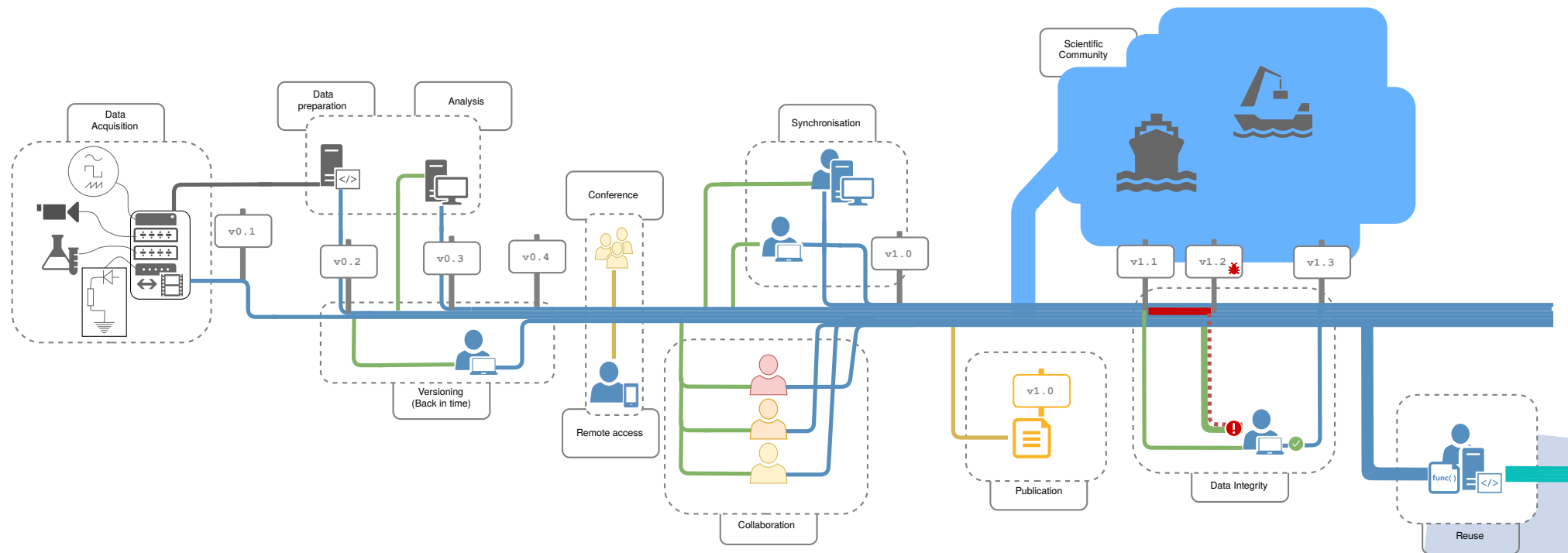# German Neuroinformatics Node

## Research Data Management, Hosting and Sharing

- GIN research data hosting service

- NIX neuroscience data format

- odML metadata format

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G-Node

# GIN ... G-Node Infrastructure

## Data management from acquisition to publication



https://gin.g-node.org

# GIN ... G-Node Infrastructure

## Scientific data hosting service



https://gin.g-node.org

# GIN ... G-Node Infrastructure

## Data hosting service

- Location independent data access

- Secure access and user management

- Sharing and collaboration

- Built-in file versioning and retrieval

- Manual and automated workflow integration

- Free storage for scientific data

- Platform independent

https://gin.g-node.org

# GIN ... G-Node Infrastructure

- Neuroscientific service recommended by:



- Statistics

  - 1195 repositories (459 public)

  - 1138 users

  - Data size (all repositories): 13.17TiB

https://gin.g-node.org

## Supplemental GIN services

- **gin-doi** https://doid.gin.g-node.org
  - free data publication service
  - 112 published data sets
  - Total published data size: 1.2TiB

- **gin-valid** https://valid.gin.g-node.org
  - automatic file validation of new data on GIN
  - submit and use custom validators

https://gin.g-node.org

# NIX … Neuroscience Exchange format
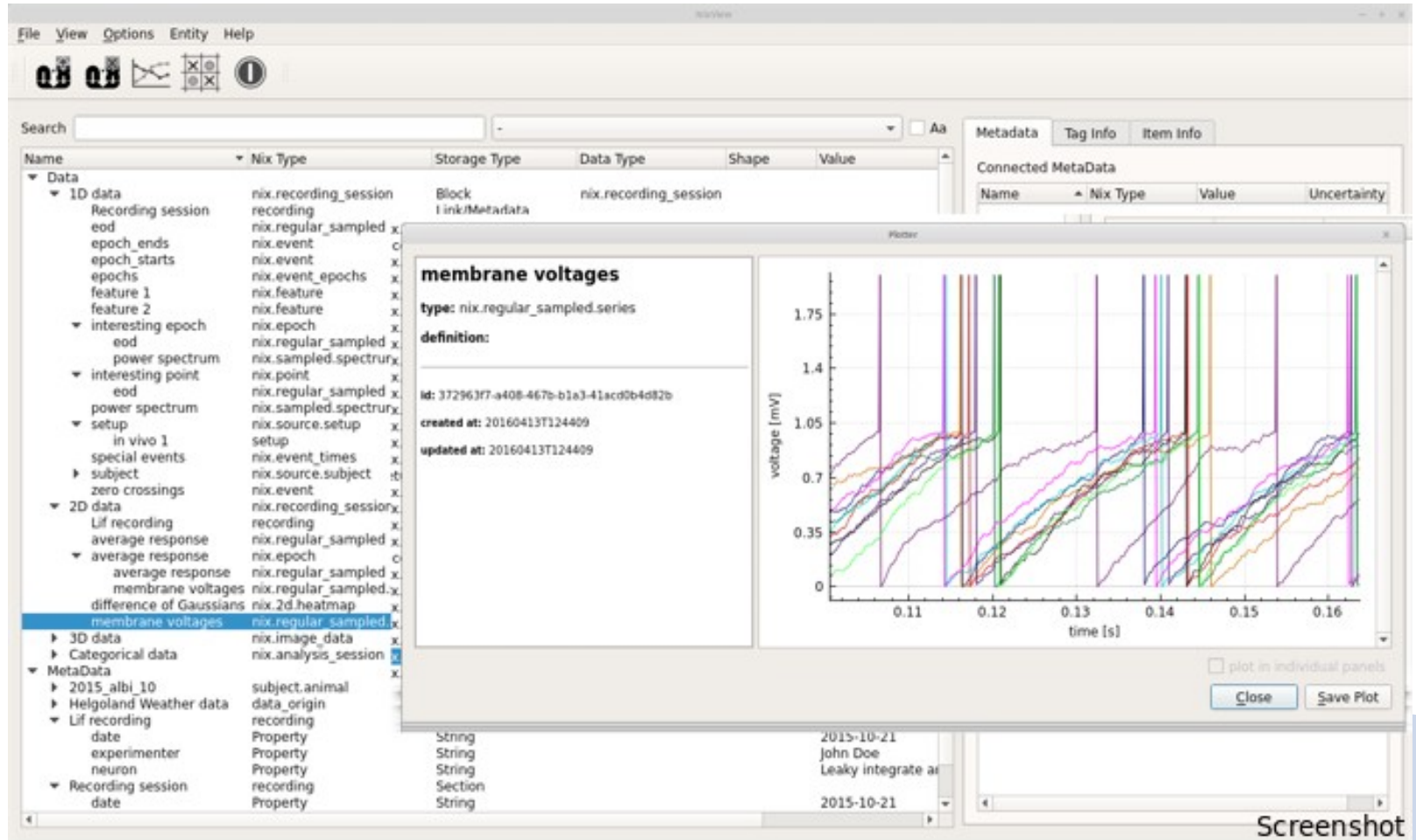


Open neuroscience file format

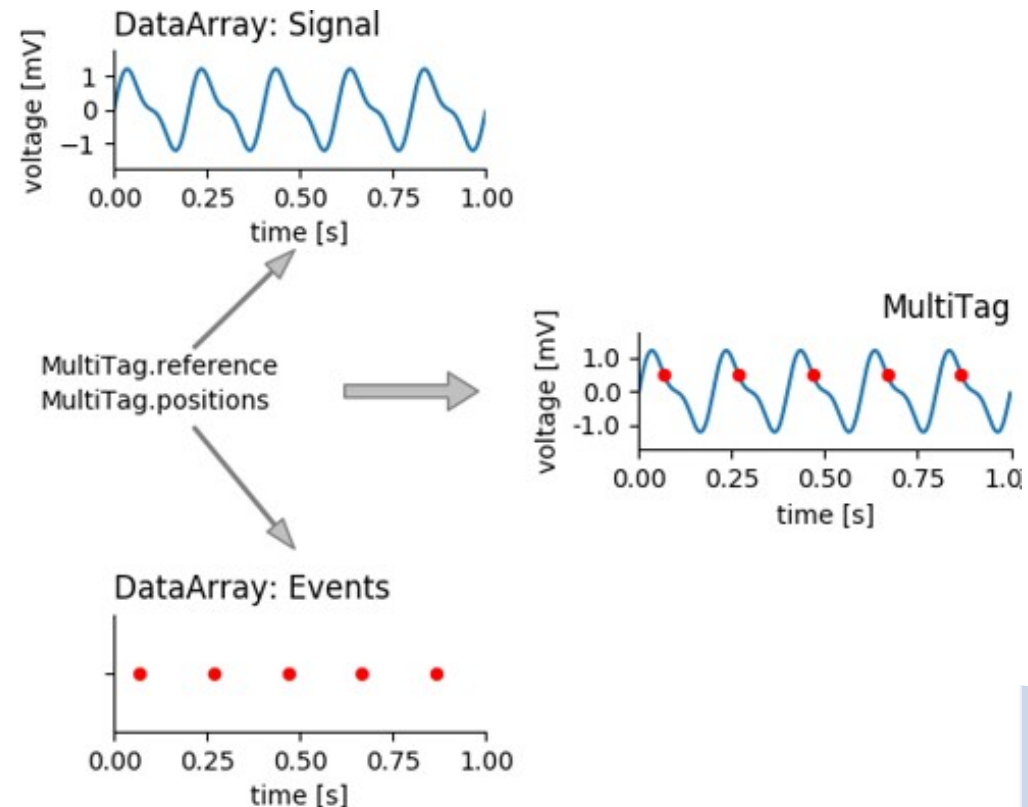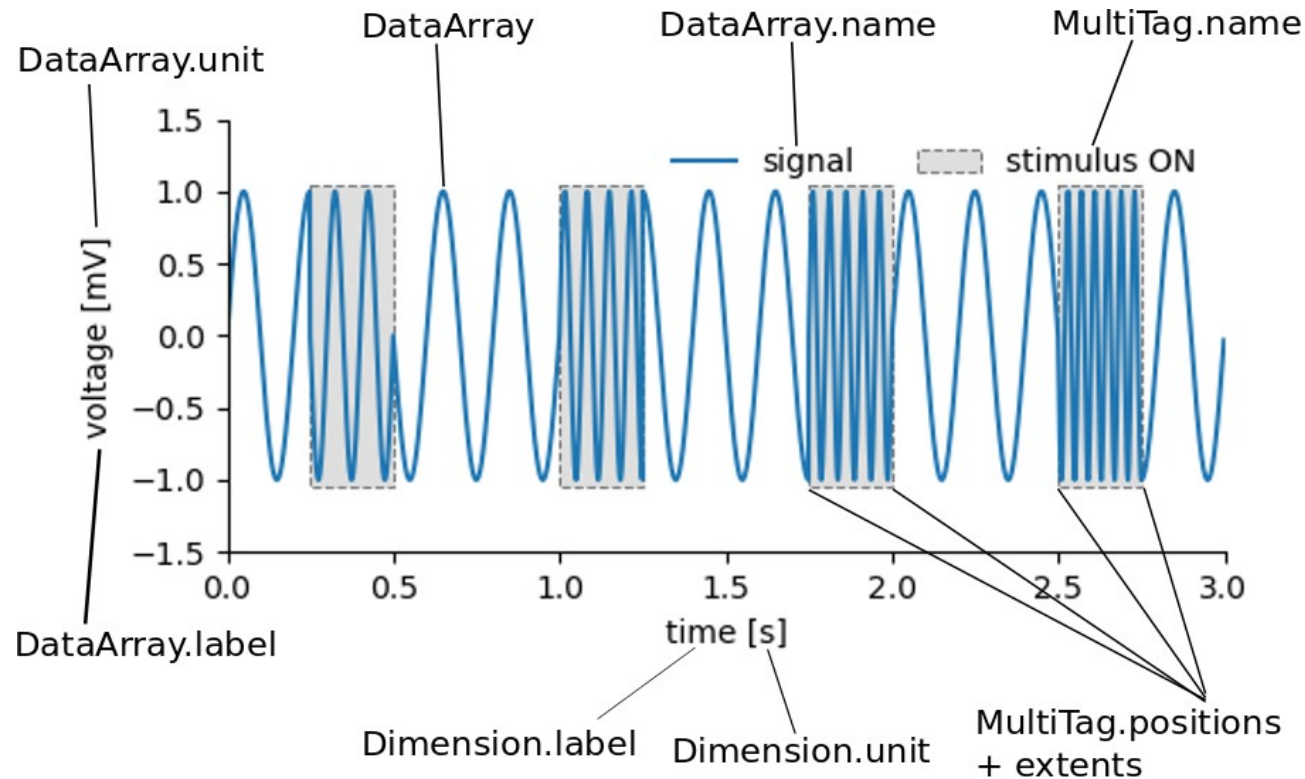http://bendalab.github.io/NixView

http://g-node.org/nix

# NIX overview

- Flexible data model for various kinds of data

- Data and metadata in the same HDF5 file

- Descriptive association between data and metadata

- Multiple language support and tools

The fully annotated file contains all information required to understand and interpret the data and their properties.

# NIX tools and interfaces

- NEO ephys format reader integration

- MNE - EEG/MEG data analysis and visualization

- Neurodata without borders (NWB) format

- SpikeInterface (Open ephys)

http://neuralensemble.org/neo

https://mne.tools

https://www.nwb.org
https://github.com/G-Node/nix-nwb

https://open-ephys.org/spikeinterface

http://g-node.org/nix

# odML ... open metadata markup language

## open metadata file format

- store metadata in a common hierarchical format

- automate experiment documentation

- human and machine readable

- highly flexible

http://g-node.org/odml
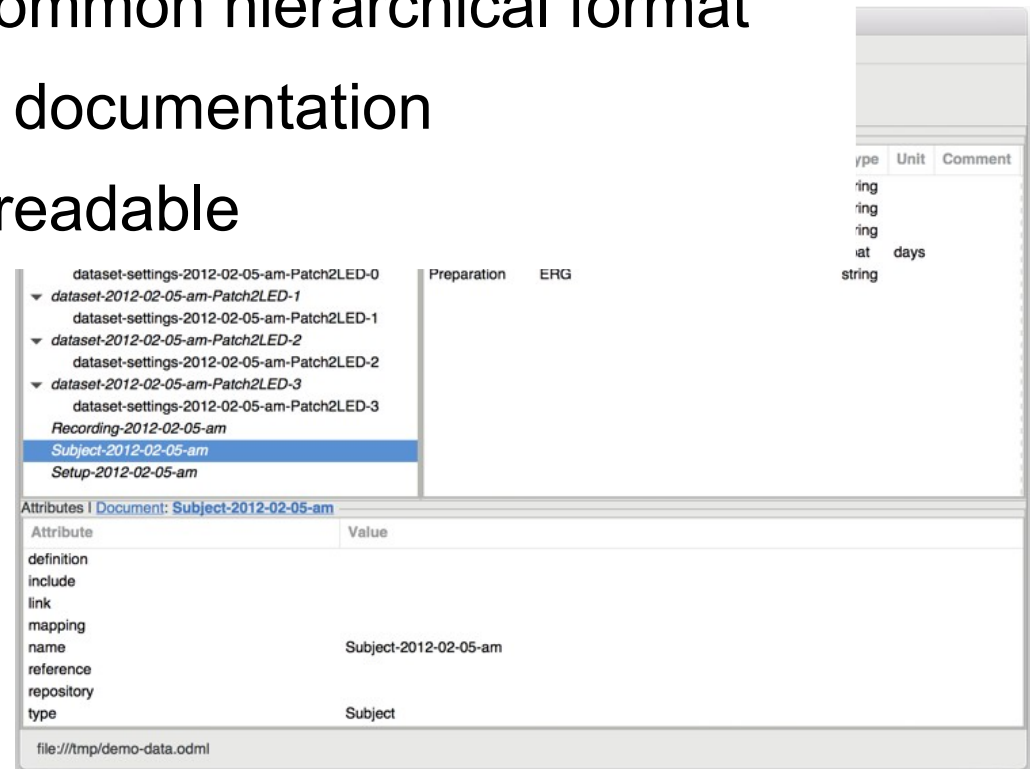
# odML ... templates and terminologies

## Automate metadata collection

- terminologies: odML building blocks
- templates: reusable odML documents

# odMLtables



- odML ↔ table conversion
- odML document filter
- odML files comparison
- command line and GUI

Sprenger et al. (2019) doi: 10.3389/fninf.2019.00062

https://odmltables.readthedocs.io

http://g-node.org/odml

# Get in touch

- ask any question here at the booth

- join our poster presentation

- email us at

    info@g-node.org

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