Introduction

In order for the NextGEOSS Pilots to build state of the art Pilot applications, that can leverage advanced EO data discovery and data processing technologies, the NextGEOSS Platform is enriched by partners building core services and software components, that implement use cases for data discovery, data processing, reproducibility and user management.

The NextGEOSS Platform architecture diagram provides a view on all the NextGEOSS services made available by the project partners working in the project work packages WP2, WP3 and WP5, in support of the integration of the NextGEOSS Pilots (WP6 and WP7).

For some “entry level” NextGEOSS services, a free access is available to any visitor of the NextGEOSS Portal (no sign-in required). You can readily check it from here. For the others, account creation and account upgrades are required and the guidance on how to proceed is provided further below.

A total of height NextGEOSS Services have been delivered so far (i.e. by the EP-2 milestone, end of the project’s Ramp-up phase), and for which software integration guides are made available:

1. Integration of Data discovery using the CKAN service
2. Integration of data processing algorithms onto the NextGEOSS Platform
3. Integration and Configuration of community portals using geospatial web services
4. Ingestion of data products into CKAN data catalogues
5. Integration of user feedback applied to data resources (quality, fit for purpose, …)
6. Integration of the NextGEOSS user management service
7. Integration of the NextGEOSS analytics service
8. Integration of standard Web Processing Service clients

They are the ones described in the main body of this "Service Integration" guide.
Additional ones might be added to the NextGEOSS Portfolio during the project's Consolidation phase (running from EP2 to EP3 project milestones).

Within the NextGEOSS Platform architecture, the NextGEOSS Platform services provided by the WP5 partners are the following:

**Data Processing Pipelines**
- Integration of your data processing algorithm onto the NextGEOSS Cloud Platform (Terradue)
- Integration and Configuration of community portals using geospatial web services (Terradue)
- Integration of standard Web Processing Service clients (Terradue)

**User Management and Analytics**
- Integration of the NextGEOSS user management service (Deimos Space)
- Integration of the NextGEOSS analytics service (Deimos Engenharia)

Within the NextGEOSS Platform architecture, the NextGEOSS Platform services provided by the WP2 and WP3 partners are the following:

**Catalogue, Data Search and User Feedback**
- Integration of Data discovery using the CKAN service (Viderum)
- Ingestion of data products into CKAN data catalogues (Viderum)
- Integration of user feedback applied to data resources (UAB)

In support of the user uptake activities conducted to grow the Pilot applications footprint within the NextGEOSS Platform, an introductory presentation of the NextGEOSS Services was developed during spring 2018, in order to announce the NextGEOSS 2nd training. This introduction to the training was presented at the EGU 2018 in Vienna on April 10th, 2018, as well as through a dedicated Webinar held on June 27th, 2018:

The NextGEOSS 2nd training session itself, titled "Building Earth Observation applications with NextGEOSS", was delivered in Geneva on September 12th, 2018 to an attendance of 20 people, performing hands-on sessions during the day in using the NextGEOSS services:

- [https://nextgeoss.eu/second-nextgeoss-training/](https://nextgeoss.eu/second-nextgeoss-training/) (NextGEOSS 2nd Training agenda)
- [https://github.com/ec-nextgeoss?q=nextgeoss-training](https://github.com/ec-nextgeoss?q=nextgeoss-training) (NextGEOSS Training material)
- [https://www.youtube.com/watch?v=Y0UsWD6ckmU](https://www.youtube.com/watch?v=Y0UsWD6ckmU) (Training day video overview)

The NextGEOSS Services in scope of both the NextGEOSS 2nd training and this Service integration guide, are part of the general NextGEOSS architecture of components and services presented hereafter.

They are identified as part of the lower part boxes (blue and green boxes) in the diagram, which:

- Provide the **integration environment (PaaS)** of the NextGEOSS Platform, in support of the development of front-end services, and in particular the collection of community portals developed by the Pilots (right hand boxes of the diagram)

- Connect to the data providers' **online data repositories** (lower left part of the diagram)

- Connect to the **production environments (IaaS)** associated with the NextGEOSS Platform, where data collections are mirrored or cached and where validated data processing application "run times" are deployed (lower part of the diagram), to serve their ad-hoc community portals.
1. Integrating services with the Ellip solutions

An overview of the Ellip solutions is provided online here:

- [https://www.terradue.com/portal/ellip](https://www.terradue.com/portal/ellip) (core services and solutions portfolio)
- [https://ellip-ref.terradue.com](https://ellip-ref.terradue.com) (beta release instance)

The Ellip Solutions portfolio is currently offering two Solutions (out of four, in total) aimed at the service integration stage of an application lifecycle:

- Ellip Notebooks:
  - to create interactive laboratory notebooks
  - software development users can integrate and test their data processing application as a reproducible experiment
• Ellip Workflows:
  o to design scalable processing chains
  o software development users can integrate and test their data processing application in a highly scalable data processing framework (Hadoop streaming), and expose it via a standard interface (OGC WPS)

In support of the user uptake activities to grow the Pilot applications footprint within the NextGEOSS Platform, a video presentation of how to integrate EO data processing services with the Ellip Workflows solution was presented at the NextGEOSS Summit (S2) on June 14th, 2018, held at the WMO offices, in Geneva:

• https://drive.google.com/open?id=1u8_GNcN3Vre32Pw3aXLyAKDFOBytaE5x
  (01 - NextGEOSS - Application Integration)
• https://drive.google.com/open?id=13yJnXePPt6Yc984wolqnohwJnlDqXu1
  (02 - NextGEOSS - Application Packaging)

These Terradue Cloud Platform solutions are delivered "as-a-Service" to the NextGEOSS Pilot application developers, allowing them to:
• Access a dedicated application integration environment on the Cloud, with software tools and libraries available and easily exploitable from that developer environment;
• Search over the web for data collections from distributed EO Data repositories and from Open Data repositories, and retrieve results in the application integration environment;
• Integrate at low cost a set of data processing chains, leveraging a selected data processing engine (Hadoop MapReduce Streaming)

These properties define the technical cloud platform in terms of a Platform-as-a-Service (PaaS) environment for the integration of EO data processing applications, that will exploit Open Data resources and publish EO-based products.
2. Deploying services in production with the Ellip solutions

An overview of the Ellip solutions is provided online here:

- [https://www.terradue.com/portal/ellip](https://www.terradue.com/portal/ellip) (core services and solutions portfolio)
- [https://ellip-ref.terradue.com](https://ellip-ref.terradue.com) (beta release instance)

The Ellip Solutions portfolio is currently defined by two Solutions (out of four, in total) aimed at the deployment and production stage of an application lifecycle:

- Ellip Launchpads:
  - to select a data processing workflow and deploy it in production
  - production management users can deploy a workflow as a Web Processing Service, on a given Processing Center, hosted on a selected IaaS

- Ellip Infohubs:
  - to connect a Web Processing Service to a custom Geobrowser client application
  - production management users can define ways to monitor their workflow throughput as part of a dedicated team or community

In support of the user uptake activities to grow the Pilot applications footprint within the NextGEOSS Platform, a video presentation of how to deploy services with the Ellip Launchpads solution was presented at the NextGEOSS Summit (S2) on June 14th, 2018, held at the WMO offices, in Geneva:

- [https://drive.google.com/open?id=1HzhvJCoT7yS_qq0SAydfbvB2065kGtK4](https://drive.google.com/open?id=1HzhvJCoT7yS_qq0SAydfbvB2065kGtK4) (NextGEOSS - Application Deployment)

These Terradue Cloud Platform solutions are delivered "as-a-Service" to the NextGEOSS Pilot application developers, allowing them to:

- Deploy a Cloud appliance (e.g. for on demand EO data processing) prepared for the processing of a range or category of datasets, and running in production on a selected
• third party Cloud provider (IaaS). Practically the resulting EO data processing appliance can be instantiated on a pool of virtual machines (cluster) for the time of the processing, and dismissed after completion (pay-as-you go model), or deployed over a selected time period, when continuous operations and availability are required (subscription model). Terradue Cloud Platform supports many Cloud API towards the major Cloud Providers, in order to handle this phase of transfer in production (Cloud bursting).

• Ultimately, expose the resulting application through a Web Service endpoint. It will be a Web Processing Service (OGC WPS) to allow end-user client applications to pass processing parameters, trigger a data processing request and retrieve data processing results.

These properties define the technical cloud platform in terms of a Platform-as-a-Service (PaaS) environment for the integration of EO data processing applications, that will exploit Open Data resources and publish EO-based products.

a. Monitoring and exploiting services in production

Some trials have been performed during this NextGEOSS Ramp-up phase and a section of this guide is dedicated to the integration of Analytics dashboards. A v3 update of this guide, planned for the end of the NextGEOSS Consolidation phase, will provide more details for Pilot partners to design and implement their analytics dashboards, as well as design the data feeds that shall collect their application metrics. These analytics figures are meant to establish a feedback loop towards the Pilot application developers, so they can evolve their software application for an improved user experience with their application. By going back to the NextGEOSS Platform integration environment, they can test their software improvements, and re-deploy the application’s new version in production.
3. Service Integration Guide

This guide supports the Pilot integration activities conducted on the NextGEOSS Platform. The first part of this guide is dedicated to the integration of EO **data processing pipelines** into a NextGEOSS-powered application:

- Integration of your data processing algorithm onto the NextGEOSS Cloud platform
- Integration and Configuration of community portals using geospatial web services
- Integration of standard Web Processing Service clients

The second part of this guide is dedicated to the integration of **user management and analytics** into a NextGEOSS-powered application:

- Integration of the NextGEOSS user management service
- Integration of the NextGEOSS analytics service

The third part of this guide is dedicated to the integration of **DataHub and catalogue search** into a NextGEOSS-powered application:

- Integration of Data discovery using the CKAN service
- Ingestion of data products into CKAN data catalogues
- Integration of user feedback applied to data resources

a. Data processing pipelines

A PaaS (Platform-as-a-Service) is operated by Terradue and is made available to the NextGEOSS partners for the integration and deployment of data processing pipelines.

i. How to join the PaaS environment

You can join the PaaS environment as a NextGEOSS service integrator, by creating a user account and getting an account upgrade.
For this, you can either directly sign-up as a Terradue Cloud Platform user:

- [https://www.terradue.com/portal/signup](https://www.terradue.com/portal/signup) (cf. sign-up page registration form)

Or you can sign-up automatically from a first 'sign-in' involving a linked account referenced by Terradue Cloud Platform (this is the case for the NextGEOSS user accounts):

- [https://www.terradue.com/portal/signin](https://www.terradue.com/portal/signin) (cf. at the bottom of the window pane the sign-in buttons "Sign in with...", providing automatic account creation from trusted identity providers, and featuring for instance the "Signin with NextGEOSS account" button)

This second option is the recommended one, in order to use all the core and advanced functions of the NextGEOSS Platform, for example such as the [Cloud Computing services](#) operated for NextGEOSS by Terradue or the [ServiceDesk service](#) operated for NextGEOSS by Deimos Engenharia.
Once done and signed-in, you can access your Welcome page:

- [https://www.terradue.com/portal/welcome](https://www.terradue.com/portal/welcome) (when signed-in)

These pages provides the user with the links to the following services on the Terradue Cloud Platform:

- Access the Ellip Core Services and the Ellip Solutions that are part of your subscription level
- Request an account upgrade (see details further below)
- Access your user profile information (account settings):
  - **About you**: personal details (username, first name, last name, affiliation, country)
  - **Account**: user account details (username, email address, registered external authentication modes, password change)
  - **API Key**: used to exploit the API functions on Terradue Cloud Platform (e.g. use of the catalogue API to manage a personal/company catalogue index)
  - **Catalogue**: creation and management of your personal catalogue index on Terradue Cloud Platform
o **Storage**: creation and management of your personal data storage on Terradue Cloud Platform

o **SSH keys**: used to access via SSH protocol your Virtual Machines created on Terradue Cloud Platform

o **Github**: to link your github account and use it as version control tool for your developments.

o **Subscription plans**: your subscription status to Terradue Cloud Platform services, and the "Contact us" function to request an account upgrade.

The GDPR notice related to user control over his/her personal information managed on the Portal is accessible from the Terradue website footer:

- [https://www.terradue.com/portal/privacy](https://www.terradue.com/portal/privacy)
How to request a Terradue account upgrade?

After the account creation, one needs to get an account upgrade, with the proper access rights granted. This can be requested via the Terradue Portal account settings page:

- [https://www.terradue.com/portal/settings/plan](https://www.terradue.com/portal/settings/plan) (when signed-in, "Subscription plans" menu entry)

It is also possible to request a user account upgrade via the support and helpdesk sites provided by the NextGEOSS consortium:

- [https://servicedesk.nextgeoss.eu](https://servicedesk.nextgeoss.eu) (sign-in here with your NextGEOSS user account)

In order to create a NextGEOSS user account, follow the procedure hereafter.

How to get a NextGEOSS user account?

During the initial phase of the NextGEOSS project, user accounts are allocated to selected Pilots. This includes the ten Pilots initially defined as part of the NextGEOSS statement of work, and the new Pilots to be on-boarded during the Consolidation phase of the project (from EP2 to EP3 milestones). The process to select a Pilot is defined by the NextGEOSS Pilots Engagement Programme (see also the Frequently Asked Questions section for more details about it).
You need first to create a NextGEOSS user account. You have several options for this.

1) You can directly use the NextGEOSS User Management registration form:

   ![NextGEOSS registration form]

   This will create your NextGEOSS user account from the details provided in the registration form.

2) You can alternatively use the NextGEOSS User Management federated sign-in from Social Network identity providers:
This will create your NextGEOSS user account from the details provided by your existing user account, and imported to create your NextGEOSS user account (upon your explicit authorisation).

1. My account (as a PaaS user)

Once signed-in (see sections above), users of the Integration environment (PaaS from Terradue) can access their user account from here:

- [https://www.terradue.com/portal/settings/profile](https://www.terradue.com/portal/settings/profile) (when signed-in)

Depending on their account upgrade status, they are assigned a Subscription plan which can be:

- **No plan**: after initial registration, accounts do not have a subscription plan associated, they imply by default 'Visitor' accounts
- **Explorer**: this subscription plan is meant for creating processing services as Cloud Appliances, either based on Jupyter Notebook executables or on scalable algorithms packaged for a data processing framework (e.g. Hadoop)
- **Scaler**: this subscription plan is meant for data producers to access and run Cloud Appliances previously prepared on Terradue Cloud Platform
- **Premium Partner**: this subscription plan is meant for Service integrators to build and deliver client side and server side Cloud Appliances on Terradue Cloud Platform, as well as deploy and operate these on third party Cloud providers (production environments).
- **Ultimate Partner**: this subscription plan 'à la carte' is meant for organizations with offers to serve users on Terradue Cloud Platform (data providers, technology providers, data processing module providers)

The subscription plans to access the tools and services of the Integration environment (PaaS) are presented on the Terradue website:

- [https://www.terradue.com/portal/ellip#plans](https://www.terradue.com/portal/ellip#plans)
Once subscribed to a plan, you can access the Ellip Dashboard from here:

- [https://ellip-ref.terradue.com](https://ellip-ref.terradue.com) (beta release)

As of today (this is subject to change in the future), access control is provided as follows:

- **Solutions subscribed to by Explorer users:**
  - Ellip Notebooks
  - Ellip Workflows

- **Solutions subscribed to by Scaler users:**
  - Ellip Launchpads
  - Ellip Infohubs

- **Solutions subscribed to by Premium Partners:**
  - Ellip Notebooks
  - Ellip Workflows
  - Ellip Launchpads
  - Ellip Infohubs
The online documentation for the Ellip solutions will be made available from here:

- [http://docs.terradue.com](http://docs.terradue.com) (new entry point for the Terradue Cloud Platform and Ellip solutions documentation, to be opened online as of November 1st 2018)

A documentation preview for each of these Ellip Solutions is presented as part of this NextGEOSS Architecture and Integration Guide, further below within the section "Using the Cloud Platform's Ellip solutions".

### 2. Partner Support

When you are subscribed to access the Integration Environment (PaaS), a Partner Support site is available from here:

- [https://support.terradue.com](https://support.terradue.com)

It is dedicated to Terradue business partners having a subscription to one of the Terradue Cloud Platform services.

Within an organisation or a project (e.g. NextGEOSS), it provides a private workspace (here, sub-projects) for a given partner working with the PaaS tools and services, where partners can request expert assistance from the Operations Support team at Terradue.

Partners with an access on [https://support.terradue.com](https://support.terradue.com) are building applications with Terradue Cloud Platform, or are contributing new resources to Terradue Cloud Platform.
3. User Forum

The User Forum is available from here:

- [https://discuss.terradue.com](https://discuss.terradue.com)

It provides community and cross-community support, with moderators from either Terradue (by default) or from community members themselves, when they have reached a higher trust level (see [Understanding Discourse Trust Levels](#)) which is basically "granting experienced users more rights over time, so that they can help everyone maintain and moderate the community they generously contribute so much of their time to".

In particular, it is operated by Terradue as a "turn-key" solution made available to Terradue business partners building EO-based applications (e.g. as it is the case for the NextGEOSS partners in charge of a Pilot), so they can create their Community on the User Forum, and interact with their users in such a Forum-like way, including support for outreach as newcomers can read the forum discussions and get insights about what is being developed or provided by that community.
Communities on the User Forum are managed as "Categories". The screenshot thereafter gives an overview of existing communities in domains such as Geohazards, Hydrology, or Coastal areas management, all supported by Terradue Cloud Platform and the PaaS tools and services.

Moderators of the User Forum (https://discuss.terradue.com) can provide support to people that are:

- Members of Ellip-powered applications: users of Ellip-powered web applications (e.g. geoportals), users of Ellip-powered data processing services, ...
- Subscribers to Ellip Solutions (here the moderators are restricted to Terradue personnel): software developers and system integrators using the Ellip Solutions to build open science notebooks, data processing services and/or web applications.
- or General public, accessing the User Forum to simply read the Topics (i.e. the Blog posts) posted within the different Community categories.

Signed-in people can configure their User Forum account preferences, in order to select the categories of interest for them, and get notifications about new posts.

The sign-up operation on the User Forum is automatic from previously signed-in users on Terradue's Portal:

- Go to https://www.terradue.com/portal/signin
  - If you do not have yet a Terradue account, see the previous section "How to join the PaaS environment"
Then go to https://discuss.terradue.com and click on "login"
You're in!

4. User Helpdesk
The User Helpdesk is available from here:
https://helpdesk.terradue.com

Similarly to the User Forum, the User Helpdesk provides community and cross-community support, with moderators from either Terradue (by default) or from community members themselves, when they are subscribed to a Premium Partner plan on Terradue Cloud Platform, and operate Ellip-powered applications that can require to provide a direct link to such applications users via a Helpdesk.

In particular, the User Helpdesk is operated by Terradue as a "turn-key" solution made available to Terradue business partners building EO-based applications (e.g. as it is the case for the NextGEOSS partners in charge of a Pilot), so they can access an ad-hoc project space for their users Community on the User Helpdesk, and deliver support to their users.

Projects on the User Helpdesk are created by Terradue for a given partner having a subscription, and agent roles assigned to the designated persons within the partner organisation.

Note: within NextGEOSS, it was decided to make use of a different Helpdesk service, that is encompassing support for all the NextGEOSS Platform services (as presented in this guide) and is operated by the different project partners. This service is available from here:
https://servicedesk.nextgeoss.eu

5. Resources Center
The Terradue open source software repository lives here:
http://terradue.github.io/ (Resources Center)

The Resource Center provides a central point aggregating the different Open Source software projects contributed by Terradue over time, that can be reused for building data processing pipelines.

Applications Portfolio
The Community "Workflows" and "Notebooks" applications live on Git repositories hosted on GitHub and GitLab:
ii. Using the Cloud Platform's core services

We present hereafter the list of the Ellip core services, with their access points, and their access conditions for Terradue Cloud Platform users in order to build, test and deploy data processing pipelines.

1. Data Agency

The Data Agency is made of two core services for the management of federated data repositories and scalable data staging operations:

- **https://store.terradue.com**
  - Access to your personal storage on the store service follows this template:
    - https://store.terradue.com/<username>
    - <username> is provided via your Terradue user account
  - The protocol to access the store functions is based on HTTP:
    - http://docs.terradue.com/t2-api/data/storage.html

- **https://catalog.terradue.com**
  - Access to your personal index on the catalog service follows this template:
    - <username> is provided via your Terradue user account
    - <YOUR-API-KEY> is provided via your Terradue user account
  - The protocol to access the catalog functions is based on OpenSearch:
    - http://docs.terradue.com/t2-api/data/publication.html

2. Cloud Dashboard

The Cloud Dashboard service is used for the creation and management of Containers and
Virtual Machines supporting the application integration work done within the PaaS environment, as well as for the deployment of Cloud Appliances in production (cloud bursting):

- [https://cloud.terradue.com](https://cloud.terradue.com) (for developer users to create and manage their VMs)
- [https://sandbox-ip/dashboard](https://sandbox-ip/dashboard) (for developer users to access their VM dashboard and work on it)

### 3. Virtual Private Network

The Virtual Private Network service is used for establishing a secured communication from a client (the user desktop/laptop machine) to the Virtual Machines that the user has created on Terradue Cloud Platform:

- [https://access.terradue.com](https://access.terradue.com)

### 4. Other Cloud Platform Services

Additional services are being configured on Terradue Cloud Platform in order to serve the PaaS users needs. They will be documented in a later stage of the Terradue Cloud Platform developments.

- [geo.terradue.com](http://geo.terradue.com) (Geoserver)
- [repository.terradue.com](https://repository.terradue.com) (Software repository)
- [anaconda.org/Terradue](http://anaconda.org/Terradue) (Software repository)
- [metrics.terradue.com](http://metrics.terradue.com) (Usage metrics)

### 5. Ellip Exchange

Upcoming. A new cloud platform core service that will be developed by Terradue during the NextGEOSS Consolidation phase, and will enforce Ellip as “a collaborative workplace” where partners can co-design their Pilot Applications.
iii. Using the Cloud Platform's Ellip solutions

The **Ellip Solutions** are empowering the NextGEOSS PaaS users to create value as part of the build, test and deploy phases of a data processing pipeline lifecycle. They can select the way (open / paid) to share their assets on Terradue Cloud Platform to other users, in a self-service mode.

All the value creation (assets) done by using an “Ellip Solution” will become referenced on the **Ellip Exchange**, a new cloud platform core service, that will be developed during the NextGEOSS Consolidation phase, and will enforce Ellip as “a collaborative workplace” where partners can co-design their Pilot Applications.

1. **Ellip Notebooks**

The Ellip Notebooks solution is based on Jupyter Hub. It provides individual users with a Jupyter Notebook server.

It is made available to Explorer plan subscribers & Premium Partners.

The online documentation for the Ellip Notebooks solution will be made available from here:

- [http://docs.terradue.com](http://docs.terradue.com) (new entry point for the Terradue Cloud Platform and Ellip solutions documentation, to be opened online as of November 1st 2018)
The Ellip Notebooks solution allows users to integrate, test and share simple data processing functions in a very interactive way. These functions are implemented in Notebooks, which can further on become unitary nodes of a data processing pipeline. It is also suitable for users to easily integrate client software contacting data access or data processing Web Services. An example of integration of standard Web Processing Service client was provided during the NextGEOSS 2nd training:


2. Ellip Workflows

The Ellip Workflows solution is based on a framework including the Hadoop MapReduce streaming API as well as ad-hoc data staging tools and services ('ciop' tools) and Web Processing Service interface (WPS).

It is made available to Explorer plan subscribers & Premium Partners. The online documentation for the Ellip Workflows solution will be made available from here:

- [http://docs.terradue.com](http://docs.terradue.com) (new entry point for the Terradue Cloud Platform and Ellip solutions documentation, to be opened online as of November 1st 2018)
  - (it is being currently reworked from [https://docs.terradue.com/developer-sandbox](https://docs.terradue.com/developer-sandbox))
The Ellip Workflows solution allows users to integrate, test and validate/package scalable data processing workflows, that can be deployed as highly interoperable data processing pipelines.

A new interface is made available in the Ellip Workflows solution, also based on the Jupyter Notebook, which allows to develop these data processing pipelines in a very interactive way. An example of integration of a data processing algorithm onto the NextGEOSS Cloud platform was provided during the NextGEOSS 2nd training:

- [https://github.com/ec-nextgeoss/nextgeoss-training-processor-integration](https://github.com/ec-nextgeoss/nextgeoss-training-processor-integration)

### 3. Ellip Launchpads

It is made available to Scaler plan subscribers & Premium Partners.

The online documentation for the Ellip Launchpads solution will be made available from here:

- [http://docs.terradue.com](http://docs.terradue.com) (new entry point for the Terradue Cloud Platform and Ellip solutions documentation, to be opened online as of November 1st 2018)

The Ellip Launchpads solution will be made available to users in a later stage. It will be documented in a later stage of the Terradue Cloud Platform developments.

### 4. Ellip Infohubs

It is made available to Scaler plan subscribers & Premium Partners.

The online documentation for the Ellip Infohubs solution will be made available from here:
An example of configuration of a web client accessing catalog services and data processing services onto the NextGEOSS Cloud platform was provided during the NextGEOSS 2nd training:


5. Others

Technology providers or Data providers currently partnering with Terradue are providing access to their services via Terradue Cloud Platform (e.g. for Linked Data management solution...)

The online documentation for the Partner solutions will be made available from here:

- [http://docs.terradue.com](http://docs.terradue.com) (new entry point for the Terradue Cloud Platform and Ellip solutions documentation, to be opened online as of November 1st 2018)

iv. Cloud Platform Communities

Application providers currently partnering with Terradue are providing access to their Ellip-powered services via Terradue Cloud Platform.
The online documentation for these Ellip-powered solutions will be made available from here:

- [http://docs.terradue.com](http://docs.terradue.com) (new entry point for the Terradue Cloud Platform and Ellip solutions documentation, to be opened online as of November 1st 2018)

v. Cloud Platform APIs Handbook

The complete set of Terradue Cloud Platform APIs is being refactored.

The online documentation for the Cloud Platform API Handbook solutions will be made available from here:

- [http://docs.terradue.com](http://docs.terradue.com) (new entry point for the Terradue Cloud Platform and Ellip solutions documentation, to be opened online as of November 1st 2018)