CDISC Library for Dummies: Use of the API

CDISC DACH User Network Meeting / Sulzbach
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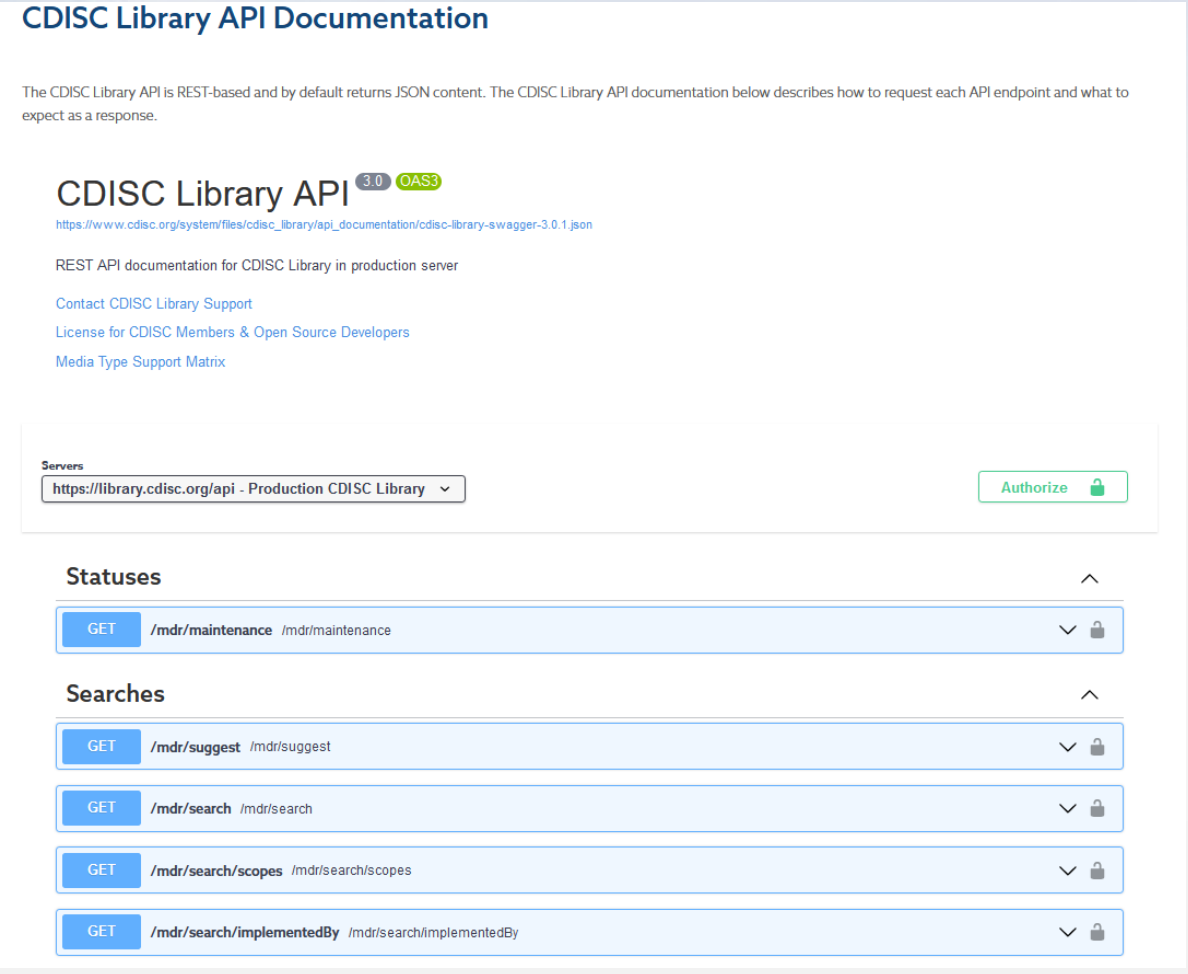
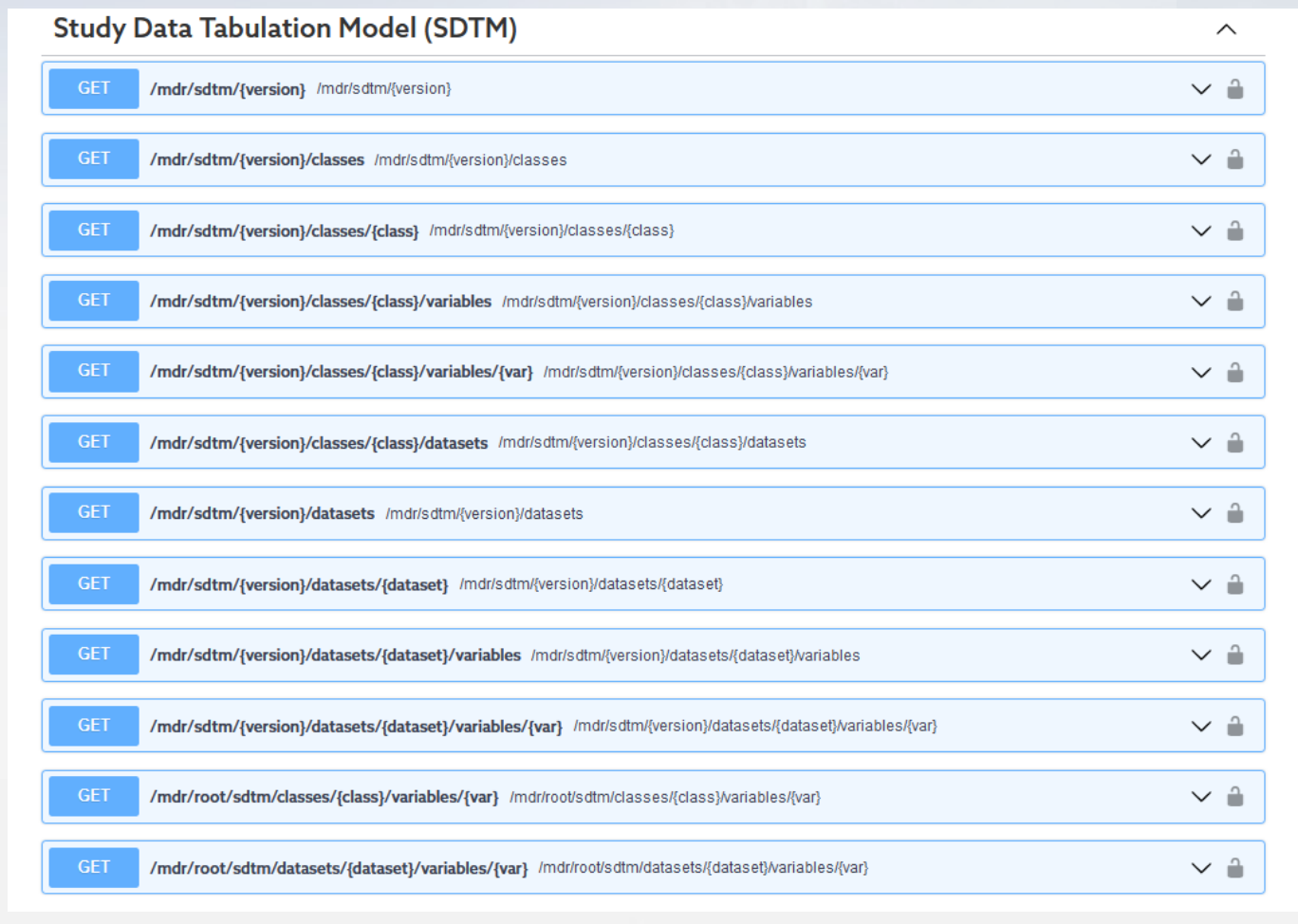
What is an API?

- API = Application Programming Interface
- A contract between different applications
  - often, one of the applications is a "server"
  - and the other applications are "clients"
    (server - client architecture)
- The "contract" is machine-readable as well as human-readable and often machine-executable
- When used over the internet: RESTful Web Services

The CDISC Library API Documentation

- https://www.cdisc.org/cdisc-library/api-documentation





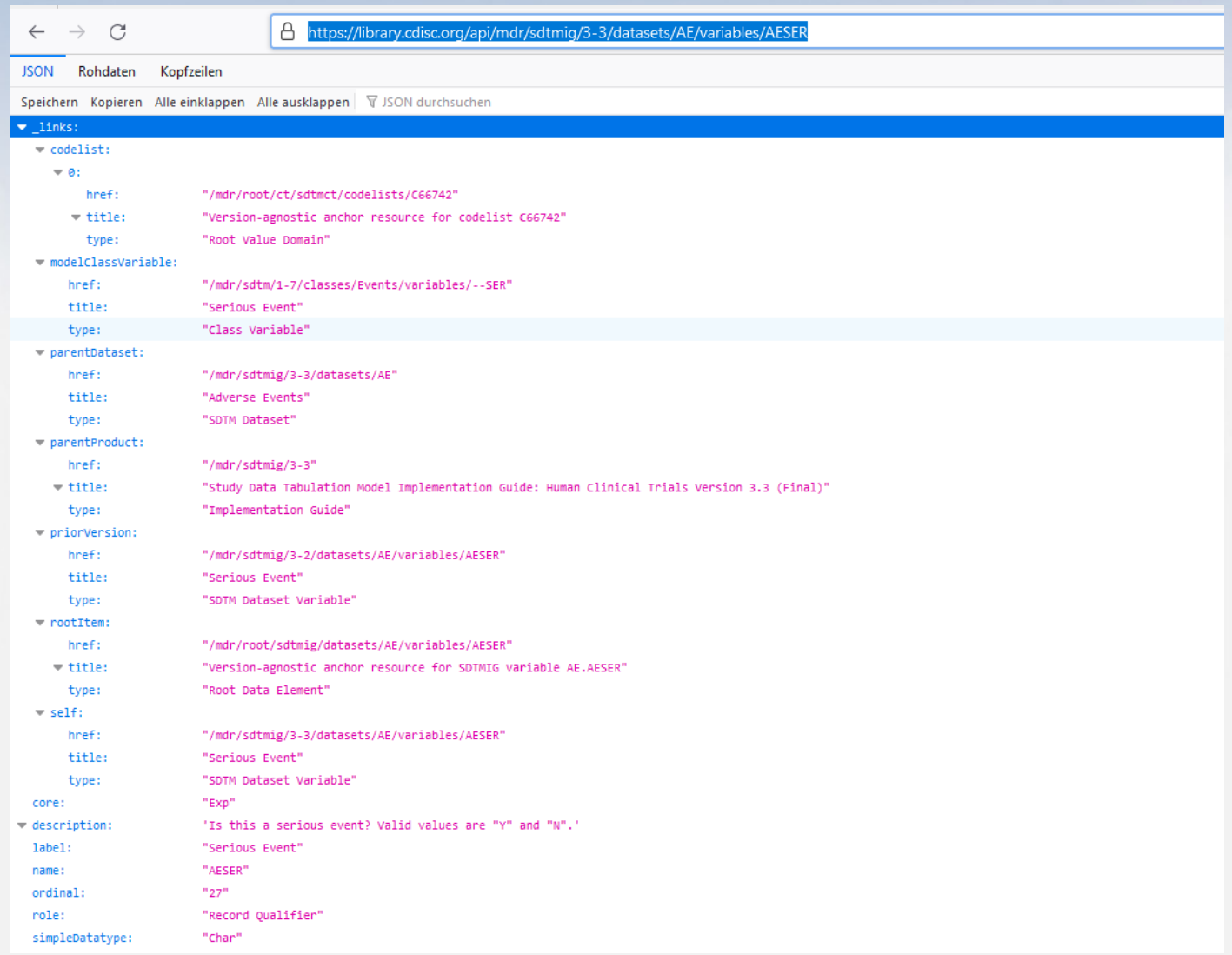
Some typical calls to the Library

- base: https://library.cdisc.org/api

- /mdr/sdtmig/3-3/datasets/AE/variables/AESER
  provides all the information about the AESER variable from SDTMIG-3.3
- /mdr/sdtm/1-7/classes/Findings
  provides all the information (or better: links to)
  all information about the Findings variables in SDTM (model) 1.7

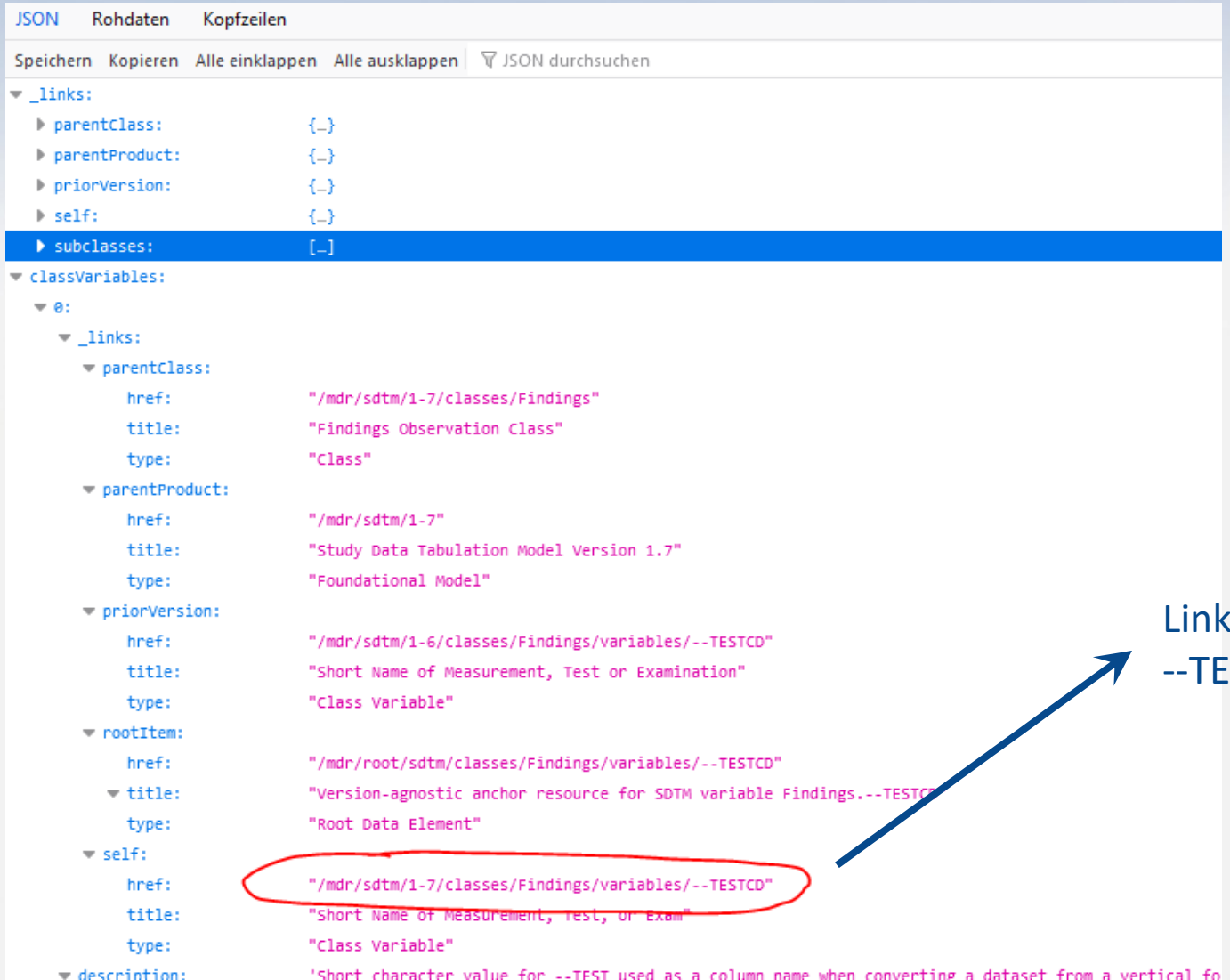
Try it out!

https://library.cdisc.org/api/mdr/sdtmig/3-3/datasets/AE/variables/AESER



Try it out!

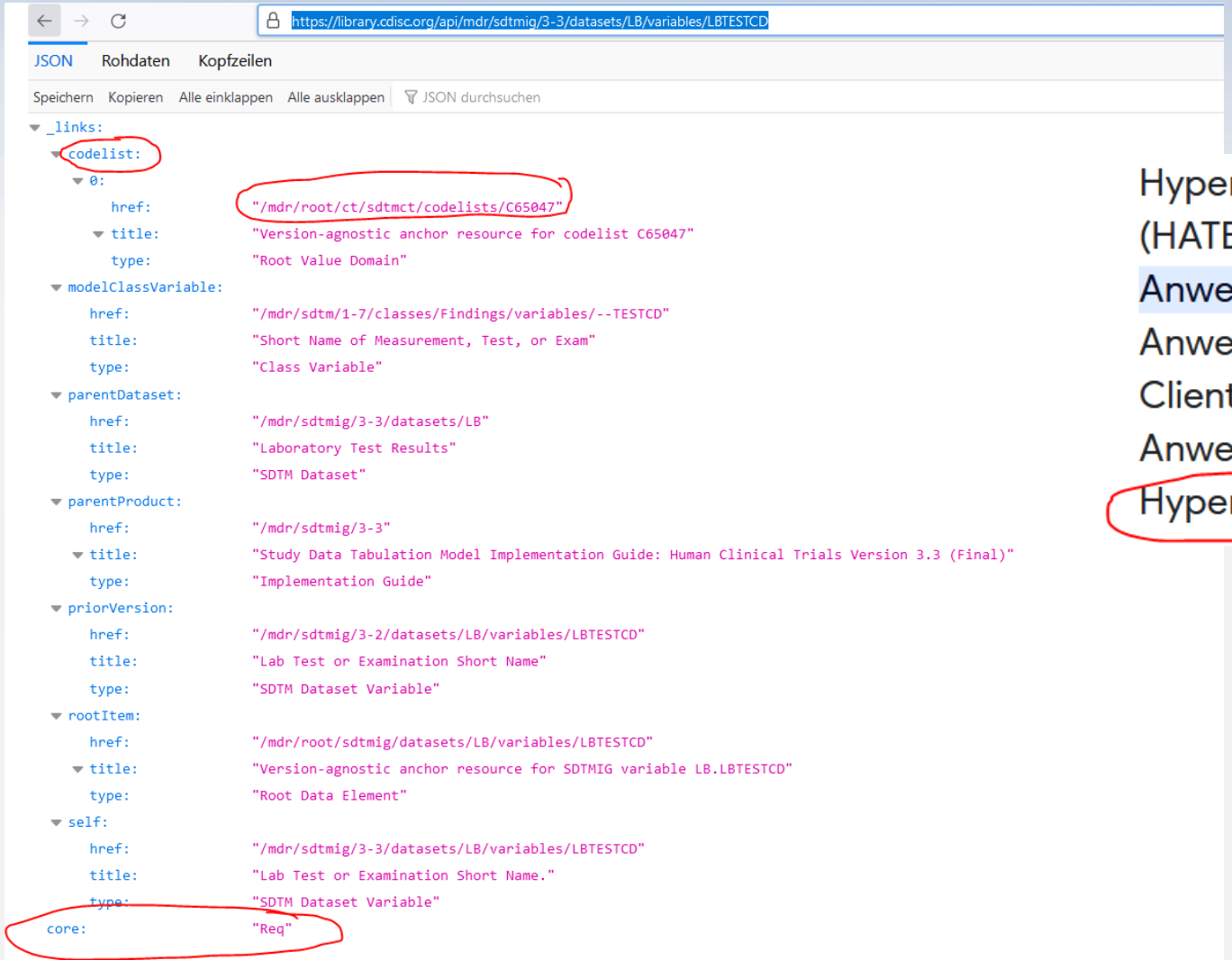
https://library.cdisc.org/api/mdr/sdtm/1-7/classes/Findings



Link to details about
--TESTCD variable in SDTM 1.7

Linking things together

https://library.cdisc.org/api/mdr/sdtmig/3-3/datasets/LB/variables/LBTESTCD



The API uses the HATEOAS principle

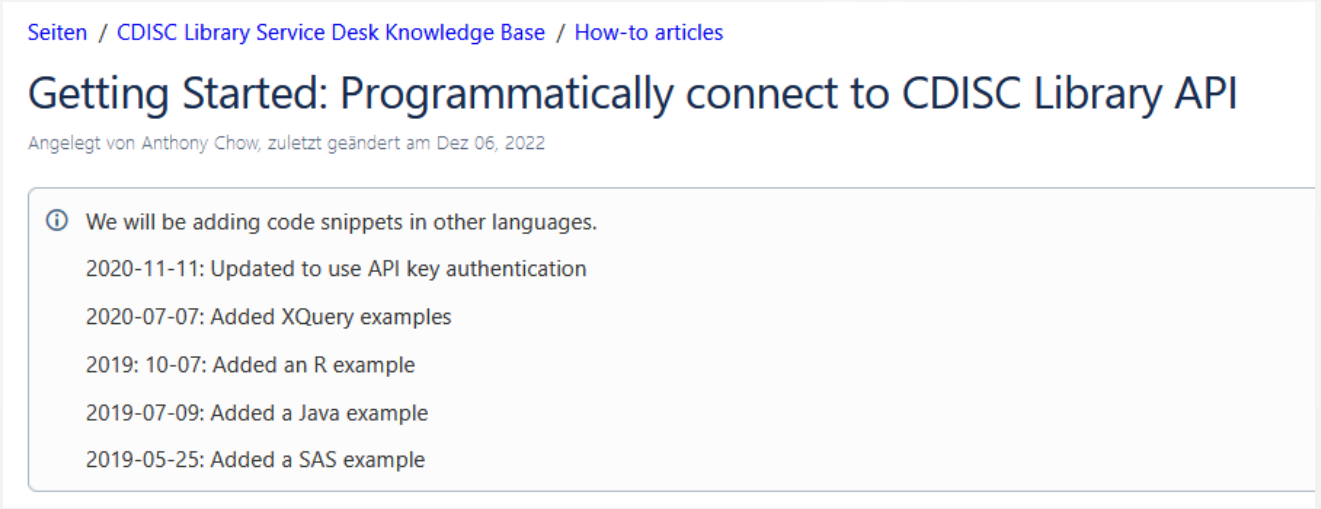
Hypermedia as the Engine of Application State (HATEOAS) zu Deutsch: Hypermedia als Motor des Anwendungs-Zustands, ist eine Einschränkung der REST-Anwendungsarchitektur. Mit HATEOAS interagiert ein Client mit einer Netzwerkanwendung, deren Anwendungsserver Informationen dynamisch über Hypermedien bereitstellen.

Forget everything I showed you about using the CDISC Library in the browser

APIs are there for application-application communication, not for use in the browser

Implementing the CDISC Library API in software applications

- Every modern software language has libraries for use with APIs and RESTful Web Services
- Manuals and examples at: https://wiki.cdisc.org/display/LIBSUPRT/Getting+Started%3A+Programmatically+connect+to+CDISC+Library+API



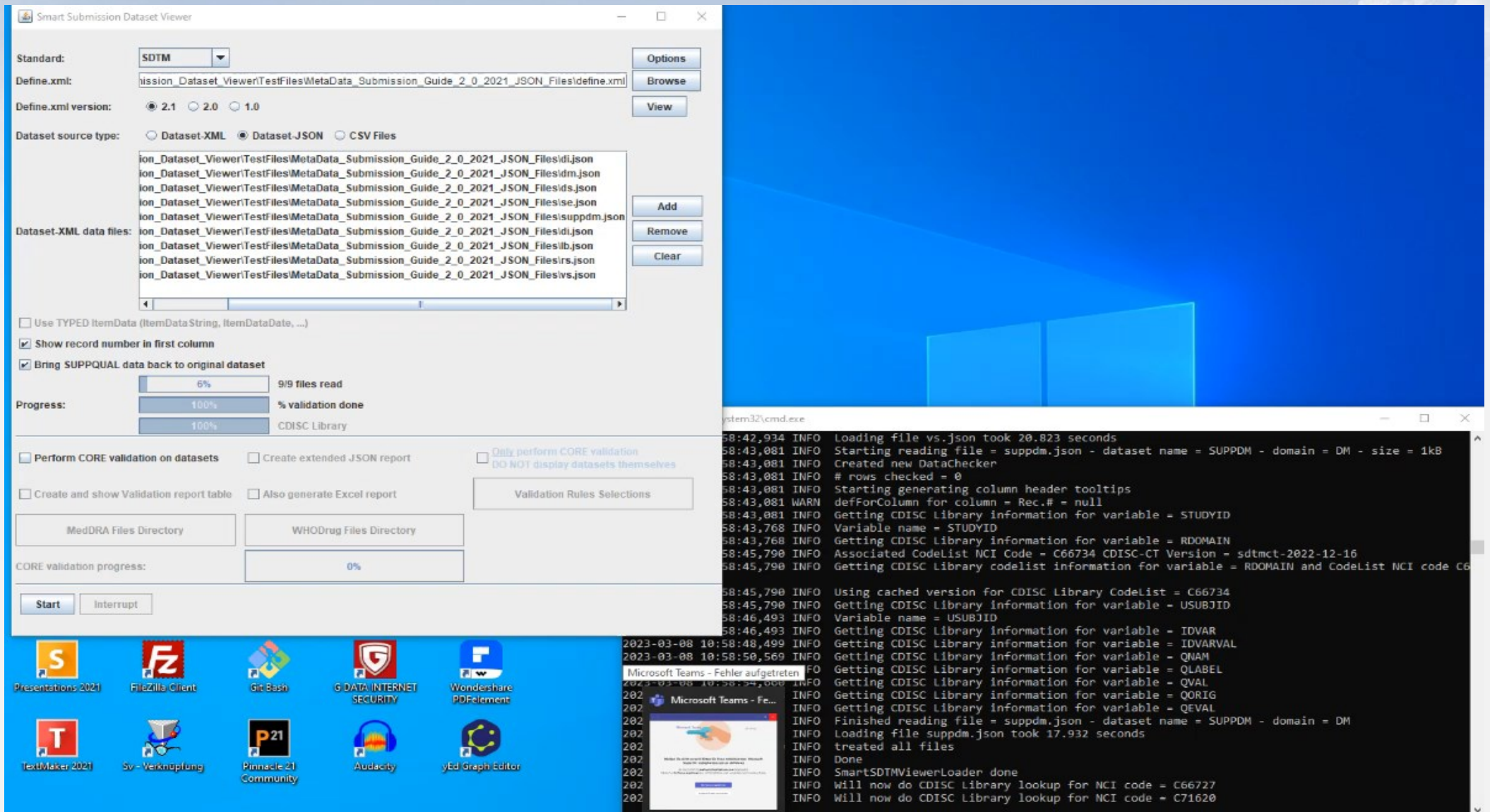
Tools for exploring the API and testing API requests

- Your browser
- Postman
  SoapUI
  Insomnia
- Your own application or favorite test tool ...
- Keep into account that you will need to request an "API key"
  (over the API Portal, accessible from the Library Browser)

What can I do with it?
Real-life examples

- Automated generation of eCRFs (e.g. in ODM format) for CDASH
- Generation of template define.xml files for different versions of SDTMIG, SENDIG and ADaMIG (SDTM-ETL)
- Automated update of CDISC-CT in own applications and repositories
- "Diffs" between standards versions (for impact analysis)
- Validation of metadata of (SDTM) submissions
  Example: Smart Submission Dataset Viewer
- and much much more ...

Implementation of the CDISC Library API in the "Smart Submission Dataset Viewer"



Conclusions

- The CDISC Library is the "CDISC truth"
- With the Library Browser and the API, one almost does not need to inspect the PDF documents anymore

- The API can be implemented in every modern software language, and in statistical software (R, SAS, ...)

- The CDISC Library allows to automate a large number of tasks that are otherwise cumbersome (manual lookup, writing custom software, ...)