

# The SKG Interoperability Framework: progress and challenges in EOSC onboarding

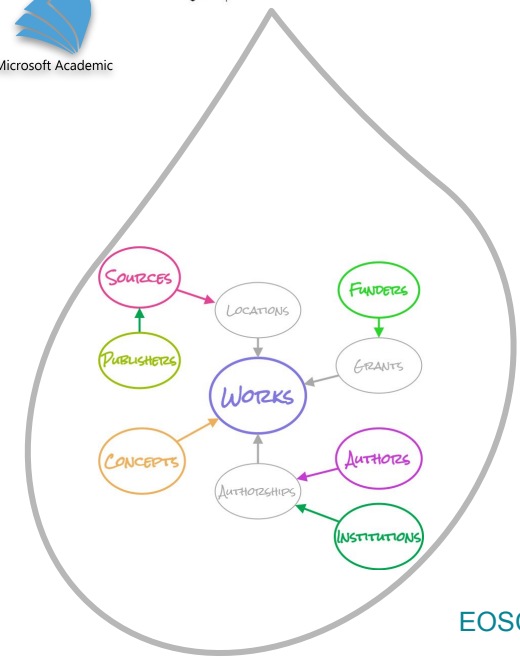
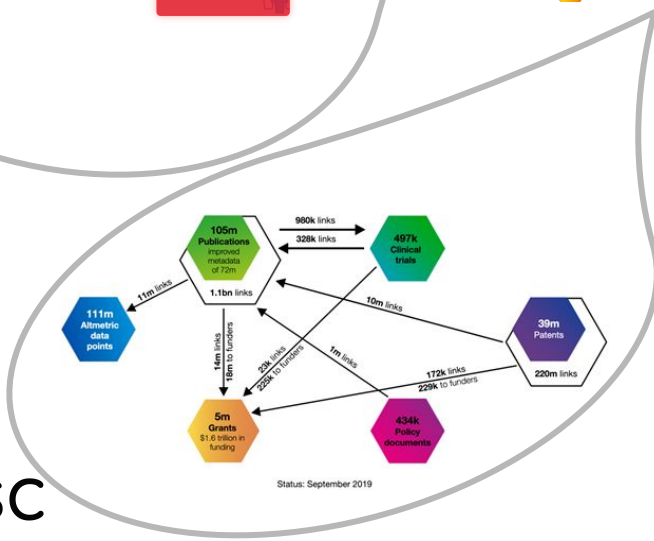
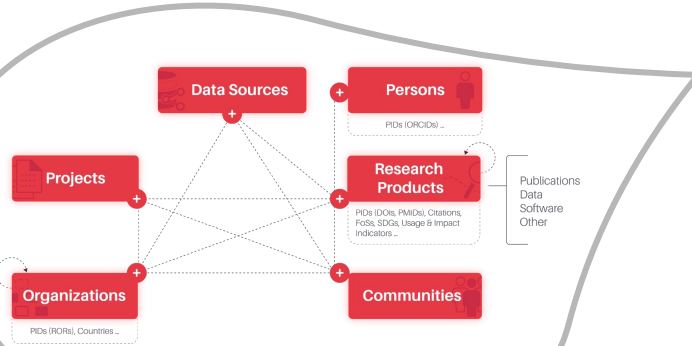


**Thanasis Vergoulis**

Athena Research Centre  
SciLake & GraspOS project coordinator  
RDA SKG-IF member

*The SKG Interoperability Framework:  
progress and challenges in EOSC onboarding*

# Background & Motivation



# SKG-IF: At a glance

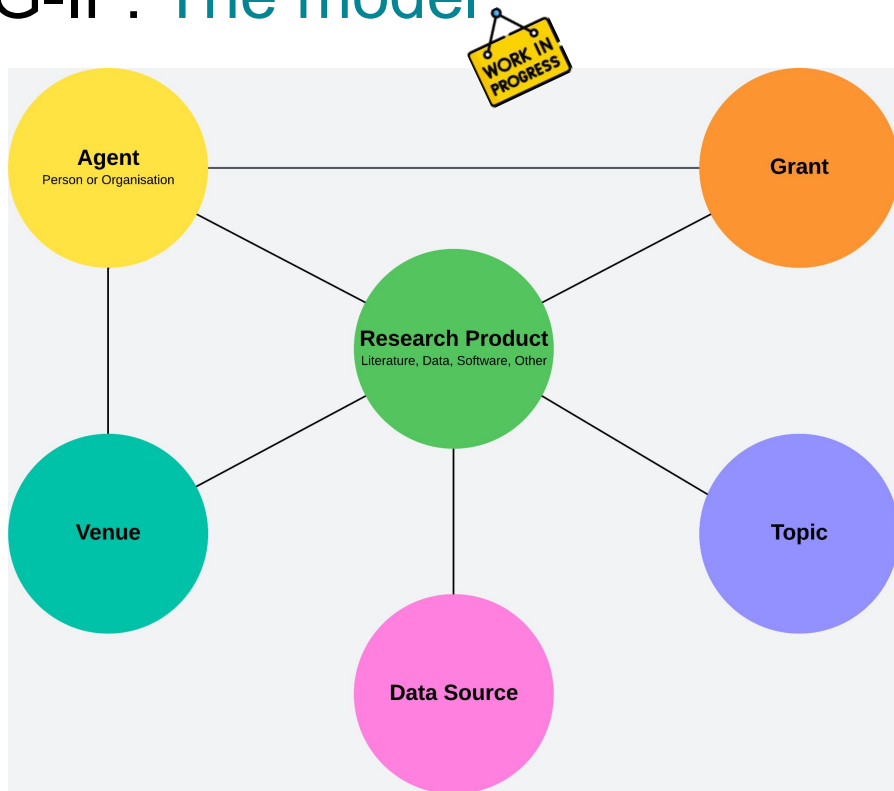
## SKG-IF: Scientific Knowledge Graph Interoperability Framework

- Aim to define a metadata model to facilitate
  - Interoperability between SKGs
  - SKG content consumption by value-added services developers
- Inspired by the models of existing, well-known SKGs
- Intention to be part of the EOSC Interoperability Framework

More information:

- <https://skg-if.github.io>
- <https://skg-if.readthedocs.io/en/latest/> (old website, being discontinued with redirect)

# SKG-IF: The model



\*Documentation sample

## interoperability-framework

### Agent

The **Agent** entity represents an individual (e.g., a person, an organisation, or another kind of entity being able to act) who is involved in the creation, publication, dissemination, etc. of a **Research product**. An **Agent** can be an author, a reviewer, an editor, a publisher, a researcher, or any other stakeholder involved in the scholarly communication process.

This page describes the metadata fields for an **Agent** and all its subtypes (i.e., persons and organisations).

### Properties

#### local\_identifier

*String* (mandatory): Unique code identifying the **Agent** in the SKG (if any, otherwise "stateless identifier").

**Suggestion:** use a URL as a string to make this resource dereferenceable on the Web.

```
"local_identifier": "skg-if-wg"
```

#### identifiers

*List* (recommended): A list of objects representing external identifiers for the entity. Each object is structured as follows:

- *scheme* *String* (mandatory): The scheme for the external identifier (e.g., orcid, viaf, etc.).
- *value* *String* (mandatory): The external identifier.

**Note:** the current version of SKG-IF includes the following types of identifiers (to be specified as strings in the field "scheme"): orcid, viaf, ...

```
"identifiers": [  
  {  
    "scheme": "orcid",  
    "value": "0000-0002-5193-7851"  
  }  
]
```

# SKG-IF: History

- Incubated in **RDA IG Open Science Graphs for FAIR data**
  - <https://rd-alliance.org/groups/open-science-graphs-fair-data-ig>: Helena Cousijn (DataCite), Amir Aryani (ResearchGraph.org), Paolo Manghi (OpenAIRE), Andrea Mannocci (CNR-ISTI/OpenAIRE), Anita de Waard (Elsevier)
  - Self-organised in Task Forces since June 2022
- Transitioned to **RDA WG Scientific Knowledge Graphs - Interoperability Framework**
  - <https://www.rd-alliance.org/groups/scientific-knowledge-graphs-interoperability-framework-skg-if-wg>
  - Officially endorsed in June 2023, wrap-up in December 2024 (18 months)
  - Chairs
    - **Andrea Mannocci** (CNR-ISTI / OpenAIRE)
    - **Silvio Peroni** (OpenCitations)
    - **Jason Portenoy** (OpenAlex)
    - **Sahar Vahdati** (InfAI)

# SKG-IF: Roadmap

## SKG Core Information Model

Review the models of a selection of SKGs and checked for common research entities being modelled and the respective properties. Trying to keep a **balance between pragmatism and expressivity** of the model.

Ongoing maintenance and extension

## SKG Data Exchange Commons

Review **metadata formats** that could be suitable for data exchange

Transitioning to JSON-LD

## SKG Access Protocol Commons

Review **technical protocols** and means to achieve information exchange. From simple data dumps to API and querying.

Defined an API resolver

Full-fledged API yet to be discussed

## SKG Extensions

Setup a **mechanism to extend the basic model** to cover special needs of communities and use cases.

Defined rules of engagement

# SKG-IF: Extensions

The **core model** should be capable of modeling the most **widely used research-related entities**.

The focus should be on **domain-agnostic entities, relationships, and properties**.

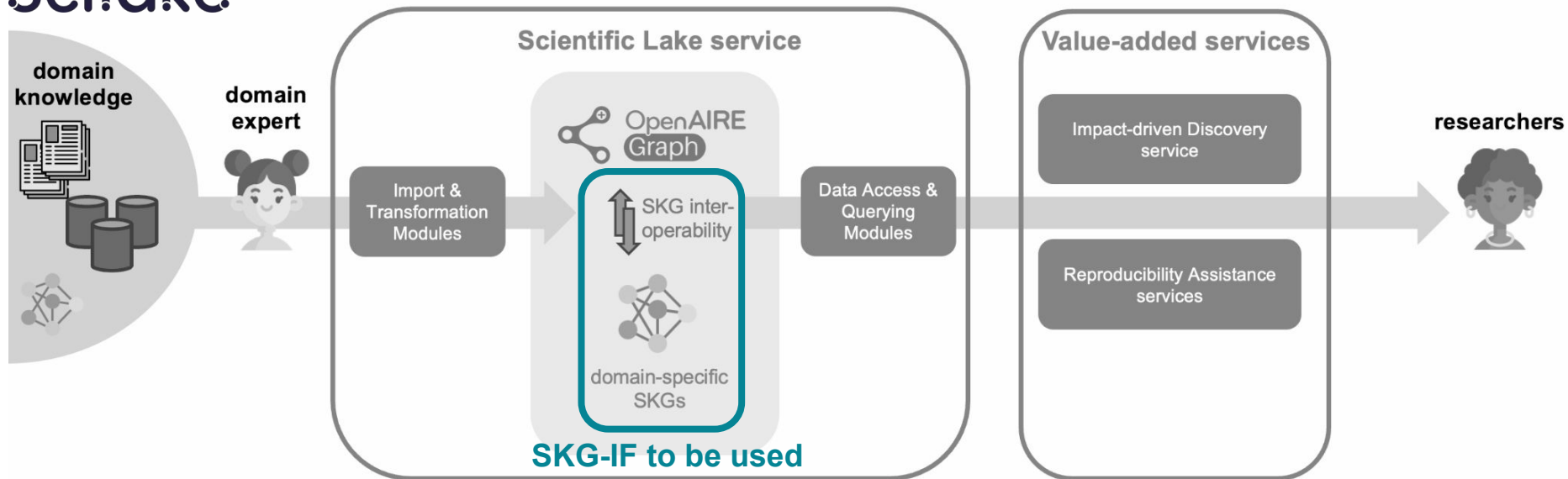
*\*Impossible/unsustainable to keep up-to-date domain-specific knowledge.*

Need to support an **extension mechanism** to cover relevant needs.

Official extensions to be **listed on the SKG-IF website** along with documentation.

# Motivation example for SKG-IF extensions

SciLake



SKG "federation" ♦ multiple SciLake nodes deploying different modules

Icons created by ultimatearm, Becris and Freepik from [www.flaticon.com](http://www.flaticon.com).