Unlock the potential of EO data and services with NextGEOSS

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Business and Technology Innovation
Deimos

EGI Conference 2020
NextGEOSS in context

The three pillars of NextGEOSS

An integrated system to support the development of Earth Observation based applications

In Support of the GEO Global Priorities

- UN 2030 Agenda for Sustainable Development
- Paris Climate Agreement
- Sendai Framework for Disaster Risk Reduction
NextGEOSS Datahub

Access to 6.5M datasets (growing)
- 34 Data providers (growing)
- Satellite, In situ, Model data
- OGC complaint OpenSearch API

Scalable architecture
- Running on 14 node cluster

Hosted by:

https://catalogue.nextgeoss.eu/
Platform Services in context

I am using Earth observation data to prototype my application.

- Is there an easy way to feed data for processing?
- Are there any tools to integrate my application in the cloud?
- How can I run and monitor my application in production?
NextGEOSS Pilot Services

A validation approach via Pilot applications from domain specialists

Innovative Pilot Services
- Agricultural Monitoring
- Biodiversity
- Space & Security
- Wetlands
- Cold Regions
- Air Pollution in Mega Cities
- Disaster Risk Reduction
- Coastal areas

Business Pilot Services
- Territorial Planning
- Food Security
- Solar Energy
- Marine Drift
- Wind farm Energy
Flagship applications using NextGEOSS

- **Supporting geologists to monitor ground activities in areas susceptible to remote landslides**
- **Helping Grid operators to get a better knowledge of local production of electricity by PV plants**
- **Advising territorial planners with the delivery of customized Land Use Land Cover products**
- **Relieving analysts who assess security threats via automated changes detection alerts**
Platform Services in context

Data Providers
- User Management
- Data Cataloging
- Service Cataloging
- Operations Analytics and Dashboards
- Data Discovery
- Geospatial User Feedback
- Cloud Busing
- Cloud Integration

Cloud Providers

New services based on Earth Observation Data
Platform Services for application builders

What NextGEOSS brings to the Industry?

The NextGEOSS Platform Services:

- Data Cataloguing
- Service Cataloguing
- Data Discovery
- Geospatial User Feedback
- Cloud Integration
- Cloud Bursting
- User Management & AAA
- Operations Analytics & Dashboards

NextGEOSS Sentinel Data Linker Service
If you are a “Data and Service provider”

- Data cataloguing classic
- Smart data cataloguing

Service Cataloguing

- Publishing a service in NextGEOSS
- It's a FREE service
NextGEOSS offer

If you are a “Data and service provider”

- Data Cataloguing
- Service Cataloguing

NextGEOSS offering

- “Link your Data”
- “Showcase your application”

If you are an “EO application developer”

- Data Discovery
- User Feedback
- User Management
- Cloud Integration
- Cloud Bursting
- Operations Analytics and Dashboards

“Integrate your pilot”
If you are a “Data and service provider”

Data Cataloguing

- Data cataloguing classic
- Smart data cataloguing

Service Cataloguing

- It's a FREE service

NextGEOSS offer

“Link your Data”

“Showcase your application”
If you are an “EO application developer”

**Data Discovery**
- Open and Free
- Using OpenSearch API
- NextGEOSS Sentinel Data Linker Service

**Cloud Integration**
- Commercial offer
- Integrate, test and validate a scalable data processing service and make available as “Cloud appliance”
- Access to Continuous Development / Continuous Integration (CD/CI) work environment
- Full control over the entire application life cycle
- Powered by Terradue’s ELLIP

**Cloud Bursting**
- Commercial offer
- Package and deploy Cloud-ready applications to registered cloud provider
- Multi-cloud portability
- configure, run and monitor a data production on the selected Cloud
- Powered by Terradue’s ELLIP
NextGEOSS offer

If you are an “EO application developer”

**Data Discovery**
- Free
- Using OpenSearch API
- Sentinel data linker service

**Cloud Integration**
- Commercial offer
  - Integrate, test and validate a scalable data processing service and make available as “Cloud appliance”

**Cloud Bursting**
- Commercial offer
  - Package and deploy Cloud-ready applications to registered cloud provider

**User Feedback**
- Free and Open Source

**User Management & AAA**
- Authentication - FREE
- Authorisation and Accounting - Commercial

**Operations Analytics and Dashboards**
- Commercial offer

**Training**
- Free training series
- Low-cost training series
- Full-cost training series

“Create bundles”
NextGEOSS Services

If you are an “EO application developer”

**User Feedback**
- Widget and JavaScript API to embed in your community portals
- Free and Open Source
- Licensed by CC-BY

**User Management & AAA**
- Federation of new Identity providers
- Authentication - FREE
- Authorisation and Accounting - Commercial (Basic / Premium) (*depending upon the # of EO resources and # concurrent users)
- Powered by DEIMOS’s Identity4EO

**Operations Analytics and Dashboards**
- Customizable operational dashboards to collect analytics on your service (e.g., usage statistics, avg. run time and many others)
- Assess trends and make operational decisions
- Commercial offer (Basic / Premium) (*depending upon the # services and # dashboards)
- Powered of DEIMOS’s services4EO QoS
A validation approach via Pilot applications from domain specialists

nextGEOSS Platform Services

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## EGI.eu Production Resources and Providers Summary

<table>
<thead>
<tr>
<th>Type</th>
<th>Total Provisioned</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total # VMs</td>
<td>87</td>
</tr>
<tr>
<td>Total # CPU cores</td>
<td>246</td>
</tr>
<tr>
<td>Total # RAM (GB)</td>
<td>1543</td>
</tr>
<tr>
<td>Total # local storage (GB)</td>
<td>11960</td>
</tr>
<tr>
<td>Online storage (guaranteed) (GB)</td>
<td>4020</td>
</tr>
<tr>
<td>Total IP addresses</td>
<td>43</td>
</tr>
<tr>
<td>Total # CPU hours</td>
<td>3,669,151</td>
</tr>
<tr>
<td>Service Cost (to date)</td>
<td>€87,072</td>
</tr>
</tbody>
</table>

**6 Providers in 5 countries** across the EGI Federation supporting the NextGEOSS Pilots
NextGEOSS Platform services - Users

If you are a “Data and service provider”

- Data Cataloguing
- Service Cataloguing

NextGEOSS offering

- “Link your Data”
- “Showcase your application”

If you are an “EO application developer”

- Data Discovery
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“Integrate your pilot”
Delivery of Platform Services - User Experience

User onboarding process

1. Users Engagement
2. Data Preparation
3. Platform Setup
4. Pilots Integration
5. Service Operations

The concept developed by OGC
Delivery of Platform Services

http://servicedesk.nextgeoss.eu/
GEO Next-EOS Community Activity meetings

First Thursday every month 16:00 CET starting:
12th November 2020, 16:00 CET
Then
3rd December 2020

https://nextgeoss.eu/nexteos/
Thank You