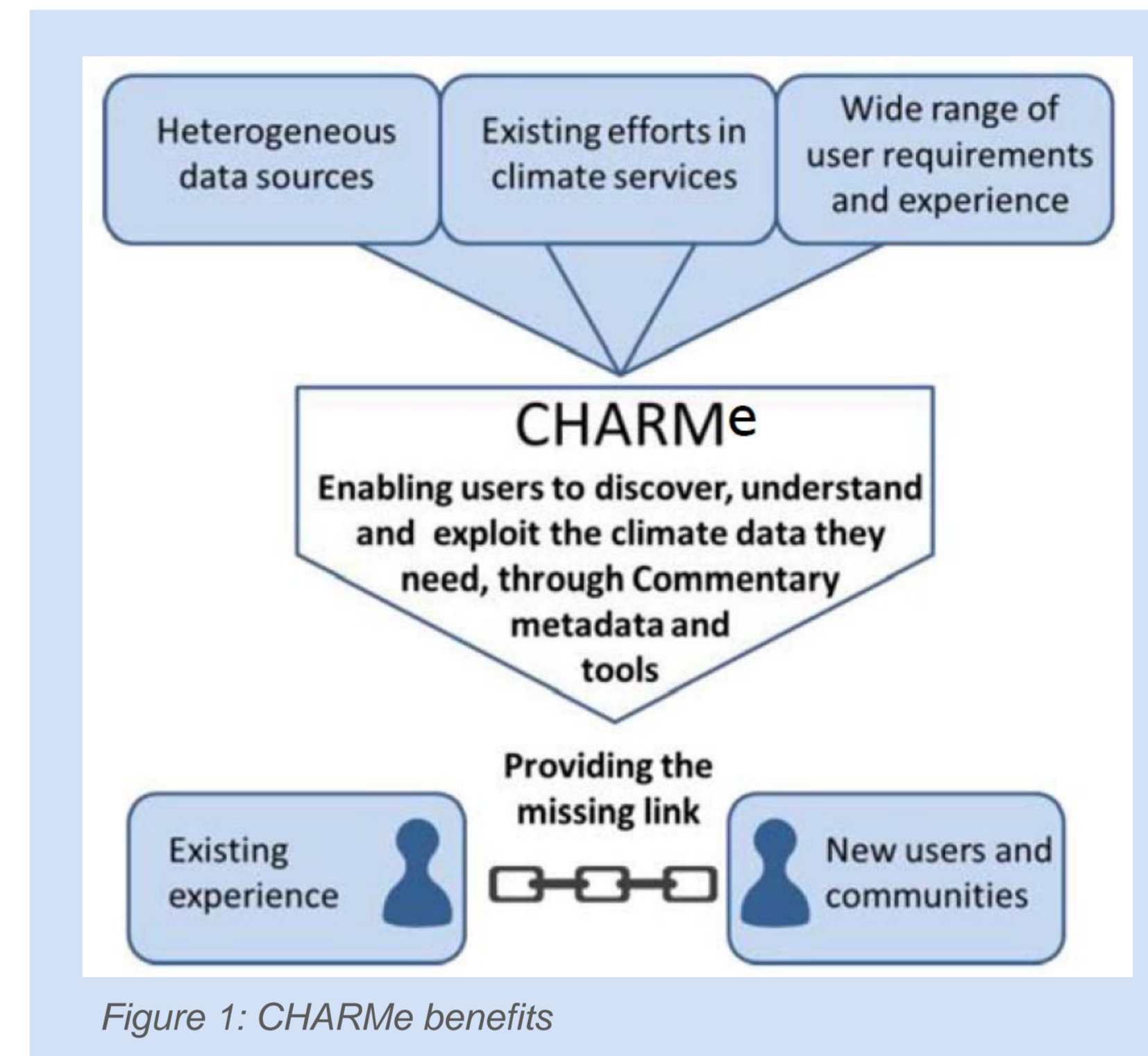


CHARacterisation of Metadata to enable high-quality climate applications and services

Nathalie Selbach on behalf of the CHARMe consortium

Accurate, long-term monitoring of the earth is of vital importance for gathering information about the climate. This information, in turn, forms an important part of the evidence base for operational and policy decisions that have far reaching effects on society. Climate data are used by both public and private sectors for applications such as controlling greenhouse gas emissions, energy production, food security and flood prediction.

The CHARMe project aims to connect users and prospective users of climate datasets with the previous expertise that has accumulated in the community, and enable them to contribute back information on their own experience.



CHARMe enabled



How CHARMe will work



The CHARMe system will provide links between datasets and citations and other commentary information following the principles of the "Semantic Web" and "Linked Data" by applying open standards such as Open Annotation. This approach is highly flexible and can adapt to changing user needs as the system grows.

Open Annotation

Open Annotation is an overall framework to associate a piece of information with a certain subject. Within CHARMe, it can be used to associate a dataset with a user comment about that dataset. It will allow users to record the motivation behind an annotation and to tag a resource.

CHARMe System

The CHARMe system will be an online system for collecting and sharing user experiences and feedback on climate datasets. In order for the system to work it has the following primary components:

- A data provider's host system, where the data is stored and from which CHARMe is linked to.
- The CHARMe node which stores the commentary metadata relating to the data on the host system.
- The CHARMe plugin which will be the primary way to access and modify the commentary metadata stored on the CHARMe node.
- The CHARMe tools which provide advanced functionality using direct access to the CHARMe node.

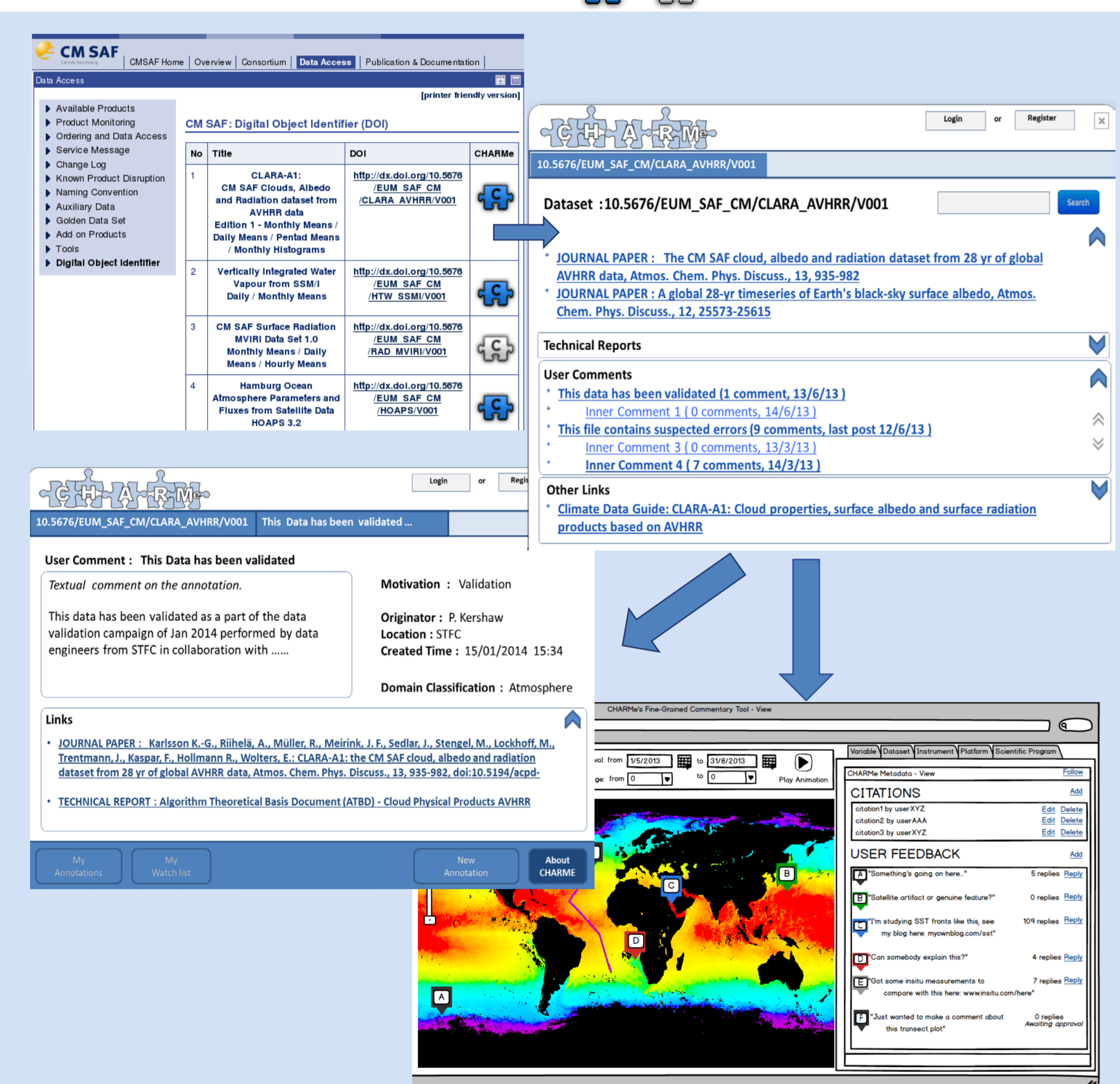
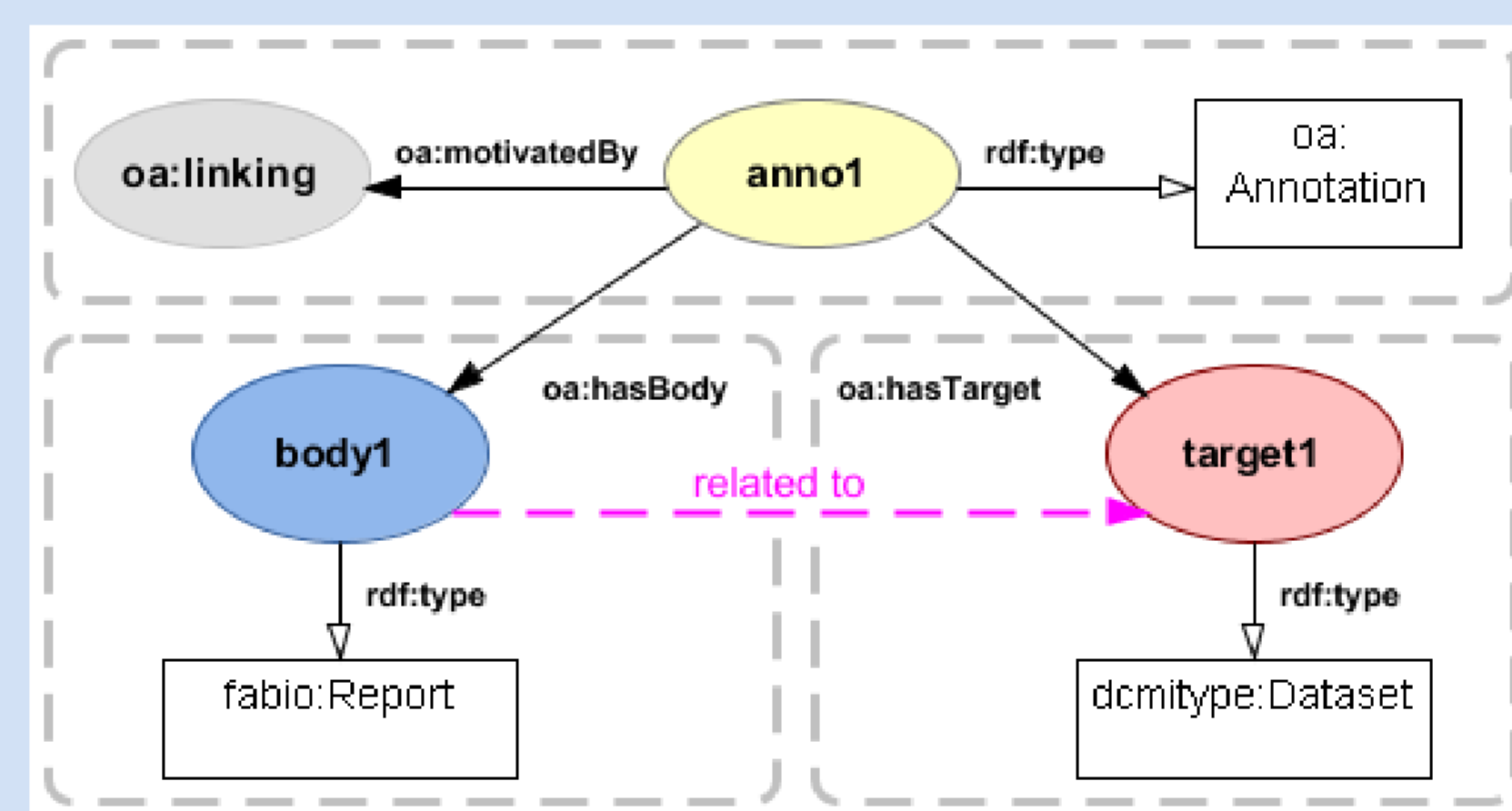


Figure 2: Example of CHARMe plugin (u.d.)

Commentary Metadata

Commentary metadata enables both data providers and data consumers to share commentary information linked to the data, for example, how climate data have been used and what has been learned. This information can include:

- **Citations** that reference a particular dataset;
- **Results of assessments** – reanalysis, quantitative error assessments;
- **Provenance** – processing algorithms and chain data source;
- **External events** that may affect the data – volcanic eruptions, El Nino, sensor failure;
- Supplementary dataset **quality information** – maturity, discontinuity, updates.
- **Feedback** and comments on dataset usages



```
<anno1> a oa:Annotation ;
oa:hasBody <body1> ;
oa:hasTarget <target1> ;
oa:motivatedBy oa:linking .

<body1> a fabio:Report .
<target1> a dcmitype:Dataset .
```

Figure 4: Open Annotation data model

Using Open Annotation for collecting and sharing user experiences and feedback on climate datasets helps users to judge how suitable such climate data are for their own intended applications.

CHARMe Objectives

- CHARMe will add value by allowing user feedback and commentary on datasets to be shared and retained within the community by
- developing an open-source system for recording "commentary metadata" that links with climate datasets and other sources of information such as descriptions of sensors and instruments.
 - providing interfaces for commentary metadata to be entered, queried and displayed through existing community websites, and through machine-readable interfaces.
 - identifying and engaging with, key strategic stakeholders (including climate data users, producers and high-level global initiatives), and to ensure that the CHARMe concept is understood and supported by both providers and users of climate.
 - developing tools that demonstrate other ways in which commentary metadata can be produced and exploited in a variety of scenarios.

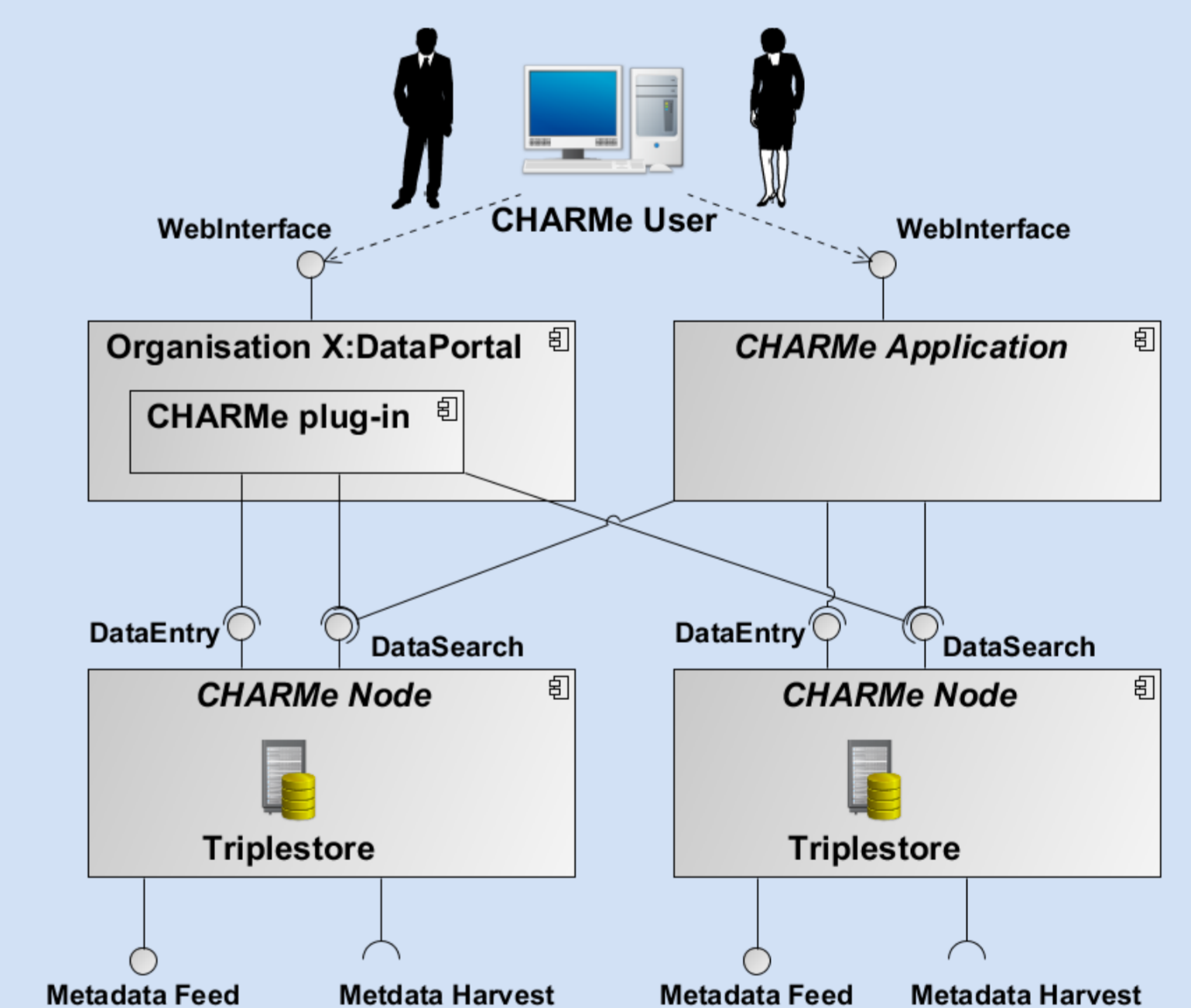


Figure 5: CHARMe system overview

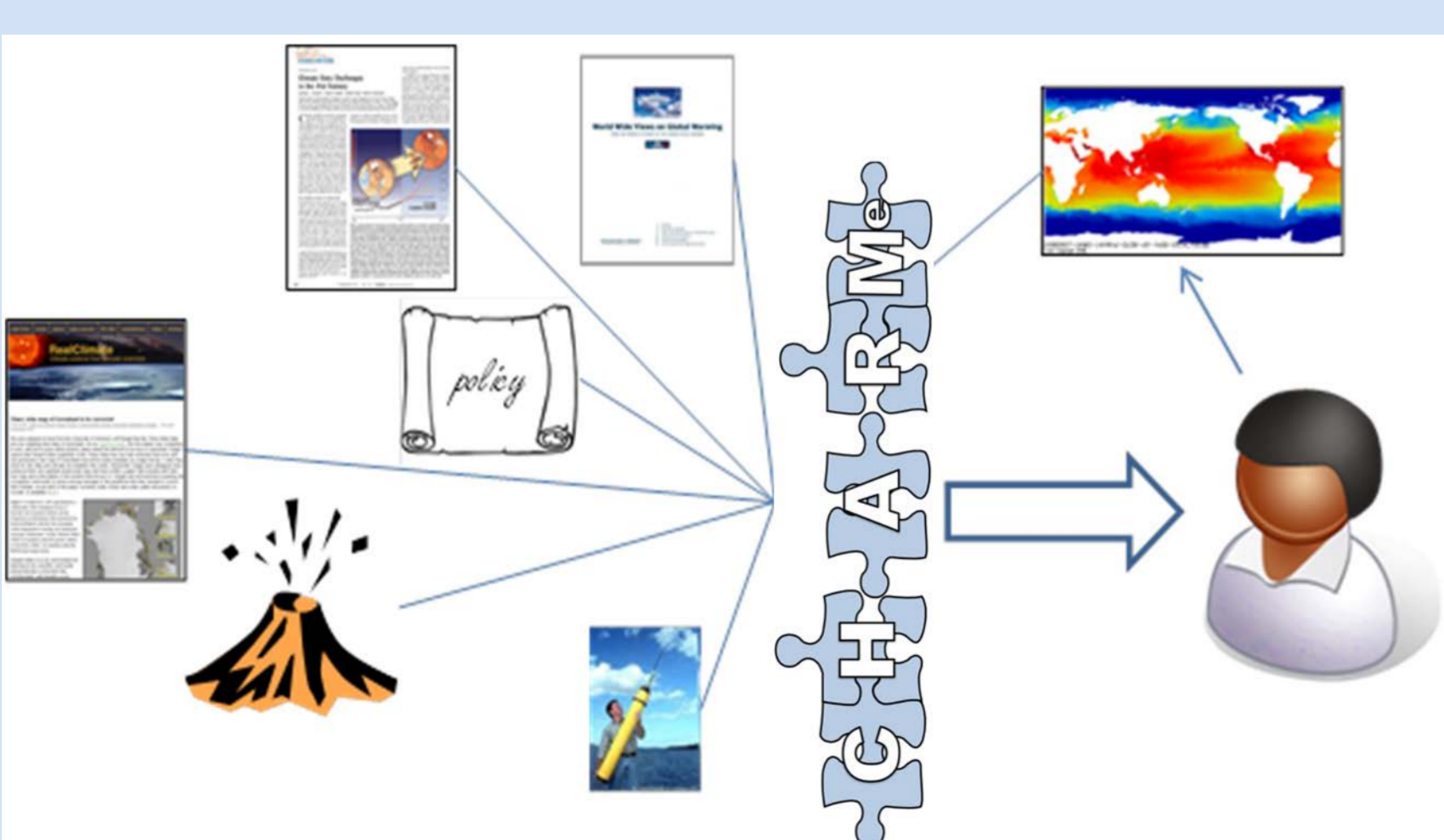


Figure 3: CHARMe provides users with supporting information

Acknowledgements

With thanks to the CHARMe Consortium



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