

# Serving Neuroscientific Studies Using Globus at the Massachusetts General Hospital

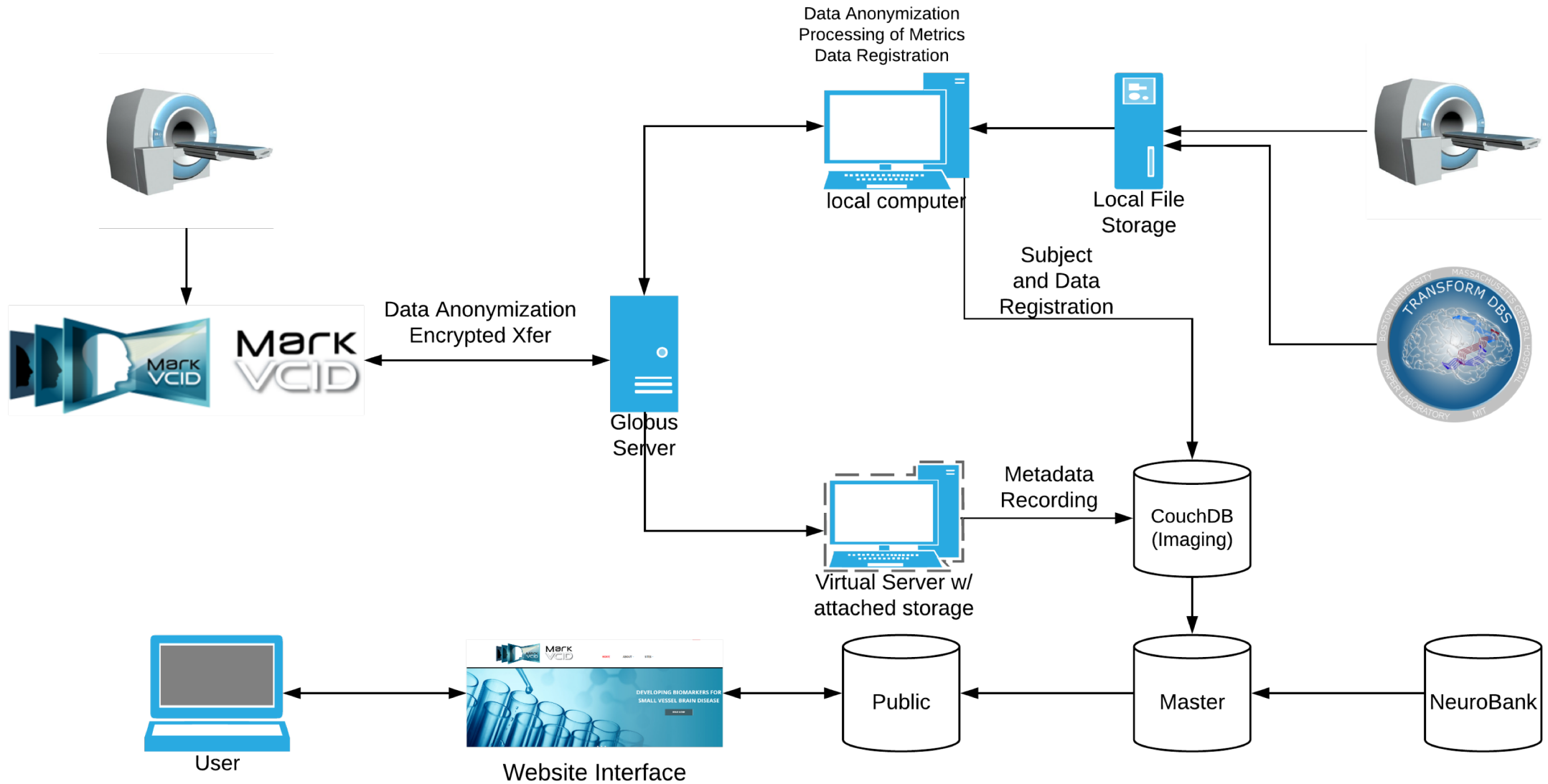
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# Globus Use Cases

- ▶ Multiple sites (SIGNAL)
- ▶ Large data sets (TRANSFORM-DBS)
- ▶ Constant data exchange (MarkVCID)

# Infrastructure



# SIGNAL



- ▶ Study drug efficacy in rare disease patient population.
- ▶ 21 sites, each with several patients enrolled
- ▶ Magnetic Resonance Imaging (MRI) and fluorodeoxyglucose (FDG)-positron emission tomography (FDG-PET)
- ▶ Mixture of research and clinical sites

# SIGNAL

- ▶ Study efficacy of drug on rare disease patient population.
- ▶ 21 sites, each with several patients enrolled

Tracking of transfer outcome

Reporting when data uploaded

Monthly reports for reconciliation with clinical data

# SIGNAL

- ▶ Mixture of research and clinical sites

Ease of installation and use (▶)

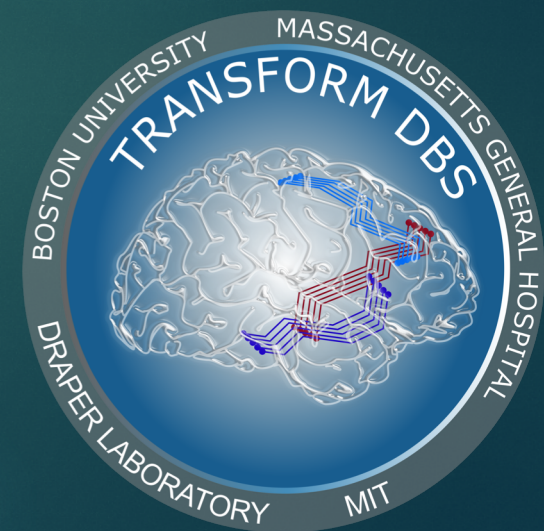
Deal with hospital and institution firewalls

Reliability

# TRANSFORM-DBS

(<https://transformdbs.partners.org/>)

- ▶ Study to construct a closed-loop deep-brain stimulation system
- ▶ MRI, Magnetoencephalography (MEG) and electrophysiology data
- ▶ Data all originates within MGH
- ▶ Data shared with public



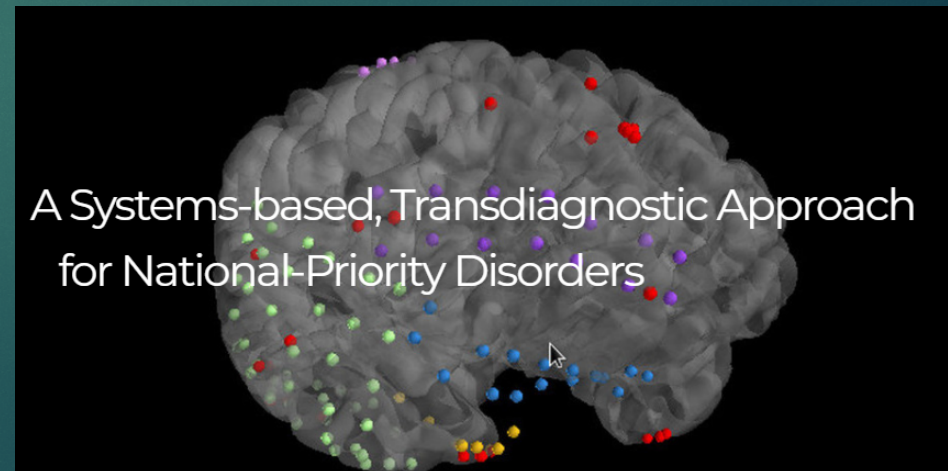
# TRANSFORM-DBS

- ▶ MRI, Magnetoencephalography (MEG) and electrophysiology data
- ▶ Data shared with public

Users have the potential to download TB of data  
Need way to track downloads

- ▶ Data all originates from MGH

Use Globus to transfer data internally





# MarkVCID

(<https://markvcid.partners.org/>)

- ▶ Consortium to discover and validate biomarkers for Vascular Cognitive Impairment and Dementia (VCID)
- ▶ MRI (**stored**), clinical data (**stored**), fluid samples (**tracked**); Each site collects different data
- ▶ Data exchanged between sites and shared with public



# MarkVCID

- ▶ MRI (**stored**), clinical data (**stored**), fluid samples (**tracked**); Each site collects different data

Sites have different IRB rules for distribution of data → encryption

- ▶ **Data exchanged between sites** and shared with public

Need a way to move data quickly w/o involving database



# Unique Requirements

- ▶ Ability to add customized tracking and reporting tools
- ▶ Handle potentially large data collections
- ▶ Ease of use for non-expert users
- ▶ Ability to troubleshoot without involving institution IT
- ▶ Ability to encrypt data
- ▶ Enable the exchange of data without involving the database