MS-CONNECT

Towards a clinical decision support system for multiple sclerosis

The project goal is to develop MS-CONNECT, a bioinformatics platform to support clinical decision making in neurology. MS-CONNECT allows the in-depth analysis of changes in neural 'wiring' in the brain (connectomics) (Fig. 1). It is based on Biomax' existing NeuroXM platform, that offers secure patient data management and analysis (artificial intelligence) of brain data.

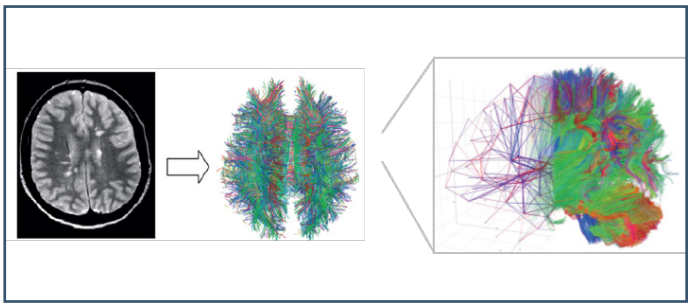

Fig. 1: The connectome: A map of all neuronal connections in the brain

Reorganization of brain connections is a common characteristic of many brain diseases, including Multiple Sclerosis (MS). Current diagnosis of brain diseases relies on behavioral and neurophysiological testing in combination with structural brain imaging, using e.g. CT and MRI. These readouts alone are insufficient for clinical decision making, as they are not able to detect changes in brain connectivity.

MS-CONNECT uses big data analytics to integrate clinical data with imaging data from diffusion tensor imaging (DTI), functional MRI (fMRI) and magnetencephalography (MEG) to create a virtual wiring diagram of all connections in the brain (the connectome) (Fig. 2, 3). The use of connectomics in clinical neuroscience has enormous potential in improving patient and disease characterization, optimizing treatment efficacy and prediction of disease progression. Disruptive research initiatives, like the 'Human Brain Project', drive this new era in neuroscience. Still, mainly due to the high complexity and large volumes of data, commercial tools to implement connectomics into clinical practice are lacking.

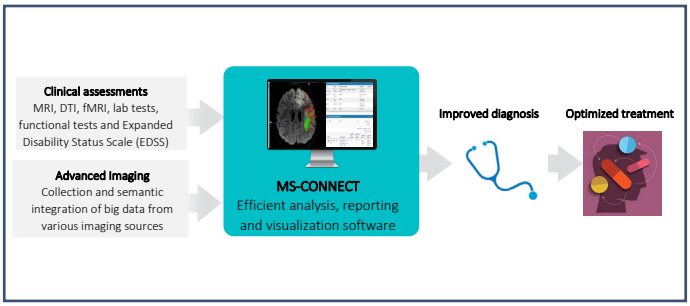

Fig. 2: Clinical workflow for optimized diagnosis, monitoring of disease progression and treatment upon integration of MS-CONNECT into clinical practice.

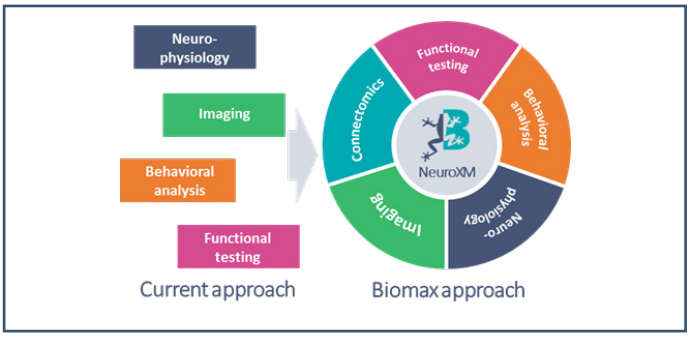

Fig. 3: The MS-CONNECT platform integrates traditional clinical data and connectomics into one comprehensive solution.

Biomax Informatics AG
Robert-Koch-Str. 2
82152 Planegg, Germany
info@biomax.com

Contact:
+49 89 895574-0 (DE)
+44 7832 965 326 (UK)
+ 1 608 636 2222 (US)