Abstract Data Model for Satellite Instrument Event Logs

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Abstract Data Model

- Determines the information content, data components, and the relationships between these components
- Building blocks are data objects from the ISO 19115-2 metadata standard
- New data objects introduced:
  - EventList
  - Event
  - EventTypeCode
  - Revision

EventList Object

- Holds one or more events
- Mandatory elements:
  - Title
  - Description
  - Identifier
  - Responsible parties (maintainer, contact person, etc.)
  - Dates of changes (creation/revision/publication times)
  - Language
  - Character set
  - License
  - Online resource associated with the event list

Event Object

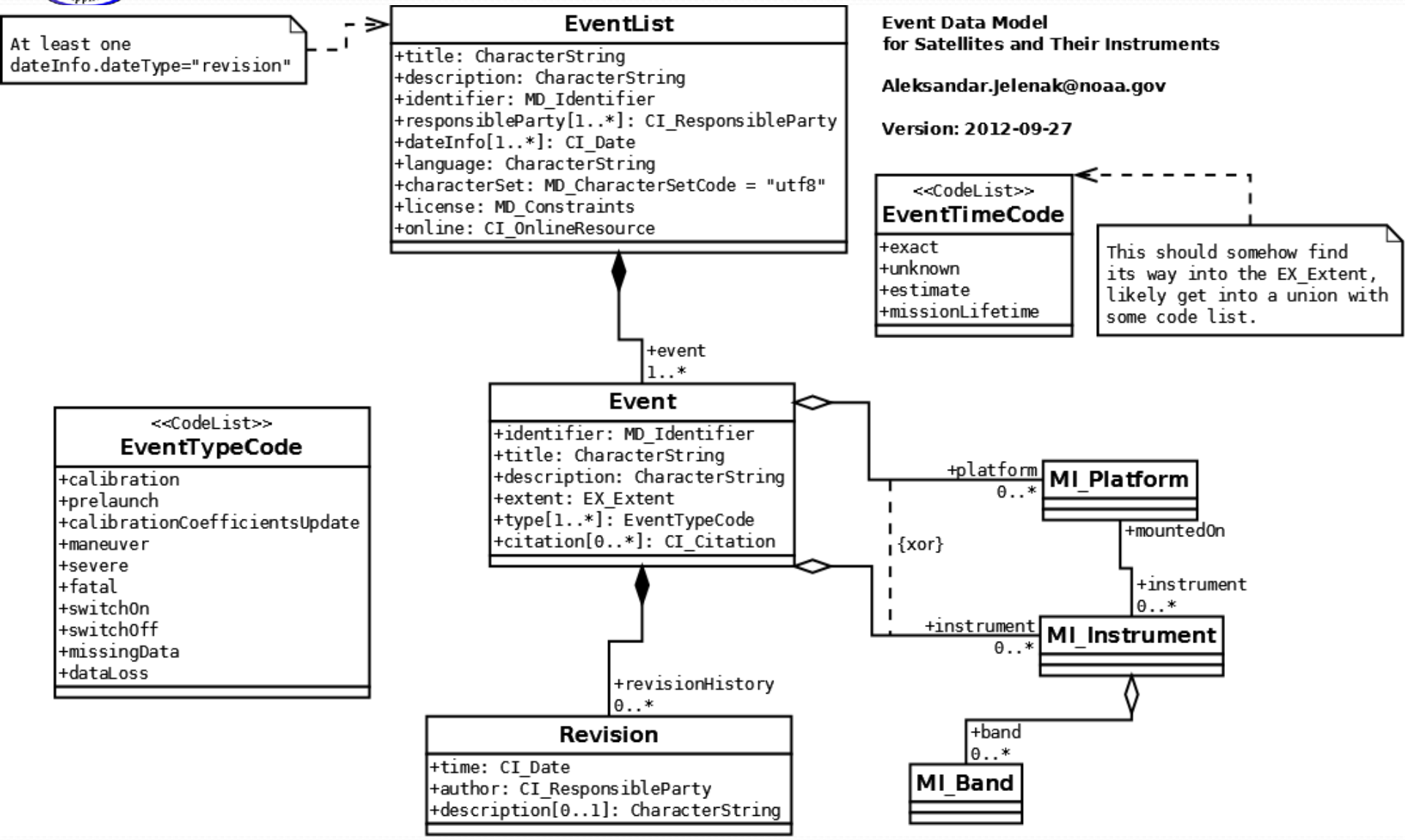
- Information about one event
- Mandatory elements
  - Title
  - Description
  - Identifier
  - Extent (temporal and/or geospatial)
  - Event type (one or more)
  - One of:
    - Platform (zero or more)
    - Instrument (zero or more)
- Optional elements
  - Citation (resource associated with the event)
  - Revision history

EventTypeCode Object

- A code list of event types
- Flat list, not a hierarchy
- One event can have one or more types
- Standardizing on list values and their descriptions establishes a common vocabulary for categorizing events

Revision Object

- Information about one event revision
- Mandatory elements:
  - Time (creation/revision/publication)
  - Author (who made the revision)
  - Description of the revision changes


At least one
dateInfo.dateType="revision"
EventList
+title: CharacterString
+description: CharacterString
+identifier: MD_Identifier
+responsibleParty[1..*]: CI_ResponsibleParty
+dateInfo[1..*]: CI_Date
+language: CharacterString
+characterSet: MD_CharacterSetCode = "utf8"
+license: MD_Constraints
+online: CI_OnlineResource
Event Data Model
for Satellites and Their Instruments
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Version: 2012-09-27
<<CodeList>>
EventTimeCode
+exact
+unknown
+estimate
+missionLifetime
This should somehow find its way into the EX_Extent, likely get into a union with some code list.
+event
1..*
Event
+identifier: MD_Identifier
+title: CharacterString
+description: CharacterString
+extent: EX_Extent
+type[1..*]: EventTypeCode
+citation[0..*]: CI_Citation
<<CodeList>>
EventTypeCode
+calibration
+prelaunch
+calibrationCoefficientsUpdate
+maneuver
+severe
+fatal
+switchOn
+switchOff
+missingData
+dataLoss
+platform
0..*
MI_Platform
+mountedOn
{xor}
+instrument
0..*
+instrument
0..*
MI_Instrument
+revisionHistory
0..*
Revision
+time: CI_Date
+author: CI_ResponsibleParty
+description[0..1]: CharacterString
+band
0..*
MI_Band

What's Next?

- Gather feedback from GSICS organizations if something like this data model is applicable to their requirements
- Further test the data model by applying it to as many events as possible
- Start working on the event type list