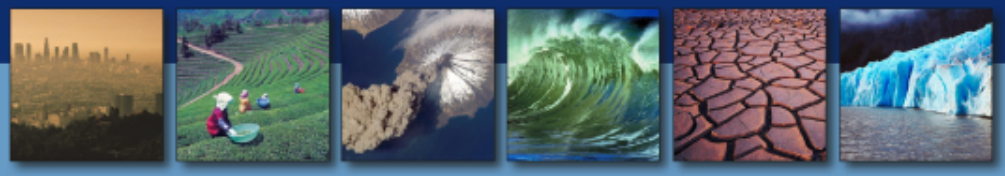
GCMD Keyword Governance



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ESIP Summer Meeting
Session: Ontologies and the Semantic Web
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Introduction To GCMD Keywords

- Hierarchical set of controlled keywords covering the Earth science disciplines.
- Used for describing Earth science data and services in a consistent and comprehensive manner to allow for the precise searching of collection metadata and subsequent retrieval of data and services.
- Used as a source for creating ontologies for the semantic web (ex: P-I-S ontology, SWEET ontology).
- Follows a governance process which defines the procedure for recommending additions, modifications, and/or deprecations to the keywords, and the process by which the user community will be informed of changes.

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Keyword Types and Structure

- Keyword Types *(…) indicates number of keyword levels*

Earth Science Keywords (7)	Earth Science Services Keywords (5)
Data Centers (2)	Projects (2)
Platform/Instrument/Sensor (3)	Locations (6)
Vertical Data Resolution (1)	Temporal Data Resolution (1)
URL Content Type (2)	Chronostratigraphic Units (5)
Horizontal Data Resolution (1)	

- Example Keyword Structure for Platform/Instrument/Sensor (3 Levels)

Keyword Level	**Example**
Platform Short Name	ICESat
Instrument Short Name	GLAS (Geoscience Laser Altimeter System)
Sensor Short Name	INS (Inertial Navigation System)

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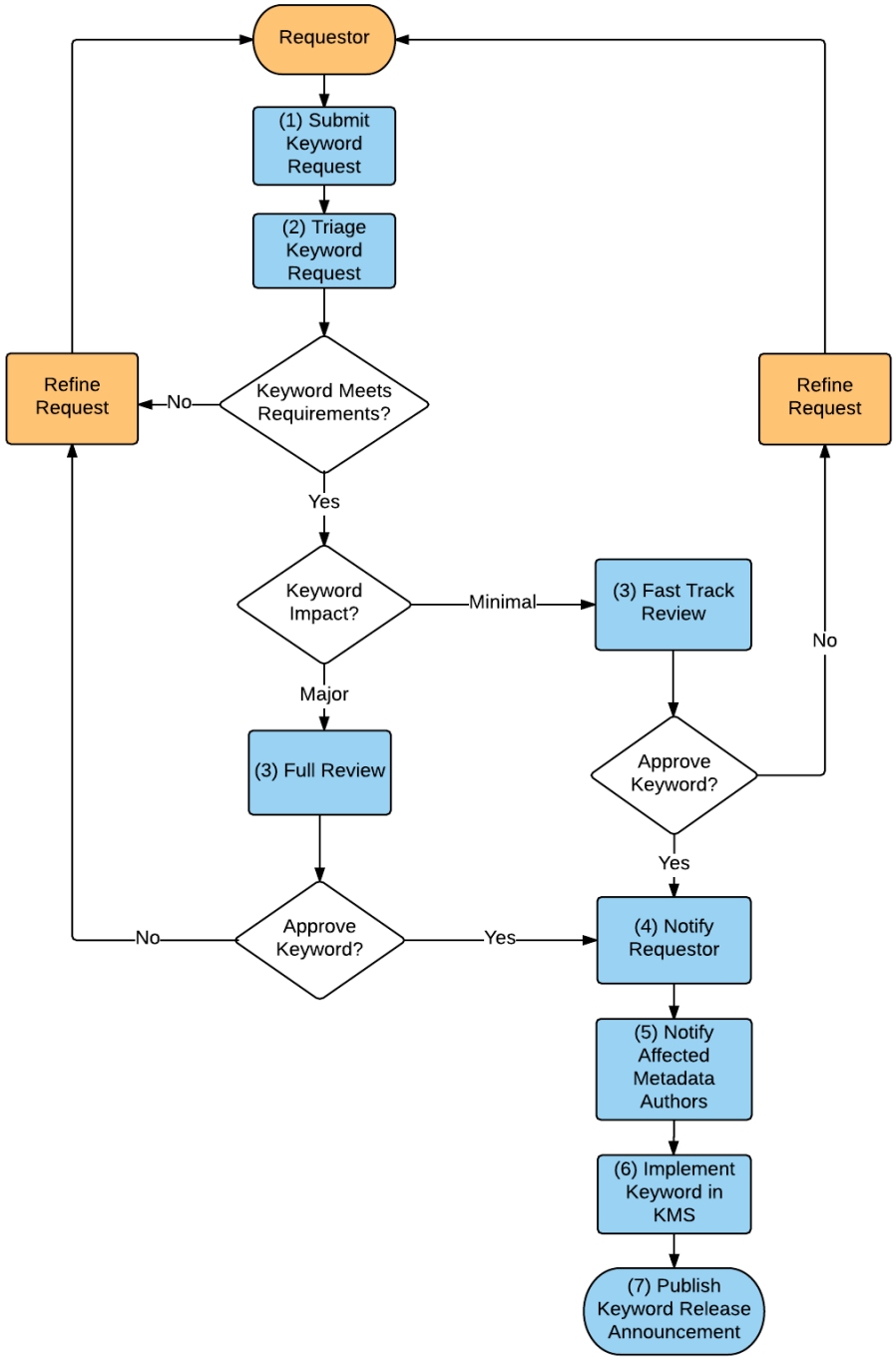
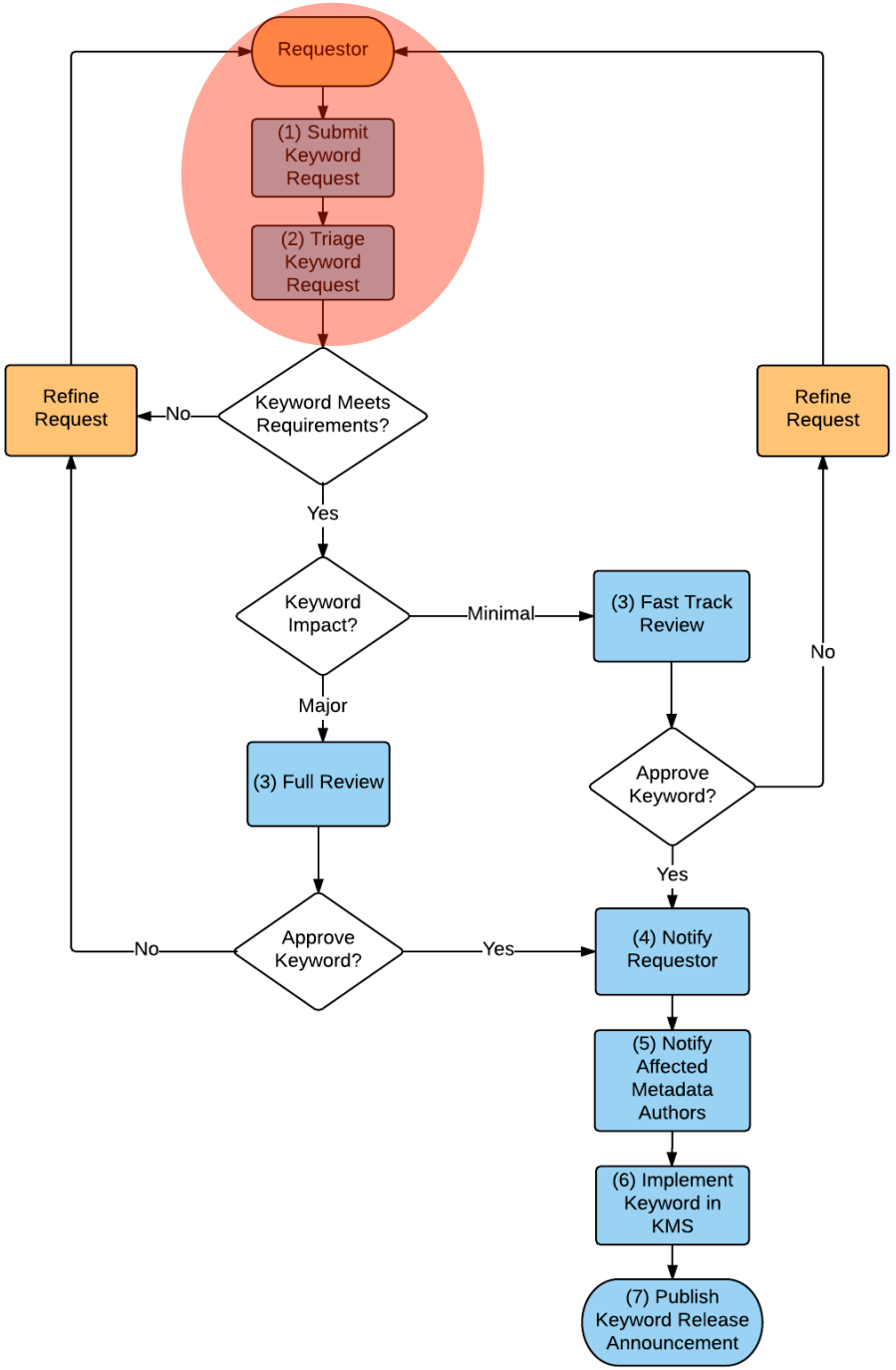
Keyword Governance Process

- **The Keyword Governance Process** is derived from the Keyword Governance document (draft version 0.5).
- Describes the end-to-end process of a keyword from initial request, triage, approval, notification, and implementation.



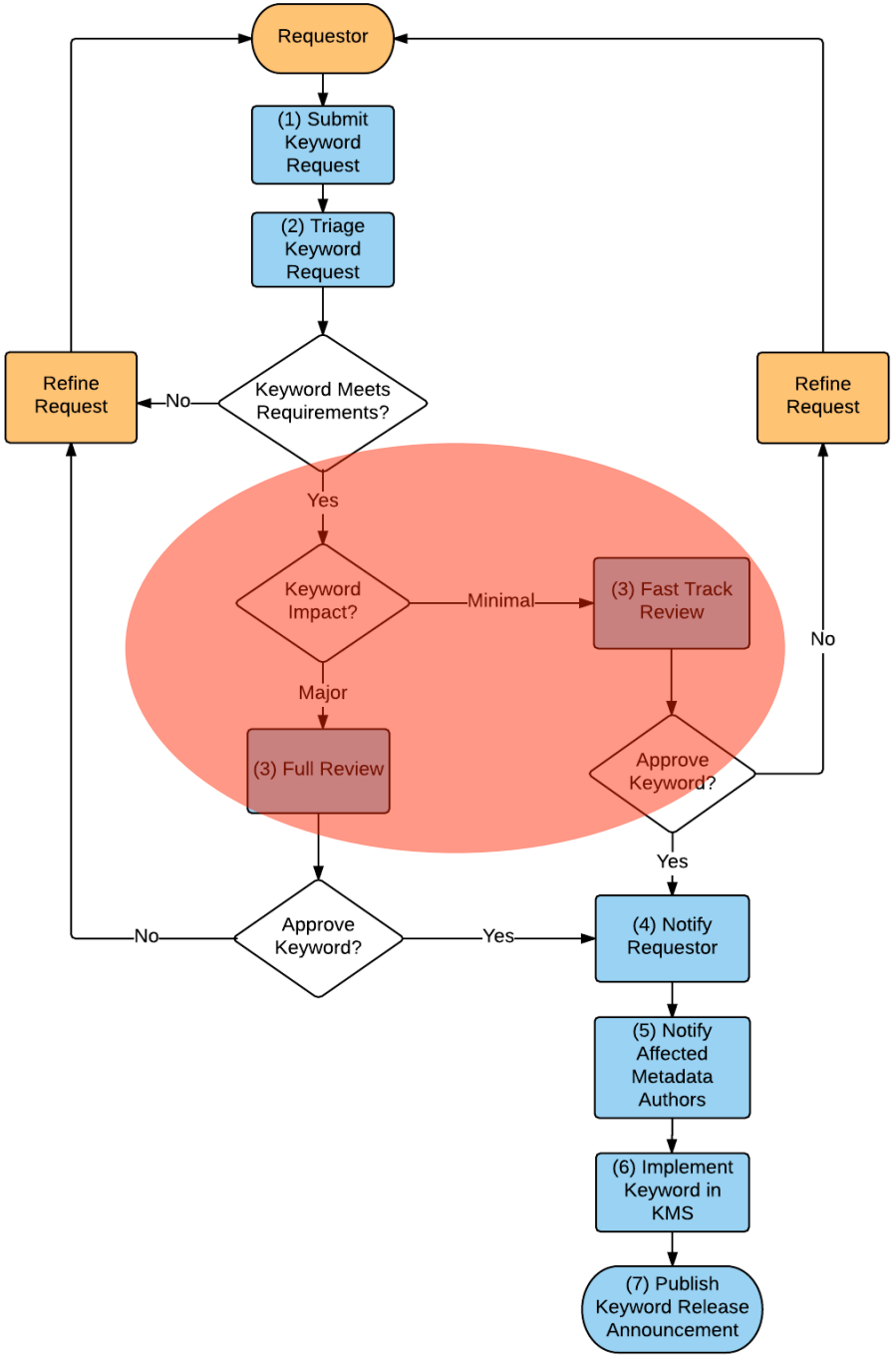
Request and Triage

- Keyword requests come from users, metadata providers, and/ or science coordinators.
- Science Coordinators perform keyword triage, which includes conducting a keyword impact assessment and making sure the keyword complies with the keyword requirements.



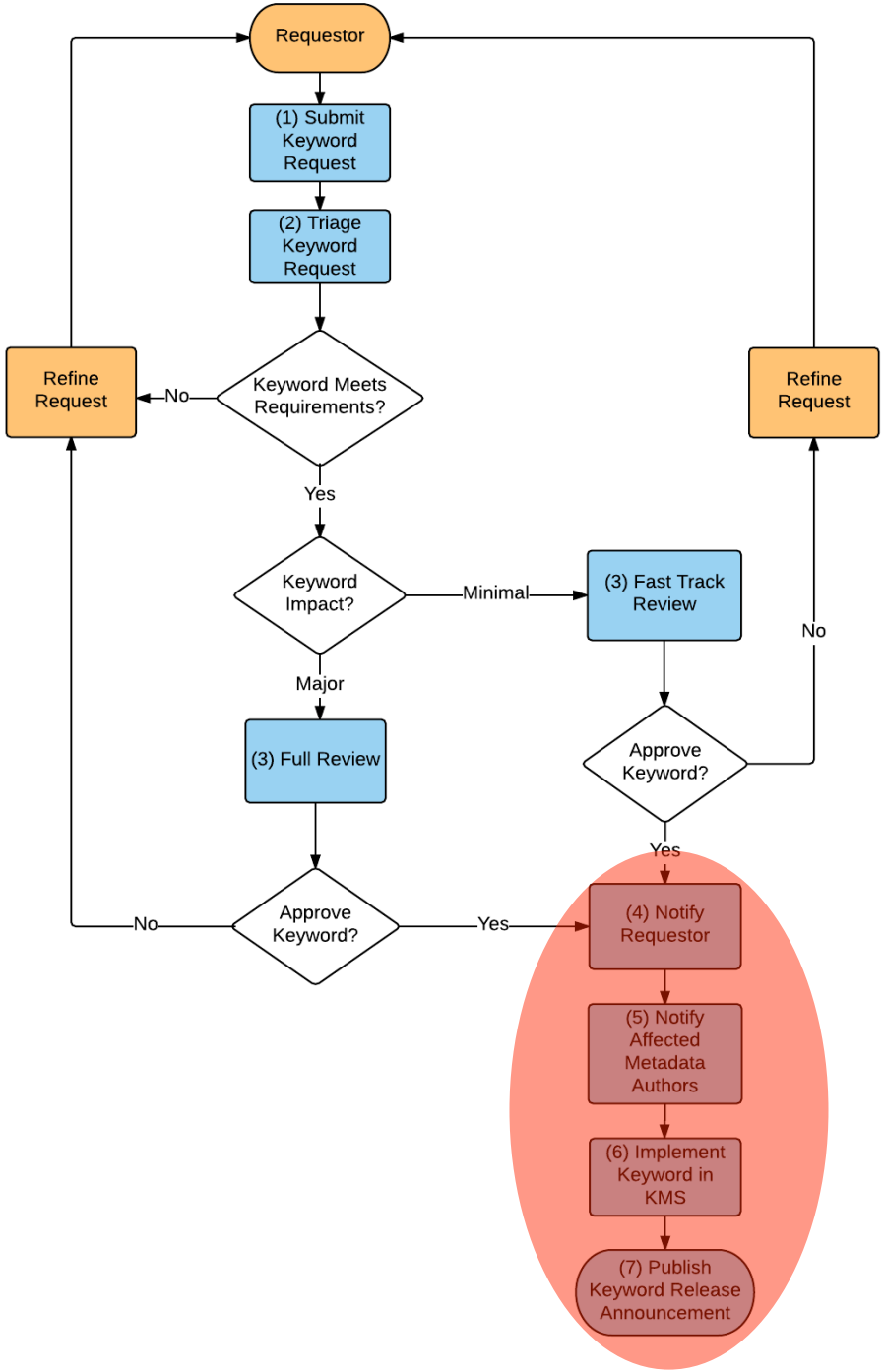
Review

- Following triage, the keyword request is either refined, put on a fast track review, or put on a full review.
- The ESDIS Standards Office (ESO) facilitates a full review of the keywords with subject matter experts (SME's).



Keyword Implementation

- Following the approval of the keywords by the ESO, the requestor and affected metadata providers are notified of the changes.
- Keywords are updated in the Keyword Management System (KMS) and published by the science coordinators.
- A keyword release announcement is published by the science coordinators.



Keyword Requirements

- A set of controlled keyword requirements are used when determining what constitutes a well-curated keyword list.
  - Applicable to an established science discipline and practical to a broad range of users and metadata providers.
  - Composed of conventional terminology that is functional and understandable by the international community.
  - Should not overlap with keywords that already exist.
  - Frequently searched for in free-text searches, but that are not already part of the existing keywords are often good candidates for new keywords.
  - Commonly populated in the uncontrolled Detailed Variables field will be considered for inclusion into the controlled GCMD keywords.
  - Applicable to existing or forthcoming Earth science data/metadata (e.g. a new project, instrument, mission, or collaboration).
  - Parallel in scope at any level of the hierarchy.
  - All chosen topics, terms, and variables, at any level within the hierarchy, must be distinctive - minimizing overlap as much as possible. This will ensure a concise keyword list.
  - Should be logically/semantically correct.

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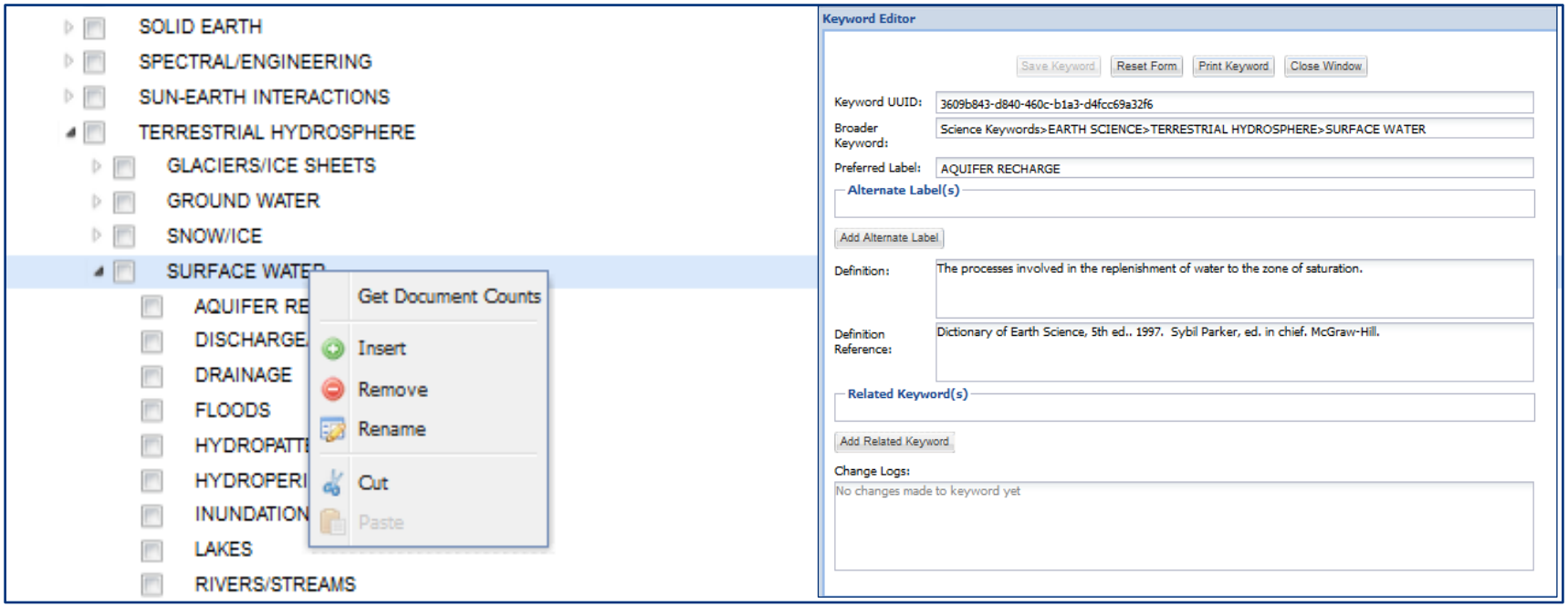
Keyword Manager

Configuration management tool for doing keyword curation - inserting, updating, moving, or deleting keywords and associated definitions/references, and adding alt labels and related keywords.

Keyword Manager Tool



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Keyword Community Forum

The purpose of this forum is to provide keyword users and metadata providers with an area for discussion of topics related to the GCMD Keywords.

Keyword Forum

GCMD Keywords Community Forum Home

Created by Ross Bagwell, last modified by Tyler Stevens about 5 hours ago

Welcome! The purpose of this forum is to provide keyword users and metadata providers with an area for discussion and planning of topics related to the GCMD Keywords. Participants are invited to use this forum to ask questions, submit keyword requests, discuss trade-offs, and track the status of keyword requests.

Announcements

- GCMD Keywords Version 8.2, 8.3, and 8.4 Release (Coming Soon)
- GCMD Keyword Governance and Community Guide Document (Coming Soon)

Forum

Search for

Clear Search

Include comments

Show Advanced Filters

New Topic | 1 topic found | Sticky topics on top

Keyword Topic	Author	Creation Date	# of Replies	Last Activity Date
Investigation of Keyword Viewer GCMD is considering support for end-users to browse the hierarchical set of GCMD Keywords in a web browser similar to how users browse collection-level metadata in the GCMD and Earthdata search interfaces. We have preliminary looked at in-house tools and	Tyler Stevens	Jun 30, 2016	0	Jul 08, 2016

How To Use This Forum

To post, an Earthdata Login account is required.

- Directions for Using the Forum
- Requirements for Posting to the Forum

Keyword FAQ's

- What Are the GCMD Keywords?
- How Do I Submit a Keyword Request or Issue?
- How Do I Access the GCMD Keywords?
- How Do I Cite the GCMD Keywords?

Related Keyword Links

- More on GCMD Keywords
- Other Related Links
- Open Keyword Requests
- All Keyword Requests

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What's Next

- Expand the Platform-Instrument-Sensor Ontology beyond the EOSDIS platforms and instruments.
- Evaluate external keyword best practices such as the CSDMS, RDA, Earth cube for potential inclusion into the GCMD keyword requirements list.
- Provide a Keyword "Viewer" to graphically show keyword hierarchies and relationships.
- Continue to release new and updated keywords.

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Resources

- GCMD Keyword Directory
  - http://gcmd.nasa.gov/learn/keyword_list.html
- GCMD Keyword RESTful Service
  - http://gcmdservices.gsfc.nasa.gov/kms/capabilities
- RESTful Service Documentation
  - http://gcmd.nasa.gov/Connect/docs/kms/KeywordManagementServiceAPI.pdf
- Keyword Forum
  - https://wiki.earthdata.nasa.gov/x/d4A9B

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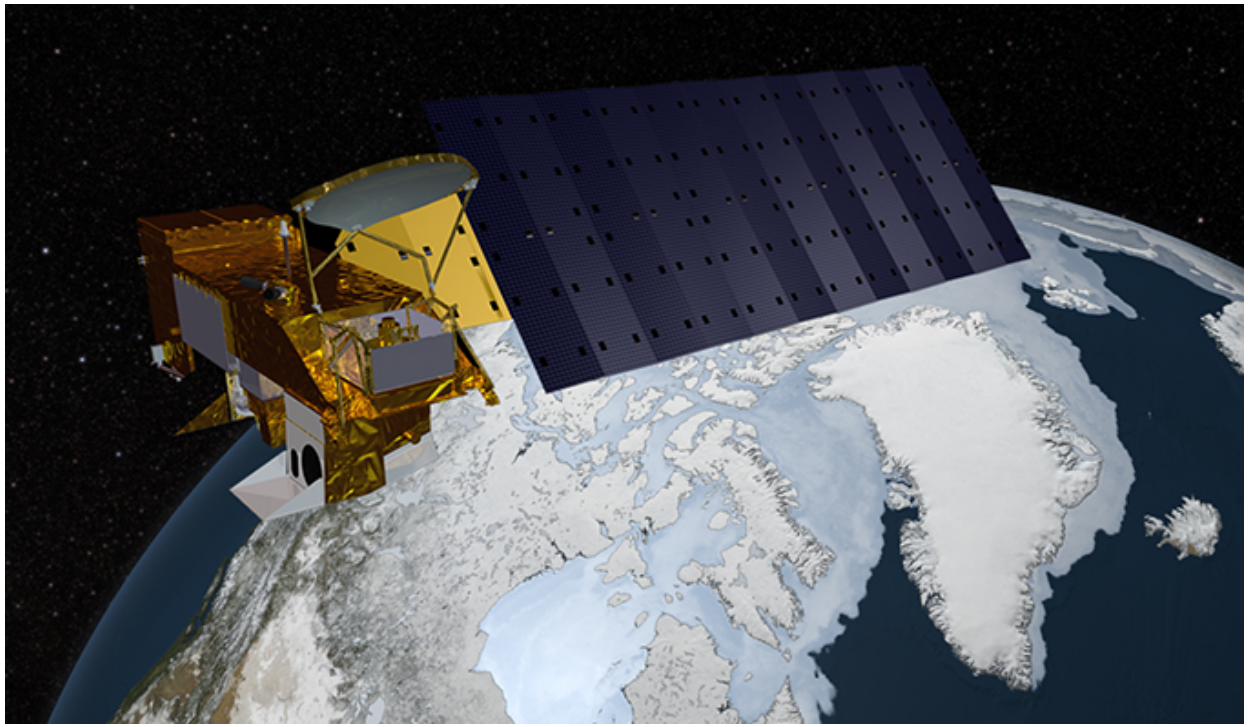
Background

Platform-Instrument-Sensor (P-I-S) Ontology

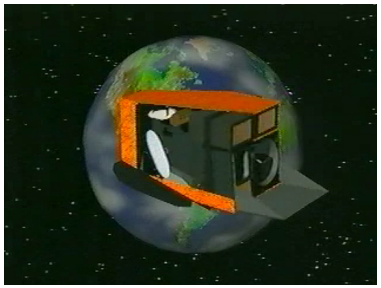
An ontology relating Earth Observation Satellites to their associated instruments and sensors, utilizing existing GCMD keywords.

- Accessible via KMS RESTful Service
- Applied in docBUILDER metadata authoring tool (suggests instruments based on platform selected)

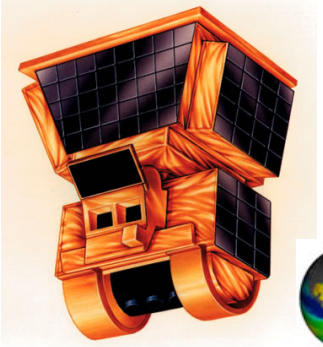
Platform: Aqua



Instrument: MODIS



Instrument: Ceres



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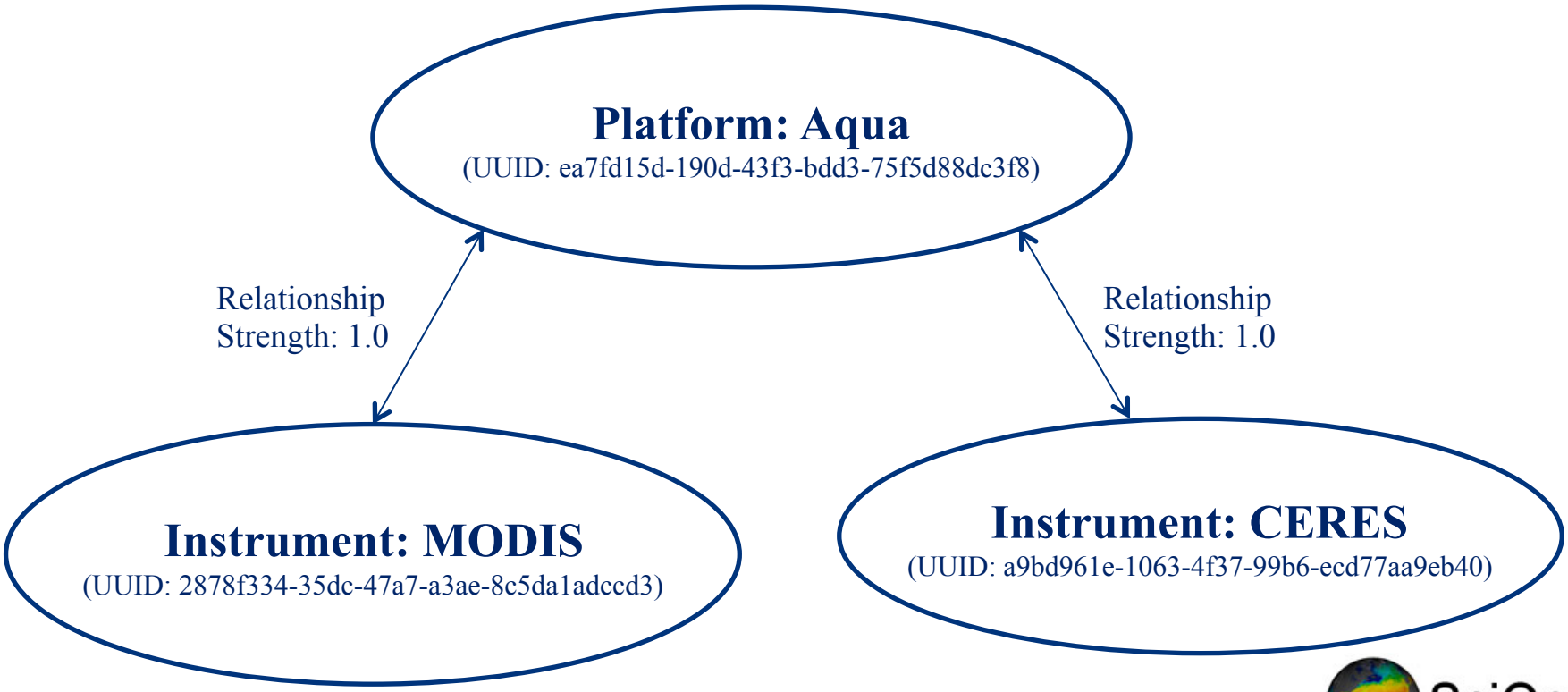
Ontology Implementation

Keyword Manager allows keywords to be linked and related via unique identifiers known as UUIDs. Keywords are represented as SKOS Concepts (RDF).



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