envision

environmental services infrastructure with ontologies

# Open Environmental Services Infrastructure

**FOSS4G 2010, Barcelona**

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# OUTLINE

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- Project overview
- Architecture
- Work packages
- Open Source integration

# PROJECT OVERVIEW (1/4)

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- ENVISION context
- European FP7 project





# PROJECT OVERVIEW (2/4)

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Main goal

Provide an ENVironmental Services Infrastructure with ONtologies for semantically enhanced multilingual discovery and adaptive composition of environmental models as services for non ICT-skilled users.

# ENVISION OVERVIEW (3/4)

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Use cases

- Landslide hazard and risk assessment

- Pollution management – Oil spills at sea

# ENVISION OVERVIEW (4/4)

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Approach

- Develop a Portal Designer to create specific Decision Support Environmental Portals
- Support for migrating environmental models as Web services: MaaS Composition Portal
- Provide an Ontology Infrastructure to enable the semantic annotation of environmental data resources
- Implement an Execution Infrastructure with a Semantic Catalogue and support for service mediation and adaptive service chaining

# ARCHITECTURE (high level)

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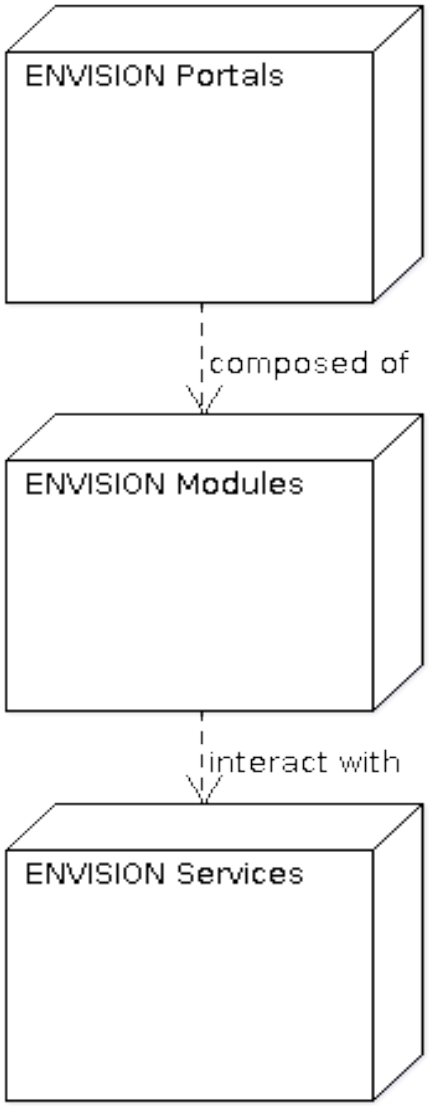

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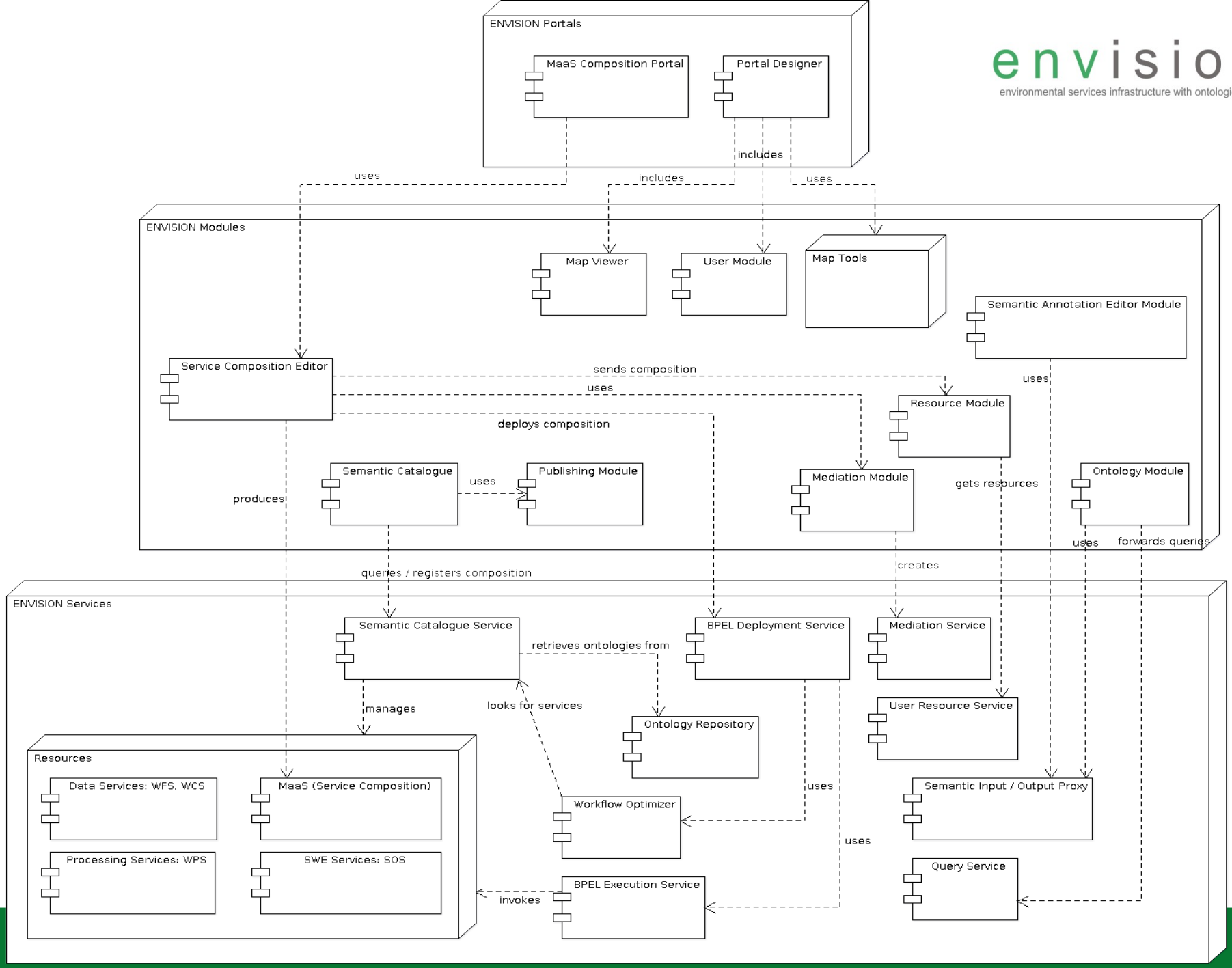

# WORK PACKAGES

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- WP1 – Environmental Services and Models; Scenarios and Pilots
- WP2 – Environmental Decision Support Portal
- WP3 – Model as a Service (MaaS) Composition Portal
- WP4 – Multilanguage Ontology-based Semantic Annotation
- WP5 – Semantic Catalogue
- WP6 – Adaptive Execution Infrastructure

# OPEN SOURCE INTEGRATION (1/6)

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WP1 – Environmental Services and Models; Scenarios and Pilots

- 52north encoding implementations
  - Sensor Observation Service
  - Web Processing Service
  - Sensor Event Service
- GeoServer: Web Coverage Service


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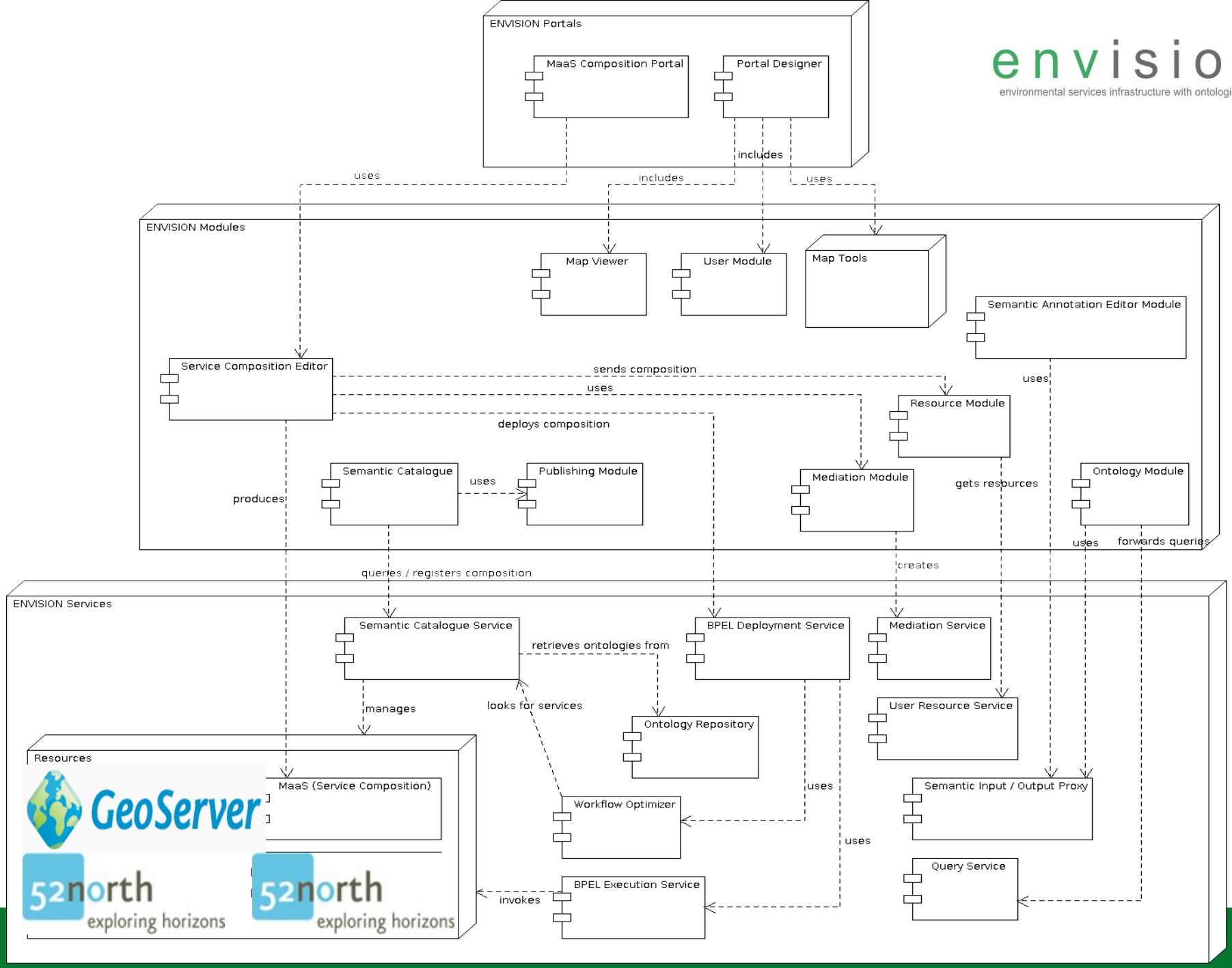

# OPEN SOURCE INTEGRATION (2/6)

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WP2 – Environmental Decision Support Portal

- Java Portlet Specification: Liferay Portal CE
- Javascript for Rich Web Mapping Apps: GeoExt (GeoServer + OpenLayers)


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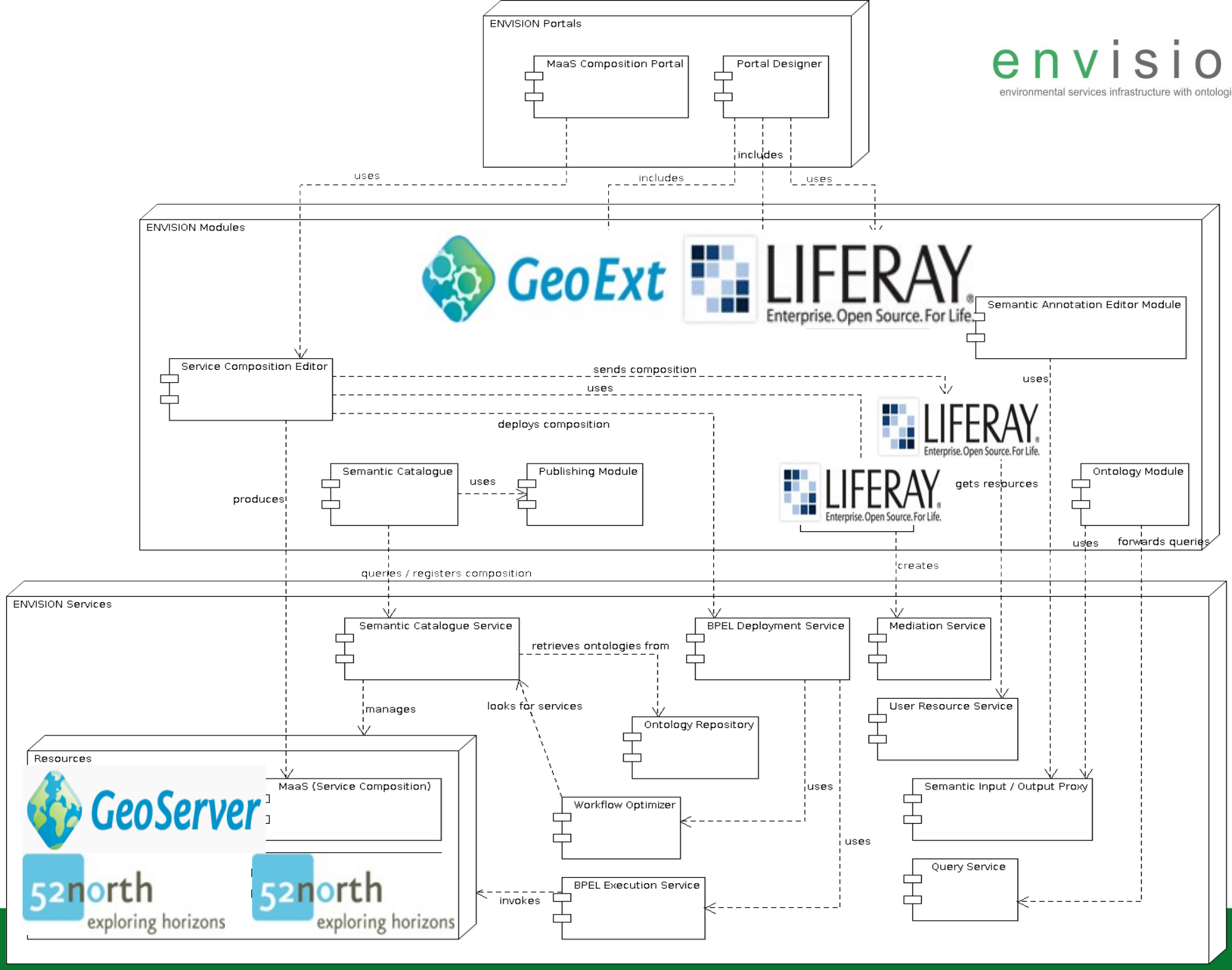

# OPEN SOURCE INTEGRATION (3/6)

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WP3 – Model as a Service (MaaS) Composition Portal

- Service Composition Editor: Oryx

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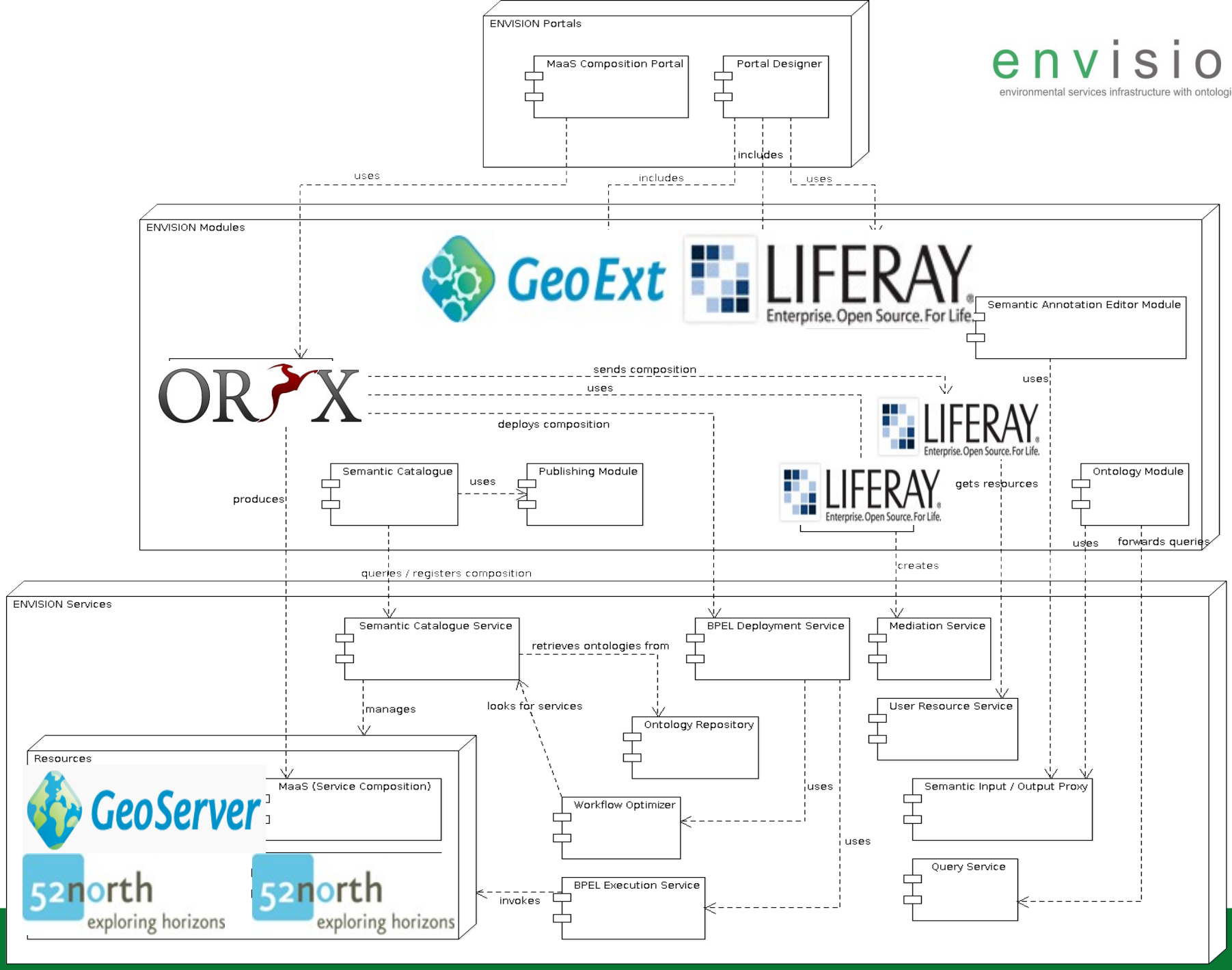

# OPEN SOURCE INTEGRATION (4/6)

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WP4 – Multilanguage Ontology-based Semantic Annotation

- Semantic Annotations: WSML
- User Resource Management: JCR with Apache Jackrabbit

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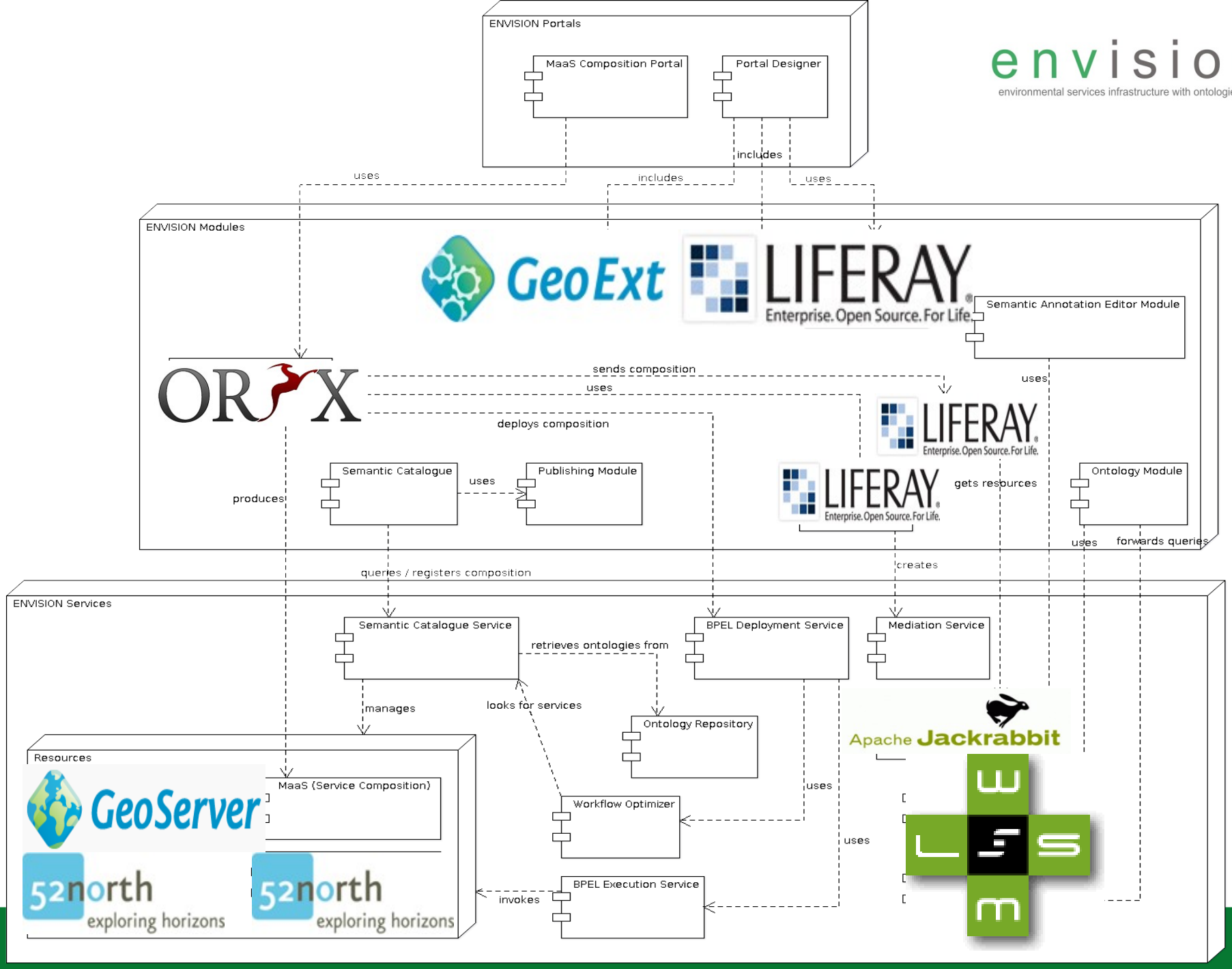

# OPEN SOURCE INTEGRATION (5/6)

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WP5 – Semantic Catalogue

- Catalogue for semantic discovery: Geonetwork + IRIS Reasoner


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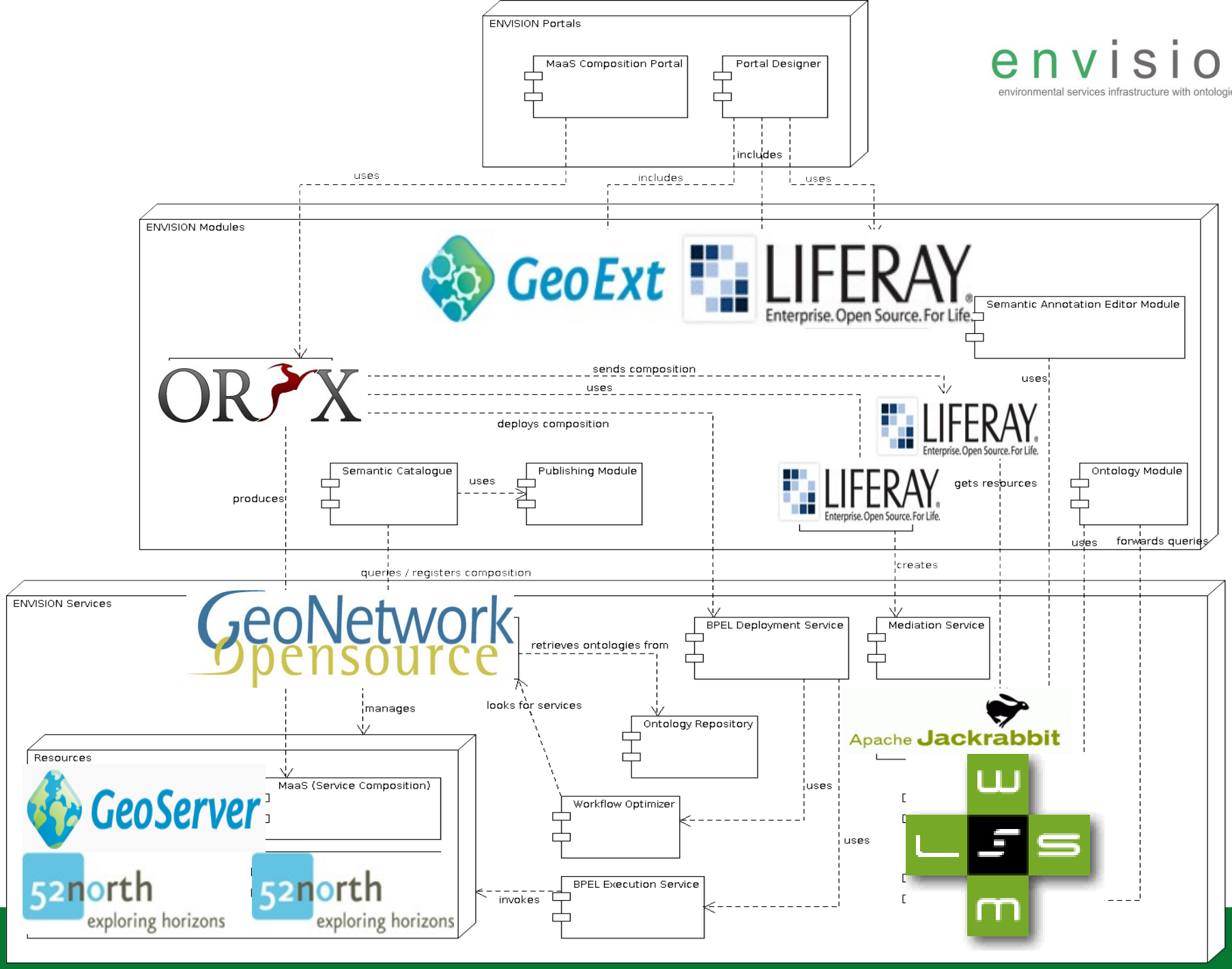

# OPEN SOURCE INTEGRATION (6/6)

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WP6 – Adaptive Execution Infrastructure

- Service Orchestration: Apache ODE
- Semantic Context Space Engine: Jini framework (JavaSpaces)
- Ontology Repository: Sesame



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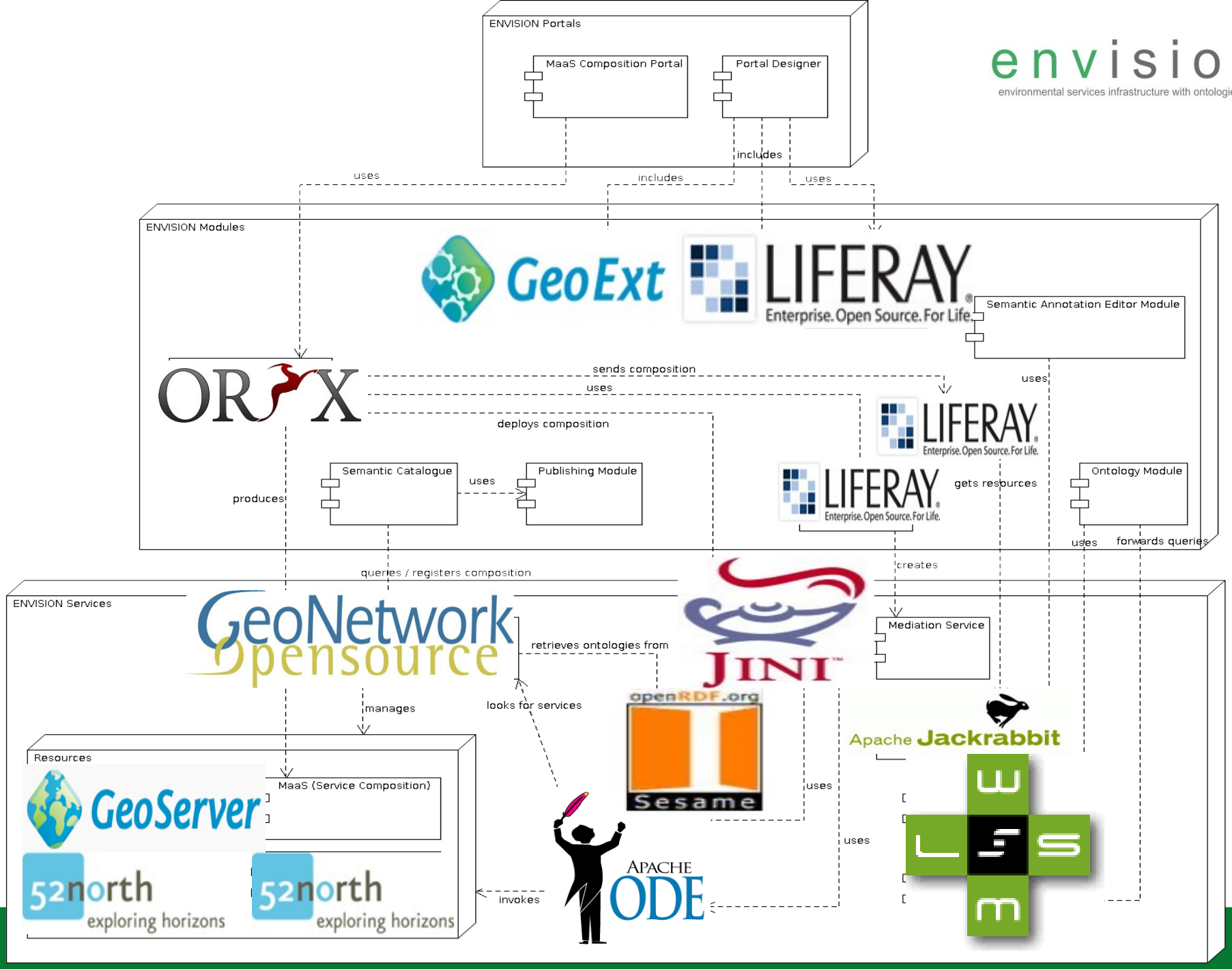

# envision

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**http://www.envision-project.eu**

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