Solutions for providing web-accessible, semi-standardised ecosystem research site information

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There are a number of systems dedicated to the storage of information about ecosystem research sites, often used for the management of such facilities within research networks or research infrastructures. If such systems provide interfaces for querying this information, these interfaces and especially their data formats may vary greatly with no established data format standard to follow.

DEIMS-SDR (Dynamic Ecological Information Management System - Site and Dataset Registry; https://deims.org) is one such service that allows registering and discovering long-term ecosystem research sites, along with the data gathered at those sites and networks associated with them. We present our approach to make the hosted information openly available via a REST-API. While this allows flexibility in the way information is structured, it also follows interoperability standards and specifications that provide clear rules on how to parse this information.

The REST-API follows the OpenAPI 3.0 specification, including the usage of JSON schemas for describing the exact structure of available records. In addition, DEIMS-SDR also issues persistent, unique and resolvable identifiers for sites independent of the affiliation with research infrastructures or networks.

The flexible design of the DEIMS-SDR data model and the underlying REST-API based approach provide a low threshold for incorporating information from other research domains within the platform itself as well as integrating its exposed metadata with third party information through external means.