Going Live with Enterprise Solutions

TopQuadrant™

Metadata Management is Key to Data Governance Initiatives

Irene Polikoff and Jack Spivak, TopQuadrant Inc.

April 27, 2017

TopBraid EDG™
Enterprise Data Governance

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Today's Program

Capabilities for Effective Metadata Management

- Why is metadata important, and what is needed to manage it?
- What can TopBraid EDG's Metadata Management Capabilities do for You?
- DEMO: EDG Metadata Management in Action
- Quick Poll
- Questions and Answers

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TopBraid EDG™
Enterprise Data Governance

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TOPQUADRANT COMPANY

FOUNDATION

- TopQuadrant was founded in 2001
- Strong commitment to standards-based approaches to data semantics

MISSION

- Empower people and drive results — by making enterprise information meaningful

FOCUS

- Provide comprehensive data governance solutions

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ENTERPRISE CUSTOMERS

Let's talk about metadata …

- What is it and why is it important?
- Why is it challenging to manage?
- How does a semantic standards-based approach help?
- TopBraid EDG Semantic Metadata Management in Action

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What is Metadata?

Data about Data

Allows understanding of its identity and characteristics

- Name
- Origin
- Created
- Modified
- Definition
- Data type
- Source
- Valid values
- Security classification
- Security policies
- Lifecycle
- Retention policies

Context: business, technical, and operational

- Databases, tables, fields, procedures, functions, etc
- Software applications, scripts, proceedures, functions
- Information systems, integrations, networks, hardware
- Business processes, roles, capabilities, requirements

(DATAVERSITY report: “Emerging Trends in Metadata Management: 2017 Report on the Top Business & Technical Drivers for Metadata by Donna Burbank and Charles Roe)

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Good Information …

- Correct, Reliable
- Timely
- Useful, Relevant

Good Information → Good Decisions

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Meaning, Information & Decisions

Meaning - allows us to make the good decisions with good information

Good Decisions

\+

"Meaningful" Information

Good Outcomes

- Intended
- Valuable
- Effective

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Metadata Makes Information Meaningful

I hear thunder and see dark clouds …

Stay where you are and raise your hands …

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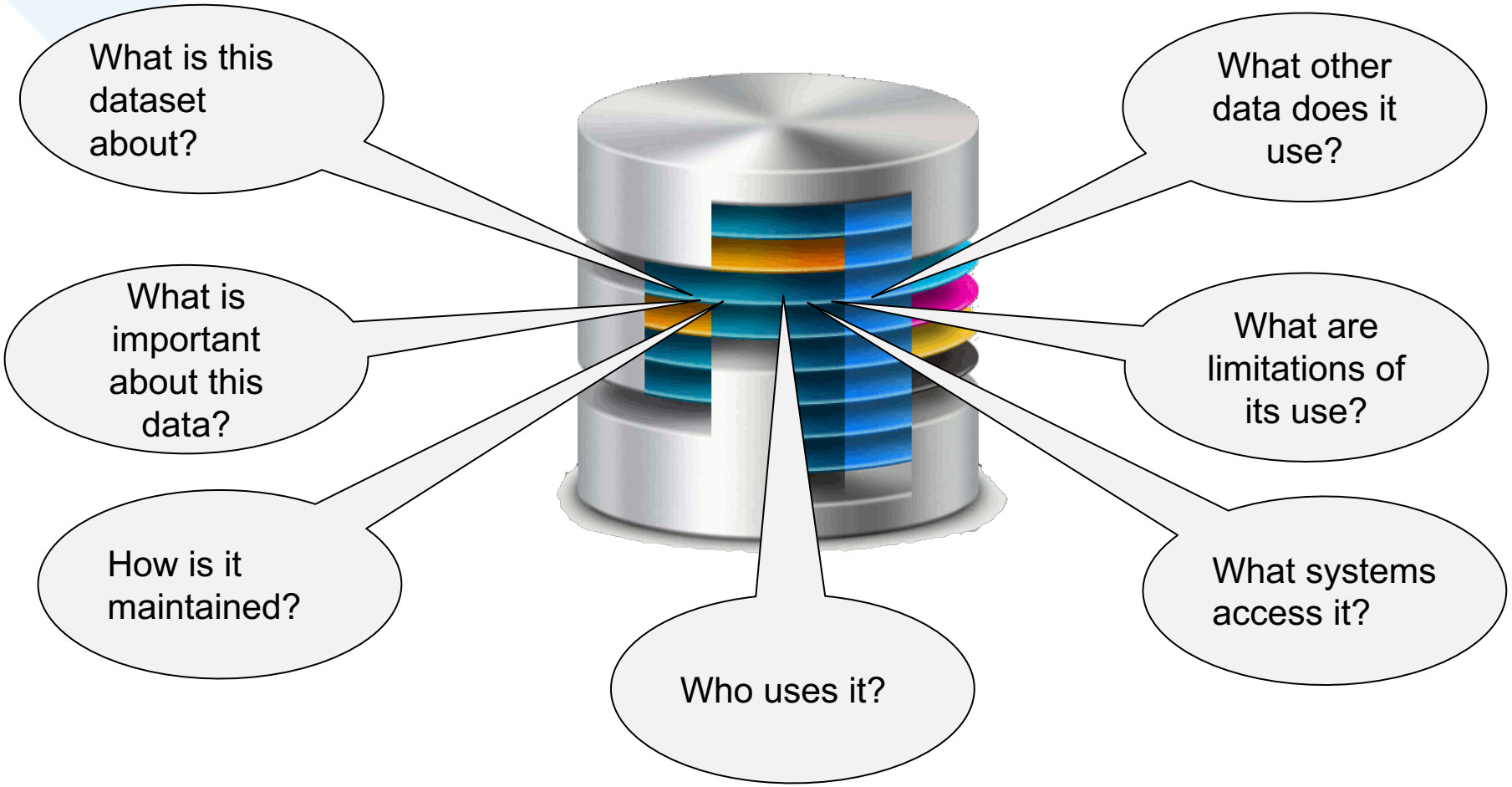
Importance of Metadata?

Metadata captures, communicates and clarifies the meaning of data
-- *answers key questions for better decisions*



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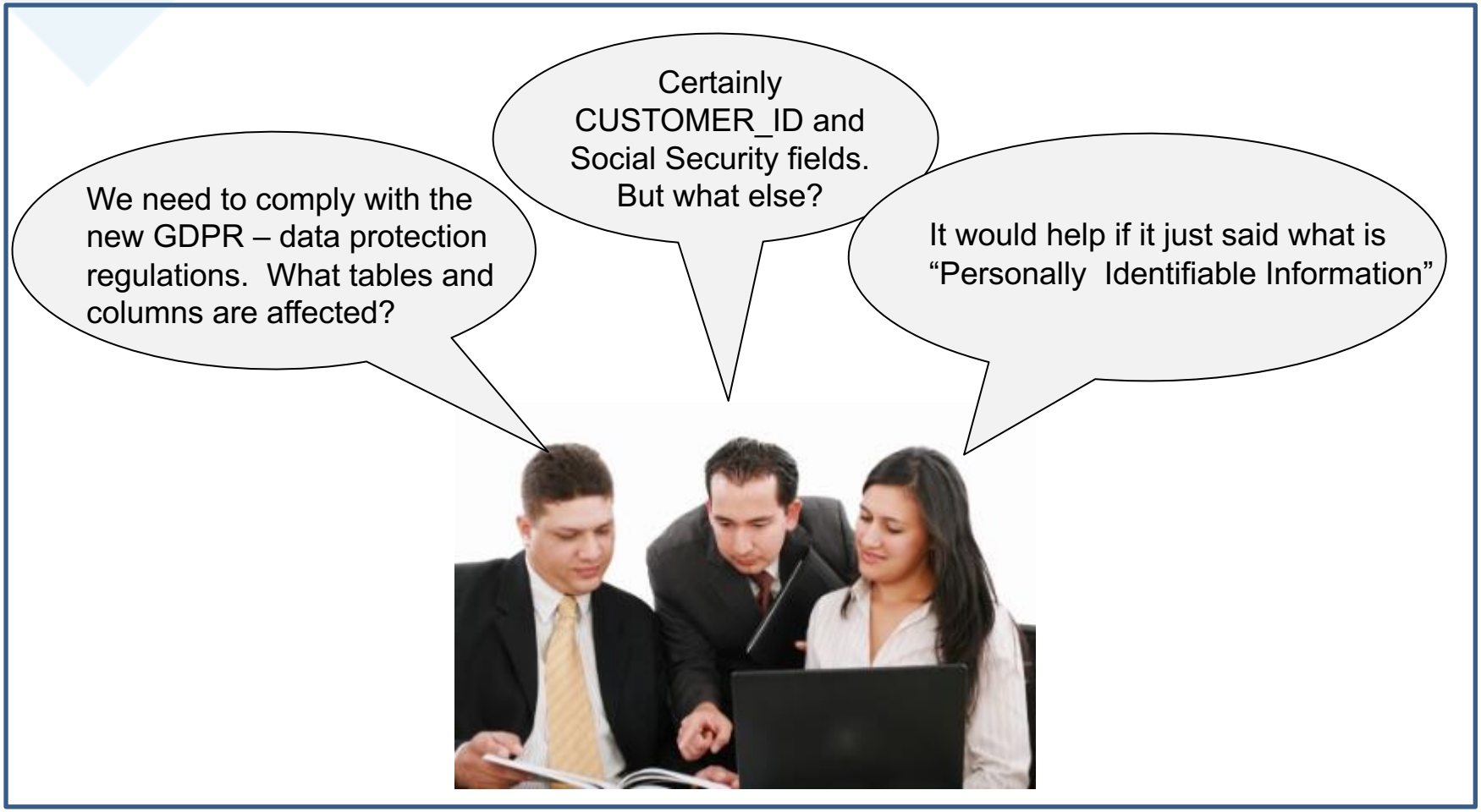
Challenges: Business Users Need Metadata

Confusion, wasted resources and errors result when users can't understand the relation between data and business goals



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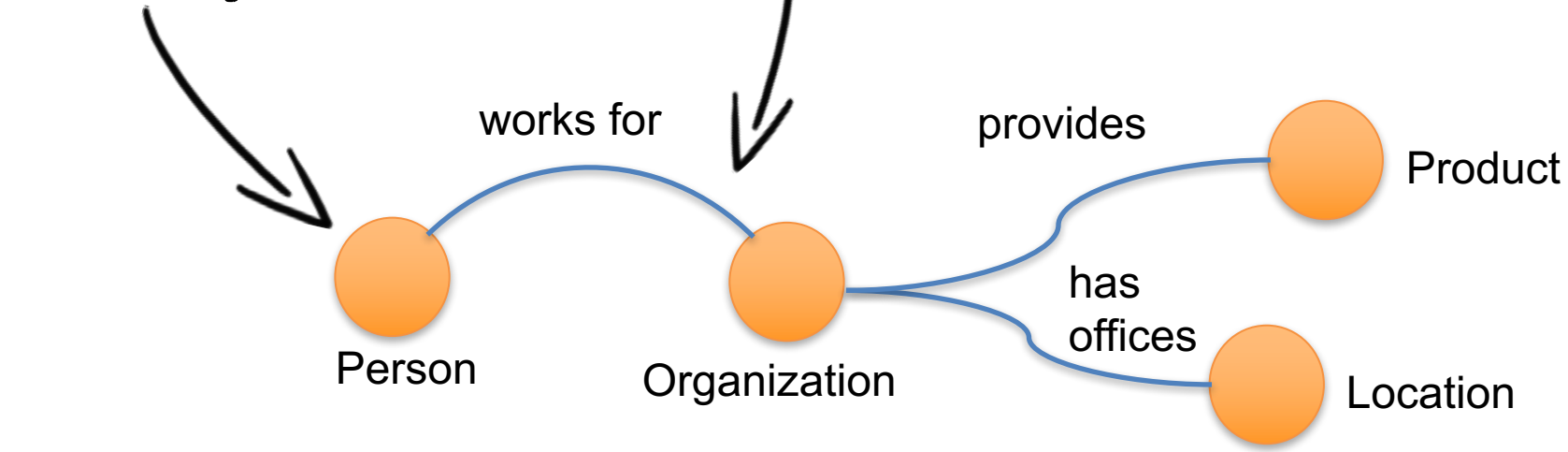
Capturing Meaningful Metadata

Semantics =

Things + Relationships



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Metadata Driven Solution?

Metadata can be of two types:

Descriptional Metadata – Values state or explain something about the data. Typically contain string, boolean or date type data.

Relational Metadata – Values connect or ”point” to other objects that participate together in a process or analysis or job. This relationship makes a “model” of the actual uses, flow and impacts of data in the enterprise.

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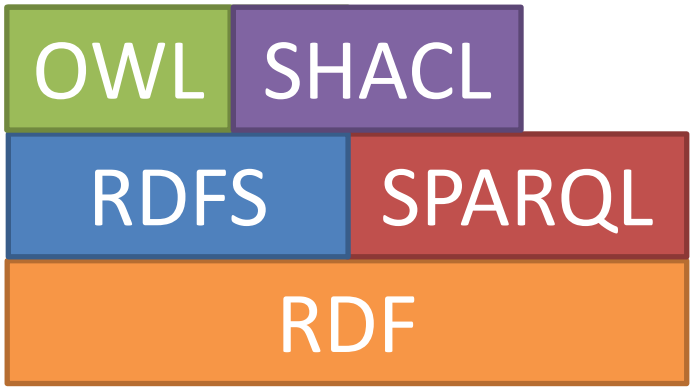
Standards for Meaningful Metadata

W3C* Semantic Standards

*W3C = World Wide Web Consortium led by Tim Berners-Lee

Restricted Inference:
What is this thing?

Rules:
Is that term used correctly?
What do you need to know?
You can't say that here!



Vocabulary:
Shared terms can we use

Query:
What did you say?

Statements:
Saying things

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Why Semantic Metadata Management?

- Understanding
- Interoperability & Reuse
- Semantic Alignment
- Impact and Risk Analysis
- Analytics and Decision-making
- Compliance & Reporting
- Search Enhancement

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Metadata Challenges

Its never easy being the “glue” that keeps the connections going

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- Business Glossaries
- Reference Data Management
- Basic Metadata Management
- Advanced Metadata Management
- Vocabulary Management

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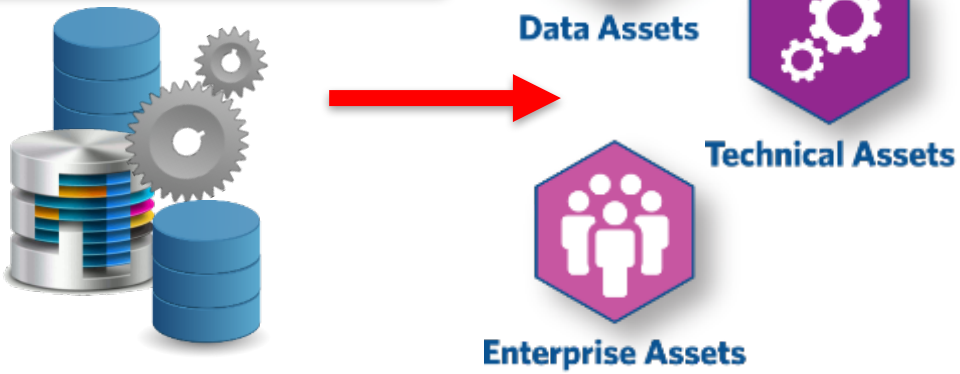
Today's TopBraid EDG Demo

Example:
Fictitious TopBank Corp

Federal Reserve Compliance Reporting.



Use EDG to:

- ✓ Manage Metadata at the Collection and Individual Level
- ✓ Follow Linking Metadata
- ✓ Create and Connect New Metadata
  - Descriptions
  - RACI
  - Security Classes
  - Policy References
  - Glossary w Links

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Participant Poll

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Demo:
Metadata Management in TopBraid EDG

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Participant Poll

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Role-based Access Control

- Assign users different roles for using the system at various levels of authority per asset collection:
  - Manager
  - Editor
  - Viewer

- This users are typically data stewards and curators for different asset collections
- System-wide read-only role is also available to support search and/or comment only use cases

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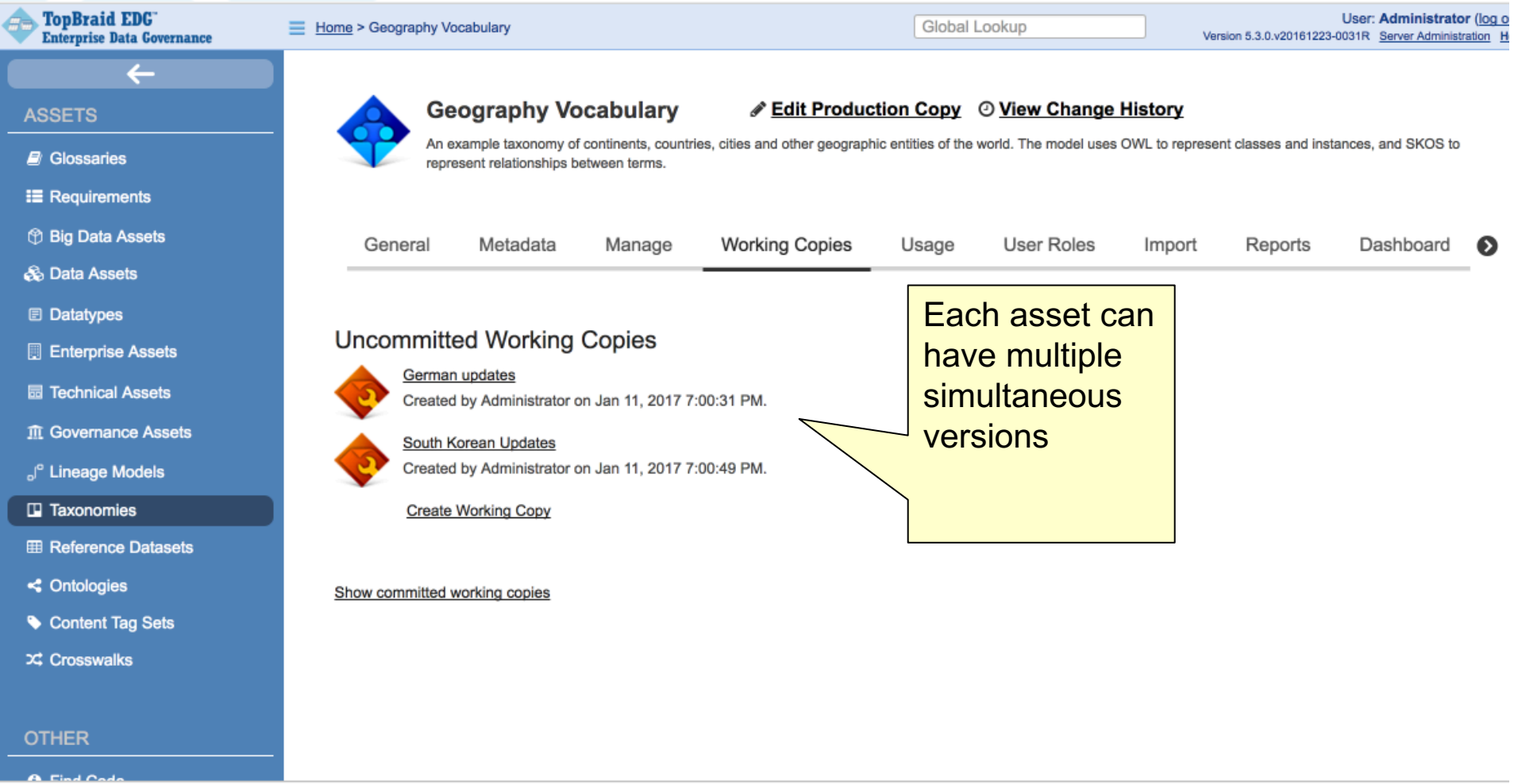
Production and Working Copies



Each item has a separate audit trail from multiple users

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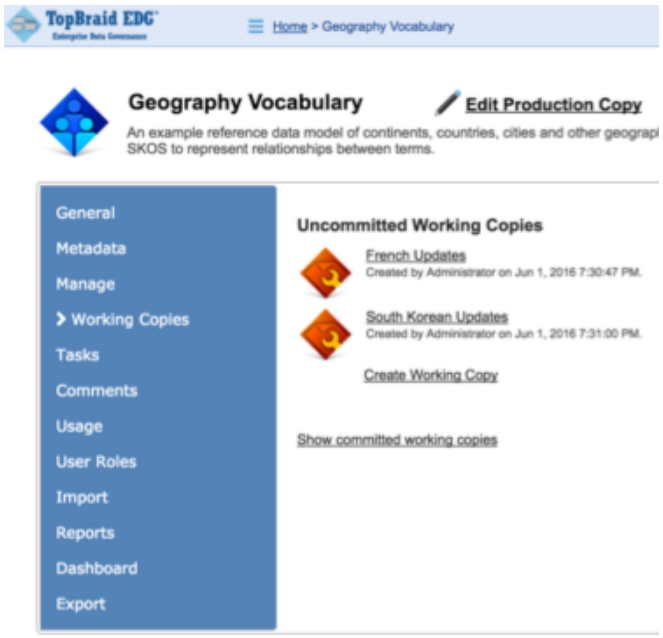
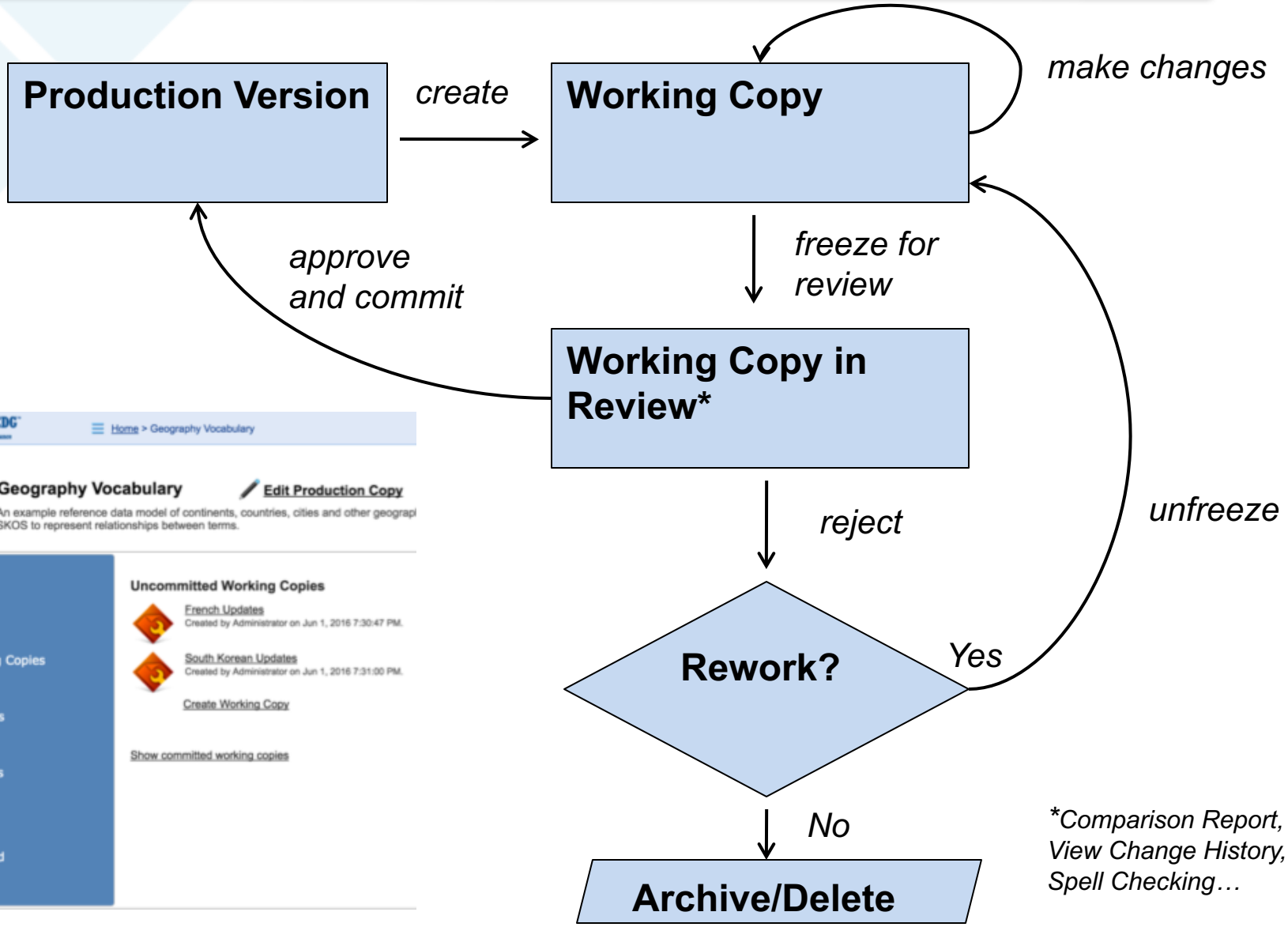
Built-in Workflow Support





*Comparison Report, View Change History, Spell Checking…

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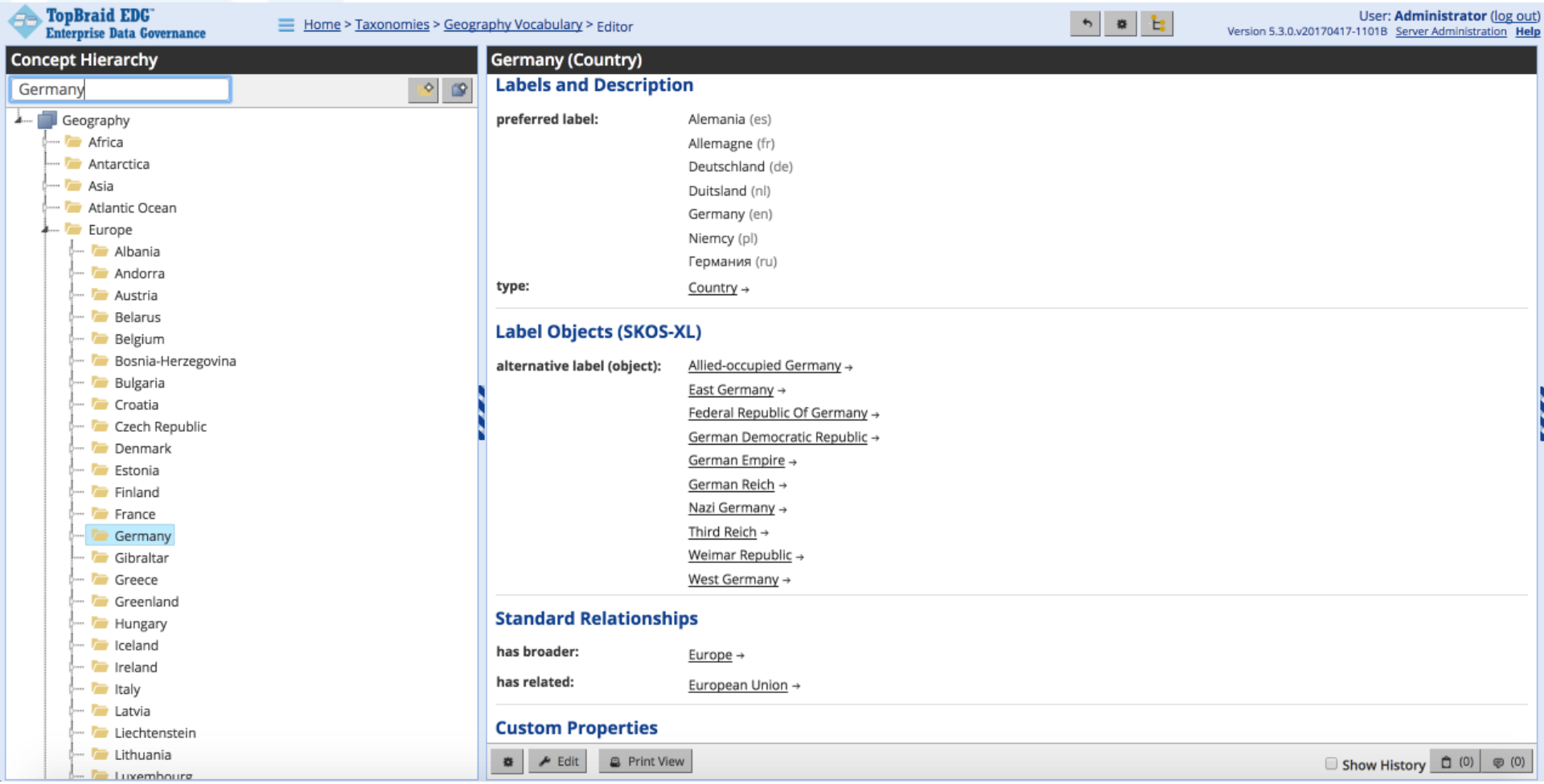
Multi-lingual support



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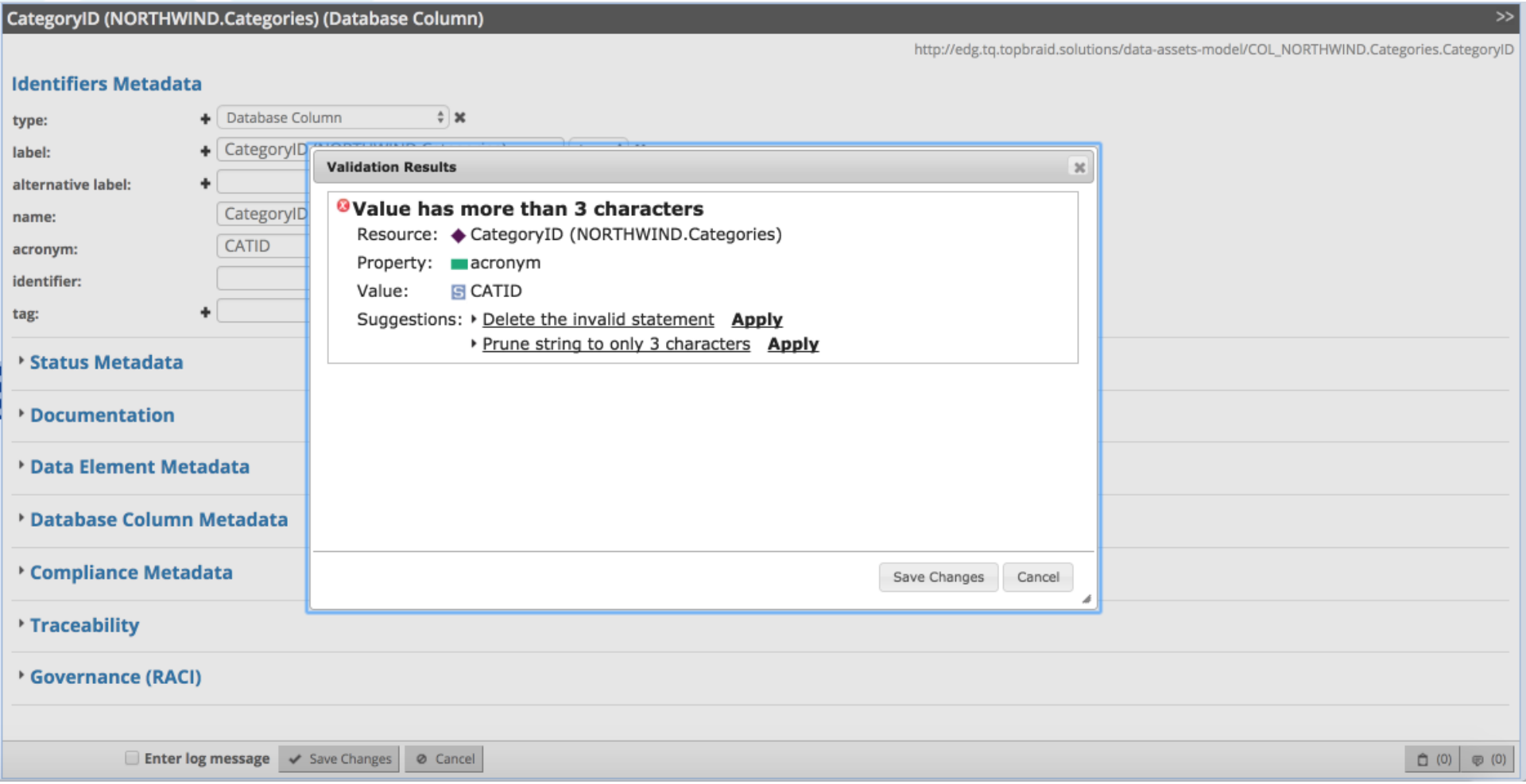
Data Quality Rules and Validation



For information governed by EDG e.g., reference data, glossary terms, etc.

Dashboards

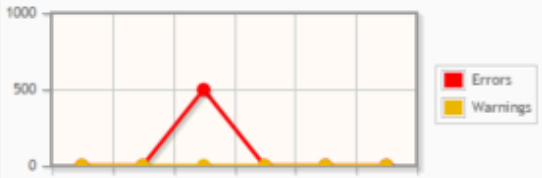
Completeness and Validity

Data Completeness: 100%

0 data entries out of 0 are incomplete,
i.e. they lack required properties.

Data Validity over Time

6 reports shown.
Most recent report from Jan 8, 2016 7:22:43 AM:
1 Errors, 0 Warnings



Information about the Reference Dataset

Completeness of Descriptive Metadata: 75%

Some recommended descriptive metadata is missing

- [x] Description present
- [x] Identifier present
- [x] Official name present
- [ ] Purpose not present

RACI Completeness: 0%

Some recommended RACI roles are missing

- [ ] Accountability not assigned
- [ ] Responsibility not assigned
- [ ] SME (consulted) not assigned

External Dataset Profiling

Airports is not an external dataset.
Therefore, no Subscription properties need to be filled in.

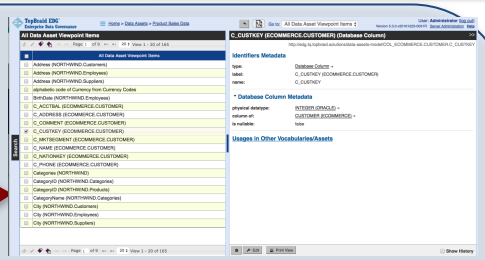
Semantic Analysis of Airport: 100%

The main entity (class) of this dataset has 5 properties.
0 of these properties lack label or description.

Integration with Other Systems

Import formats
- Spreadsheets (xls, csv, tsv)
- RDF
- XML
- UML
- RDBMs and SQL DDL
- System specific outputs e.g., Collibra, IBM Bus Glossary, MultiTes

TopBraid EDG govern information assets



Export formats
- HTML
- tab-delimited files
- RDF
- Avro, JSON
- Sharepoint, etc.

And also export to TopBraid EDG Explorer module

TBL Server

EDG Repository

SPARQL

Rules

Data transforms

Import & Export

Data Integration services

Web Services

direct RDF/SPARQL access

JMS

Web Services

Real Time Access

3rd party systems

Data Warehouse

Portals

In-House Apps

Data Stores

Import/Export formats
- RDF (Turtle, RDF/XML, JSON-LD)
- relational databases
- XML, XMLS
- RSS
- Excel spreadsheets
- delimited text (.csv, tsv)
- Web pages (RDFa, Microformats)

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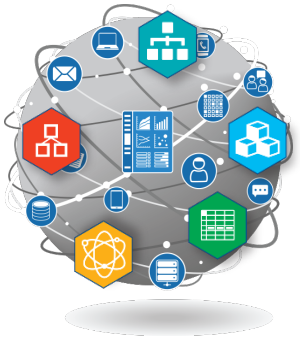
TopBraid EDG Meta-model

EDG Data Assets Collections

EDG Technical Assets Collections

EDG Enterprise Assets Collections



Enterprise Data Landscape:

Linking Business, Technical, Operational Contexts

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TopBraid EDG
Data Governance Packages

Business Glossaries

Support for
Business Glossaries
Ontologies

Basic Metadata Management

Support for
Data Assets
Datatypes
Ontologies

Reference Data Management

Support for
Reference Datasets
Ontologies
Crosswalks

Advanced Metadata Management

Support for
Data Assets
Big Data Assets
Datatypes
Lineage Models
Technical Assets
Enterprise Assets
Requirements
Ontologies

Vocabulary Management

Support for
SKOS Taxonomies
Ontologies
Crosswalks
Content Corpora

For details, see:

http://www.topquadrant.com/products/topbraid-edg-gov-packs/

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TopBraid EDG: Summary and Benefits

- *Core flexibility and extensibility* – add user defined models, assets and properties as needed (model-driven)
- *Models: pre-built and user defined* – support multiple types of governance assets
- *Connections:* – can be made between any types of assets
- *Flexible Connections Enable*:
  - People (UI) and software (APIs/web services) to view, follow and query the connections to answer core questions, e.g. *"Where did this come from?"*
  - complete data governance vs. siloed data governance, i.e "reference-ability"

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… Questions?

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Thank You !

To Learn More …

Contact us: at info@topquadrant.com to:

- Discuss metadata management solutions
- Request a more targeted demo of TopBraid EDG
- Ask for a free EDG evaluation account

EDG Metadata Management Product Info:

- http://www.topquadrant.com/products/topbraid-edg/
- http://www.topquadrant.com/products/topbraid-edg-gov-packs/

Other EDG demos/webinar recordings:

- http://www.topquadrant.com/knowledgeassets/videos/#edgoverviewdemo
  Webinar: Data Governance for the Connected Enterprise: TopBraid EDG in Action

Upcoming Webinar…

May 18

GDPR in EDG

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