MetaSat

An open, collaboratively-developed metadata toolkit to support the future of space exploration.

Thousands of SmallSats are being launched every year, but how do you find information detailed information about them?

When you can't search across platforms, how can you build on lessons learned by other teams?

MetaSat aims to:

link data, software, and hardware from small satellite missions through its metadata vocabulary

https://schema.space/metasat/

Index | Families | Segments | Search

a b c d e f g h i
j k l m n o p q r
s t u v w x y z

A

ablation

abort

aboveMeanSeaLevel

absolute

absoluteMagnitude

absorbedDose

absorptance

absorption

MetaSat Concepts

Alphabetical Index

The full list of MetaSat concepts (i.e., "terms") can be viewed alphabetically via the Index view, or organized into two different types of groups: the concept families or the concept mission segments.

Families View

A concept family is a collection of conceptually related MetaSat concepts (i.e., "terms"). These concepts do not have any hierarchical structure and are instead collections or groupings of related concepts.

Segments View

A mission segment represents concepts related to a specific phase of a space mission. MetaSat concepts in these segments do not have any hierarchical structure, they are simply collected into groupings of concepts based on when or where they are relevant to an overall mission.

Search MetaSat Concepts

The search option allows for searching across all concepts and synonyms.

Uniform Resource Identifiers

- URIs tell you *what* something is
- URLs tell you *where* to find it on the web
  - URLs are a type of URI

https://schema.space/metasat/gravity

thermalControlSystem

Thermal Control System

https://schema.space/metasat/thermalControlSystem

Description: Process of keeping all parts of a spacecraft within acceptable temperature ranges (source)

Example: None

Synonym(s): TCS, Temperature Control System, Thermal Control Subsystem, Environmental Subsystem, Thermal Protection Subsystem (TPS)

Concept Segments: Space Segment

Concept Families: Thermal Control

suggest an edit

gravity

Gravity

https://schema.space/metasat/gravity

Description: Curvature of spacetime attracting uneven distribution of masses together (source)

Example: 9.807 m/s^2

Synonym(s): Gravitation, Gravitational Force

Concept Segments: Space Segment

Concept Families: Orbital Mechanics, Attitude Control, Propulsion

suggest an edit

Crosswalk Identifiers

AMS Glossary of Meteorology	http://glossary.ametsoc.org/wiki/Gravitation
Astronautics Vocabulary	https://www.asc-csa.gc.ca/eng/resources/vocabulary/view.asp?id=74
Australian Education Vocabulary	http://vocabulary.curriculum.edu.au/scot/3389.html
BNCF Nuovo Soggettario Thesaurus	https://thes.bncf.firenze.sbn.it/termine.php?id=7993
BnF General Catalog	https://catalogue.bnf.fr/ark:/12148/cb11941885b
Cultureel Woordenboek	https://www.cultureelwoordenboek.nl/natuurkunde-scheikunde-en-sterrenkunde/zwaartekracht
EncyclopÃ¦dia Britannica Online	https://www.britannica.com/science/gravity-physics
EncyclopÃ¦dia Universalis	https://www.universalis.fr/encyclopedie/interactions-physique-interaction-gravitationnelle/
Freebase	https://freebase.toolforge.org/m/09lw1

WIKIDATA

Item   Discussion

Read   View history

gravity (Q11412)

fundamental force attracting uneven distribution of masses together   ✎ edit

gravitation | gravitational force

▼ In more languages
Configure

Language	Label	Description	Also known as
English	gravity	fundamental force attracting uneven distribution of masses together	gravitation gravitational force
Spanish	gravedad	fuerza fundamental por la cual diferentes masas se atraen y se comprimen en el caso de un agujero Negro	
Traditional Chinese	引力	No description defined	重力
Chinese	引力	物体或物质间的吸引力	重力 万有引力

All entered languages

Statements

instance of   ⬍   fundamental interaction   ✎ edit

JSON-LD Example

MetaSat example schemas are in our GitLab Repository:

https://gitlab.com/metasat/metasat-toolkit/-/tree/master/examples

```
{
    "@context": {
        "@version": 1.1,
        "@import": "https://gitlab.com/metasat/metasat-toolkit/-/raw/master/context.jsonld",
        "@vocab": "https://schema.space/metasat/"
    },
    "mission": {
        "missionName": "Miniature X-ray Solar Spectrometer",
        "missionShortName": "MinXSS",
        "purpose": ["Solar physics", "Space weather", "Near space research"],
    },
    "spaceSegment": {
        "spacecraft": {
            "spacecraftName": "Miniature X-ray Solar Spectrometer 1",
            "spacecraftShortName": "MinXSS-1",
            "internationalDesignator": "1998-067HU",
            "noradID": "41474",
            "country": "US",
            "scienceOperationsStart": "9 June 2016",
            "serviceLife": "5 years",
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                "orbitClass": "LEO",
                "altitude": {
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                    "schema:unitCode": "KMT"
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                    "schema:value": 402,
                    "schema:unitCode": "KMT"
                },
                "apogee": {
                    "schema:value": 402,
                    "schema:unitCode": "KMT"
                },
                "orbitalInclination": {
                    "schema:value": 51.65,
                    "schema:unitCode": "DD"
                },
                "orbitalPeriod": {
                    "schema:value": 92.69,
                    "scheam:unitCode": "MIN"
                },
                "epoch": "4 July 2016"
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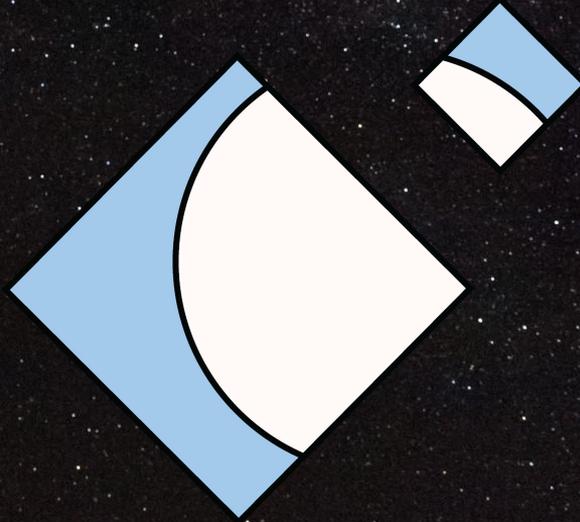
Project Partners

- Libre Space Foundation (SatNOGS)
- NASA Small Satellite Virtual Institute (S3VI)
- Small Satellite Reliability Initiative (SSRI)
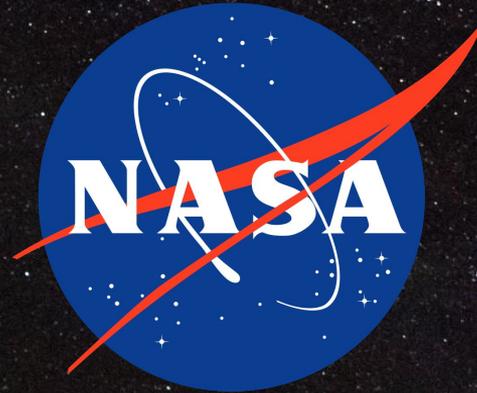
MetaSat Steering Committee

- Advisory body for MetaSat governance
- Representatives to help guide toolkit's development

Future of MetaSat

- New governance structure and release cycle
- MetaSat JSON-LD Generator
- RDF Serializations
- API
- Further adoption and integration
  - Enabling faceted search
  - SEO
- Community-driven development (as always)

Get in Touch!

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https://schema.space
https://gitlab.com/metasat

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HARVARD & SMITHSONIAN