



GEO Knowledge Hub to preserve and share EO Applications: Introduction and practice

GEO Knowledge Hub team

Date: 11th of September from 14:00 to 16:00 (CET)

Where: EuroGEO Workshop - Online

Agenda

Introduction of EuroGEO and partners

Introduction to the GEO Knowledge Hub

Hands-on presentation of the GEO Knowledge Hub

Best practices for creating Knowledge Packages

GEO Knowledge Hub team



Paola de Salvo



**Kalamkas
Yessimkhanova**



Felipe Carlos

We are not alone! Our team thanks everyone who worked with us, especially Gilberto Camara, Douglas Cripe, Gilberto Queiroz, Florian Franziskakis, Hendrik Baeyens, and the InvenioRDM community

Material availability

All the materials used during this workshop are available in the following GitHub repository:



[geo-knowledge-hub/geo-knowledge-hub-workshop](#)

Group on Earth Observations (GEO)

GEO is a partnership of more than 110 national governments
and in excess of 100 Participating Organizations



Group on Earth Observations (GEO)

GEO envisions a future where **decisions** and **actions** for the benefit of humankind are **informed** by coordinated, comprehensive and sustained **Earth observations**



Group on Earth Observations (GEO)



GEO Data Sharing principles



23rd Programme Board Meeting – 21-22 June 2022

PB-23.12

Revised GEO Data Sharing and Data Management Principles

This document is submitted by the Secretariat to the Programme Board for decision.

1 INTRODUCTION

In 2015, the GEO Data Management Principles Task Force was tasked with defining a common set GEO Data Management Principles¹. These principles address the need for discovery, accessibility, usability, preservation, and curation of data and related resources that are shared. Such resources also should be shared as open data in accordance with the GEO Data Sharing Principles². The GEO Data Management Principles complement the FAIR Principles and TRUST Principles, which also are being adopted across research communities. The GEO Data Management Principles can be applied to the entire data management lifecycle,

Open Knowledge Statement



21st Programme Board Meeting – 28-30 September 2021

PB-21.17

GEO Statement on Open Knowledge

This document is submitted by the Secretariat to the Programme Board for decision.

1 INTRODUCTION

This document presents a revision of the GEO Statement on Open Science (see Annex A) that was presented to the Programme Board at its 19th meeting in January 2021. Based on consultations with the GEO community, the Secretariat proposes that the statement be reformulated to focus on "Open Knowledge". This concept, while inclusive of Open Science, is considered to be more closely aligned with the GEO Mission and Vision, which aim to support decision making and not only or primarily science.

Group on Earth Observations (GEO)



Download the [GEO Work Programme 2023-2025 Summary Document](#), which contains short descriptions of each of the GEO Flagships, Initiatives, Pilot Initiatives and Regional GOEs that comprise the GEO Work Programme.

Group on Earth Observations (GEO)



EuroGEO



Earth Observations
for the Americas



Earth Observations
for Africa



Earth Observations
for Asia-Oceania

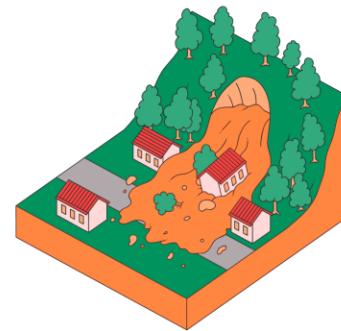
EO Applications



Open Data

Knowledge

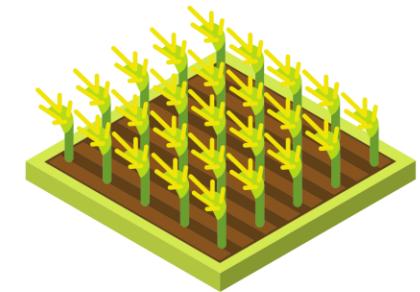
EO Applications



Disasters



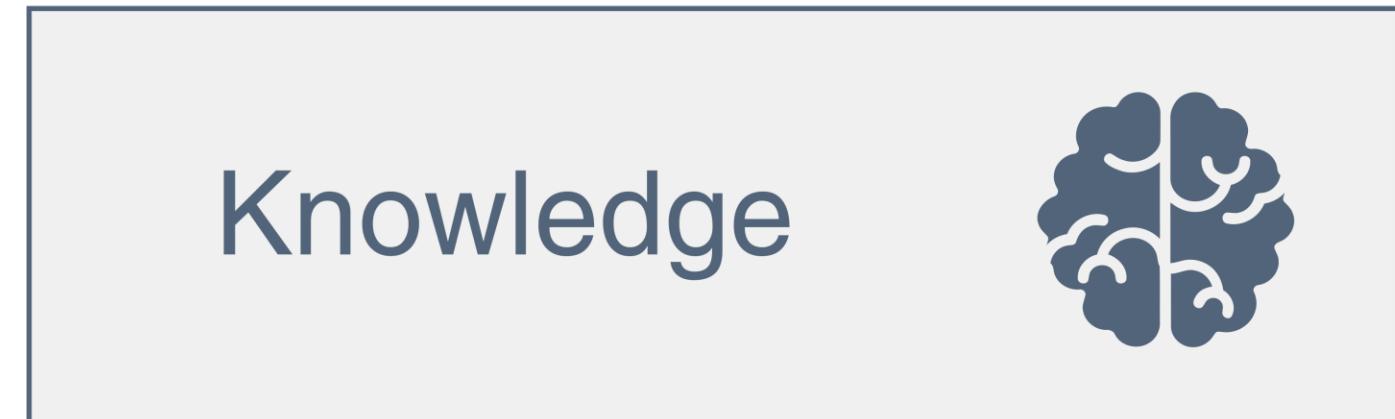
Resilient cities



Food security



Open Data



GEO holds valuable knowledge and solutions that cannot remain hidden

We have the responsibility and urgency to make those open applications known and used

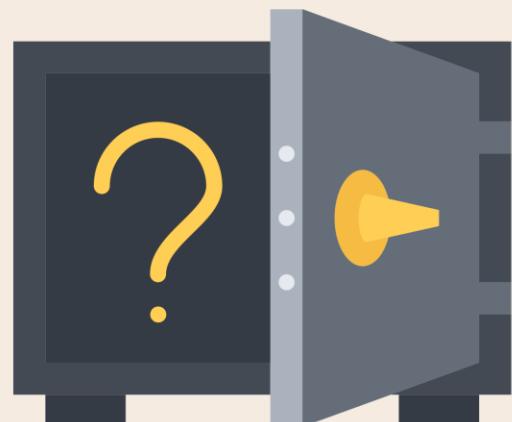


GEO Knowledge Hub

Open



Preserve



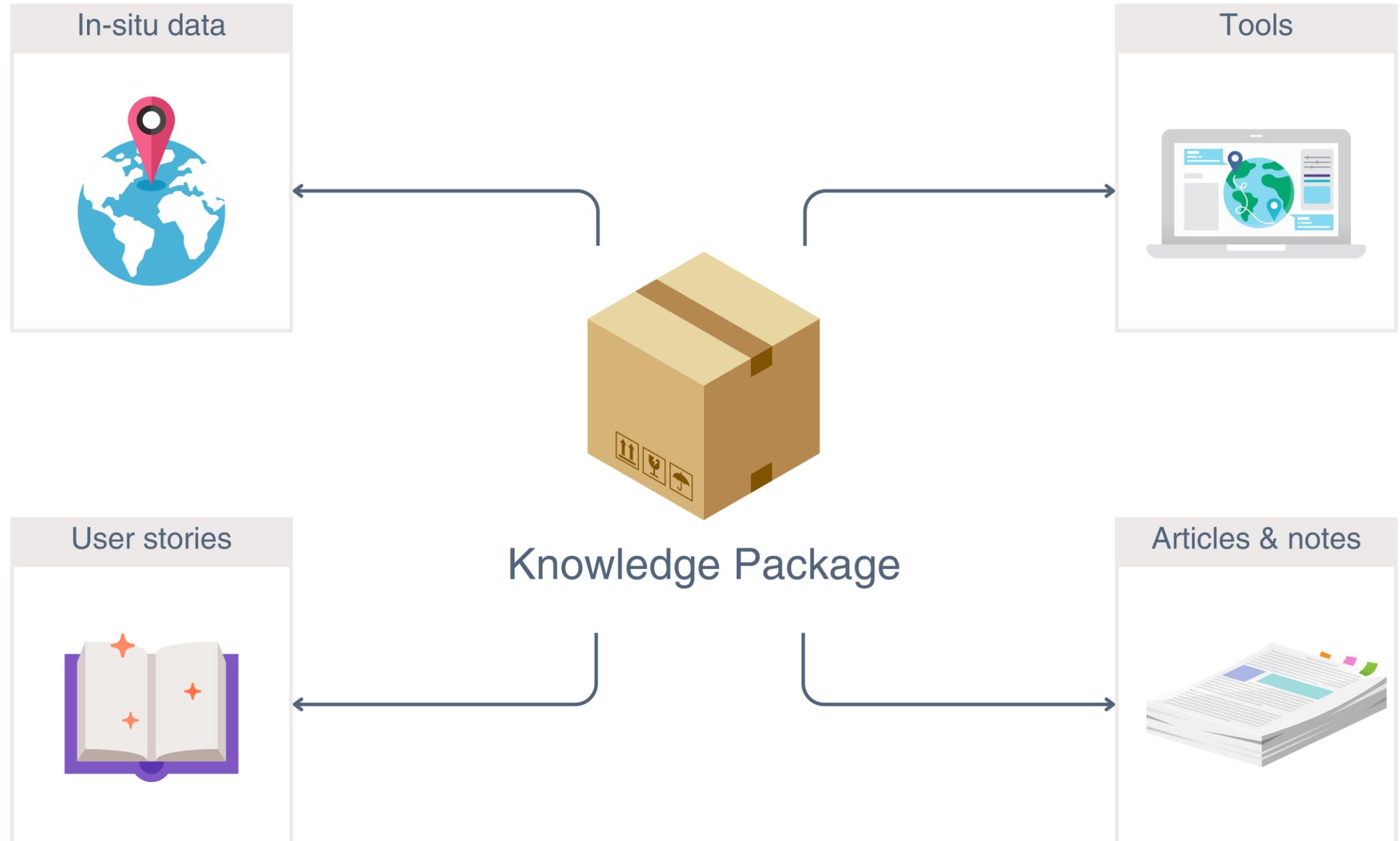
Use





Knowledge Package



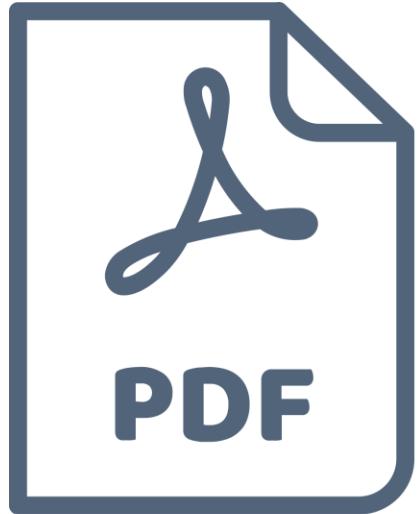


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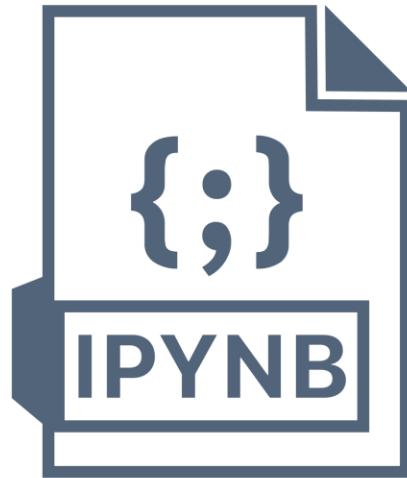
Knowledge Packages

816

Knowledge Resources



Documents



Code

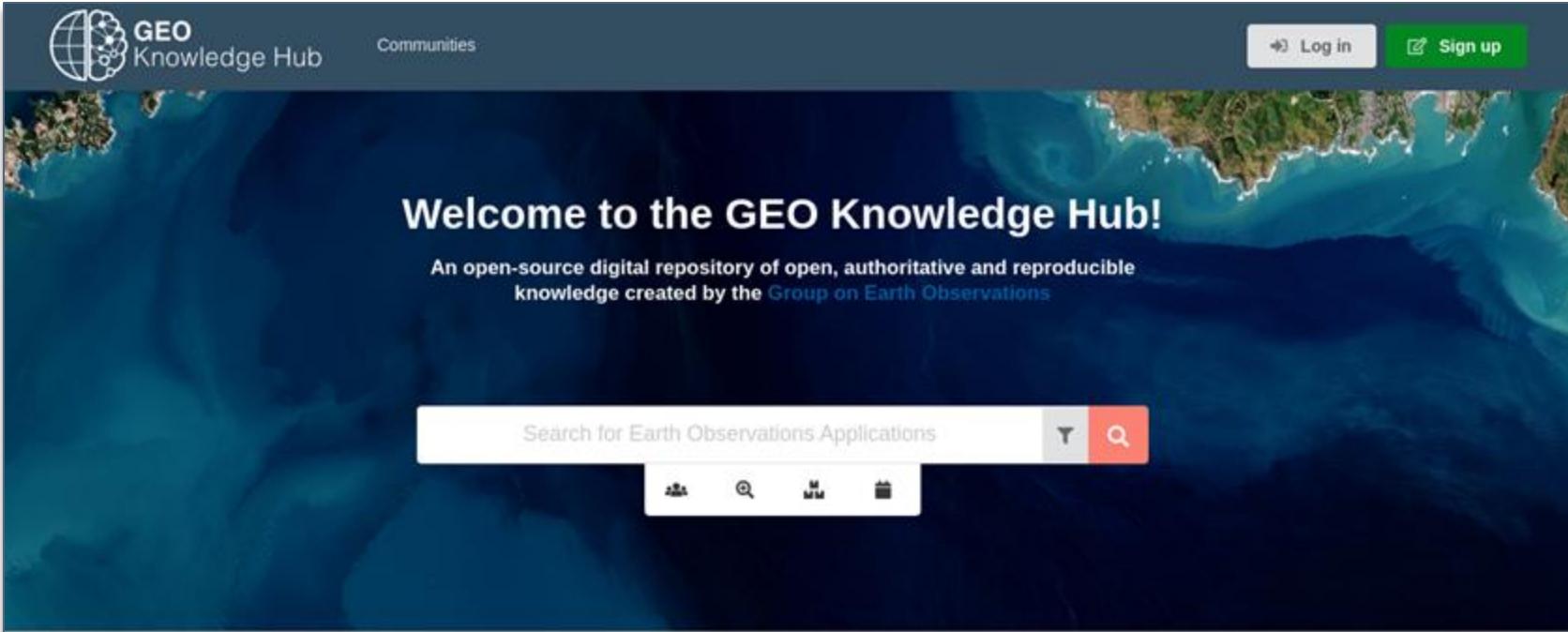


Data



Video

gkhub.earthobservations.org



The screenshot shows the homepage of the GEO Knowledge Hub. At the top, there is a dark header bar with the GEO Knowledge Hub logo, a 'Communities' link, a 'Log in' button, and a 'Sign up' button. Below the header is a large banner featuring a satellite image of Earth's coastline. The banner contains the text 'Welcome to the GEO Knowledge Hub!' and a description: 'An open-source digital repository of open, authoritative and reproducible knowledge created by the Group on Earth Observations'. Below the banner is a search bar with the placeholder 'Search for Earth Observations Applications' and a red search icon. Underneath the search bar is a navigation bar with icons for users, search, and other functions. The main content area is titled 'Featured communities' and features a card for the 'Earth Observations Toolkit for Sustainable Cities and Human Settlements'. This card includes an orange icon with a cityscape, the toolkit's name, and a subtitle: 'Enables the use of Earth observations to advance Sustainable Development Goal 11 and the New Urban Agenda'.

gkhub.earthobservations.org

Welcome to the GEO Knowledge Hub!

An open-source digital repository of open, authoritative and reproducible knowledge created by the Group on Earth Observations

Search for Earth Observations Applications

Featured communities

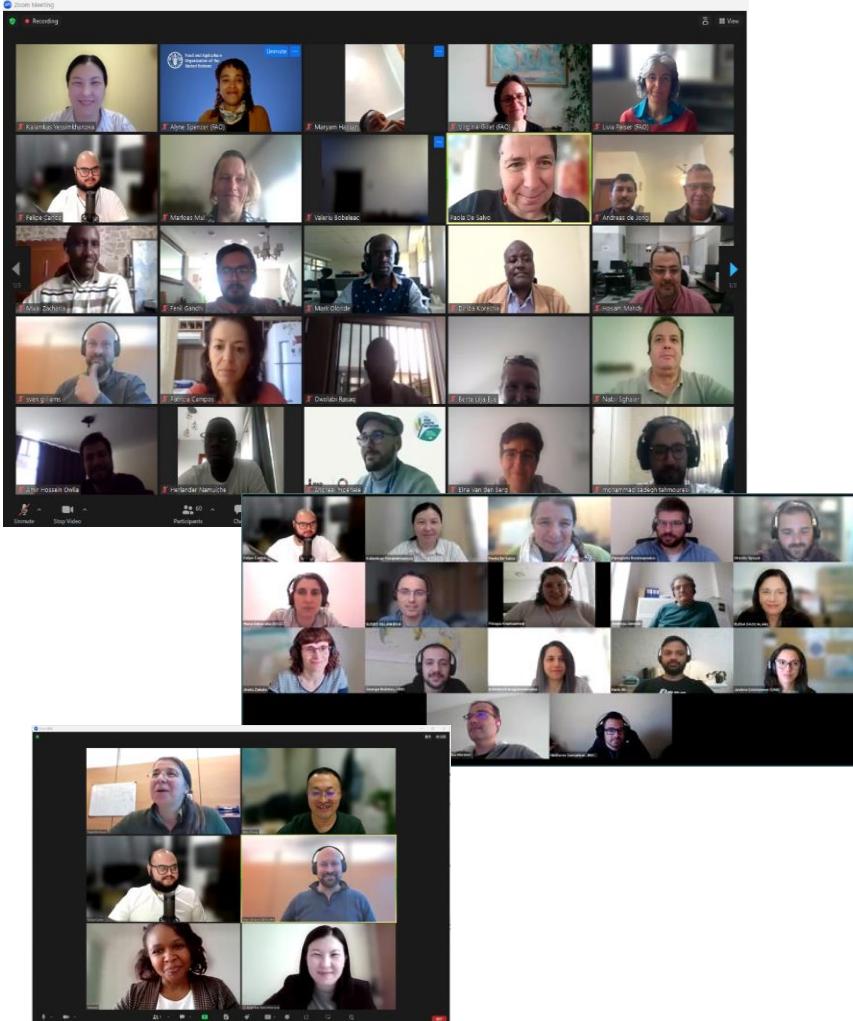
Earth Observations Toolkit for Sustainable Cities and Human Settlements

Enables the use of Earth observations to advance Sustainable Development Goal 11 and the New Urban Agenda

Spreading Knowledge



Spreading Knowledge



Organization of webinars to showcase knowledge shared in the GKH

Highly involvement of the Knowledge Providers

Spreading Knowledge

Open EO Applications for Food Security - Webinar series



240
Attendees



61
Countries



150
Organizations

Spreading Knowledge



Spreading Knowledge



100%

Want to keep updated on
GEOGLAM CapDev webinars



100%

Want to keep updated on
GEOGLAM Data Apps webinars

Questions

Hands-on presentation of the GEO Knowledge Hub

Workshop instance



Practical demonstration

Creating Knowledge Packages

Creating Knowledge Packages



Creating Knowledge Packages



Dataset

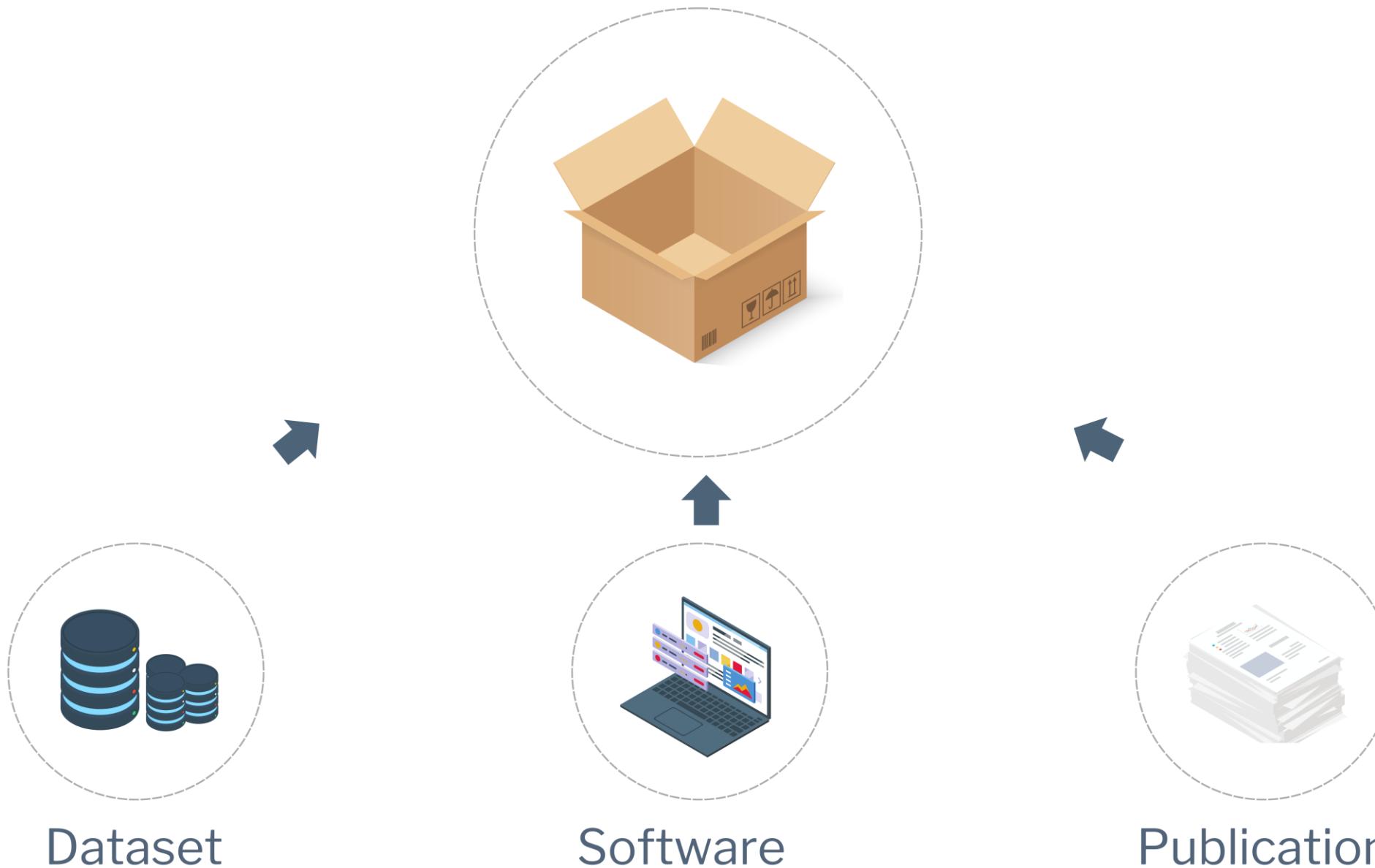


Software

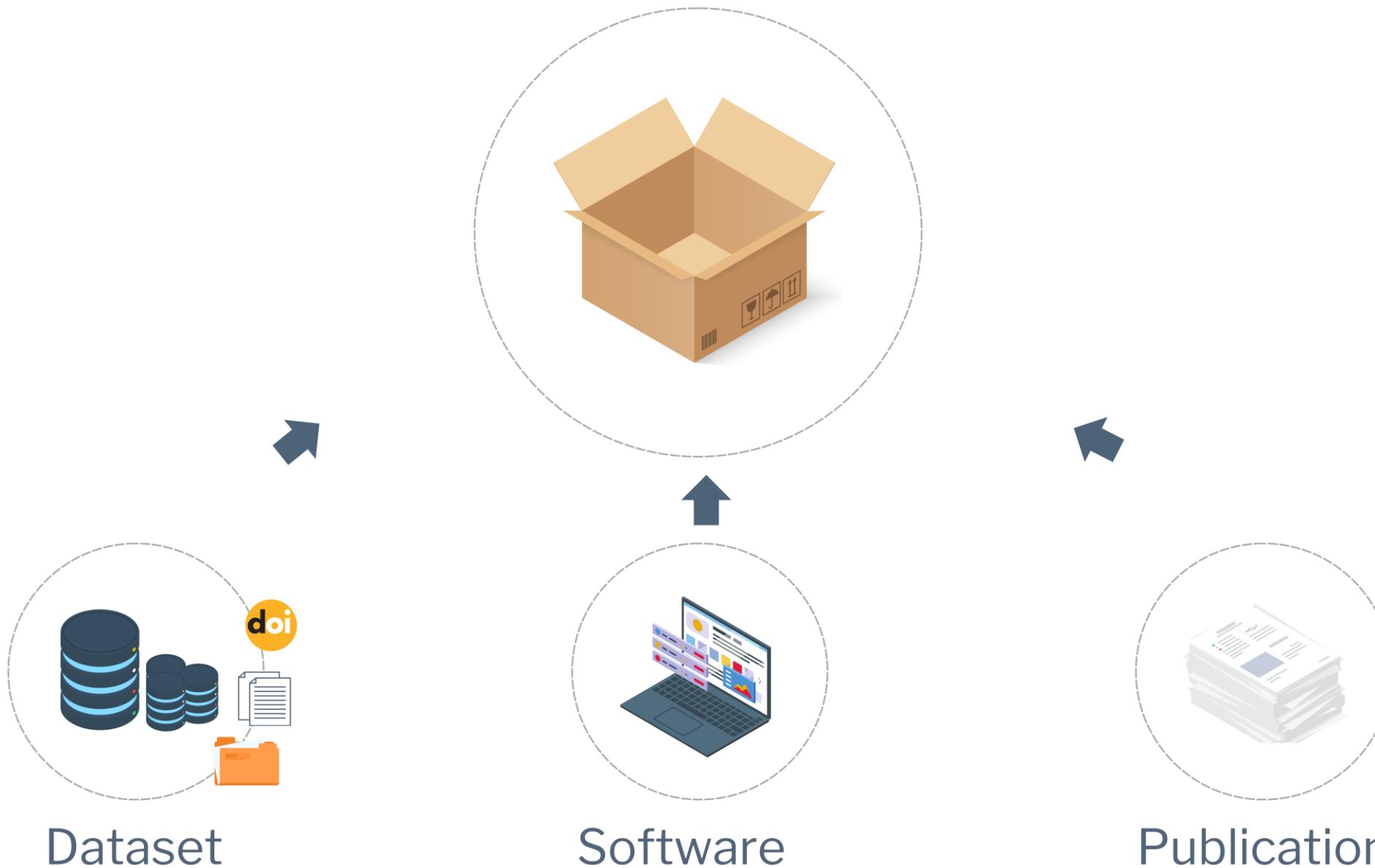


Publication

Creating Knowledge Packages



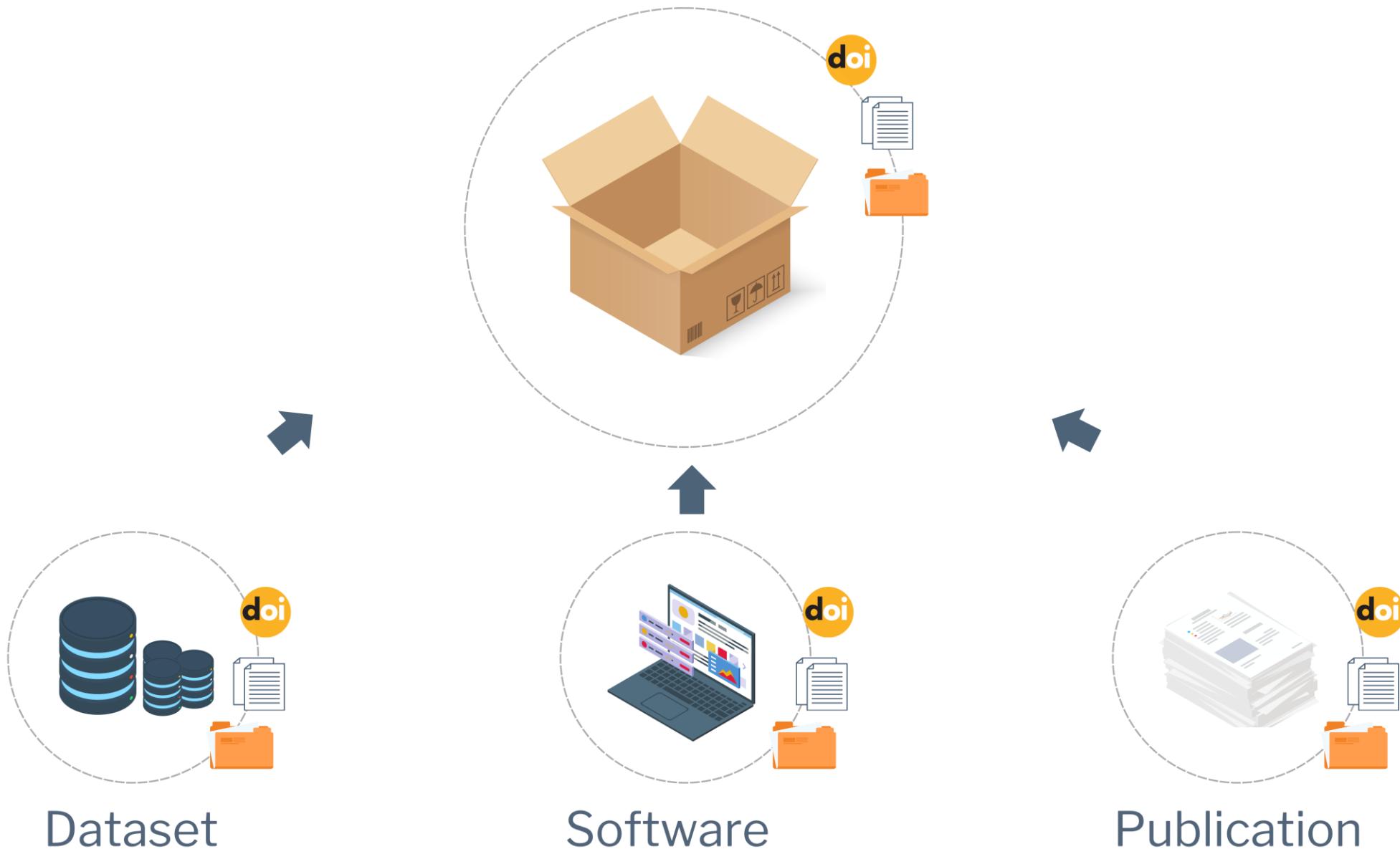
Creating Knowledge Packages



Creating Knowledge Packages

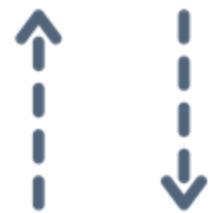


Creating Knowledge Packages



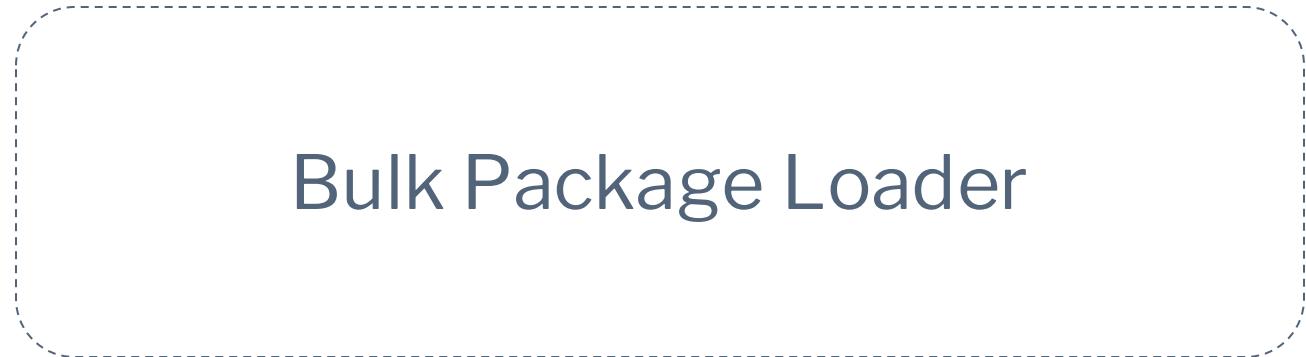
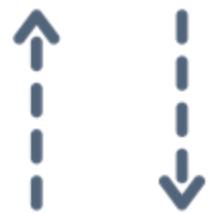
Rest API

Rest API



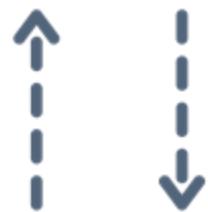
External systems

Rest API



External systems

Rest API



External systems

Bulk Package Loader

OGC/CSW Package Loader
(Harvester)

Using the Rest API

Meet the e-shape legacy through the GEO Knowledge Hub

As a European flagship project contributing to EuroGEO, the e-shape project has linked with the [Knowledge Hub \(GKH\)](#) to support the promotion and the results dissemination of the 37 pilot showcases, which have been developed during the project life time.

The approach relies on the use of the webservice-energy GEO community catalogue to initiate the creation of one metadata record per pilot (<https://tinyurl.com/5dk34cks>). Metadata records, 19139 and/or INSPIRE Network Service profiles, have been created having the concept of the granule in mind. It means, beside the access to the given application, to provide a bucket of enriched metadata including, scientific communications, DOI, videos support presentations, Jupyter Notebooks, repositories, OGC Web Services GetCapabilities and output result datasets samples. A prime enriched metadata record is available here: <https://tinyurl.com/3bjd7ymu>

tinyurl.com/e-shape-gkh

The screenshot shows the e-shape community page on the GKH platform. At the top, there's a header with the community name 'e-shape', its URL 'https://e-shape.eu/index.php/', and project details 'Project' and 'EuroGEO, Group on Earth Observations'. There's also a 'New upload' button. Below the header, there are search and member navigation links. The main content area displays a list of 171 results found, sorted by 'Newest'. The results are categorized under 'Versions' and 'Resource types'. Each result item includes a thumbnail, title, author(s), date, and a brief description. For example, the first result is a video titled 'e-shape co-design presentation and pilot's testimonials - Video' by Barbier, Raphaëlle; Menard, Lionel, uploaded on June 1, 2023. The second result is a thesis titled 'Collective action for bridging digital and sustainability transitions: modelling and experimenting a new form of co-design between Earth-observation data providers and unknown users. (Doctoral thesis). Mines Paris, PSL University.' by Barbier, Raphaëlle, uploaded on June 1, 2023.

Using the Rest API

The screenshot shows the GitHub README page for the 'GEO Knowledge Hub Package Loader'. At the top, there are links for 'README' and 'MIT license'. Below the title, there are several status indicators: 'license MIT', 'docs unknown', 'lifecycle maturing', 'tag v0.9.0', 'chat', and '2 online'. The main content section is titled 'About' and describes the tool as 'Load Knowledge Packages metadata and related resources to the GEO Knowledge Hub digital library.' Below this is another section titled 'Install' with the sub-instruction '1. Install from the GitHub repository:' followed by a command-line instruction: 'pip3 install git+https://github.com/geo-knowledge-hub/geo-package-loader.git'.

github.com/geo-knowledge-hub/geo-package-loader

Documentation

Documentation

The screenshot shows the homepage of the GEO Knowledge Hub. At the top, there is a navigation bar with links for "GEO Knowledge Hub", "Feed", "User guides", "Development", and "Releases". On the right side of the navigation bar are "GitHub" and a search bar. The main title "GEO Knowledge Hub" is prominently displayed in large white letters. Below the title, a subtitle reads "The open-source digital library for open, authoritative and reproducible knowledge". There are two buttons at the bottom: "Explore now" and "Learn more". The background of the main content area is dark blue.

GEO Knowledge Hub

The open-source digital library for open, authoritative and reproducible knowledge

Explore now Learn more

EO Digital Library

The GEO Knowledge Hub (GKH) is a central cloud-based digital library providing access to Earth Observation (EO) Applications developed by the GEO Work Programme Activities.

A small illustration in the bottom right corner shows a person from behind, looking at a computer monitor. The monitor displays a globe, suggesting a geographical application or interface.

gkhub.earthobservations.org/doc

Documentation

The screenshot shows the GEO Knowledge Hub website. The top navigation bar includes links for 'GEO Knowledge Hub', 'Feed', 'User guides', 'Development', 'Releases', 'GitHub' (with a search bar), and a magnifying glass icon for search. The main content area has a dark blue header with the text 'GEO Knowledge Hub' and 'The open-source digital library for open, authoritative and reproducible knowledge'. Below this are two buttons: 'Explore now' and 'Learn more'. To the right, a large white box contains the title 'Creating a new Knowledge Package'. It features an 'INFO' icon and a note about creating a Knowledge Package. Below this is a section titled 'Getting ready' with a checklist of actions: 1. Organize the material you want to share; 2. Describe all the materials you have in a document (e.g., Title, Authors, Licenses, Files and so on); 3. Go to the GEO Knowledge Hub and follow the step-by-step guide to create a Knowledge Package. At the bottom of this box is a 'Step-by-step' section with a note to follow instructions on following pages. The URL 'gkhub.earthobservations.org/doc' is visible at the bottom left.

GEO Knowledge Hub

The open-source digital library for open, authoritative and reproducible knowledge

Explore now Learn more

EO Digital Library

The GEO Knowledge Hub (GKH) is a central cloud-based digital library providing access to Earth Observation (EO) Applications developed by the GEO Work Programme Activities.

Creating a new Knowledge Package

INFO

To create a Knowledge Package, your [GEO Knowledge Hub user](#) must have the [Knowledge Provider role](#). If you do not have this permission, [create an account](#) and [request the required role](#) for the [GEO Knowledge Hub team](#).

Sharing Earth Observation Applications in the [GEO Knowledge Hub](#) is done through Knowledge Package creation. This section presents how Knowledge Providers can use the features of the digital library to create these packages.

Getting ready

The most important work, once as [Knowledge Provider](#) you decided to share your application in the [GEO Knowledge Hub](#) is to organize and document your application with the relative resources.

A [checklist of actions](#) is suggested:

1. Organize the material you want to share;
2. Describe all the materials you have in a document (e.g., [Title](#), [Authors](#), [Licenses](#), [Files](#) and so on);
3. Go to the [GEO Knowledge Hub](#) and follow the step-by-step guide to create a [Knowledge Package](#).

Step-by-step

To create your [Knowledge Package](#), follow the step-by-step instructions on the following pages.

gkhub.earthobservations.org/doc

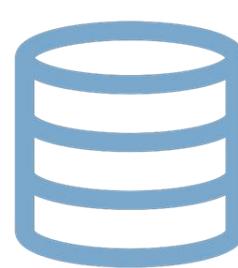
Best practices for creating Knowledge Packages



Clear Documentation



Descriptive Metadata & Data Accessibility



Metadata

Title

Description

Authors (Creators and contributors)

DOI



Metadata

Title

Date

Focus area and engagement priorities

Description

Geospatial info

GWP

Authors

License

Version

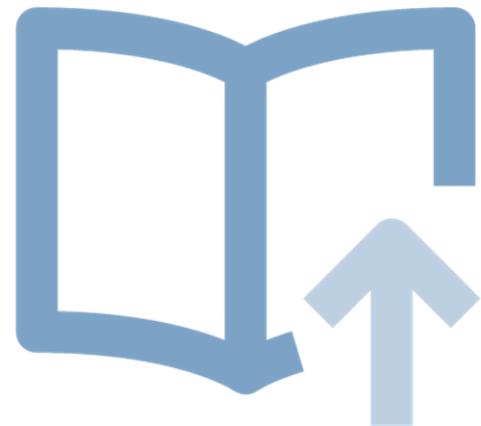
DOI

Related links

Target audience



Make publications visible



**Provide access to
training materials**



**Ensure effortless
access to the full
range of products**



Providing User Stories



Licensing

GEO Data Working Group - Law and Policy Subgroup. (2023). **Data Licensing Guidance**. Geneva, Switzerland: Group on Earth Observations Secretariat.

<https://doi.org/10.60566/c3yd5-2s987>



Interact with community



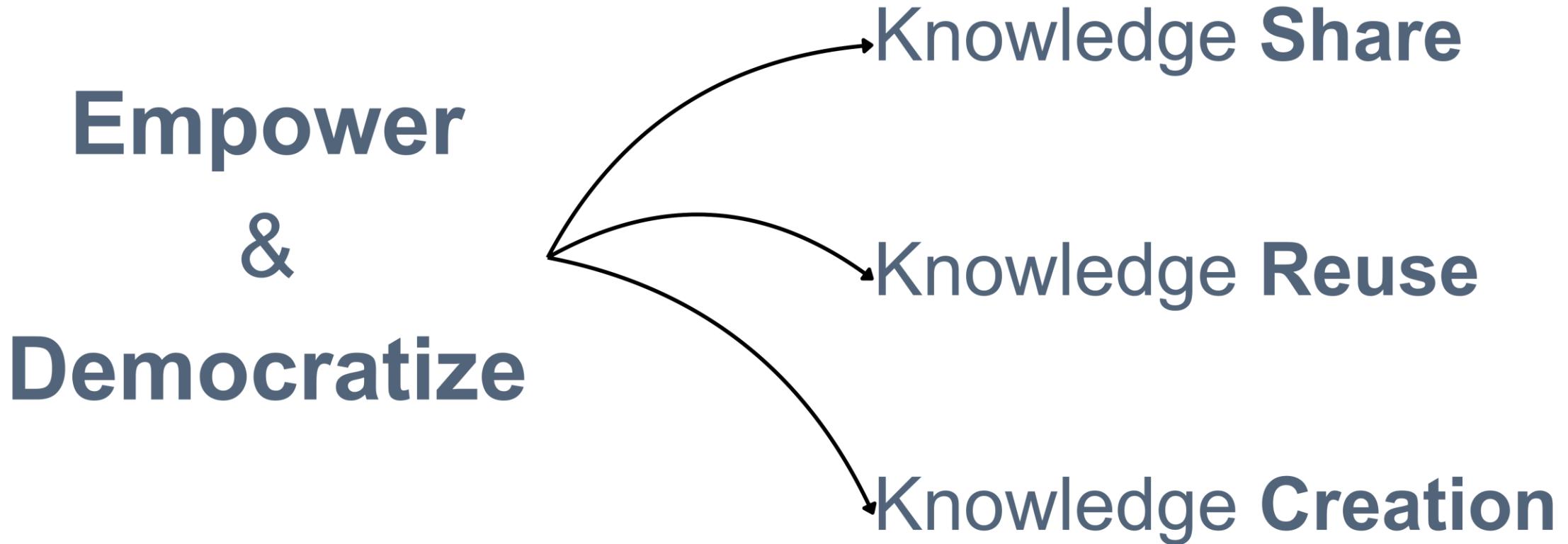
Think in the long-term



Always Up-To-Date

Supported by the GKH Link Checker automated tool

Witnessing a paradigm shift in GEO supported by the GEO Knowledge Hub



We build with ❤️ together with the GEO Community

(1) Community effort

(2) On-demand approach

(3) Let's go together



Thank you