
Shown here is a mindmap describing a medical or health science concept. Each node (a discrete piece of knowledge) is linked to other nodes.

Figure 12: cDNA Microarray Two Channel Preparation and Processing

State diagram is the analogue in data science and system design. A state diagram is a model of deterministic graph with nodes and arcs.
The nodes are called state, the arcs are transition. One may follow a transition to go from one state to another, and to navigate around the entire graph.

The Role of HATEOAS in CDISC Library API

- The heart of the CDISC Library is the API
- A couple of important constraints for REST API:
  - Each response contains links for next requests
  - Server provides clients a uniform method for determining what contents can be retrieved, actions can be performed, and formats can be represented
- Flattened representation for the linked data world of information
An API response in JSON format when querying about SDTMIG v3.2

```json
{name: "SDTMIG v3.2",
  label: "Study Data Tabulation Manuals Version 3.2 (Final)",
  description: "CDISC Version 3.2 (V3.2)_g Administration (FDA).",
  source: "Prepared by the CDISC Su..ion Data Standards Team",
  effectiveDate: "2013-11-26",
  registrationStatus: "Final",
  version: "3.2"
}
```

A link (`"href"`) is provided for one of the class objects accessible (`"type"`), whose name is Events Observation Class (`"title"`).

An application client (web, mobile, or programming language of choice) can reliably use this **uniform interface** for subsequent requests.
In other words, it is a state transition from SDTMIG v3.2 to the SDTMIG v3.2 Events class.
A link ("href") is provided for one of the SDTM dataset objects accessible ("type"), whose name is Adverse Events Class ("title").

These links, for state transitions, aligns with the standards' hierarchy: classes > domains > variables > codelists.

```
    ordinal: "4"
    name: "Events"
    label: "Events Observation Class"
    description: "This SDTM class captures...C183372, 2018-06-29"
```

Two endpoints are useful:

- `/mdr/products`
- `/mdr/products/{product-family}`

Where, product family is one of these:

- Terminology
- DataCollection
- DataTabulation
- DataAnalysis

Highlighted is a link to the a CDISC Controlled Terminology package after querying for a full product listing.

Notice it is using the same uniform interface for linking.