

Cross-repository information discovery in the earth sciences

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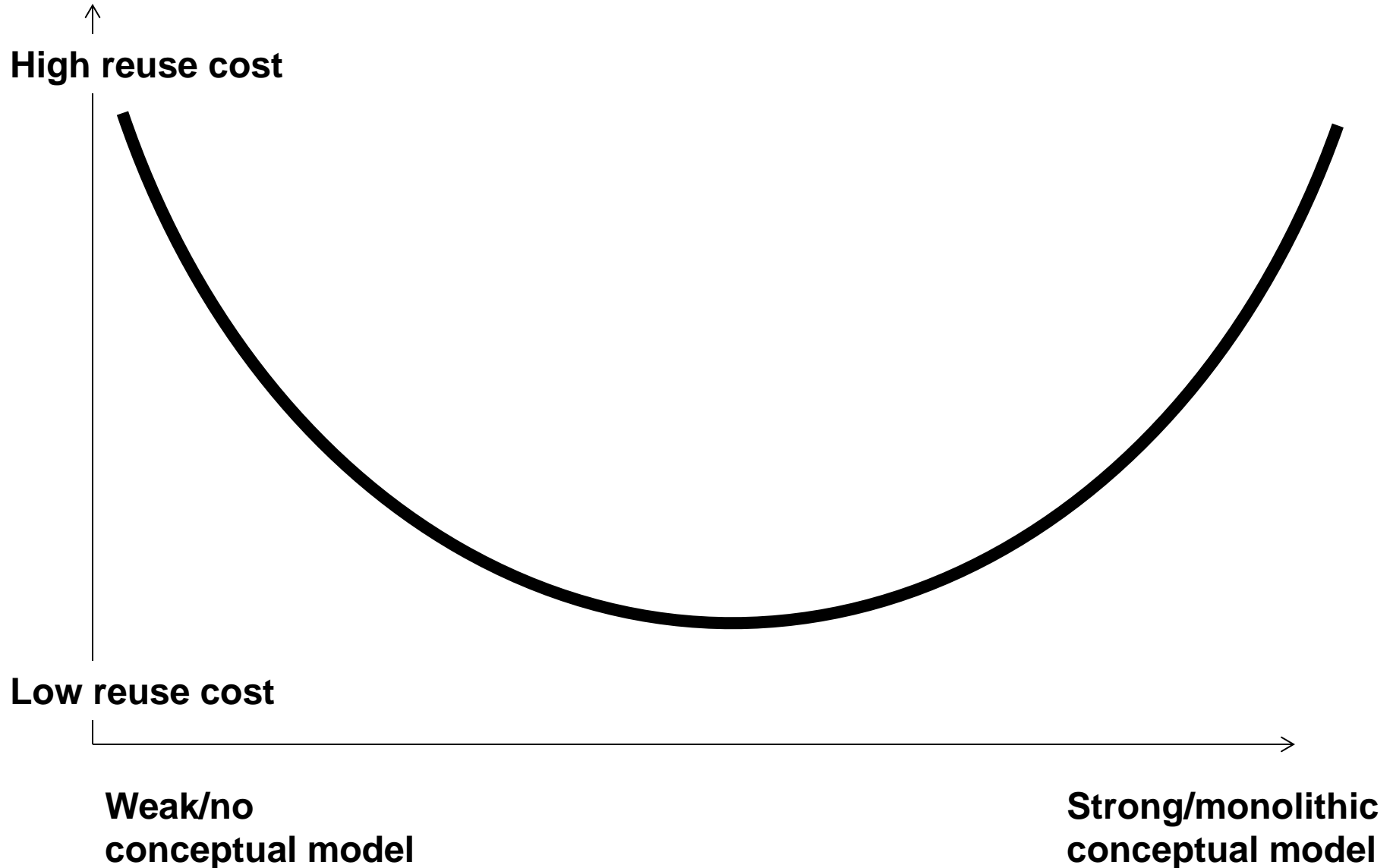
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Cost of data reuse



EarthCube:

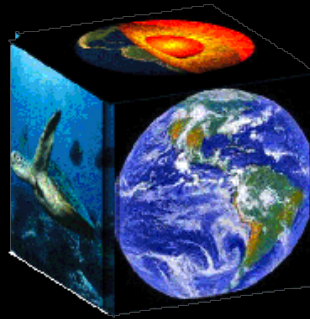
Developing a Community-Driven Data and Knowledge Environment for the Geosciences

“concepts and approaches to create integrated data management infrastructures across the Geosciences.”

“EarthCube aims to create a well-connected and facile environment to share data and knowledge in an open, transparent, and inclusive manner, thus accelerating our ability to understand and predict the Earth system.”

EarthCube requires

- information integration
- interoperability
- conceptual modeling
- intelligent search
- data-model intercomparison
- data publishing support

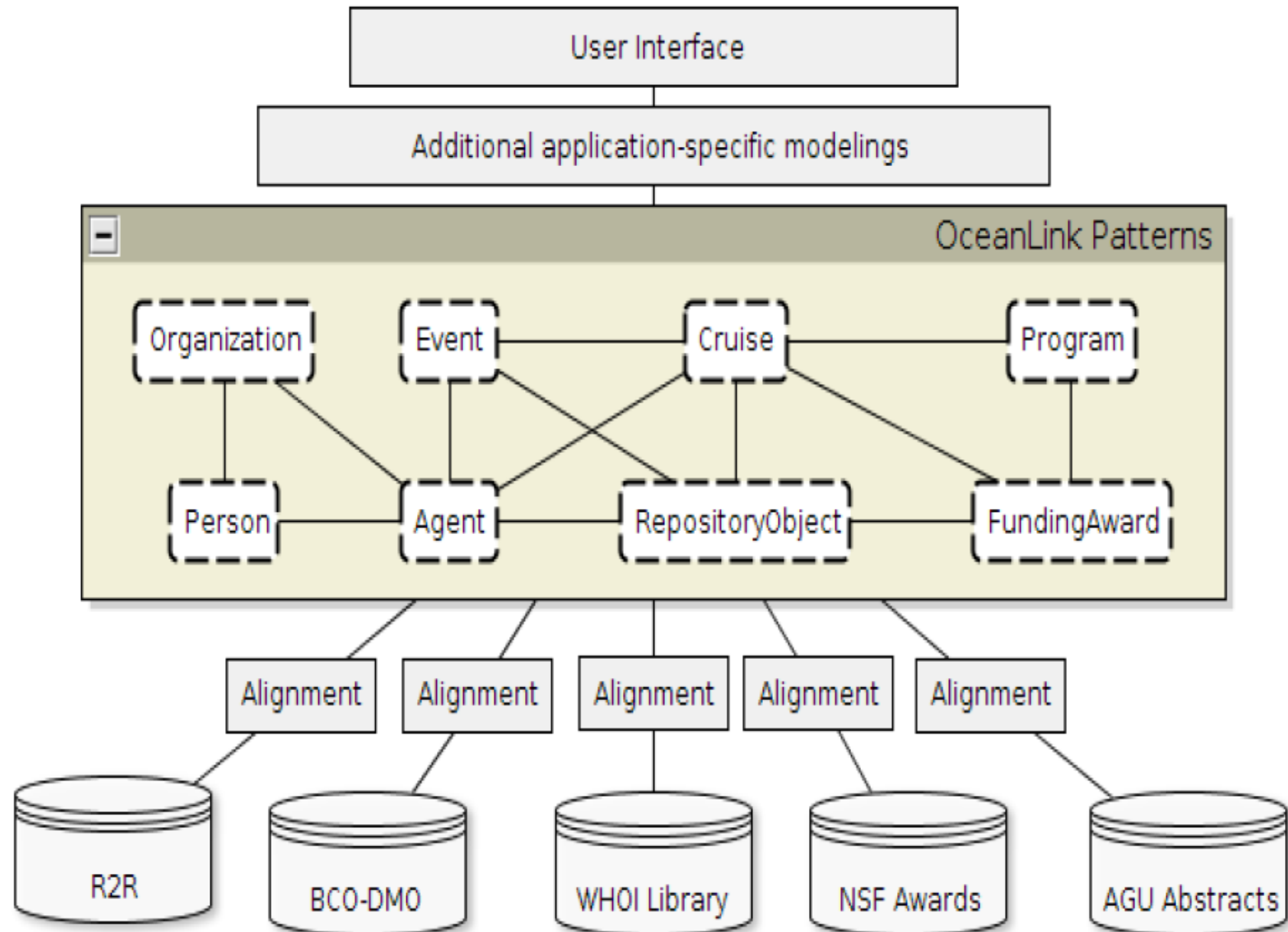


Semantic Web studies

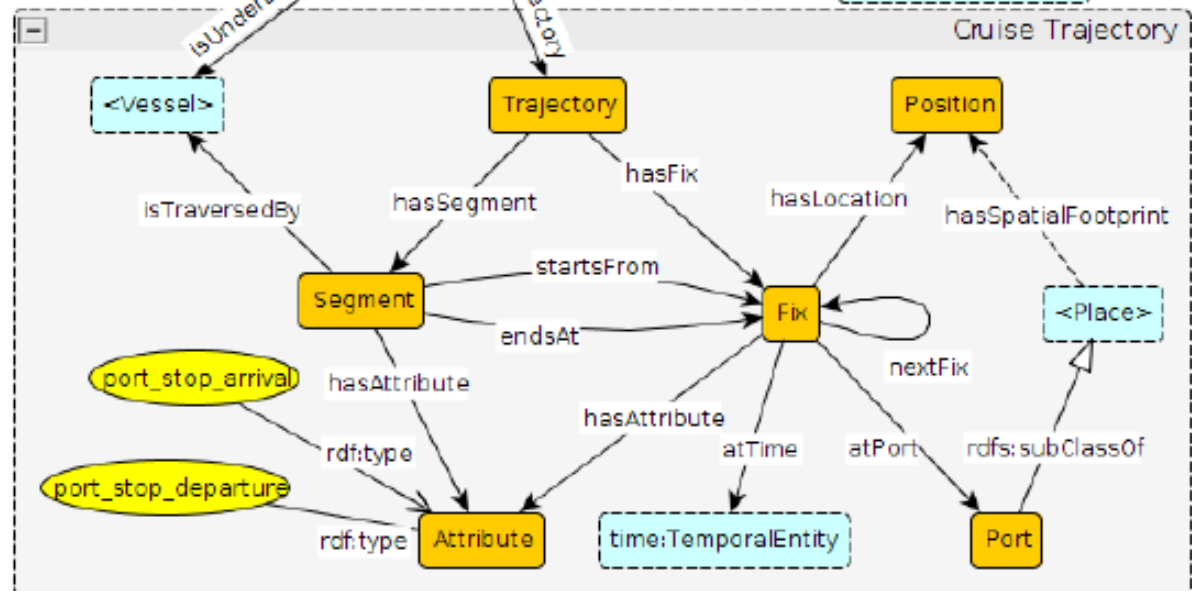
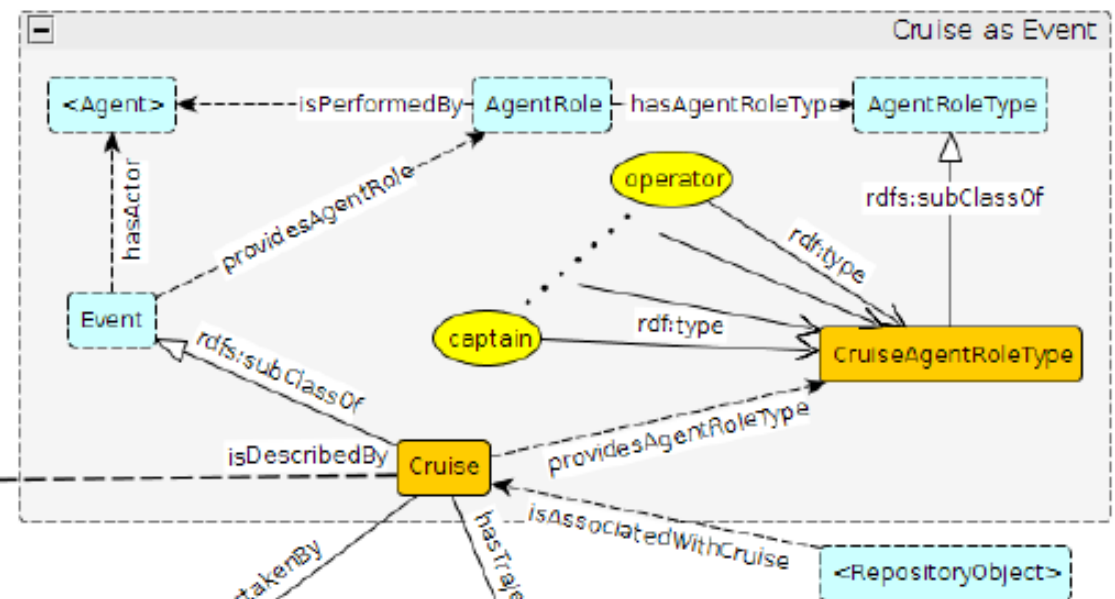
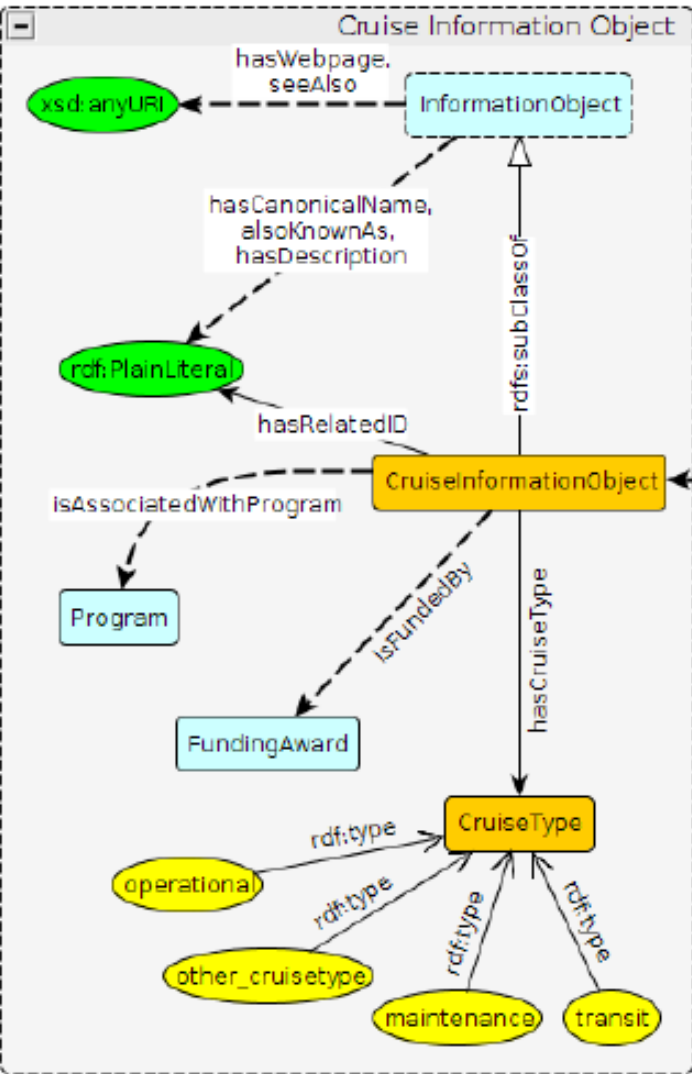
- information integration
- interoperability
- conceptual modeling
- intelligent search
- data-model intercomparison
- data publishing support



Flexible, extendable approach



Oceanographic Cruise Pattern



Thanks!

www.oceanlink.org

The presented work is part of the NSF *OceanLink* project:
EarthCube Building Blocks, Leveraging Semantics and Linked Data for
Geoscience Data Sharing and Discovery

- **BCO-DMO: Biological & Chemical Oceanography Data Management Office, <http://www.bco-dmo.org/>**
- **R2R: Rolling Deck to Repository, <http://www.rvdata.us>**
- **OceanLink website and publications are forthcoming at <http://www.oceanlink.org/>**
- **Adila Krisnadhi, Robert Arko, Suzanne Carbotte, Cynchia Chandler, Michelle Cheatham, Timothy Finin, Pascal Hitzler, Krzysztof Janowicz, Thomas Narock, Lisa Raymond, Adam Shepherd, Peter Wiebe, An Ontology Pattern for Oceanographic Cruises: Towards an Oceanographer's Dream of Integrated Knowledge Discovery. OceanLink Technical Report 2014.1.**
- **<http://ontologydesignpatterns.org>**

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- **Krzysztof Janowicz, Pascal Hitzler, The Digital Earth as Knowledge Engine. Semantic Web 3 (3), 213-221, 2012.**
- **Gary Berg-Cross, Isabel Cruz, Mike Dean, Tim Finin, Mark Gahegan, Pascal Hitzler, Hook Hua, Krzysztof Janowicz, Naicong Li, Philip Murphy, Bryce Nordgren, Leo Obrst, Mark Schildhauer, Amit Sheth, Krishna Sinha, Anne Thessen, Nancy Wiegand, Ilya Zaslavsky, Semantics and Ontologies for EarthCube. In: K. Janowicz, C. Kessler, T. Kauppinen, D. Kolas, S. Scheider (eds.), Workshop on GIScience in the Big Data Age, In conjunction with the seventh International Conference on Geographic Information Science 2012 (GIScience 2012), Columbus, Ohio, USA. September 18th, 2012. Proceedings.**

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- **Pascal Hitzler, Frank van Harmelen, A reasonable Semantic Web. Semantic Web 1 (1-2), 39-44, 2010.**