97

European Network for Brain Imaging of Tumours (ENBIT)

Cyril R Pernet[1], David Rodriguez[1], Clara Moreau[2], Daniele Marinazzo[3], Anders Eklund[4]

1 Centre for Clinical Brain Sciences, Edinburgh Imaging, University of Edinburgh, UK
2 University of Montreal & Montreal Neurological Institute, Montreal, Canada
3 Faculty of Psychological and Educational Sciences, Ghent University, Belgium
4 Department of Biomedical Engineering & Department of Computer and Information Science, Linköping University, Sweden

Abstract

There is evidence that sharing complex imaging data increases the scale of scientific studies performed, recruiting scientists from a broad range of disciplines (Milham et al. 2018). A large number of repositories (e.g. 1000 functional connectomes project, human connectome project) share neuroimaging data (e.g. structural MRI, functional MRI, diffusion MRI) from healthy controls. A smaller number of repositories (e.g. ADNI, ABIDE, PPMI) share neuroimaging data from controls as well as diseased subjects. However, there are few repositories that share neuroimaging data from brain tumour patients. One exception is the BraTS dataset, but it only shares structural MR images (T1, T1Gd, T2, FLAIR). Despite success in general cancer therapy, patients with brain tumours have very low survival rates. To improve clinical outcomes, we have launched ENBIT supporting any advanced brain imaging (MRI, MEG) in the hope to engage the community in solving challenges associated with treatments; www.enbit.ac.uk

The network

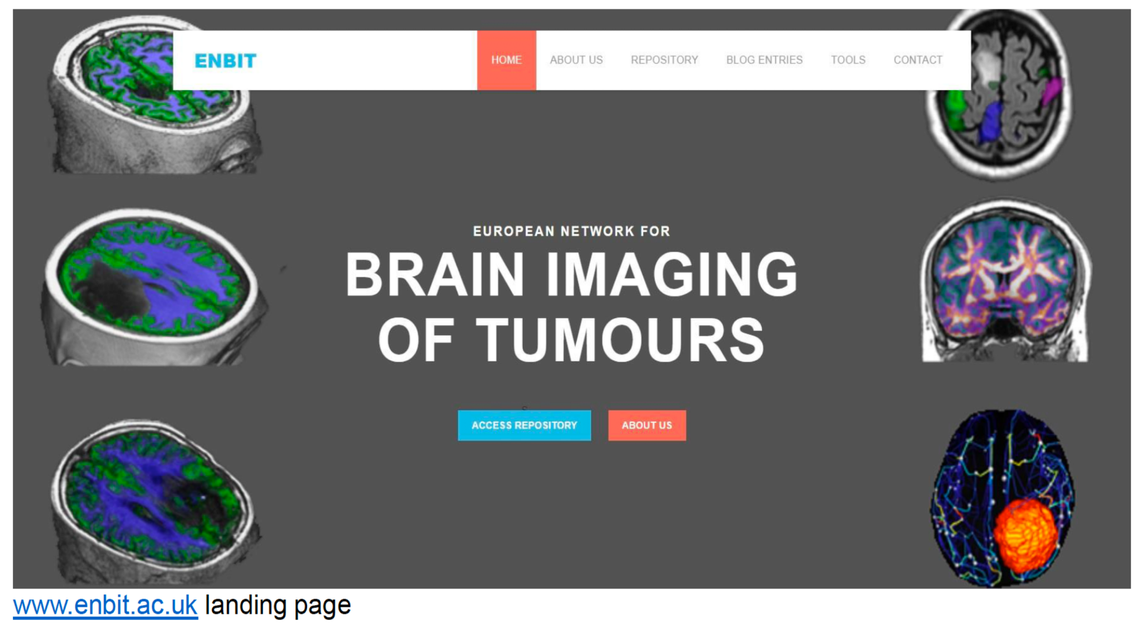
The European network consists of Cyril Pernet (UK), Linda Douw (Netherlands), Daniele Marinazzo (Belgium), Franck-Emmanuel Roux (France), Christoph Stippich (Switzerland) and Anders Eklund (Sweden).

Acknowledgement

INCF is acknowledged for seed funding this initiative.

Sharing data

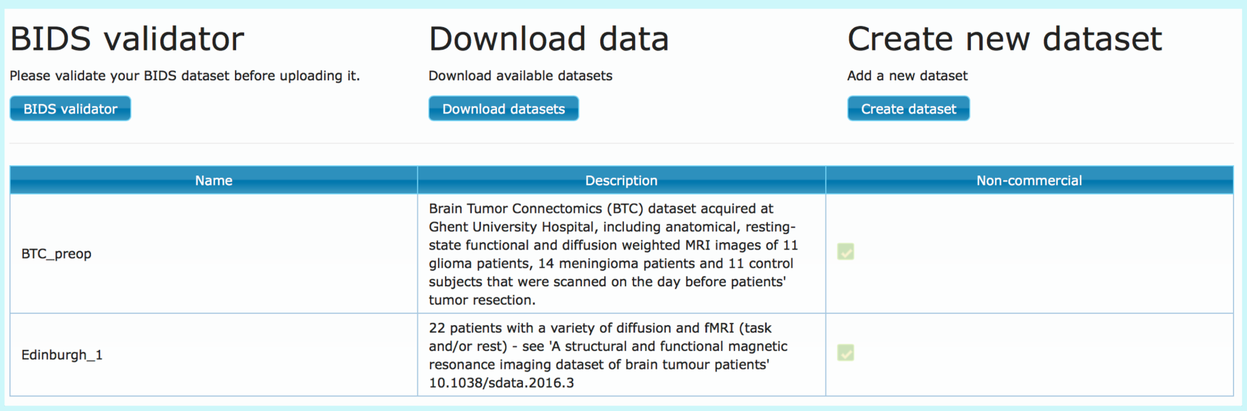
- Upload anonymized data in the brain imaging data structure format (BIDS, Gorgolewski et al., 2016) to facilitate data analysis and reproducibility. A BIDS validator verifies that requirements are met, http://bids.neuroimaging.io/
- To link imaging and genetic data, and describe what genetic information is available, we developed BIDS BEP018: https://tinyurl.com/bids-genetics
- To specify metadata associated with the disease, BIDS brain tumours is also being developed: https://tinyurl.com/bids-tumours



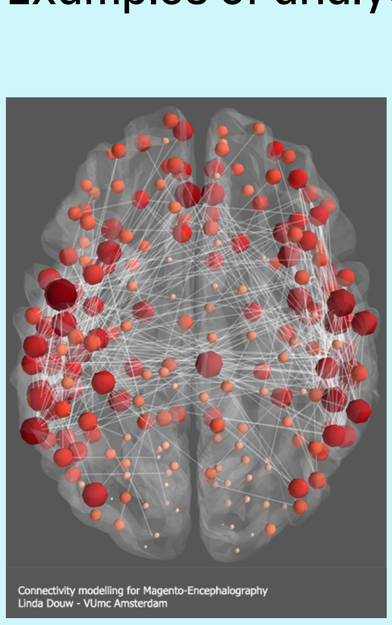
www.enbit.ac.uk landing page

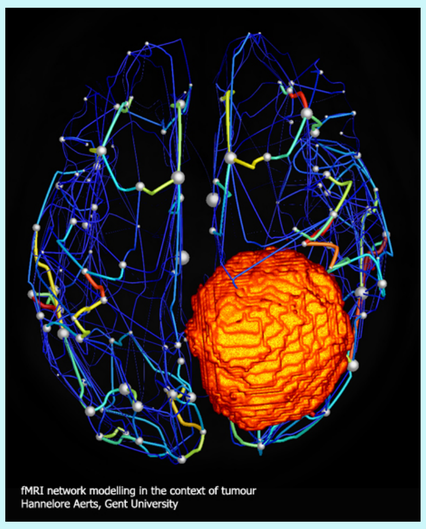
Downloading data

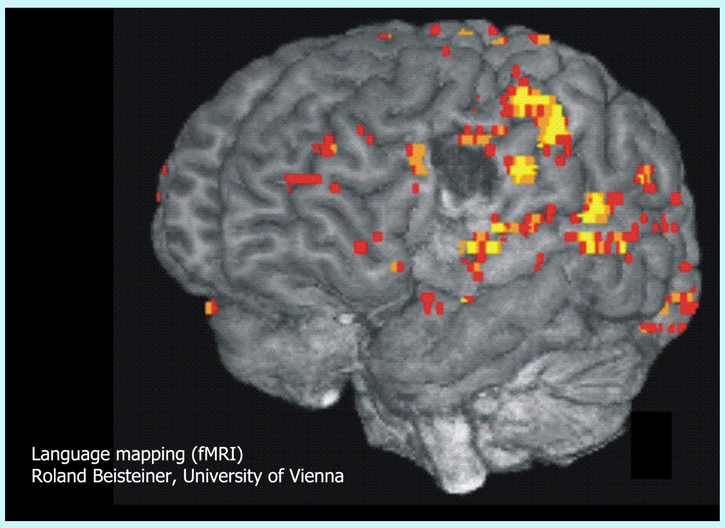
- Upon registration and a quick check that the user is a real person, access is granted.
- Anonymized data are listed per dataset and downloadable as such, along with their own licence.
- Data restrictions: only contributors have access to fresh data (<1 year), some data can be commercially restricted.



Examples of analyses







References

Milham et al.. Assessment of the impact of shared brain imaging data on the scientific literature, Nature Communications, 2018

Pernet, et al., A structural and functional magnetic resonance imaging dataset of brain tumour patients, Scientific Data, 3, 160003, 2016

Gorgolewski et al., The brain imaging data structure, a format for organizing and describing outputs of neuroimaging experiments, Scientific data, 3, 160044, 2016

LINKÖPING UNIVERSITY
DEPARTMENT OF BIOMEDICAL ENGINEERING