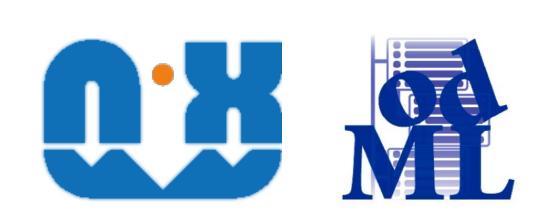


Tools, formats and services for efficient data management, collaboration and reproducibility in neuroscience

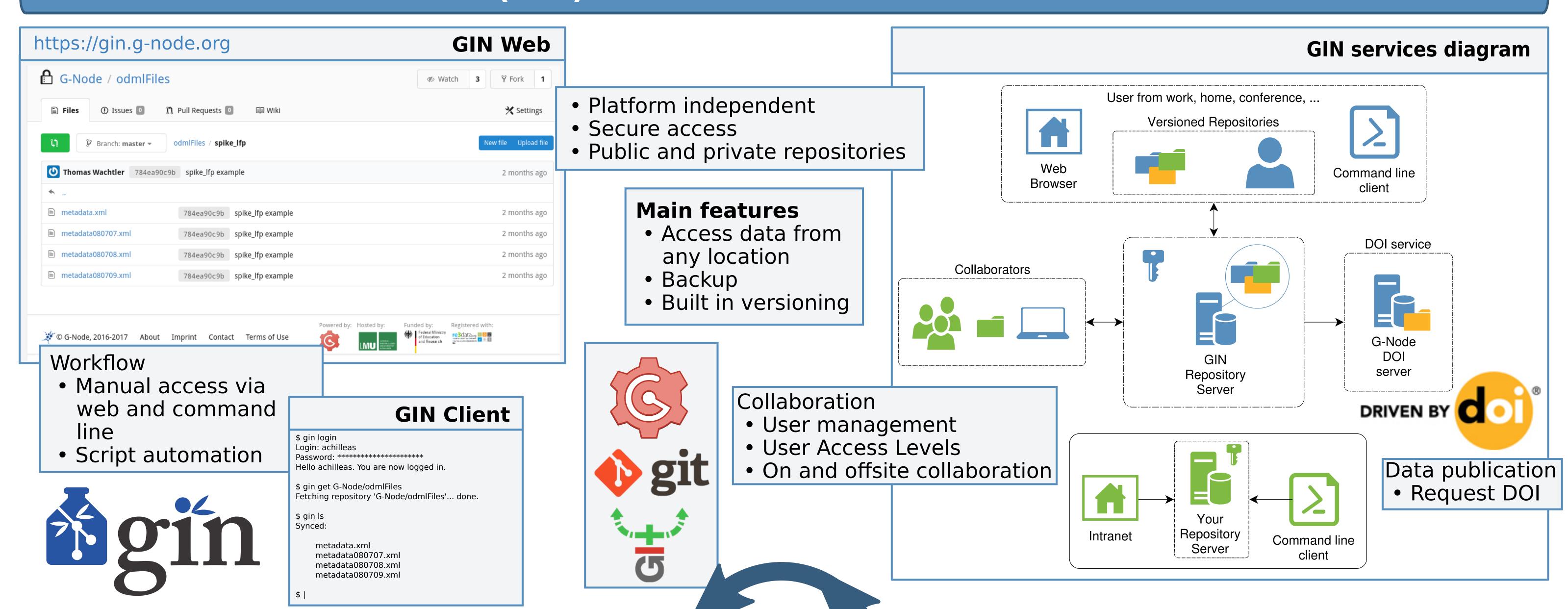


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The G-Node Infrastructure (GIN) Services

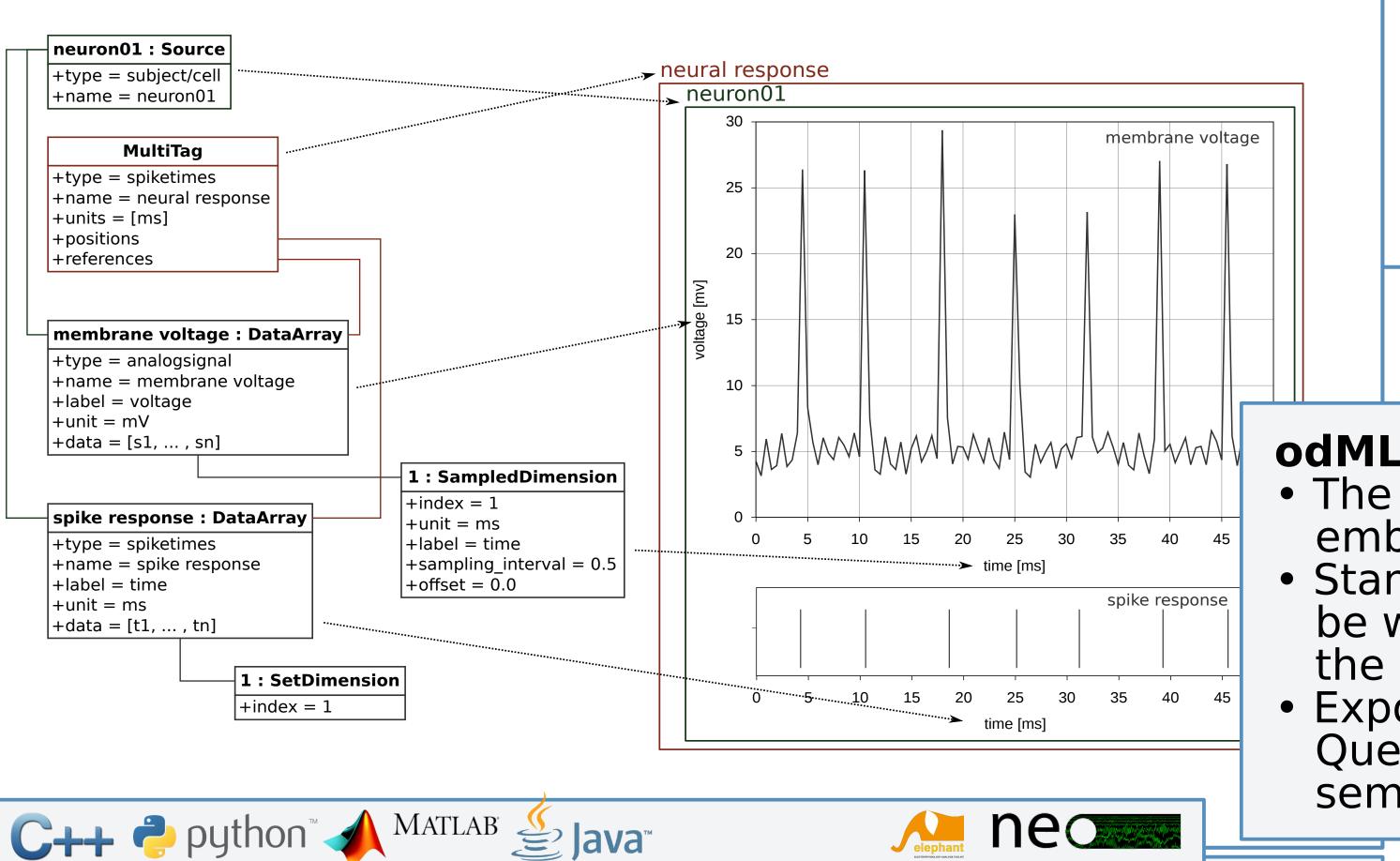


Formats and Data models

The NIX format

- Open data format
- Store data, analysis results, and metadata conveniently in the same file
- Descriptive associations between data, analysis results, and metadata

The NIX data model



- The metadata format embedded in NIX
- Standalone metadata can be written and read using the odML library

+ metadata: Section[]

+ id: String

+ type: String

+ name: String

+ link: Section

+ definition: String + repository: URI

+ sections: Section[] properties: Property[]

Property

Value

+ value: T

+ name: String

+ unit: String

definition: String

values: Value[]

+ uncertainty: double

Section

Export odML data to RDF: Query metadata using semantic web technologies

Terminology 1 → 0..1

odML Metadata format: Schema and GUI

Species

Genotype

Subject-2012-02-05-am

RDF schema for the odML data model

Rh1GAL4.norpA7:UASnorpA/-

hardware-2012-02-05-am

hardware-Miscellaneous-2012-02-05-am

dataset-2012-02-05-am-Patch2LED-0

dataset-2012-02-05-am-Patch2LED-1

dataset-2012-02-05-am-Patch2LED-2

Recording-2012-02-05-am

file:///tmp/demo-data.odml

include

mapping name

hardware-DataAcquisition-2012-02-05-am

dataset-settings-2012-02-05-am-Patch2LED-1

dataset-settings-2012-02-05-am-Patch2LED-2

dataset-settings-2012-02-05-am-Patch2LED-3

Libraries

- Free open source libraries for: C++, Python, Matlab, Java
- NIX IO for Neo: Saving and loading fully supported

Resources

This work was performed in connection with the activities of the HDF5 working group of the INCF Electrophysiology Data Sharing Task Force Supported by BMBF grant 01GQ1302.

https://gin.g-node.org
https://github.com/G-Node/nix
https://github.com/G-Node/python-odml
https://github.com/G-Node/gin-cli
https://github.com/G-Node/gogs
http://neuralensemble.org/neo

W3C RDF





Definition Type Unit Comment

http://neuralensemble.org/elephant

Contact: dev@g-node.org