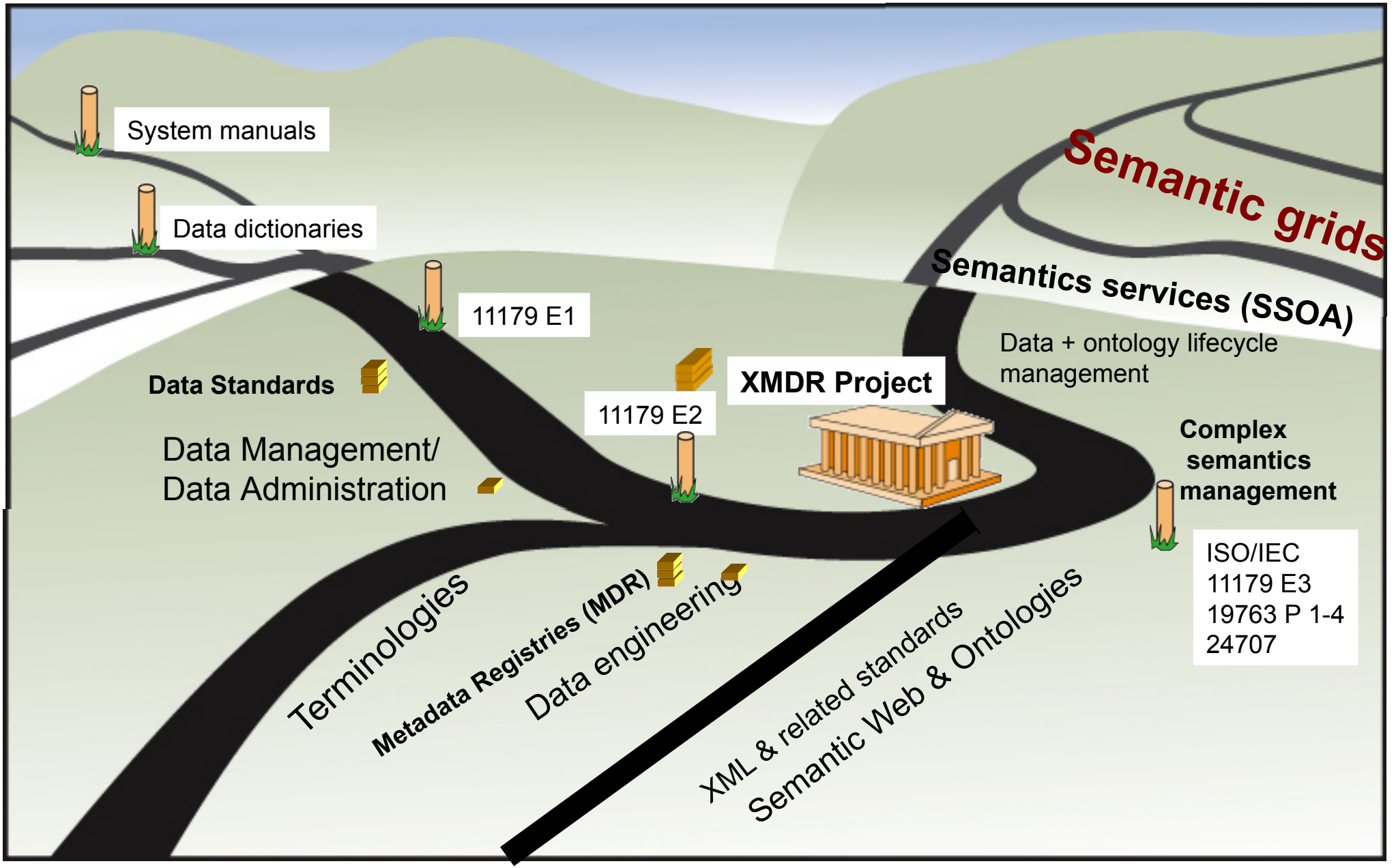
Ontologizing ISO/IEC 11179-3

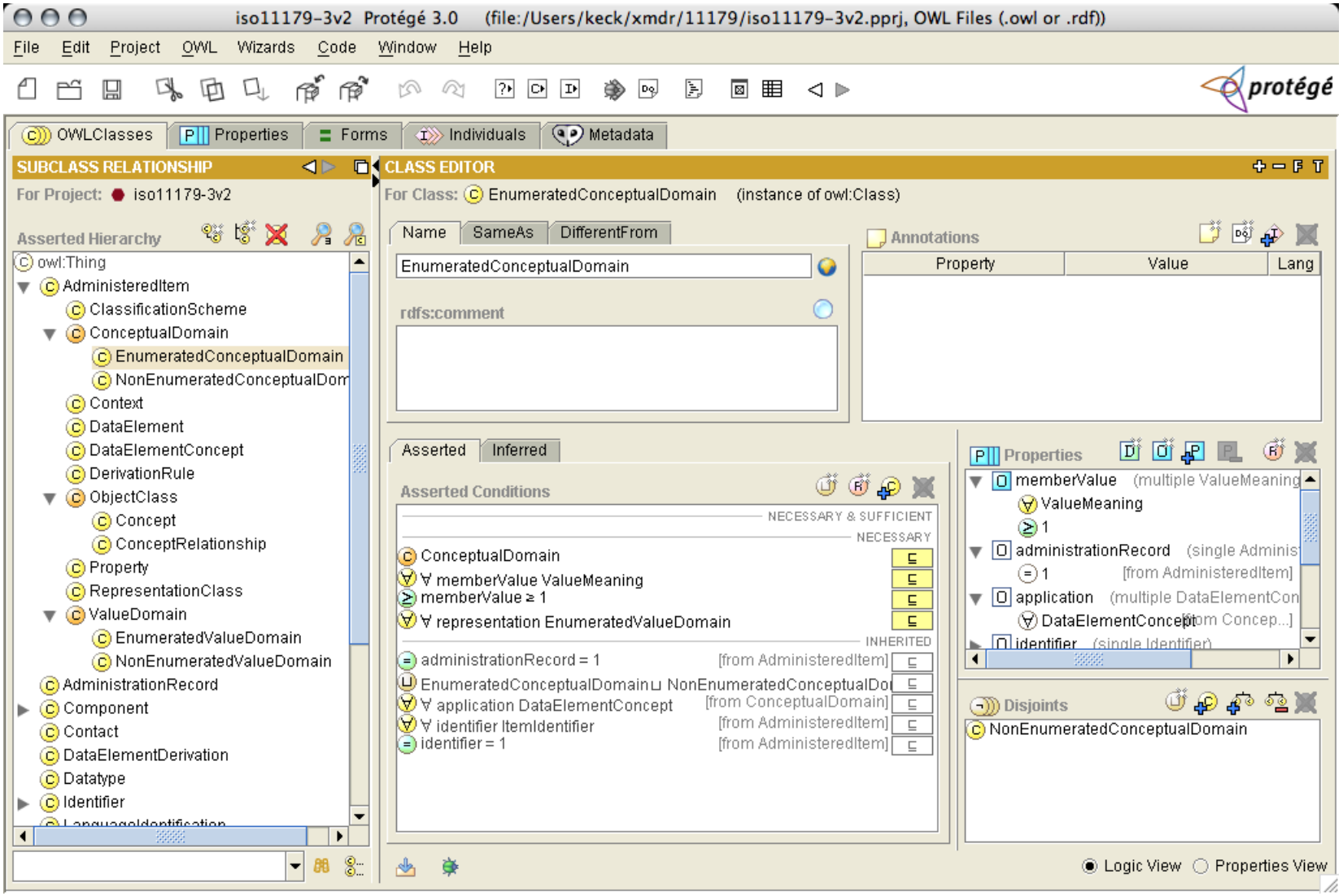
Kevin D. Keck
Lawrence Berkeley National Lab

http://xmdr.org/

Background (ISO/IEC 11179)



Protégé Editor was used to create OWL ontology for 11179 metamodel



Protégé OWLViz Plug-in Displays OWL Class Hierarchy for 11179

Built on top of GraphViz

Is-a and union hierarchies can nest to arbitrary depth in OWL

Published 11179-3 Ontologies

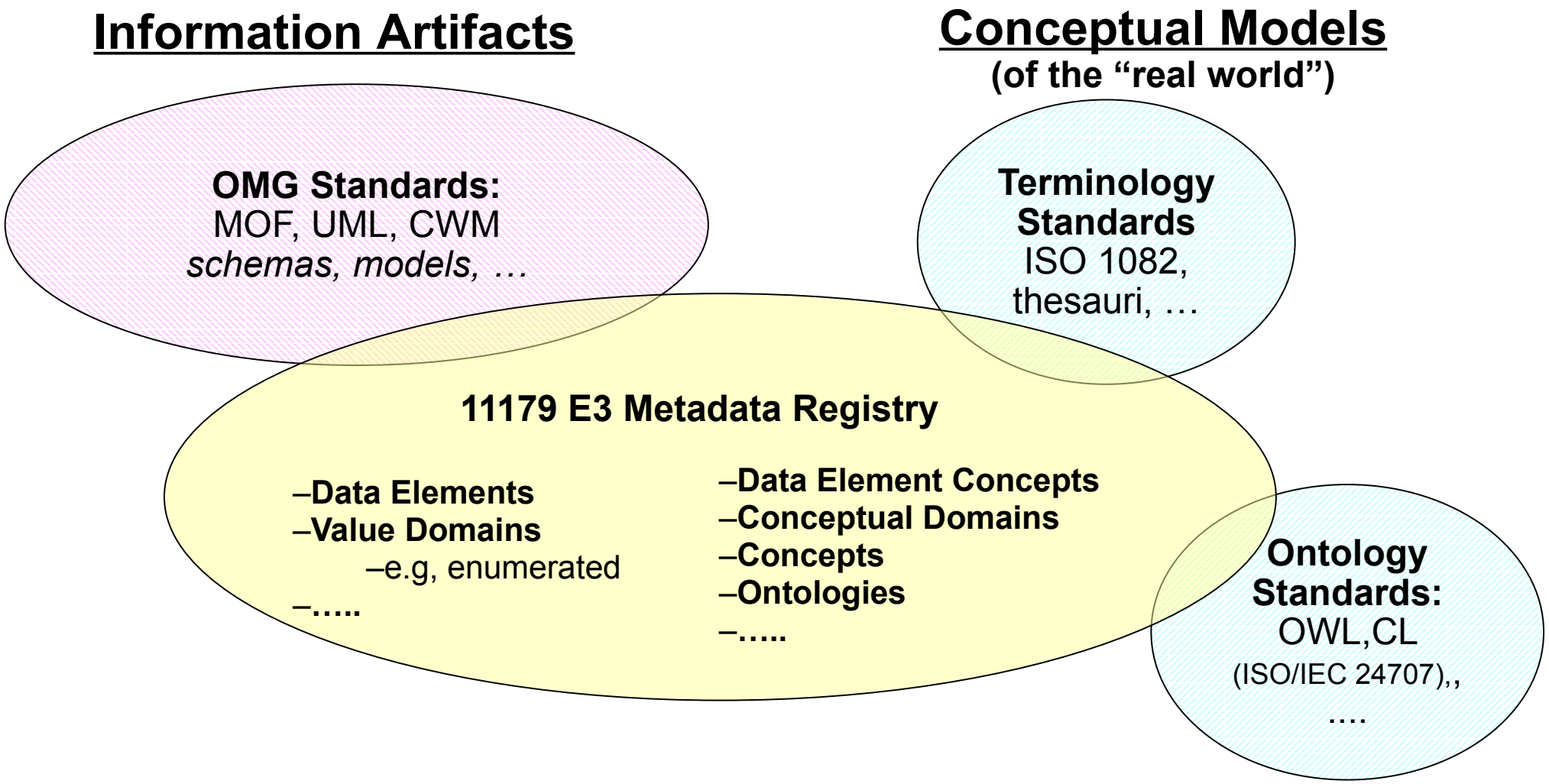
- Edition 2 ontology
  - http://xmdr.org/ont/iso11179-3e2.owl
- Edition 3 draft of September 2008
  - http://issue.metadata-standards.org/attachment.cgi?id=390
- Edition 3 CD2
  - coming soon, watch SC32 WG2 Bugzillla issue 303

Note: published by XMDR project, not ISO/IEC

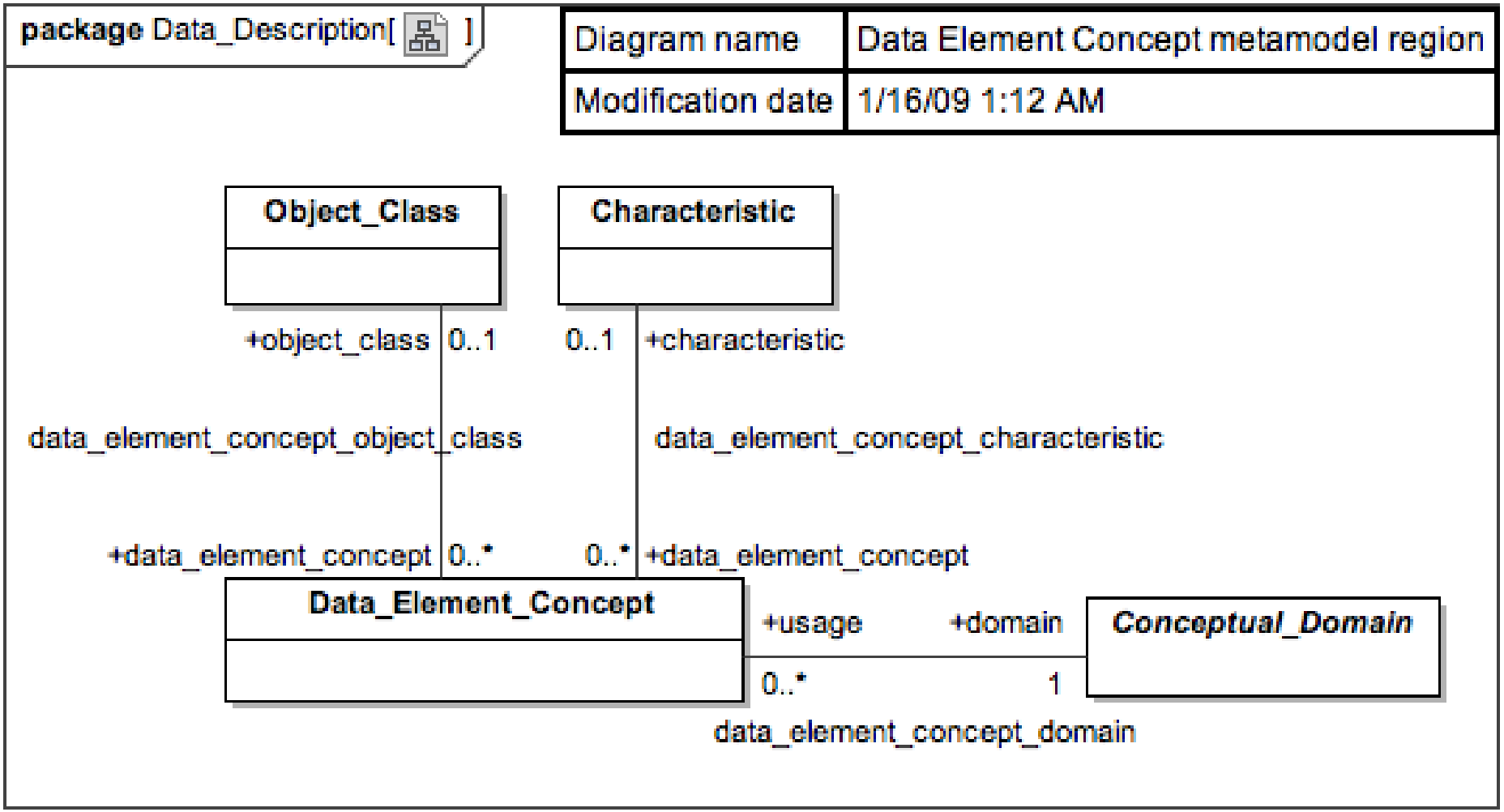
Experience

- OWL is complementary to XML Schema or RELAX NG (in XMDR prototype)
- Shared properties are more common than class inheritance in UML
- OWL distinguishes necessity from sufficiency
  - not clear what value is added
- Association classes and N-ary relations are awkward to translate

Aligning different realms of metadata standards



Data Element Concepts



Bridge between Data and Ontologies

- Data Element Concept closely resembles OWL Restriction classes
- Data Element captures representation details, including (though Value Domain) measurement units
- Combine with OMG CWM or IMM for data integration
- Would help to introduce Reference Schemes (keys) to 11179-3

Merged Common Ontology Study Period

- Study period on standardized concept systems and semantic descriptions for merged core ontology (MCO)
- Proposed to ISO/IEC JTC1 SC32 WG2 in November 2008, ballot closes this week
  - http://jtc1sc32.org/doc/N1801-1850/32N1807-US_contrib_SP_MCO.pdf
- Website expected next week
  - http://mco.metadata-standards.org/

Thank You

Contact Information:

Kevin D. Keck
KDKeck@lbl.gov

Bruce Bargmeyer
BEBargmeyer@lbl.gov

http://xmdr.org/