TVB-EBRAINS

GDPR compliant EBRAINS Cloud Simulator

25 November 2021

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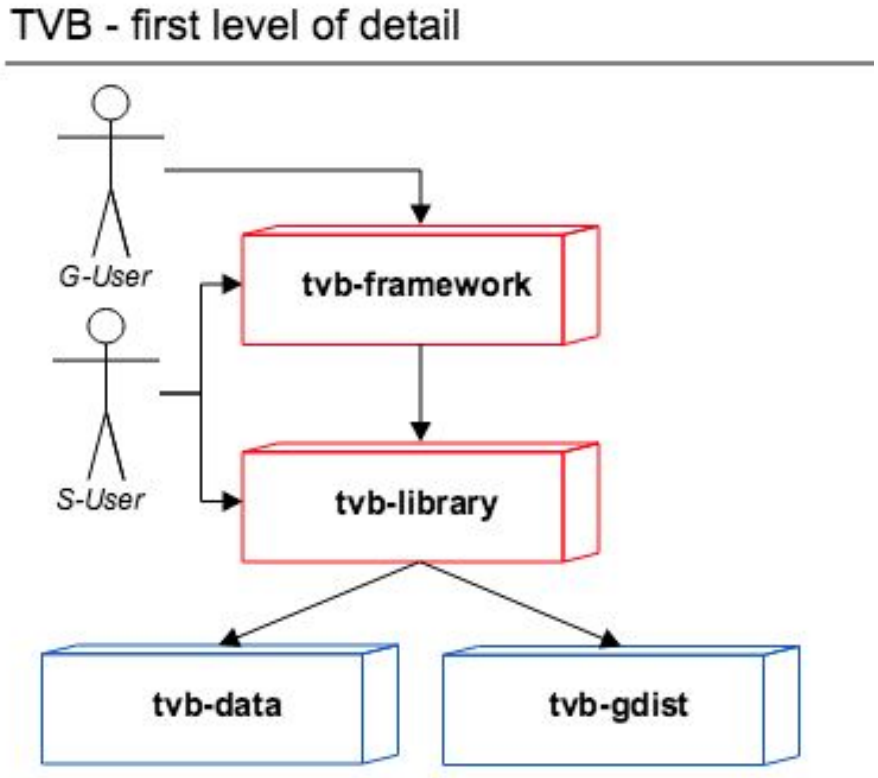
TVB PACKAGES

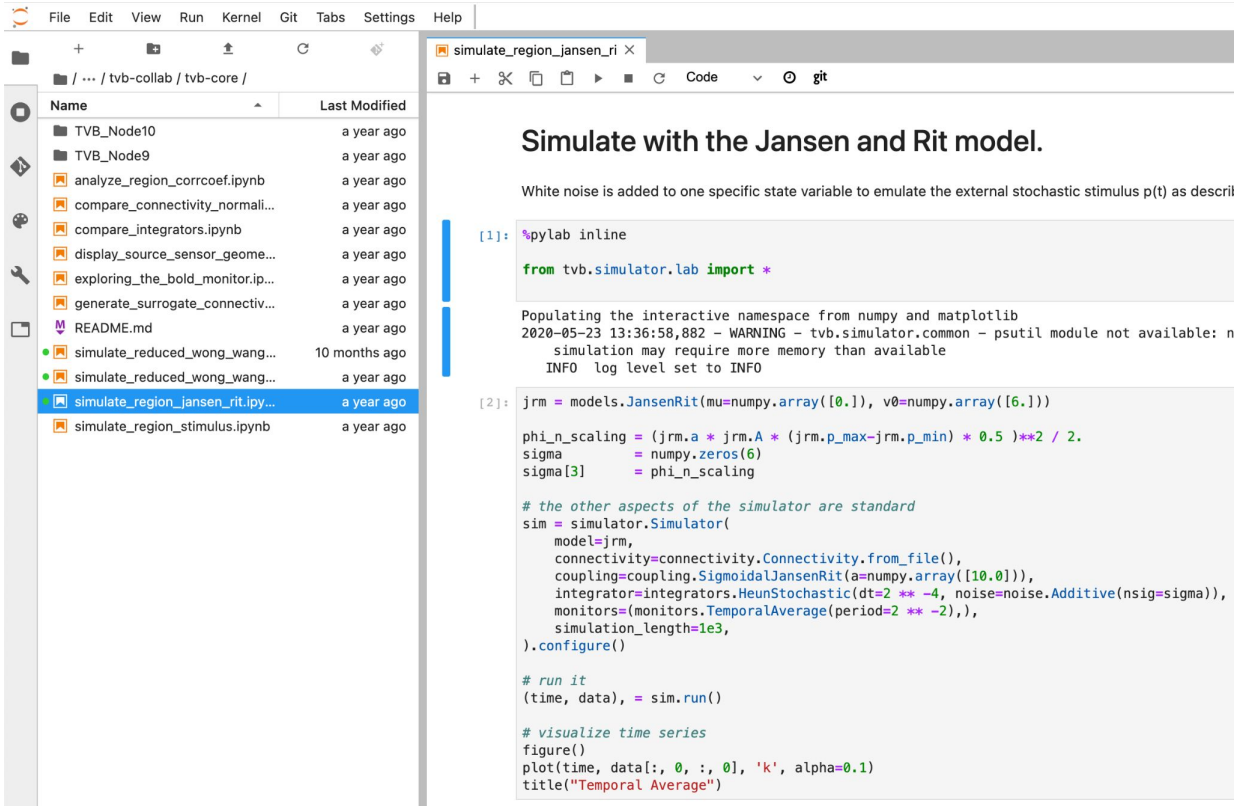
TVB - Core Packages



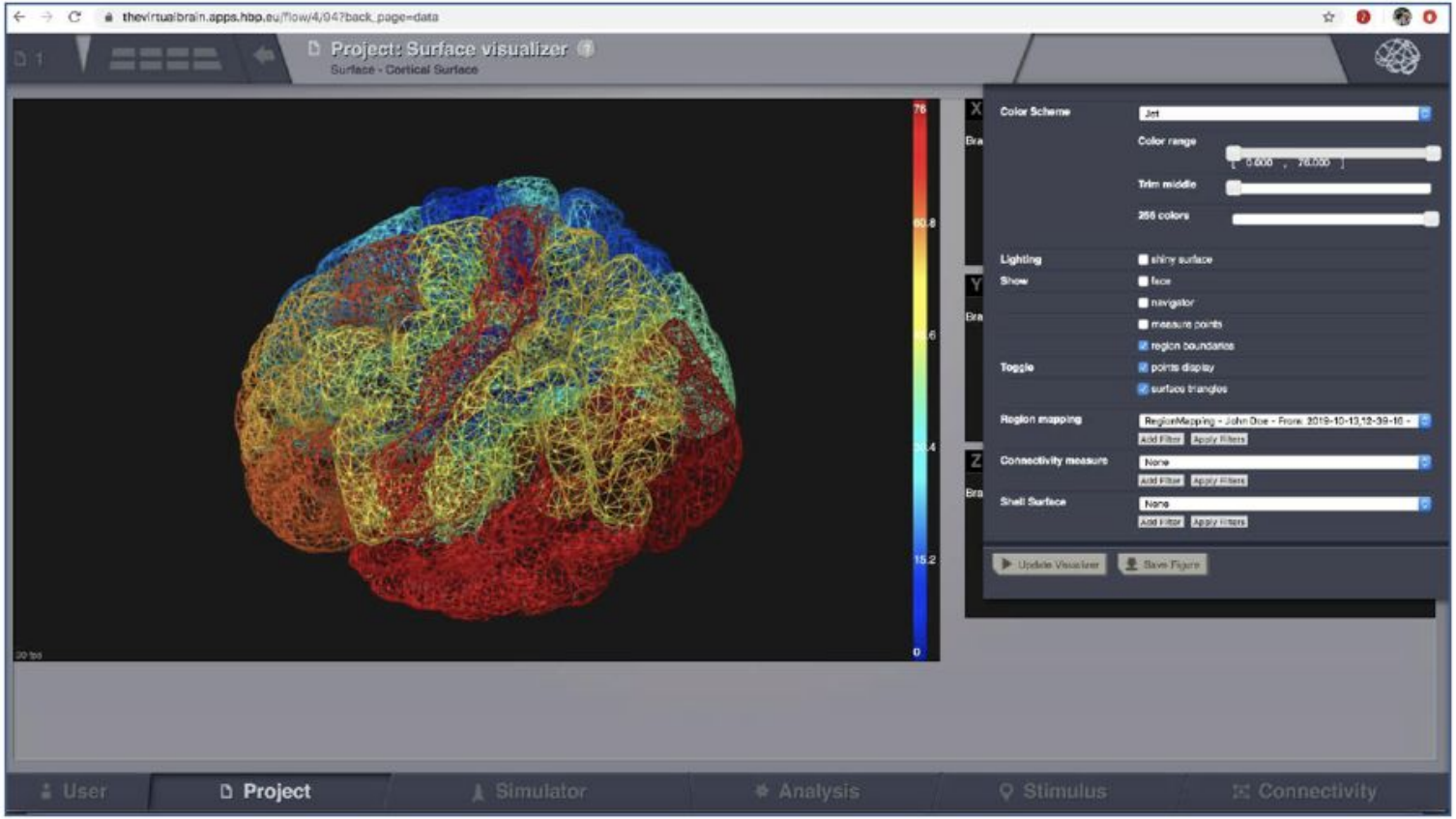
TVB - EBRAINS

Tvb-library on lab.ebrains.eu

Spack packaging



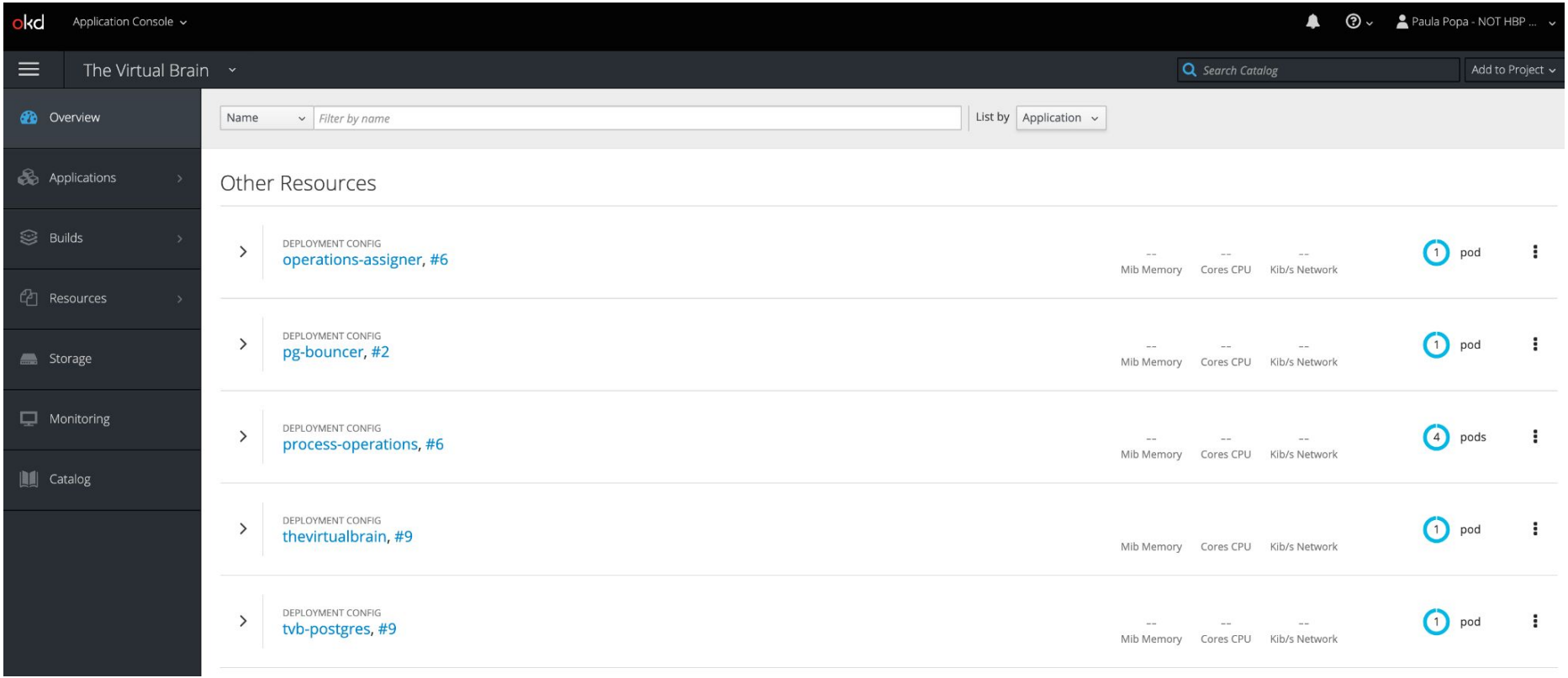
TVB Web App


thevirtualbrain.apps.hbp.eu/flow/4/94?back_page=data
Project: Surface visualizer
Surface - Cortical Surface
Color Scheme
Jet
Color range
Trim middle
255 colors
Lighting
shiny surface
Show
face
navigator
measure points
region boundaries
Toggle
points display
surface triangles
Region mapping
Connectivity measure
None
Shell Surface
None
Update Visualizer
Save Figure
User
Project
Simulator
Analysis
Stimulus
Connectivity

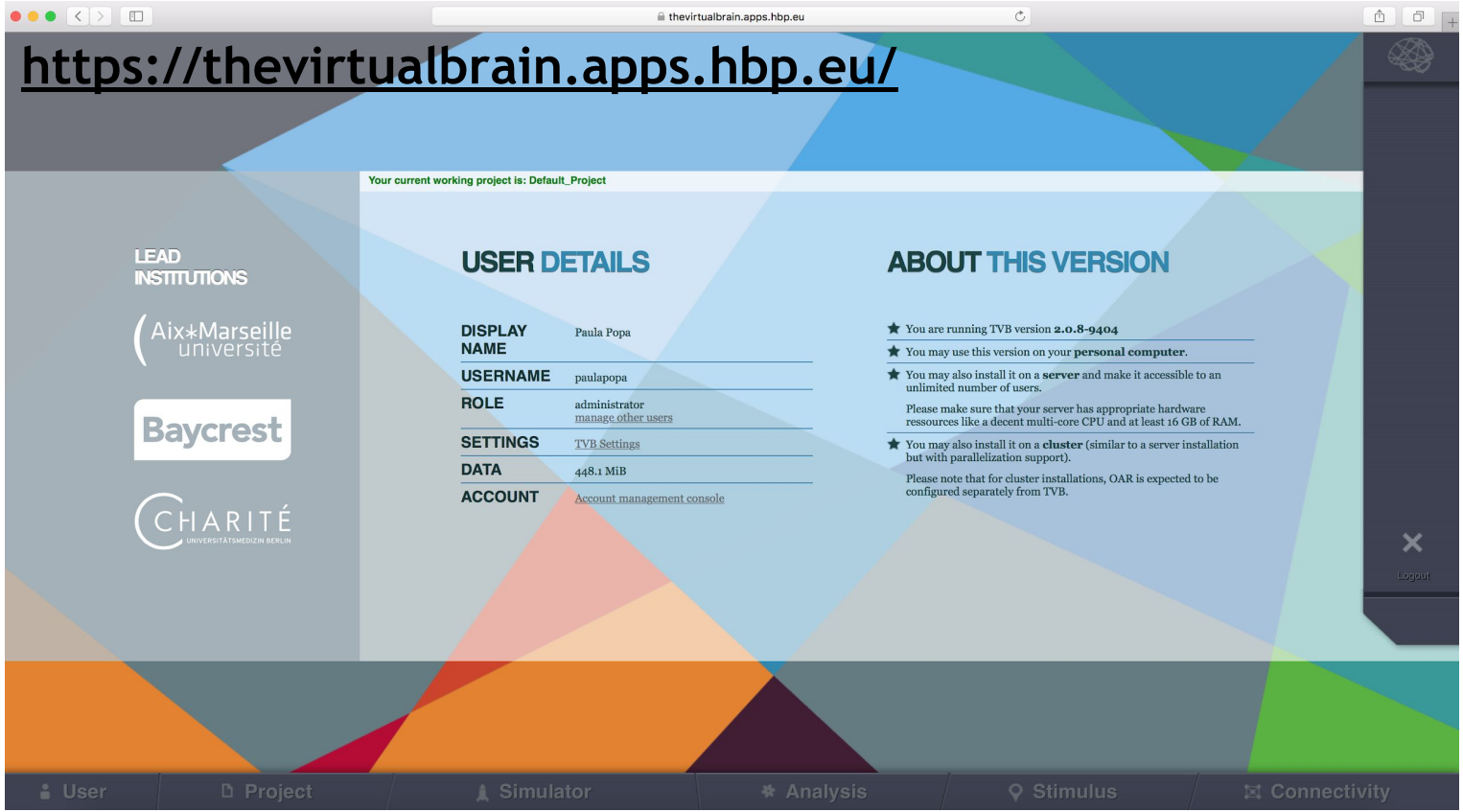
Objectives TVB Web GUI

- reliable and scalable deployment of TVB web GUI
- respect GDPR, as we are dealing often in TVB with personal data
- possibility to distribute jobs on HPC backed in a secure manner

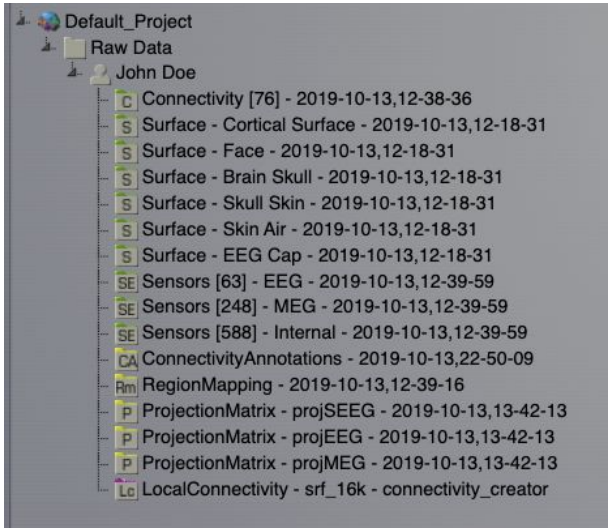
TVB - OpenShift

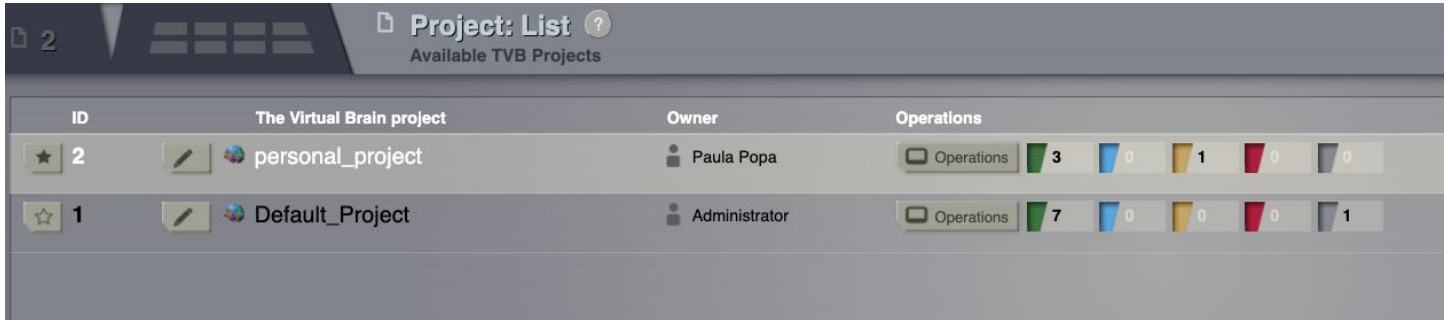


Authorization with EBRAINS IAM

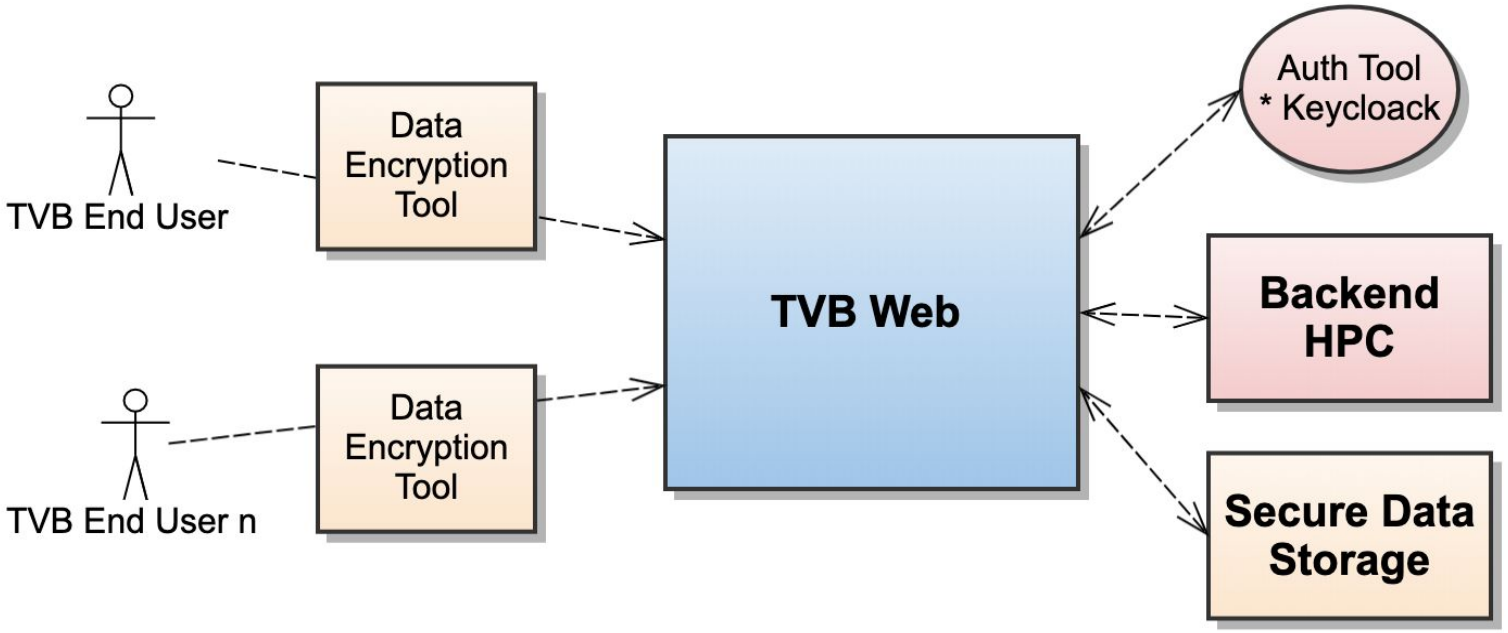


Projects

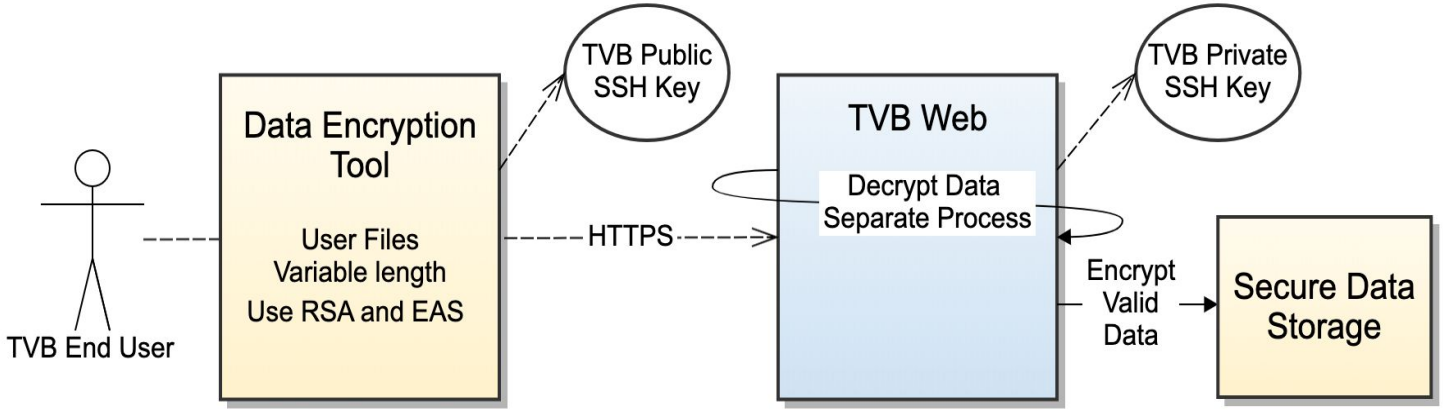

Default_Project
Raw Data
John Doe
Connectivity [76] - 2019-10-13,12-38-36
Surface - Cortical Surface - 2019-10-13,12-18-31
Surface - Face - 2019-10-13,12-18-31
Surface - Brain Skull - 2019-10-13,12-18-31
Surface - Skull Skin - 2019-10-13,12-18-31
Surface - Skin Air - 2019-10-13,12-18-31
Surface - EEG Cap - 2019-10-13,12-18-31
Sensors [63] - EEG - 2019-10-13,12-39-59
Sensors [248] - MEG - 2019-10-13,12-39-59
Sensors [588] - Internal - 2019-10-13,12-39-59
ConnectivityAnnotations - 2019-10-13,22-50-09
RegionMapping - 2019-10-13,12-39-16
ProjectionMatrix - projSEEG - 2019-10-13,13-42-13
ProjectionMatrix - projEEG - 2019-10-13,13-42-13
ProjectionMatrix - projMEG - 2019-10-13,13-42-13
LocalConnectivity - srf_16k - connectivity_creator


2
Project: List
Available TVB Projects
ID
The Virtual Brain project
Owner
Operations
2
personal_project
Paula Popa
Operations
3
0
1
0
0
1
Default_Project
Administrator
Operations
7
0
0
0
1

Architecture



Upload encrypted data

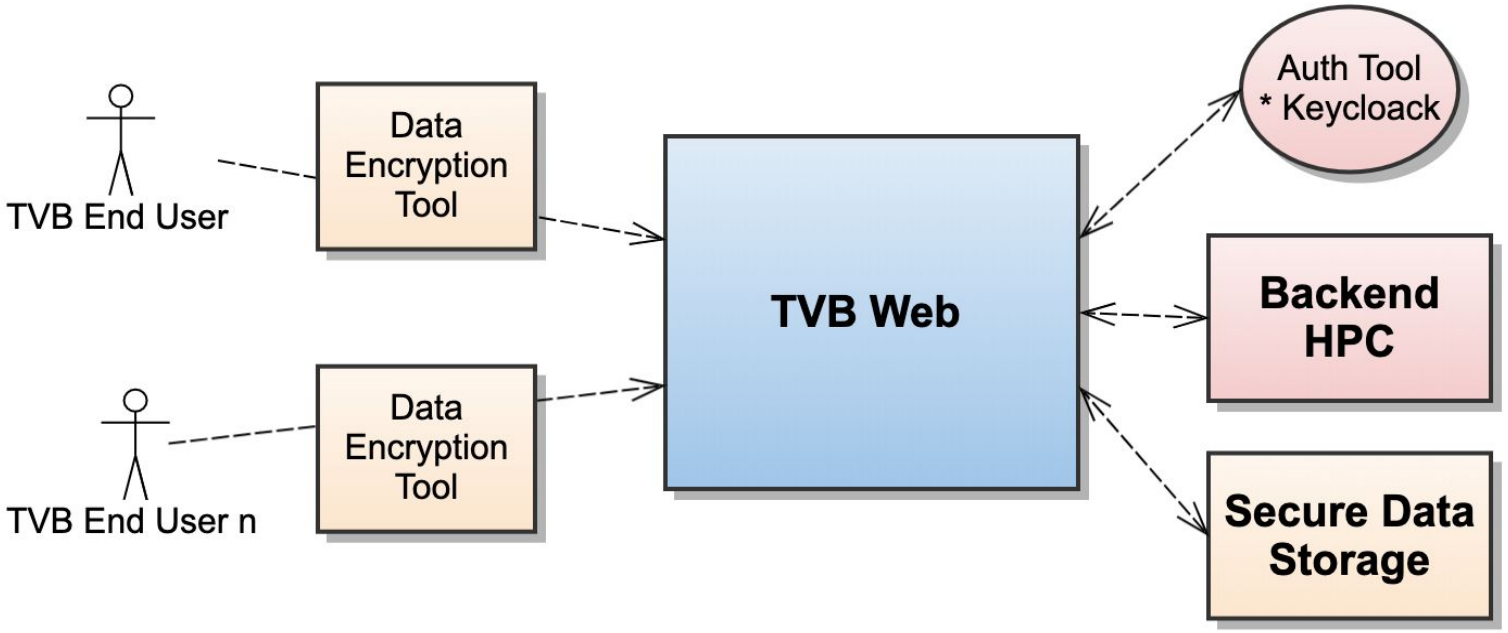


Upload encrypted data

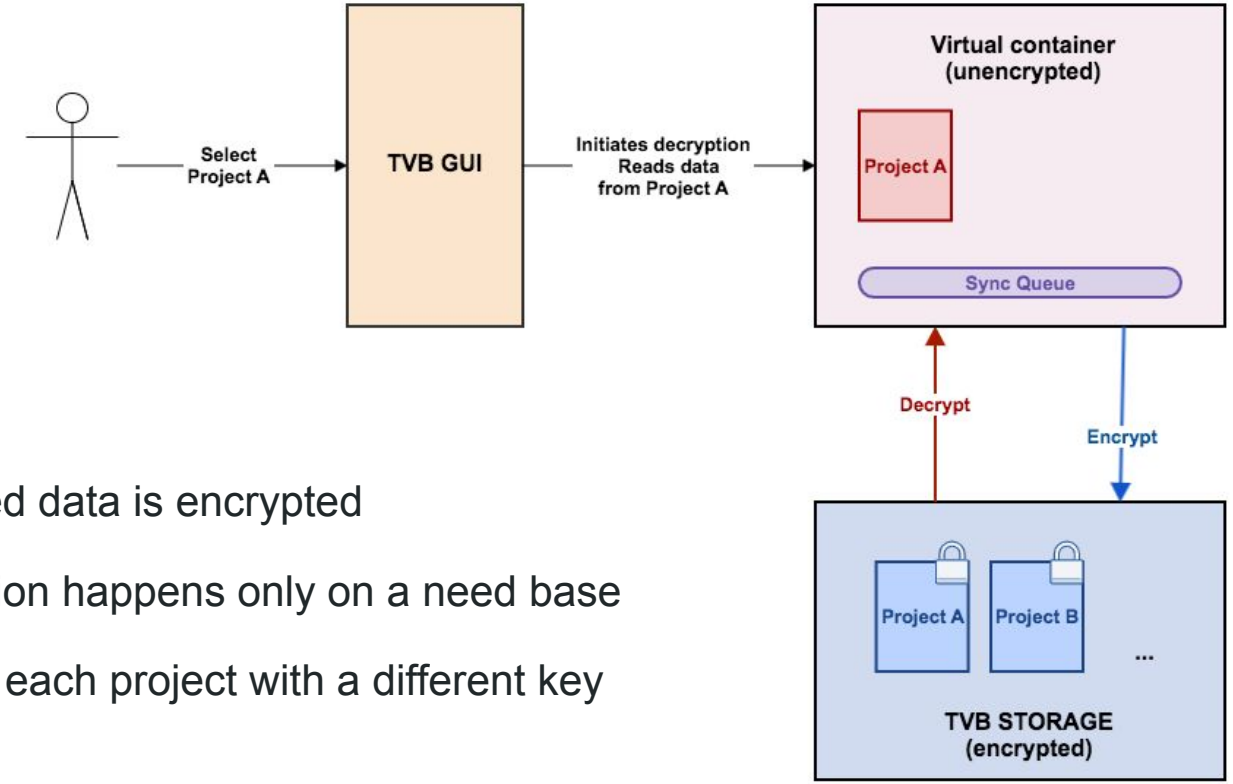
Public key:
https://www.thevirtualbrain.org/tvb/bin/upload_encryption_public_key

Procedure for encrypting data before uploading in TVB Web GUI:
http://nbviewer.ipython.org/url/docs.thevirtualbrain.org/demos/encrypt_data.ipynb

Architecture

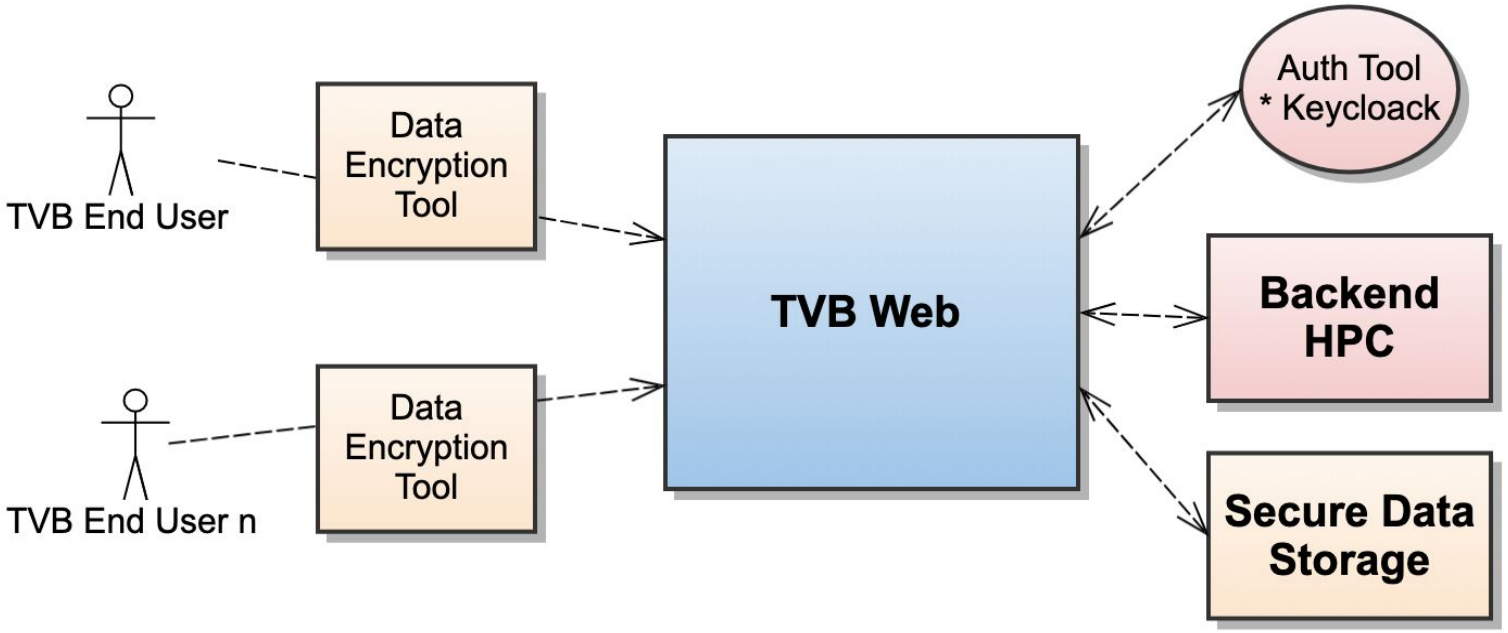


Encrypted TVB storage

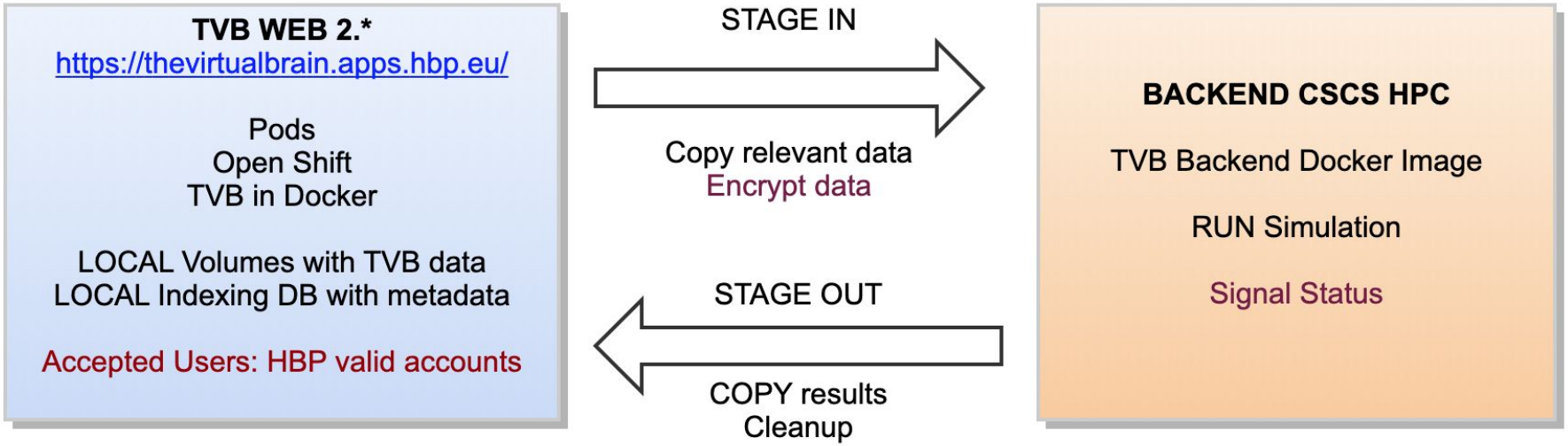


- persisted data is encrypted
- decryption happens only on a need base
- encrypt each project with a different key

Architecture



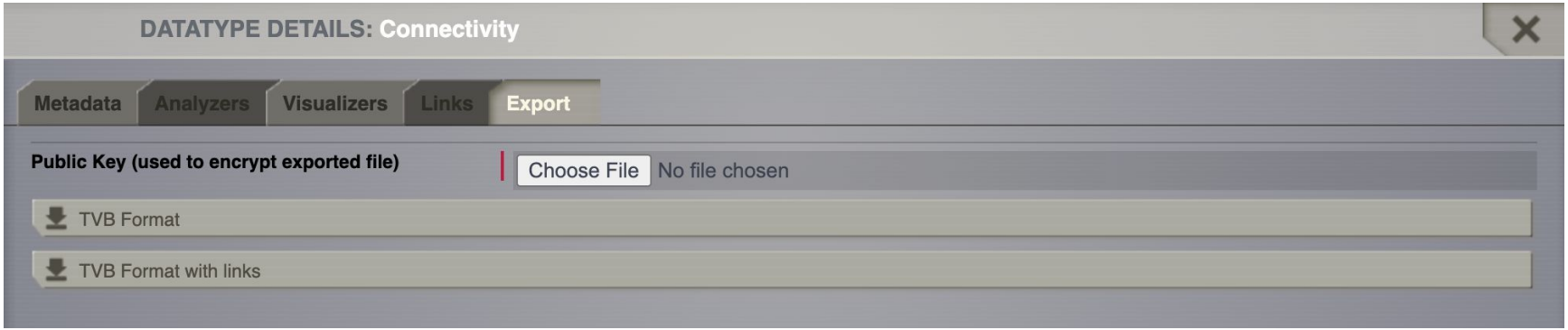
TVB - HPC Backend



TVB PLANS

Recent work

- Encryption at export

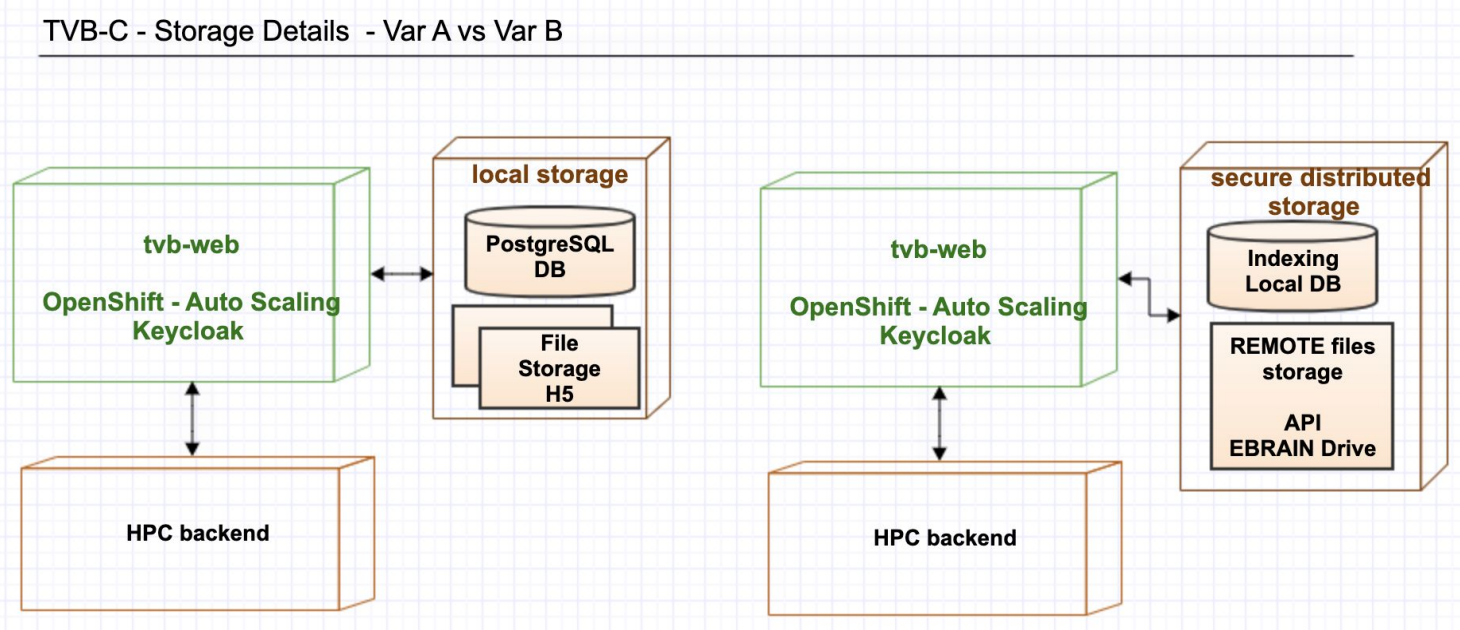


- Deploy at JSC Openshift:
  - **https://thevirtualbrain.apps.jsc.hbp.eu**
- Common landing page for both CSCS and JSC Openshift installations
  - https://tvb.apps.hbp.eu/

Plans

- Common storage for both CSCS and JSC Openshift installations (detached storage, EBRAINS Drive API)
  - Longer term
- Access to Preprocessing Pipeline via TVB Web GUI (setup, launch and monitoring)

Detached storage



docs.thevirtualbrain.org

thevirtualbrain.apps.hbp.eu