



# OPEN DATA & OPEN KNOWLEDGE Workshop

GEO Knowledge Hub: Publishing Knowledge  
Packages

06/16/2023

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# Practical demonstration goal

Introducing the capabilities of the GEO Knowledge Hub,  
focusing on creating and publishing EO applications

# Practical demonstration goal

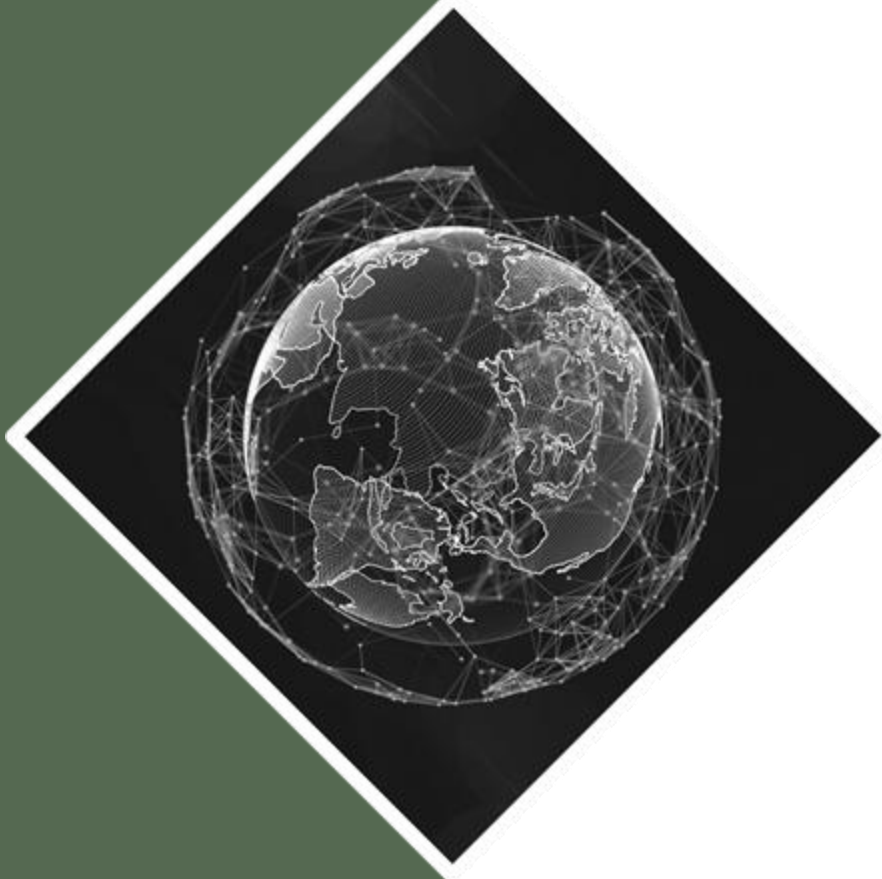
Introducing the capabilities of the **GEO Knowledge Hub**,  
focusing on creating and publishing EO applications

# Practical demonstration goal

Introducing the capabilities of the **GEO Knowledge Hub**,  
focusing on **creating** and publishing EO applications

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Introducing the capabilities of the **GEO Knowledge Hub**,  
focusing on **creating** and **publishing** EO applications



# Concepts

# The **GEO Knowledge Hub** is a **digital library** for the **GEO Community**

# GEO Knowledge Hub





# GEO Knowledge Hub

Helps the GEO Community to **share** EO Applications

# GEO Knowledge Hub

Helps the GEO Community to **share** EO Applications

**Preserves** materials from the EO Applications

Helps the GEO Community to **share** EO Applications

**Preserves** materials from the EO Applications

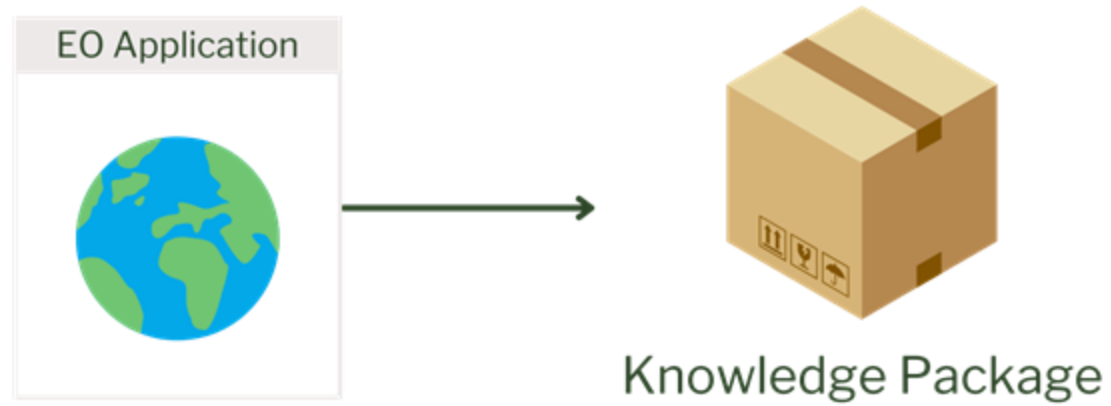
Helps the community to **find** and **access** EO Applications

# Knowledge Packages



Knowledge Package

# Knowledge Packages



# Knowledge Packages

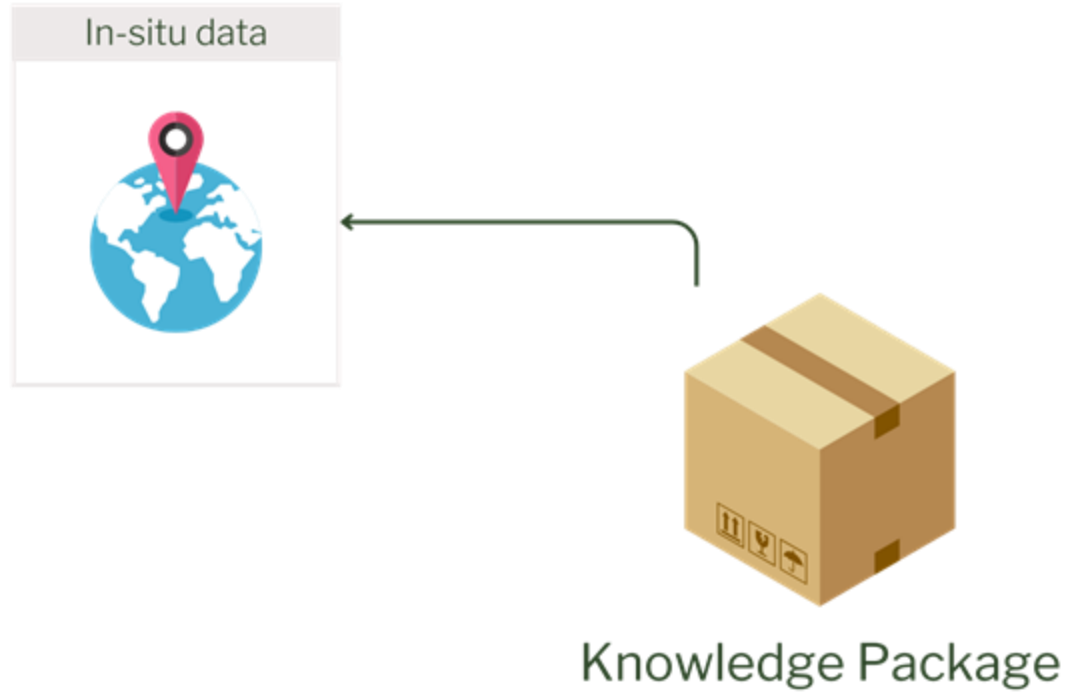


# Knowledge Packages



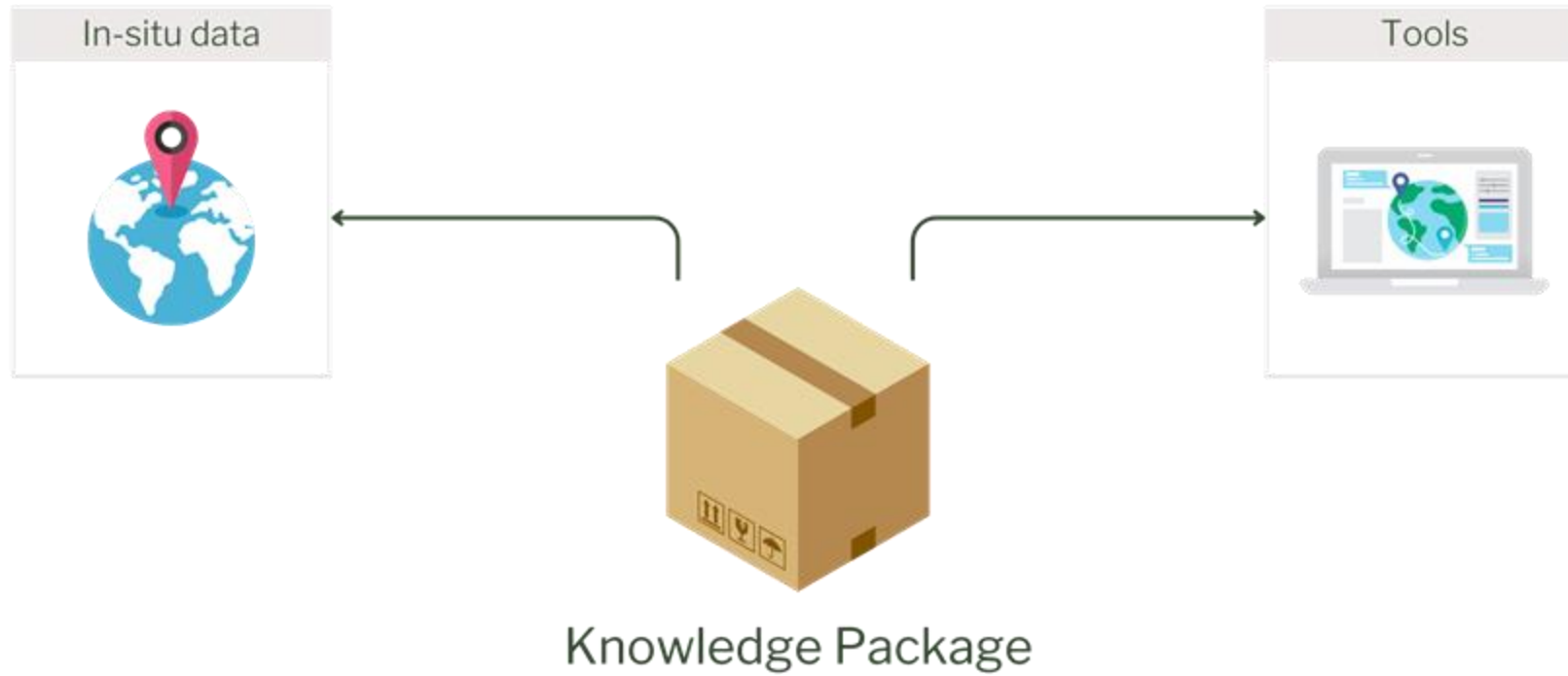
Knowledge Package

# Knowledge Packages

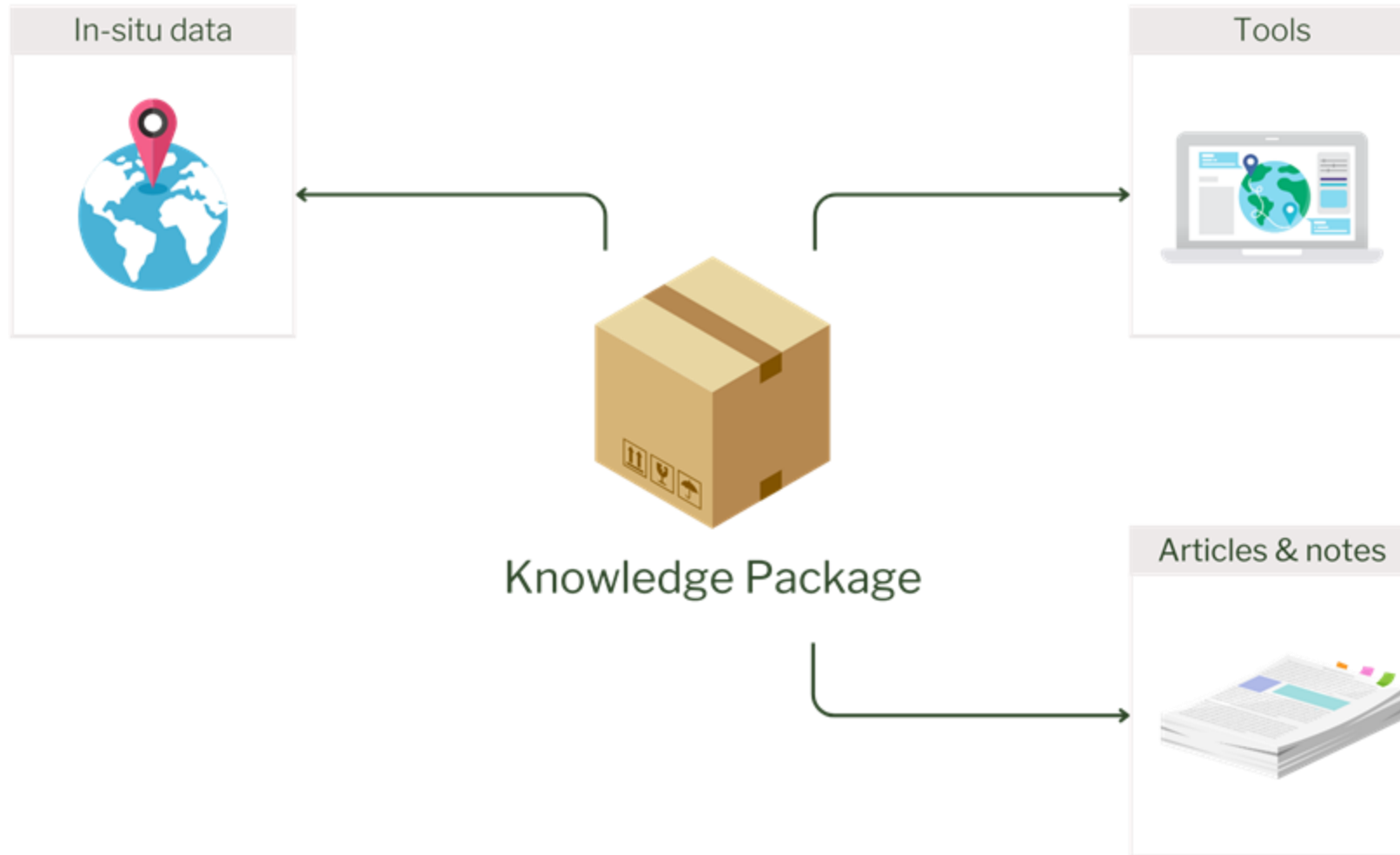




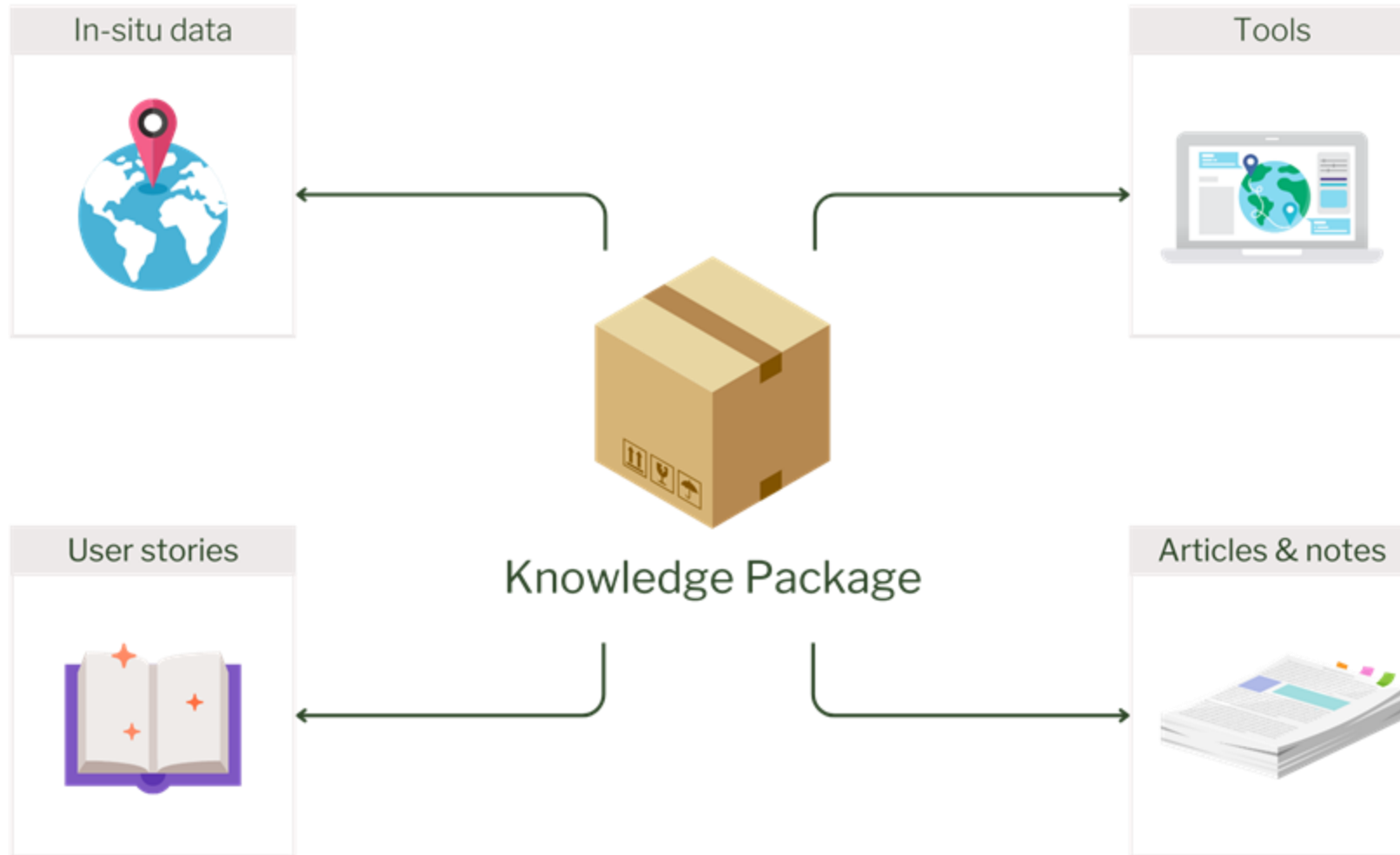
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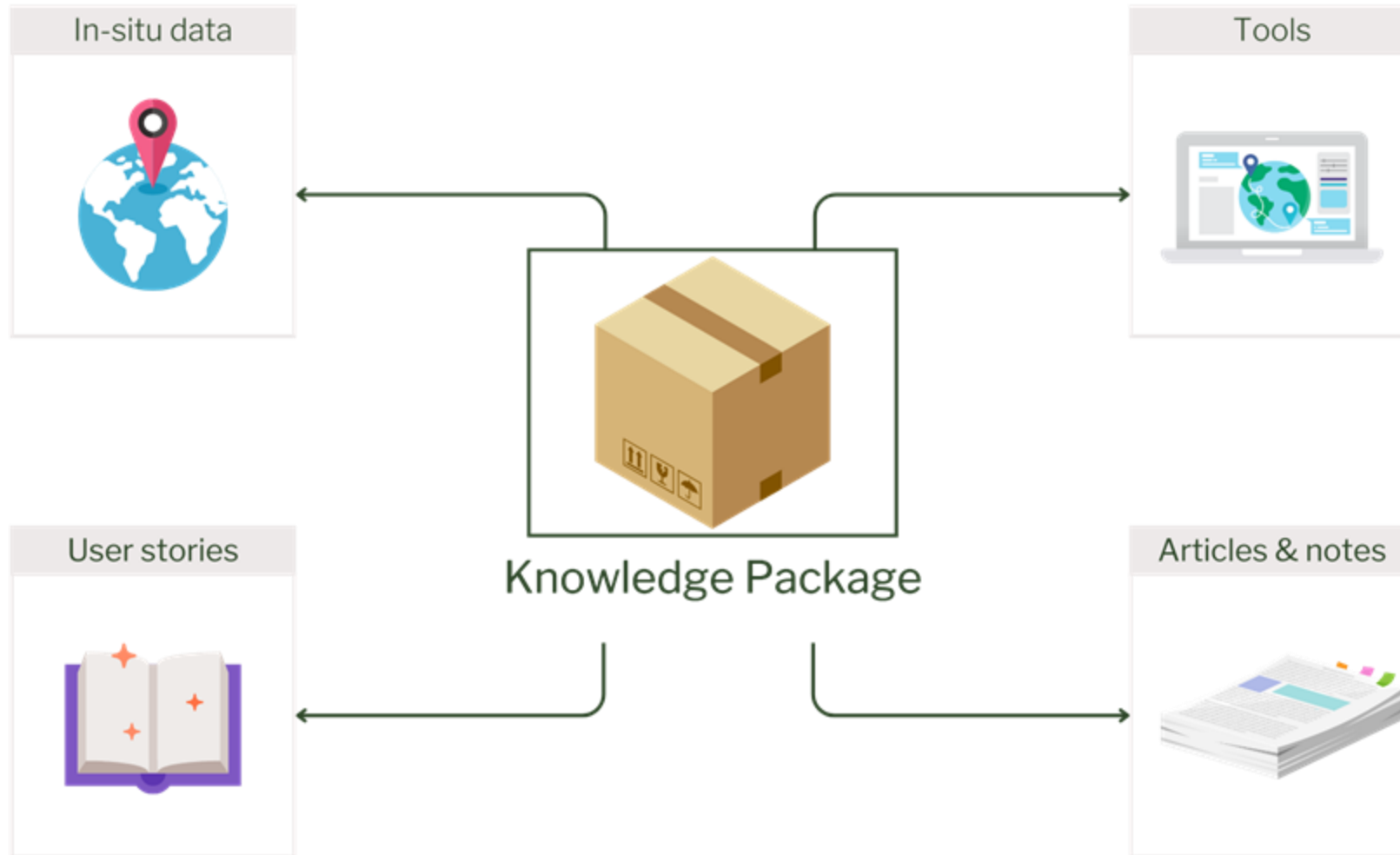
# Knowledge Packages



# Knowledge Packages



# Knowledge Packages



# Knowledge Packages



Knowledge Package

# Knowledge Packages

Define metadata



Knowledge Package

# Knowledge Packages



Knowledge Package

Define metadata

Upload files

# Knowledge Packages



Knowledge Package

Define metadata

Upload files

Link external resources



# Knowledge Packages



Knowledge Package

Define metadata

Upload files

Link external resources

Associate/Create DOI

# Knowledge Packages



Version 1

# Knowledge Packages



Version 1



Version 2

# Knowledge Packages



Version 1

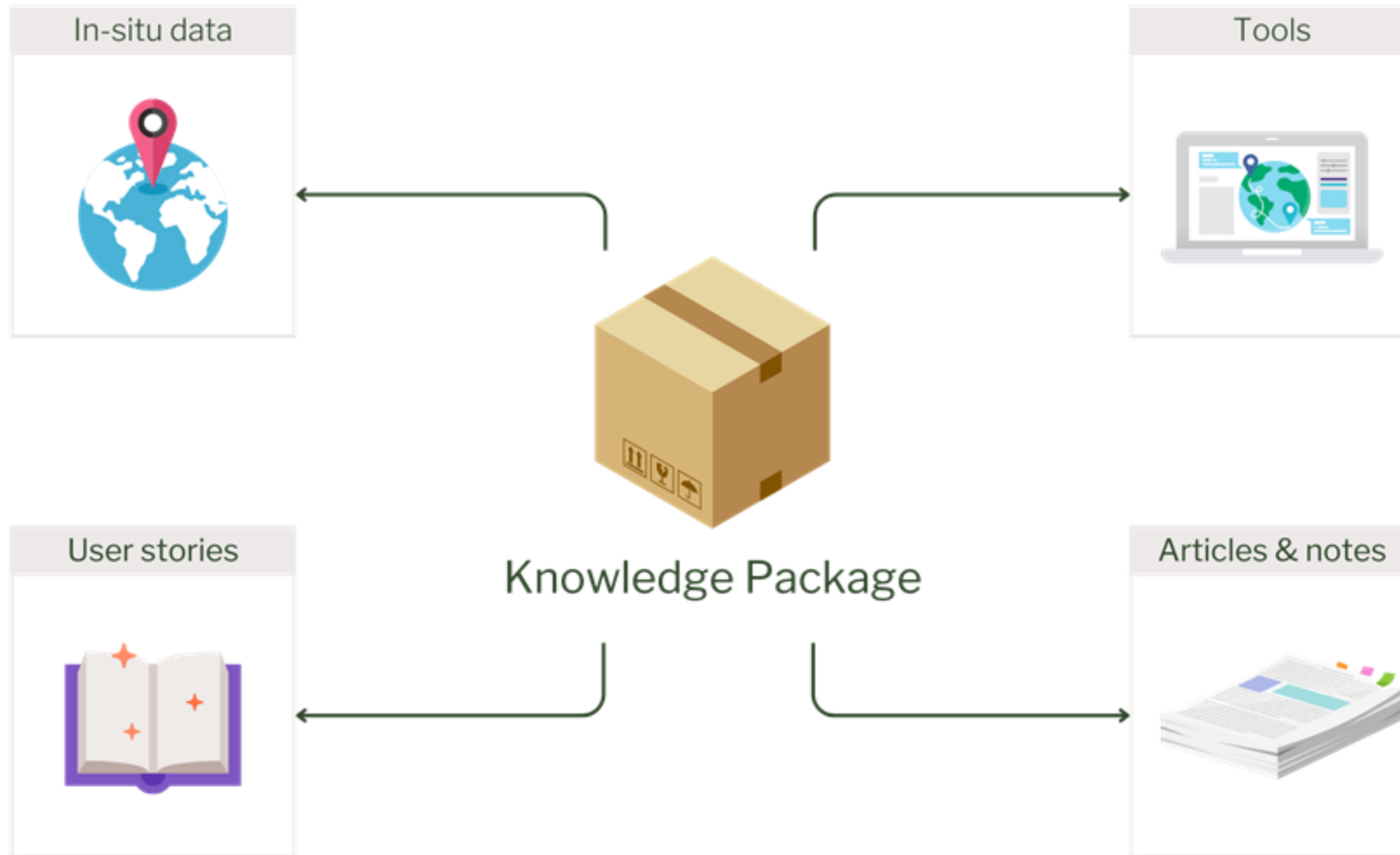


Version 2

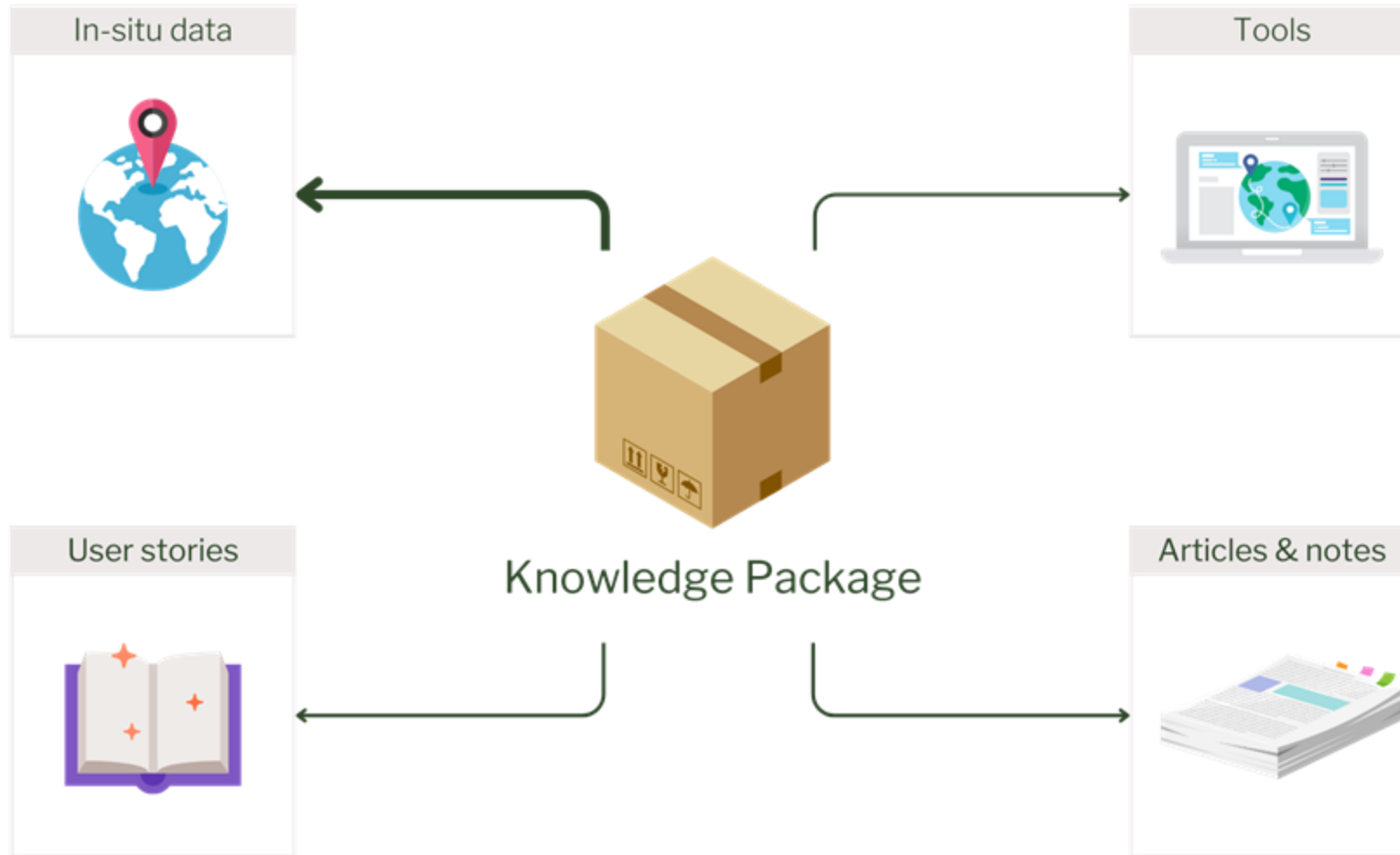


Version 3

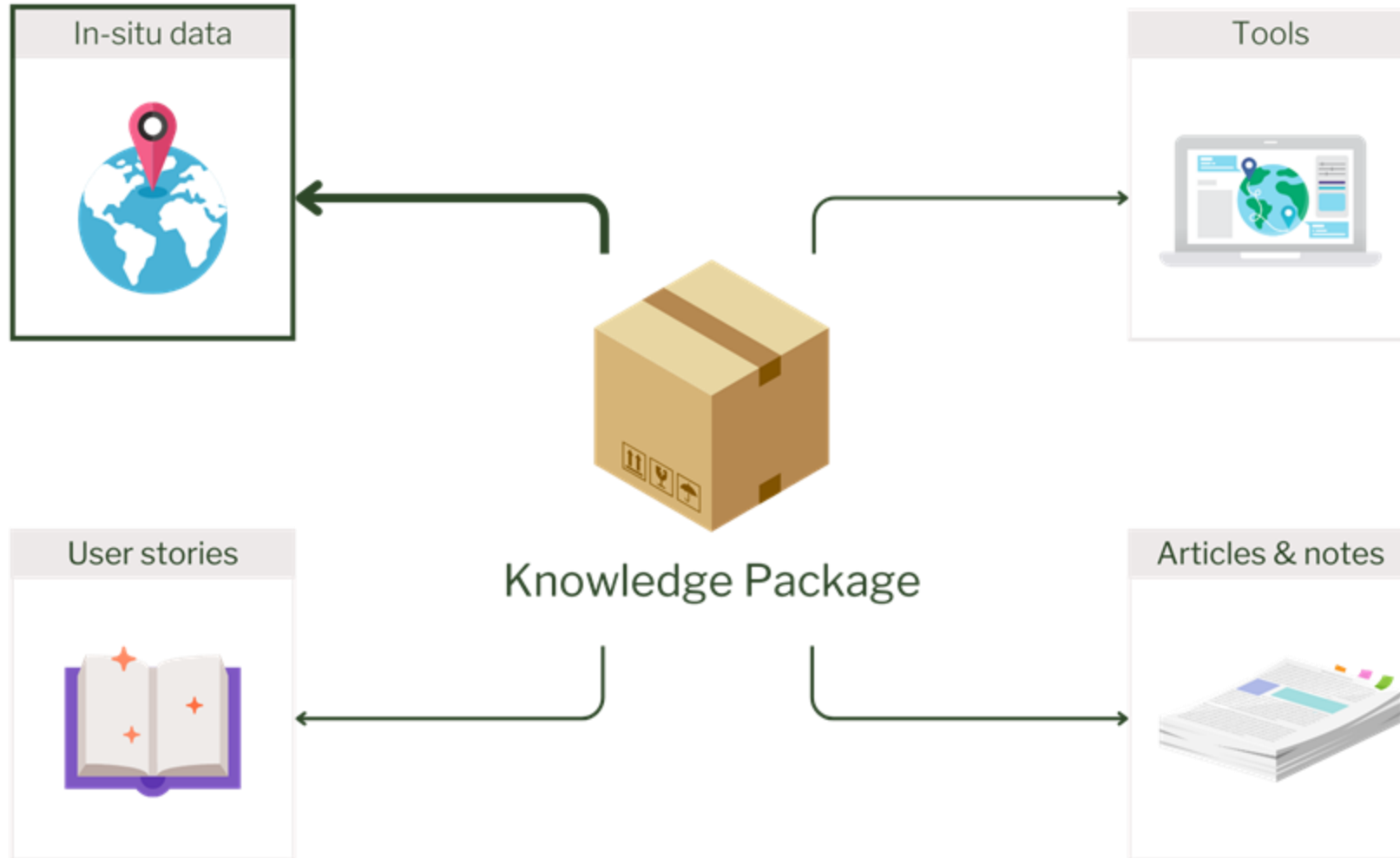
# Knowledge Packages



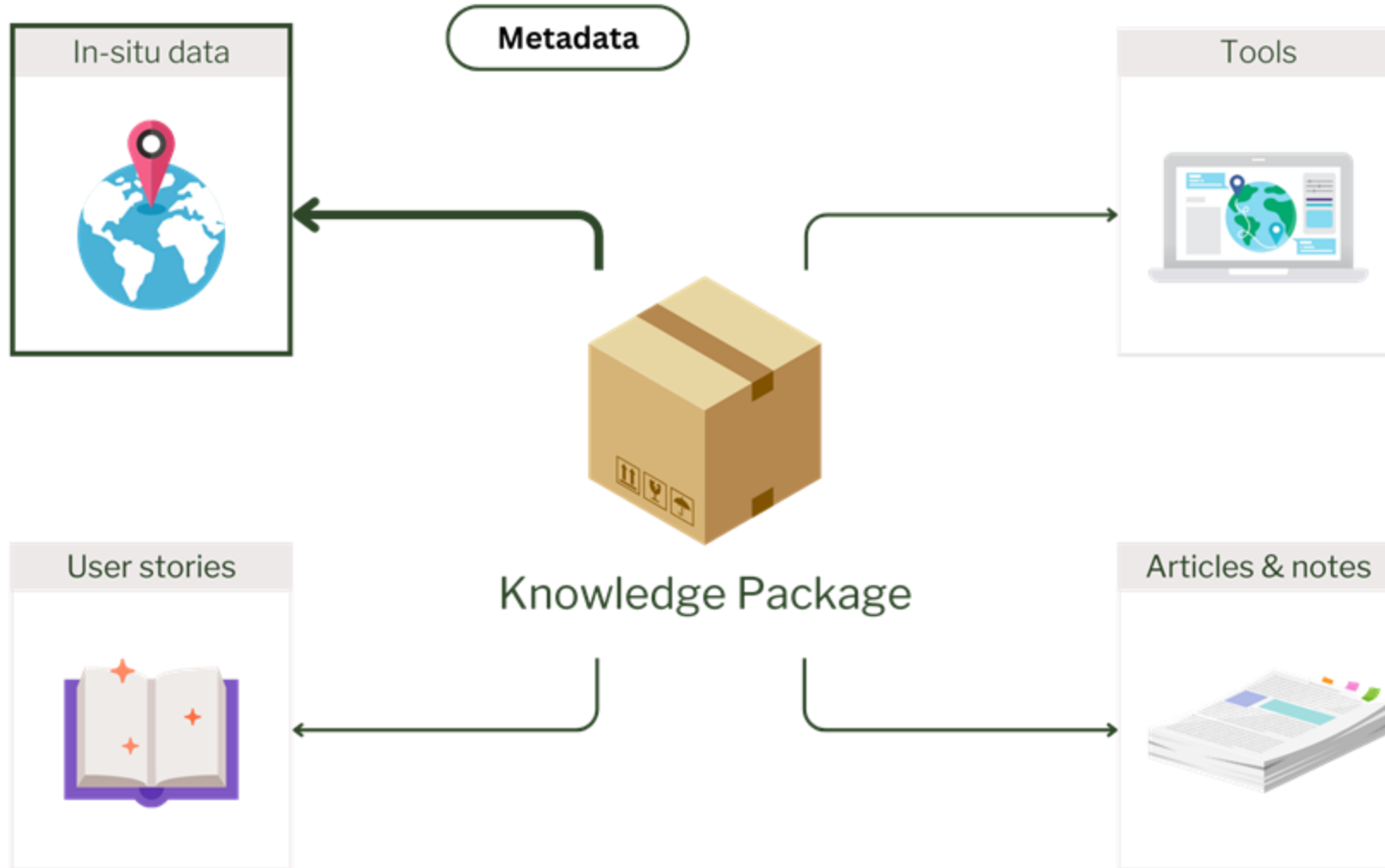
# Knowledge Packages



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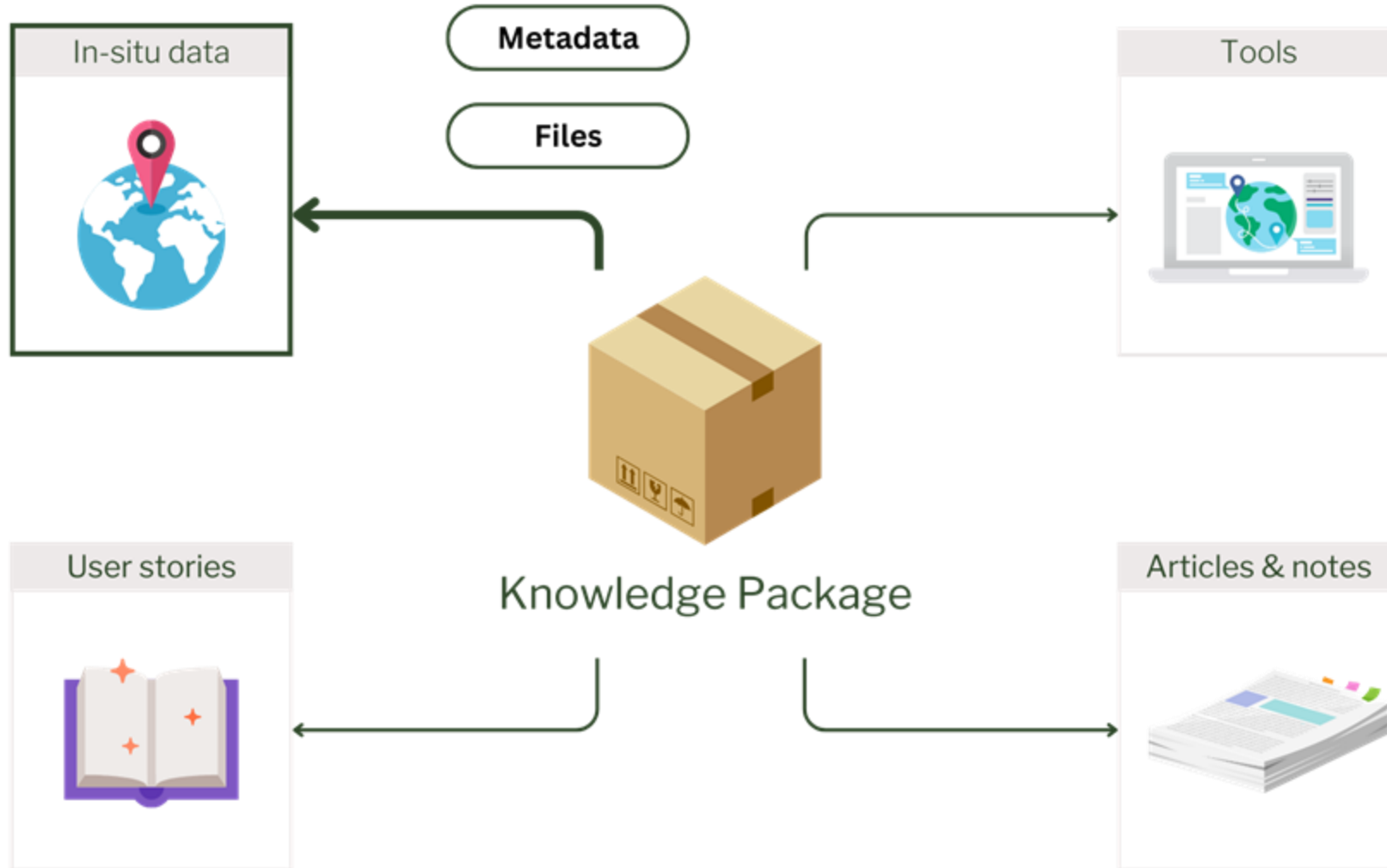


# Knowledge Packages

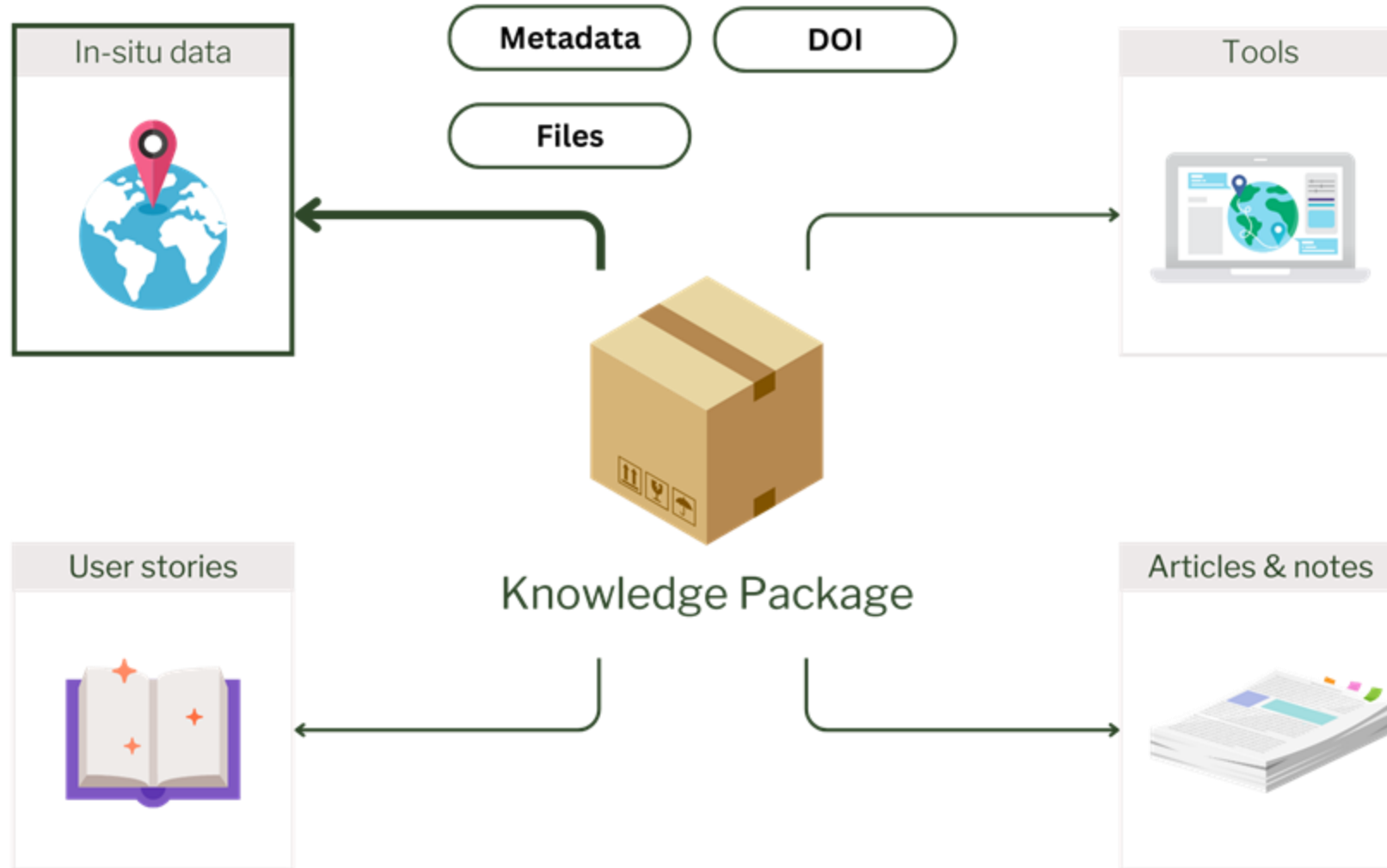




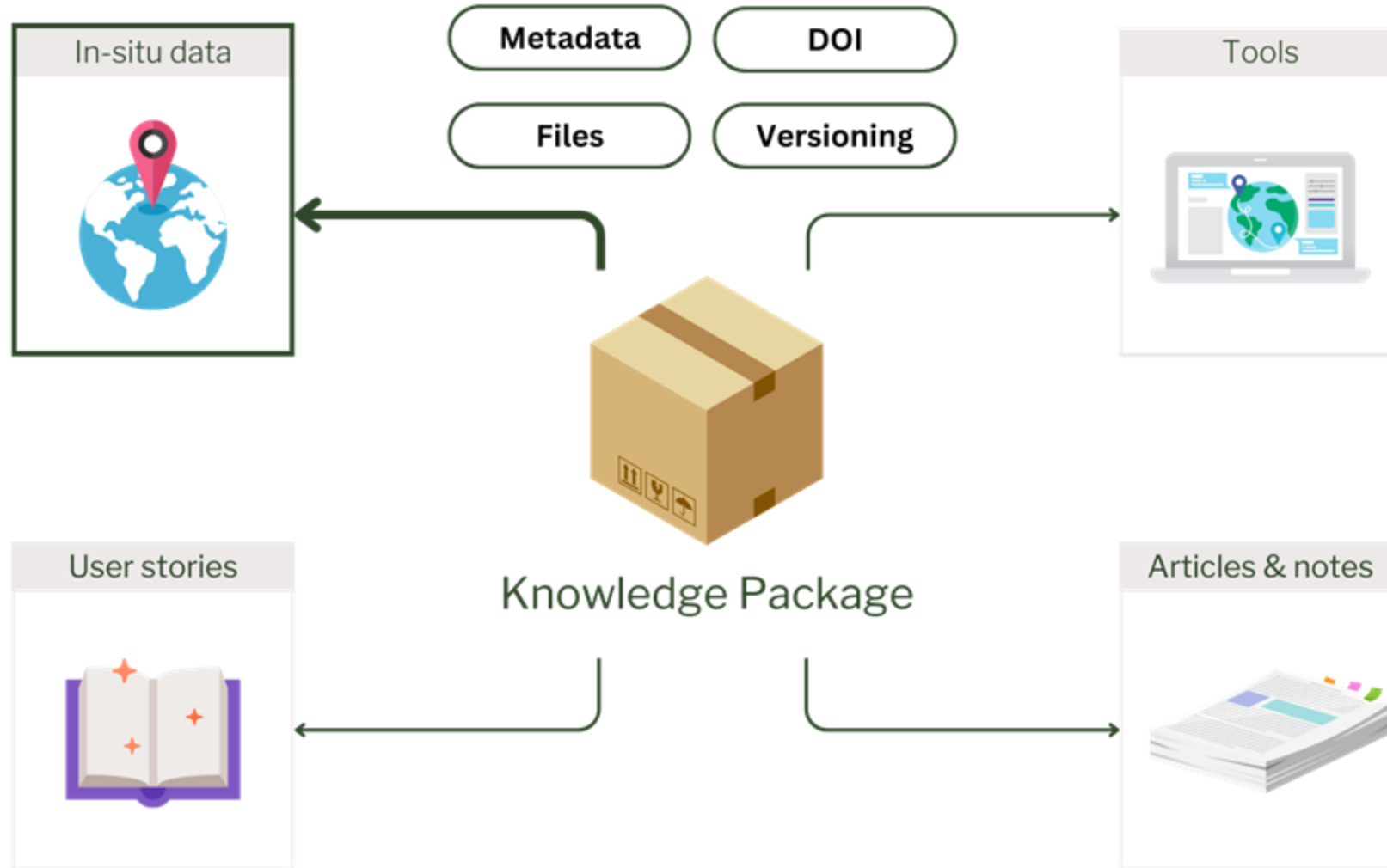
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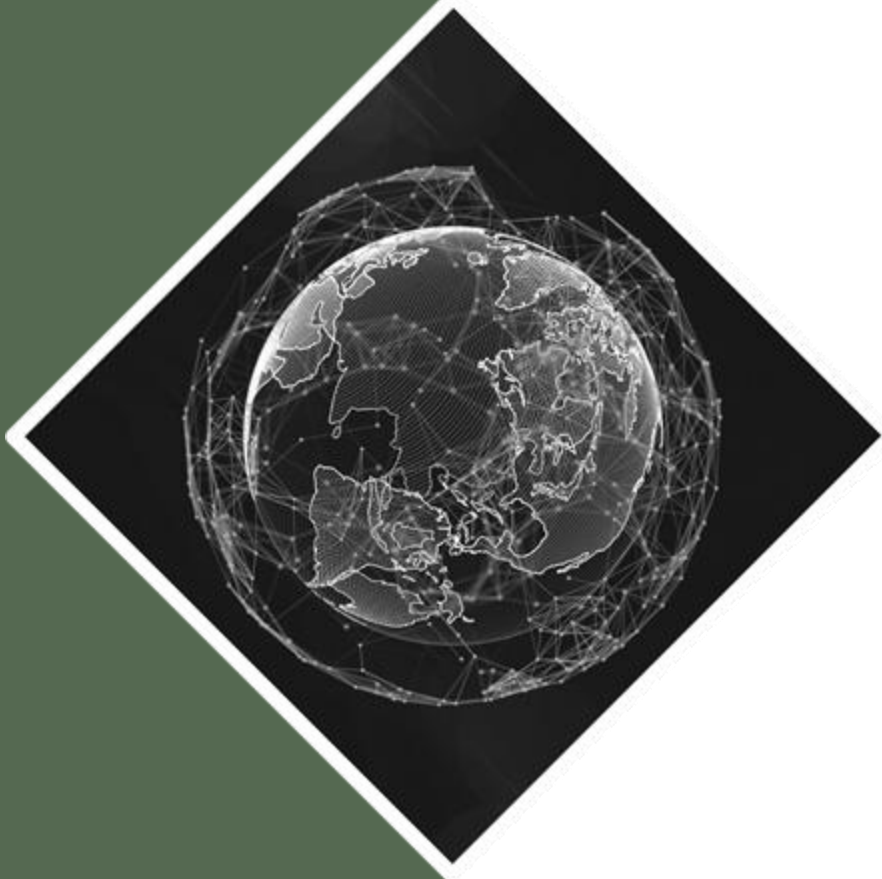


# Knowledge Packages



# Knowledge Packages





# Exploring the GEO Knowledge Hub

# Exploring the GEO Knowledge Hub



# Exploring the GEO Knowledge Hub



Web interface

# Exploring the GEO Knowledge Hub



Web interface



Rest API

# Exploring the GEO Knowledge Hub



Web interface



Rest API



# GEO Knowledge Hub content pages

Front page

Landing page

Search page

Community page

Deposit page

# GEO Knowledge Hub content pages

Front page

Landing page

Search page

Community page

Deposit page

# GEO Knowledge Hub content pages

Front page

Landing page

Search page

Community page

Deposit page

All users

# GEO Knowledge Hub content pages

Front page

Landing page

Search page

Community page

All users

Deposit page

Knowledge Providers

# GEO Knowledge Hub content pages



# Practical exploration

# GEO Knowledge Hub content pages



# GEO Knowledge Hub content pages

Front page

Landing page

Search page

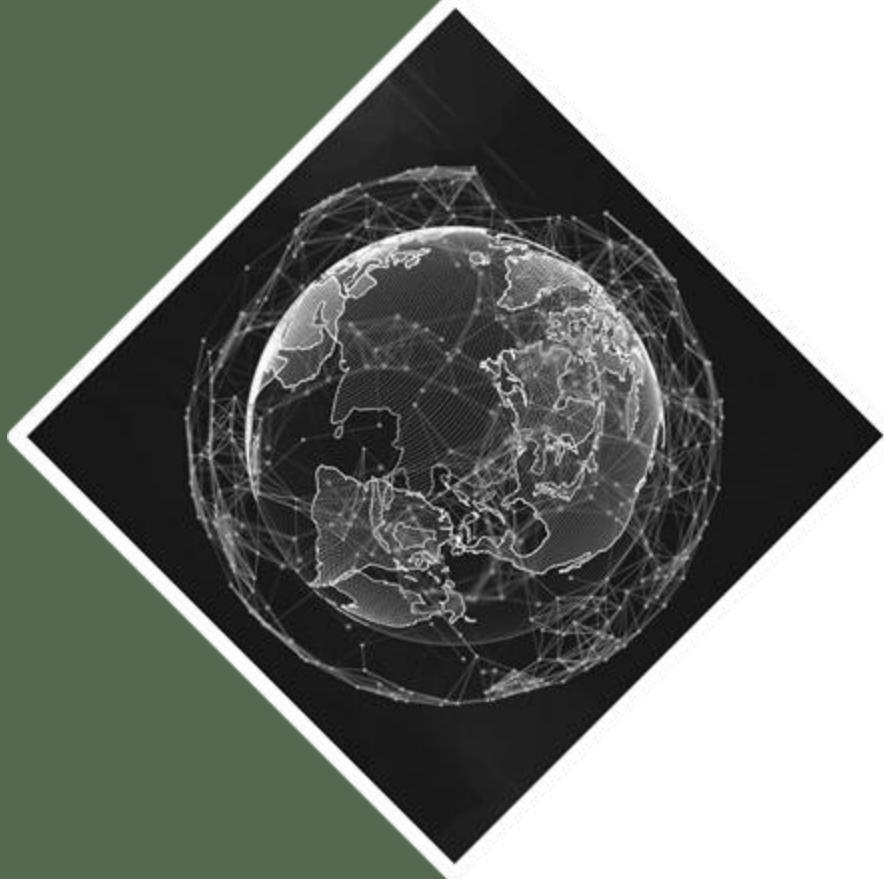
Community page

All users

Deposit page

**Knowledge Providers**





# Publishing Knowledge Packages

# Publishing a Knowledge Package

# Publishing a Knowledge Package



# Publishing a Knowledge Package

Record

Knowledge Package



# Publishing a Knowledge Package

Record

Knowledge Package



Knowledge Resource



Dataset



Docs



Results

# Publishing a Knowledge Package

Workflow to create a Record

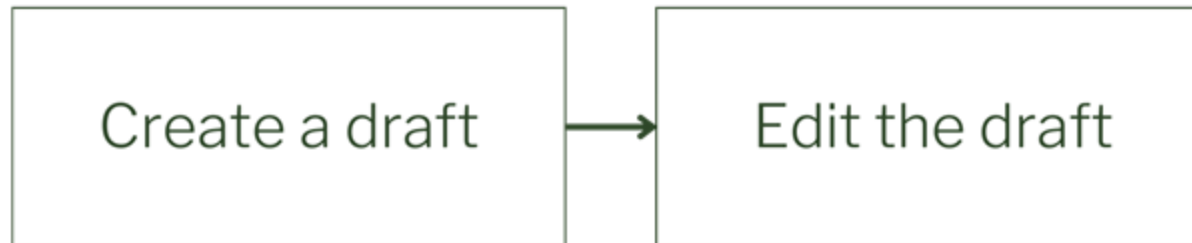
# Publishing a Knowledge Package

## Workflow to create a Record

Create a draft

# Publishing a Knowledge Package

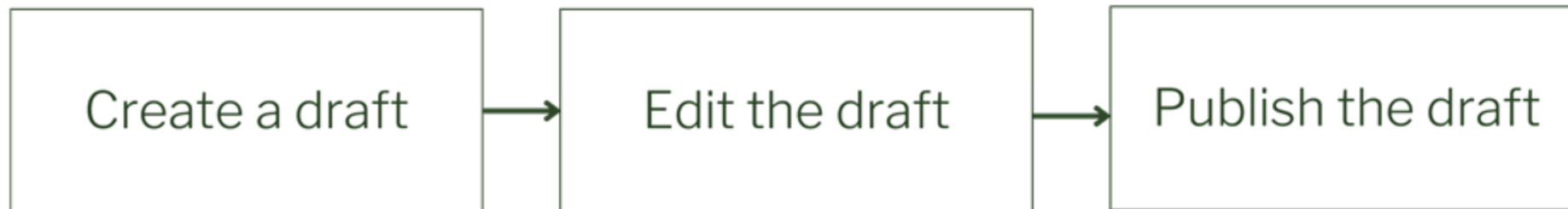
## Workflow to create a Record





# Publishing a Knowledge Package

## Workflow to create a Record



# Practical exploration

# Detecting deforestation using data cubes and deep learning



## Resources

|                  |                   |                   |
|------------------|-------------------|-------------------|
| <h3>Docs</h3>    | <h3>ML Model</h3> | <h3>Datasets</h3> |
| <h3>Scripts</h3> | <h3>Results</h3>  |                   |

## Documentation

### Image classification in data cubes

[Open in Kaggle](#)

This Chapter discusses how to classify data cubes by providing a step-by-step example. Our study area is the state of Rondonia, Brazil, which underwent substantial deforestation in the last decades. The objective of the case study is to detect deforested areas.

### Training the classification model

The case study uses the training data set `samples_prodes_4bands`, available in package `sitsdata`. This data set consists of 480 samples collected from Sentinel-2 images covering the state of Rondonia. The samples are intended to detect deforestation events and include four classes: “Forest”, “Burned\_Area”, “Cleared\_Area”, and “Highly\_Degraded”. The time series cover a set of 29 dates with a period of 16 days, ranging from 2020-06-04 to 2021-08-26. The data has 12 attributes, including original bands (B02, B03, B04, B05, B08, B8A, B11, and B12) and indices (NDVI, EVI, and NBR).

```
library(sitsdata)
# Obtain the samples
```

# Detecting deforestation using data cubes and deep learning



## GEO Knowledge Hub @ ODOK 2023



The GEO Knowledge Hub (GKH) is a central cloud-based digital library providing access to Earth Observations applications developed by GEO Work Programme Activities, It includes applications that help users working on agriculture, disaster risk reduction, urban planning and more.

To learn more about the new features available in the GEO Knowledge Hub and how you can start using it, join the practical demonstration session "GEO Knowledge Hub: Publishing Knowledge Packages" that will be

[geo-knowledge-hub/geo-knowledge-hub-workshop](https://geo-knowledge-hub/geo-knowledge-hub-workshop)

# Questions ?