

STANDARDIZATION OF NEUROIMAGING DATA MANAGEMENT INSIDE SYNAPSY

Online annual 2021 meeting

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WHY?

EXECUTION OF DMP SATISFYING OPEN SCIENCE REQUIREMENTS

- SNSF expects all its funded researchers:
 - to **store the research data** they have worked on and produced during the course of their research work
 - to **share these data** with other researchers, unless they are bound by legal, ethical, copyright, confidentiality or other clauses
 - to **deposit their data and metadata onto existing public repositories** in formats that anyone can find, access and reuse without restriction, conformed with the **Findable Accessible Interoperable Reusable (FAIR) principles**

Art 47 SNSF Funding Regulations and SNSF Open Research Data Policy

ADVANTAGES OF ADOPTING A STANDARD

- [Ease of sharing and reuse](#) - No need to spend a considerable amount of time to understand data organization and adapt code to each researcher or lab.
- [Automated processing pipelines](#) can be built to analyze data
- [Meta-analysis accross datasets](#) become possible

HOW?

KEYS TOWARDS FAIR NEUROIMAGING DATA IN SYNAPSY

- Standard to organize and describe neuroimaging data along with metadata: **Brain Imaging Data Structure (BIDS)** - <https://bids.neuroimaging.io/>
- Distributed data versioning and management system tailored to neuroimaging data: **Datalad** - <https://www.datalad.org/>
- Distributed storage of neuroimaging data accross the different institution servers with access controlled by PIs.

ROAD MAP

Goal in
1 year



Today



ROAD MAP

Goal in
1 year

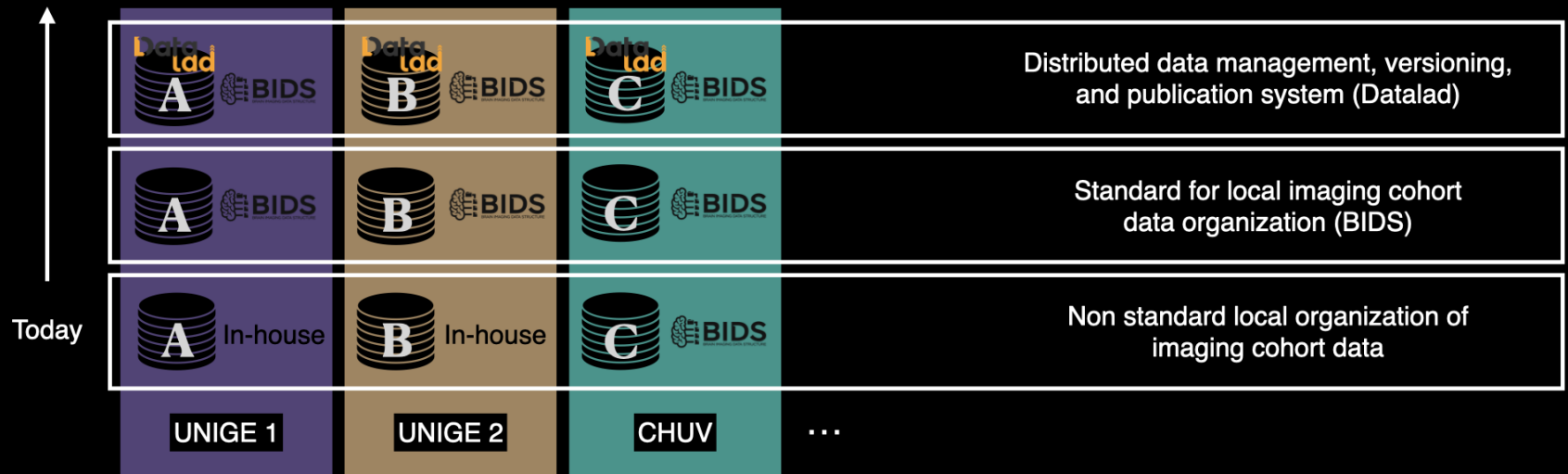


Today

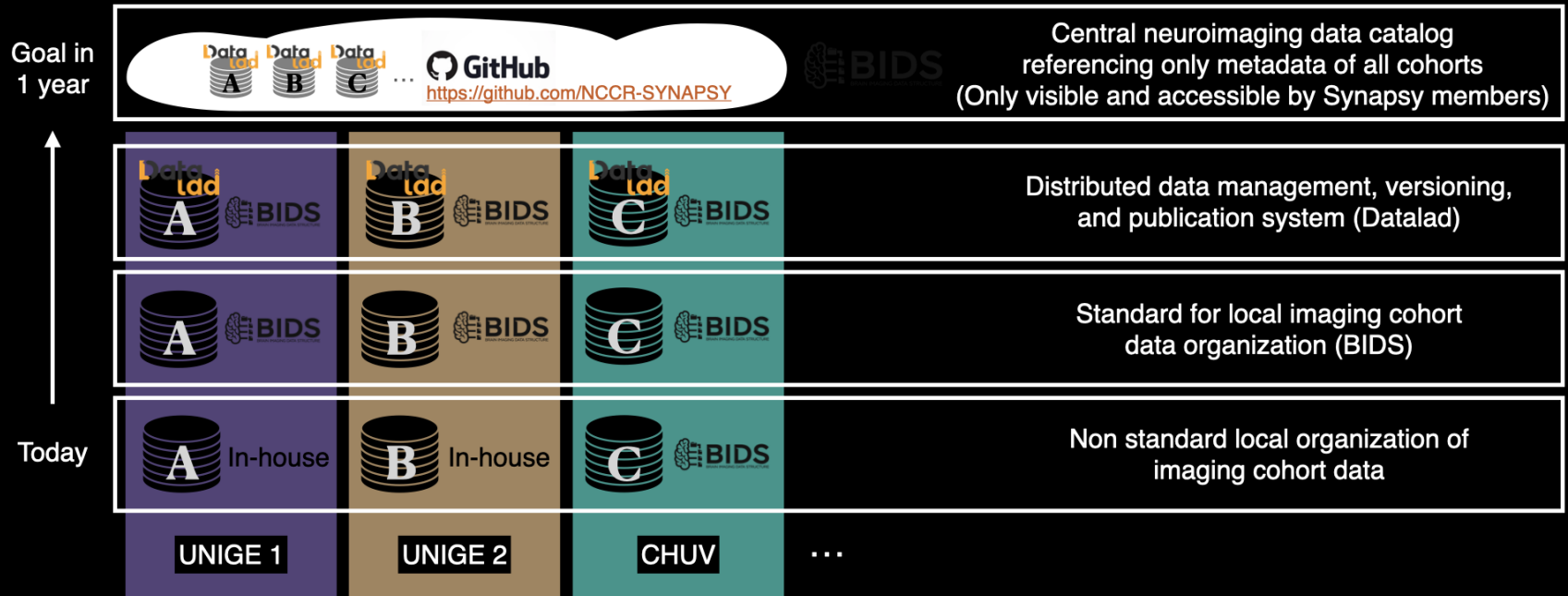


ROAD MAP

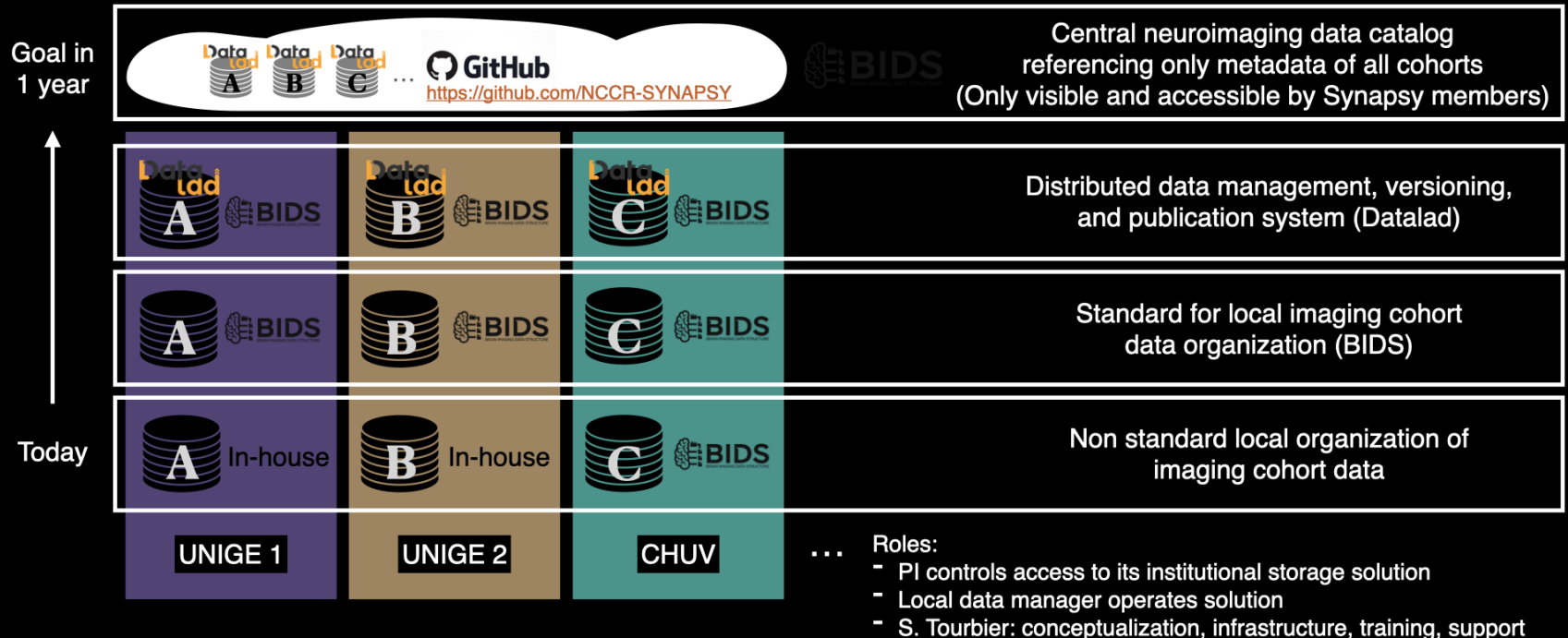
Goal in
1 year



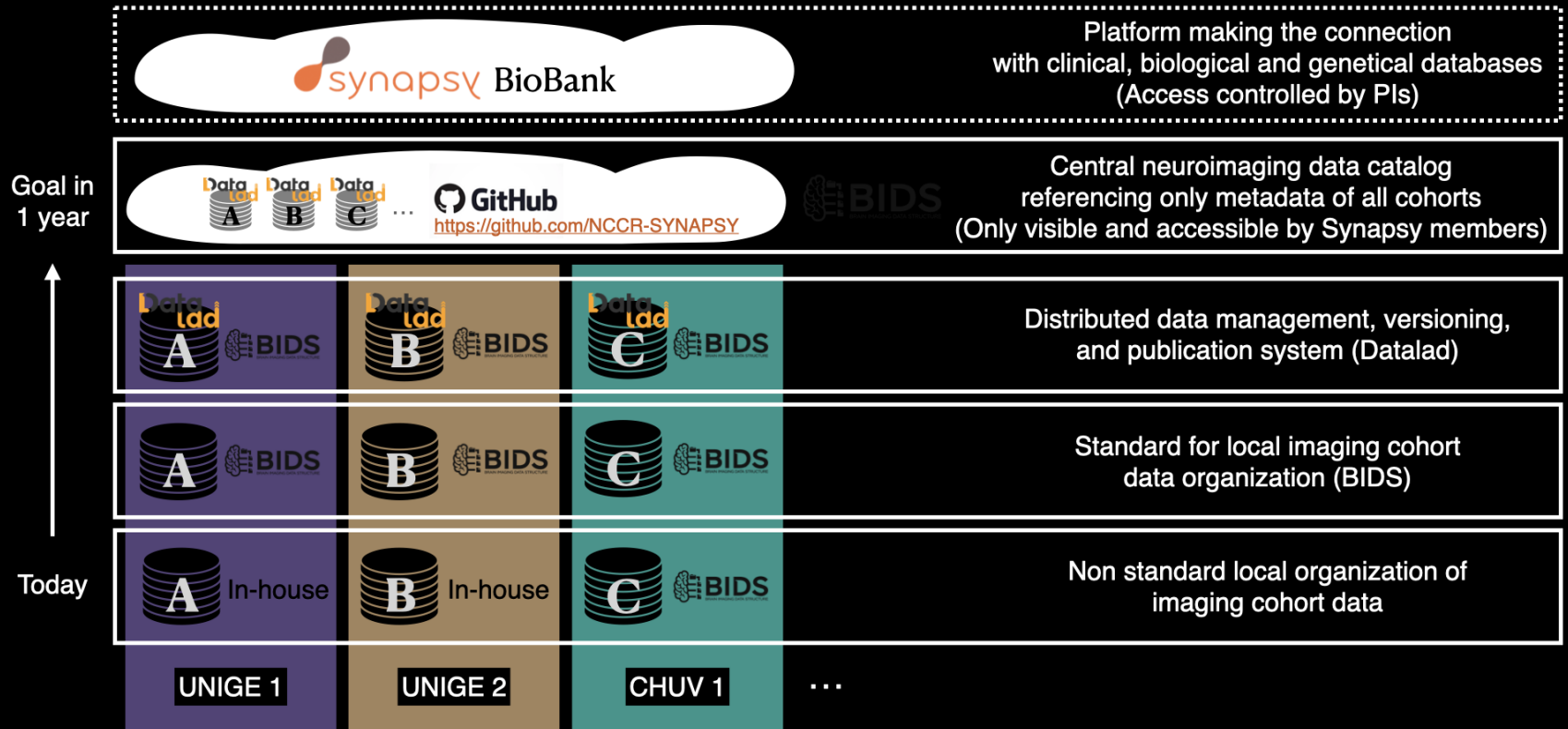
ROAD MAP






ROAD MAP



POTENTIAL FUTURE PERSPECTIVES



PROGRESS

			
Onboard			
MRI / EEG Cohort : Autism PI: M Schaer (C Michel) Data manager: N Kojovic	✓ MRI EEG	—	—
MRI / EEG Cohort : 22q11.2 deletion syndrome PI: S Eliez (C Michel) Data manager: F Delavari	✓ MRI EEG	—	—
MRI / EEG Cohort : Early psychosis PI: K Do / P Conus (P Hagmann, M Murray) Data manager: S Tourbier	✓ MRI EEG	✓ MRI — EEG	—
New onboard			
MRI Cohort : Bipolar disorders PI: Camille Piguet Data manager: To be determined	—	—	—

Not listed but wish to join? Please contact us!
Any MRI or EEG cohort is welcome!

Goal in
1 year

IN A NUTSHELL

In 1 year:

- **Synapsy DMP implemented for neuroimaging cohorts** based on the presented bottom-up approach and in control of each PI
- Facilitate future collaborations between groups
- Enable the analysis of Synapsy neuroimaging cohort with a collection of automated processing pipelines (<https://bids-apps.neuroimaging.io/>)
- Ease the sharing of Synapsy neuroimaging cohorts on open data repositories to fully satisfy SNSF FAIR research data requirements

THANK YOU FOR YOUR ATTENTION!

Slides could be viewed at

<https://sebastientourbier.github.io/synapsy-annual-meeting-04-21/>