

# JISC Information Environment Service Registry (IESR)

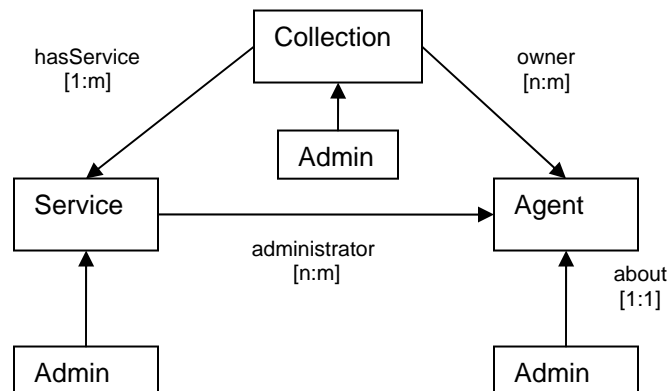
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## Aim

IESR is a middleware, shared service providing a registry within the JISC Information Environment (IE). It aims to assist other applications, such as portals, virtual learning applications or research services, to discover and devolve materials that match their users' interests in their research, learning and teaching. It contains information about resources that JISC makes available within UK Higher and Further Education, or that are useful to this community. IESR was commissioned by JISC as a service registry within the IE technical architecture, and is a 'Service in Development' project currently funded until July 2009.

## IESR Model

The IESR model comprises three types of entity: 'collection', which is an aggregation of resources; 'service', which is a system that provides one or more functions, being either an 'informational' service providing access to a collection, or a 'transactional' stand-alone service; and 'agent', which may be an owner of a collection or an administrator of a service, or both. Additionally each entity has an associated set of administrative metadata.



Why does a 'service registry' describes collections? Isn't it more intuitive to centre the specification around services? Within IESR context, a service is a low level, technical access point to a data collection, or a broker service such as an OpenURL resolver, or a component of a technical Service Oriented Architecture. Within the JISC IE, many services provide access to a data collection, so some information about a collection is needed. Describing the collection as part of a service becomes complicated when there is more than one service available to access a collection, e.g. 'find' via a web search, 'find' using Z39.50, and an OAI-PMH 'harvest'. The model is cleaner when collection-based as well as being based on formal modelling, and in practice the collection-based IESR model works well.

## IESR Metadata

IESR collection metadata is based on the RSLP Collection Description Schema (RSLPCD). The DCMI Collections Application Profile, recently endorsed by DCMI, and the NISO Metasearch Initiative Collection Description Specification are also derived from RSLPCD. IESR includes some further properties, in particular, "usesControlledList", which captures the subject vocabulary that a collection uses to describe its items. This term would be useful for a terminology service, and also to a portal that wishes to provide to its users an item level search over discovered collections.

IESR Service description is a bespoke schema, because IESR is agnostic about service protocol, and is consistent with the 'flat' Dublin Core data model (rather than a hierarchical XML model). Specific service connection details are captured externally to IESR, via an "interface" property that references machine readable information according to the appropriate standard for the service protocol, e.g. WSDL or Zeerex.

## Data Creation

IESR provides a data Editor, a web form based application, for data Contributors to supply descriptions of their collections, services and agents. All current data (100 collections) has been entered manually and quality checked.

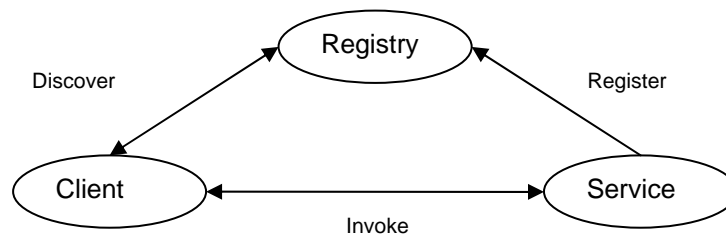
IESR provides OAI-PMH harvesting of collection, service and agent descriptions that conform to the IESR XML schema. Setting up ingest of data from registries that do not supply data in IESR XML format, or have a proprietary API, will necessitate specific data mappings and software routines on a case-by-case basis. Data from some registries may require some augmentation. IESR currently intends to harvest records from OpenDOAR, the UK Data Archive and MICHAEL.

## Data Dissemination

IESR disseminates data descriptions in XML, apart from its web interface, which displays equivalent text fields. Available service interfaces are: Z39.50; a simple OpenURL 'link to' resolver (or just dereferencing an IESR URI); and OAI-PMH. IESR records are available according to a 'by-nc-sa' Creative Commons licence. An SRU/W interface is planned.

## Using IESR

The over-arching use expected of a service registry is shown in the figure below. A 'Service' (and collection) is 'registered', by a Contributor who is probably the service administrator. A 'Client', such as a portal application, 'discovers' a relevant service within the 'Registry'. It 'invokes' the service by locating it using the details ascertained from the Registry, and then connecting to it possibly using further interface details acquired from the Registry.



The primary use case for IESR is dynamic discovery by an application such as a portal, the 'client', to support the functionality it provides to its end users. Discovery may be subject based relevant to a user's discipline. Or a client application may maintain a local registry by harvesting IESR data, possibly merging it with data from other sources. This may be for performance reasons, to obviate the need for repeated network accesses to IESR, or to transform IESR data into a proprietary format to populate a local knowledgebase.

A secondary use case is discovery of information in IESR by a person. Dynamic use of IESR may be too high a barrier for a builder of a portal application, or not possible (the semantics of the interfaces of SOAP Web Services are proprietary). They could discover details of appropriate resources in IESR and plug relevant services into their portal. Or IESR could be used by a person simply to search for relevant resources.

IESR Use Cases are available via: <http://iesr.ac.uk/use/use-cases/>

## IESR Metadata Schema Use

The US NSDL OCKHAM Digital Library Service Registry uses IESR metadata to describe its services and collections. IESR hopes to share records with OCKHAM soon, as part of the NSDL Registry Experiment. IESR metadata is also used by the registry within the aDORe Digital Object Repository at the US Los Alamos National Laboratory Research Library, and by the Australian Partnership for Sustainable Repositories collection registry project.