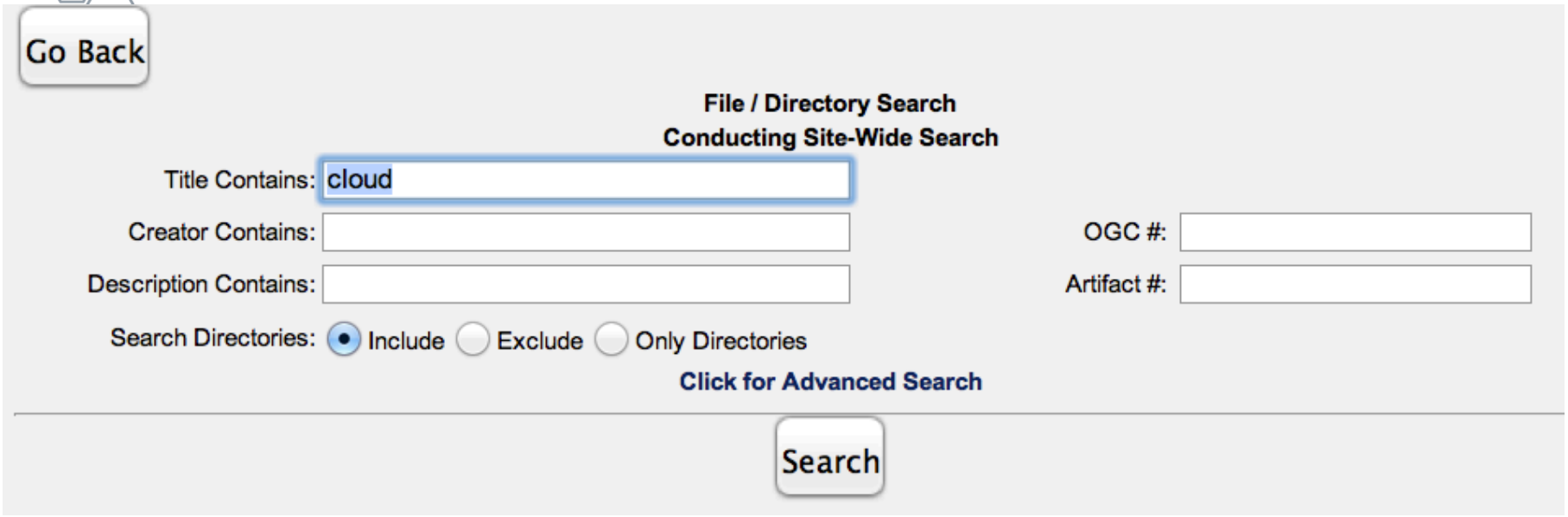
http://dl.acm.org/citation.cfm?id=1823893

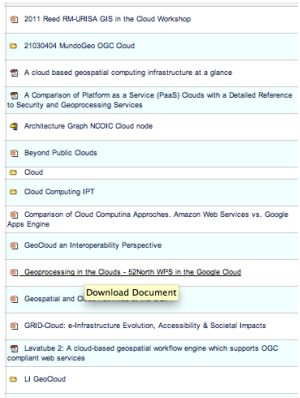
Otros Recursos

- Estandares de OGC
  - http://www.opengeospatial.org/standards
- Foro ILAF
  - http://www.opengeospatial.org/ogc/regions/ilaf
- Libro IDE
    - http://redgeomatica.rediris.es/libroide/



Miembros pueden acceder a todos los recursos del Portal – Archivos





Search found 31 files matching criteria
Search found 5 directories matching criteria

Miembros Pueden Acceder a todos los recursos del Portal – 4000 usuarios

User Name	Email	Phone	Organization	Rep Type
Aguilar, Betzabe	baguilar@centrogeo.org.mx		CentroGeo [Details]	Other
Campos, Jesus	jcampose@centrogeo.org.mx		CentroGeo [Details]	Other
Coronel, Claudia	ccoronel@centrogeo.org.mx		CentroGeo [Details]	Other
Gutierrez, Cecilia	ceciliag@centrogeo.org.mx		CentroGeo [Details]	Other
Ledesma, Mario	mledesma@centrogeo.org.mx		CentroGeo [Details]	Other
Lopez, Pablo	plopez@centrogeo.org.mx		CentroGeo [Details]	Other
Lopez, Alejandra	alopez@centrogeo.org.mx		CentroGeo [Details]	Other
Lopez, Daniel	dlopez@centrogeo.org.mx		CentroGeo [Details]	Other
Lopez, Fernando	ferlopez@centrogeo.org.mx		CentroGeo [Details]	Other
Lopez, Alberto	albertol@centrogeo.org.mx		CentroGeo [Details]	Other
Madrigal, Jose Manuel	jmadrigal@centrogeo.org.mx		CentroGeo [Details]	Other

Miembros reciben financiamiento para avanzar prototipos

OGC Web Services, Phase 9 (OWS 9)

Time frame: 05.2012 to 01.2013

Website: http://www.opengeospatial.org/projects/initiatives/ows-9

Description: OGC OWS 9 testbeds are part of OGC's Interoperability Program, a global, hands-on and collaborative prototyping program designed to rapidly develop, test and deliver proven candidate specifications into OGC's Specification Program, where they are formalized for public release. The content of OWS 9 initiatives are organized around threads which include Aviation, Cross-Community Interoperability (CCI), Security and Services Interoperability (SSI), OWS Innovations and Compliance & Interoperability Testing & Evaluation (CITE).

52°North participates in the Aviation, CCI and CITE threads.

- Aviation: 52°North's task is to work on WPS implementation and documentation with respect to closing the gaps in the current specification. Particular focus is on on-demand processing of aviation data as an addition to the previously exercised data centric focus in the aviation domain.
- Cross-Community Interoperability (CCI): Data fusion and data provenance are the focus of 52°North's activities. 52°North tackles the problems of merging geometries from various data sources and documenting the original data sources.
- Compliance (CITE): Development of SOS 2.0 and SPS 2.0 reference implementations that will be tested to become reference implementations.

Commissioned/Funded by:Open Geospatial Consortium, Inc.

Preguntas?

Ventajas de unirse al consorcio OGC
http://www.opengeospatial.org/ogc/join/levels

Luis Bermudez, Ph.D.
lbermudez@opengeospatial.org
@berdez on Twitter
http://www.linkedin.com/in/bermudez