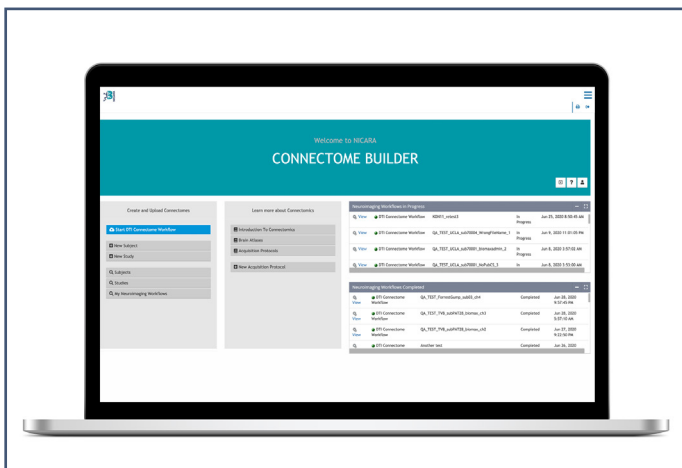# NICARA™. Connectome Builder

Automated Connectome Computation

The Connectome Builder of NICARA™ helps you extract brain connectivity from raw MRI imaging data in a fully automated fashion.

NICARA™ Connectome Builder Landing Page

Automated standardized workflows allow easy usage and high reproducibility. The NICARA™ Connectome Builder provides you with fully automated documentation of every processing step from initial image quality control and preprocessing to DTI tractography and morphometric measures.
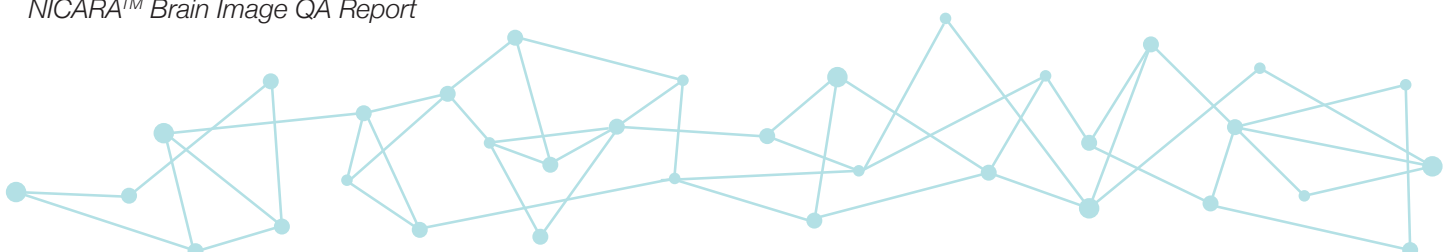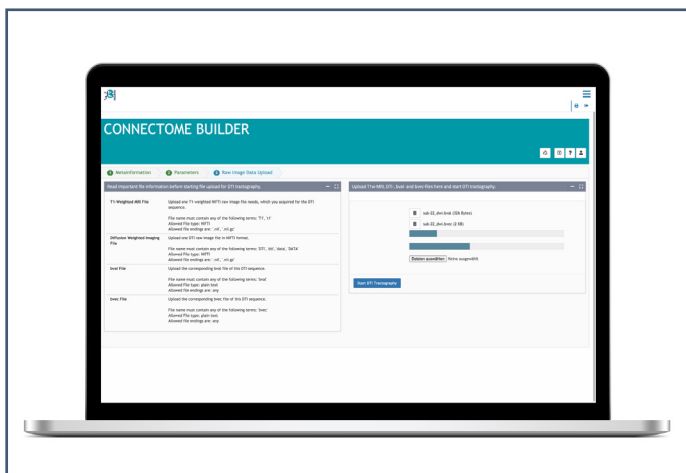

NICARA™ Brain Image QA Report

Integrated Components

> Surface-based full brain probabilistic structural connectivity analysis for healthy controls as well as patients' images

> A module to execute standardized preprocessing and processing workflows according to HCP

> Transformation of fiber tracts to MNI152 standard space

> Automatic anonymization of images by brain extraction

> Zero-footprint image processing on Biomax hardware using fast and parallel GPU-based computation

> Future components:

  - Surface-based functional connectivity analysis by time series correlations

  - Complete morphometry of gray and white matter from conventional MRI scans

Required Input

> T1w/T2w, DWI, bvec, bval raw image files derived from adequate MRI acquisition protocols

> File format: NIfTI; DICOM upon request

> A minimum of user choices for easy usage

> Desired brain atlas (e.g., HCP MMP 1.0 + subcortical Harvard/Oxford atlas; more atlases upon request)

> Desired resolution [up to 100mio. streamlines]

> Pre-selected and configured tools for optimal image preprocessing (Eddy correction, Orientation, Top up)

NICARA™ Data Upload and Processing Wizard

Generated Output

> Quality control for image registration and segmentation with easily interpretable ratings

> Full brain probabilistic tractography to be visualized and managed by Connectome Browser

> Exporting of full brain tractography as tck-file for further external processing

> Documentation of pre- and processing workflow and metadata

About NICARA™

NICARA™ is a novel and unique software solution for everyone working with brain data. With it, dealing with multimodal brain data becomes easy and straightforward; it reveals new insights into the brain as never before.

NICARA™ provides our customers with various modules for building up, browsing, comparing, analyzing and editing large imaging data volumes.

Building on the Connectome Browser as a starting point, further modules can be licensed alone or in combination with any other software module of the NICARA™ environment.

Get in touch with our experts for a live demo of NICARA™ and receive your individual offer for an attractive bundle of software modules matching your needs. Organize imaging data on one platform with help of an institution-wide NICARA™ account with adjustable access and user rights management for separate projects.

*NICARA™. **N**euro**I**maging-based **C**onnectome **A**ssessment in **R**esearch & **A**pplication*