
BIDS
BRAIN IMAGING DATA STRUCTURE

is a standard for organizing and describing neuroimaging data and metadata, developed by the neuroscience community.

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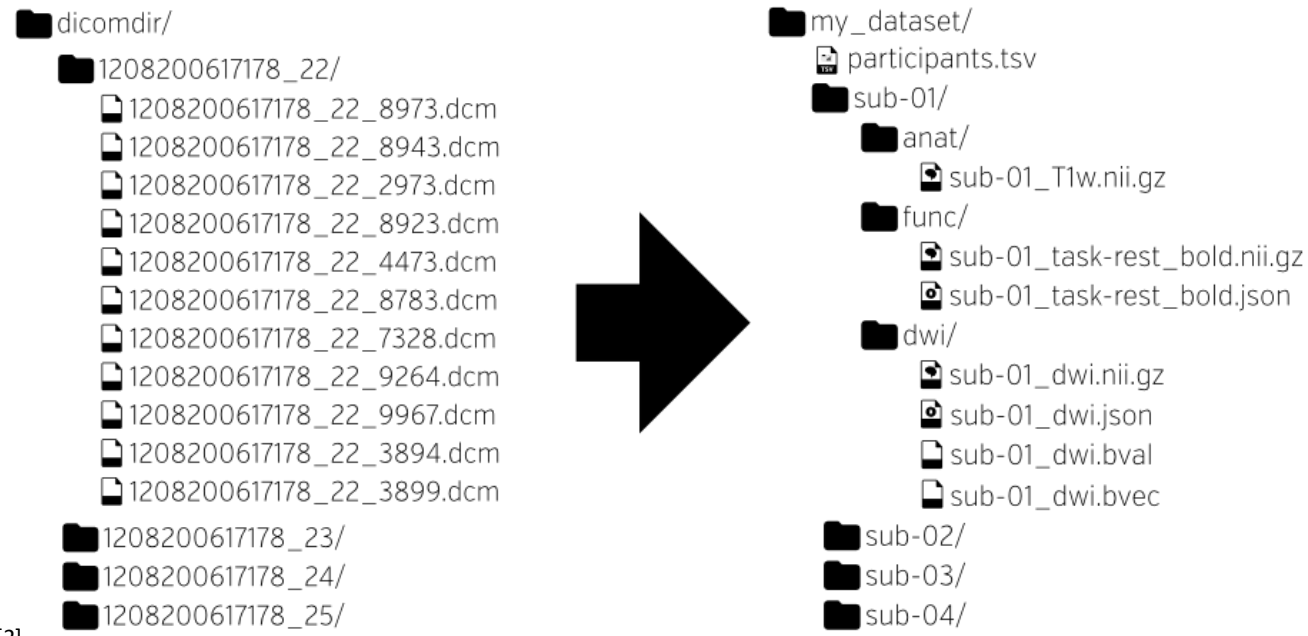

[2]

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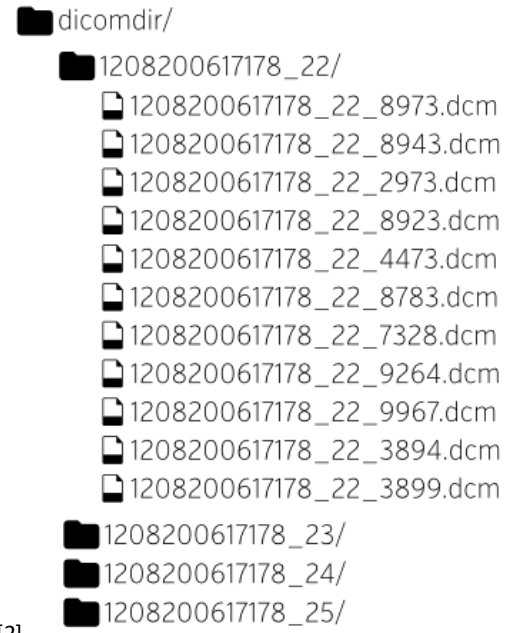
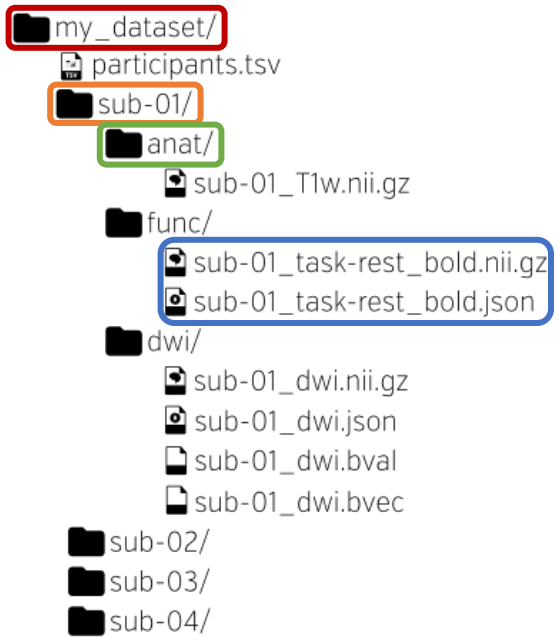


[2]



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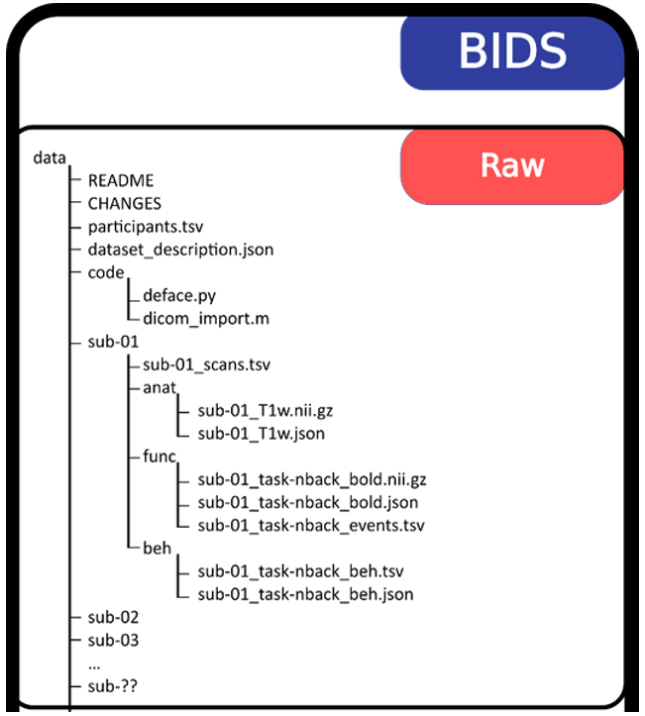
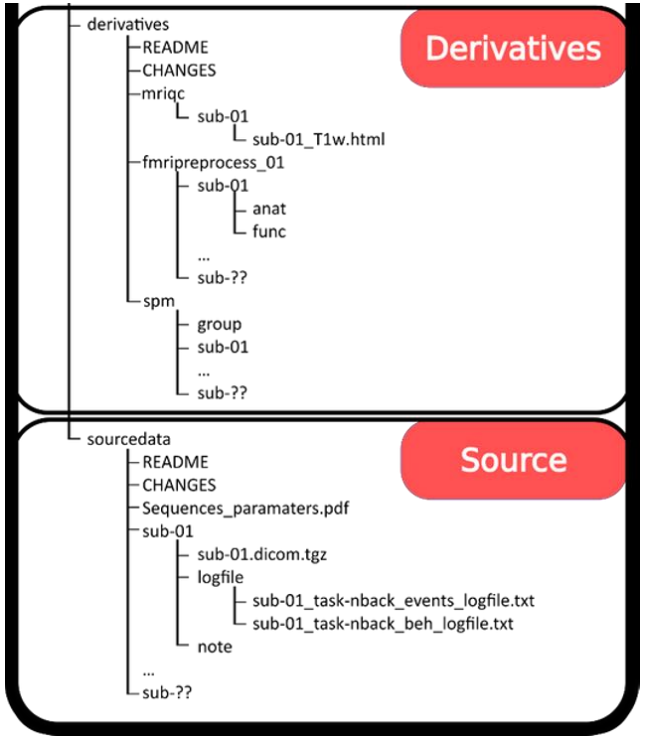


[3]



[3]

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modality agnostic file


```
{
  "Name": "The mother of all experiments",
  "BIDSVersion": "1.6.0",
  "DatasetType": "raw",
  "License": "CC0",
  "Authors": [
    "Paul Broca",
    "Carl Wernicke"
  ],
  "Acknowledgements": "Special thanks to Korbinian Brodmann for help in formatting
  "HowToAcknowledge": "Please cite this paper: https://www.ncbi.nlm.nih.gov/pubmed,
  "Funding": [
    "National Institute of Neuroscience Grant F378236MFH1",
    "National Institute of Neuroscience Grant 5RMZ0023106"
  ],
  "EthicsApprovals": [
    "Army Human Research Protections Office (Protocol ARL-20098-10051, ARL 12-040,
  ],
  "ReferencesAndLinks": [
    "https://www.ncbi.nlm.nih.gov/pubmed/001012092119281",
    "Alzheimer A., & Kraepelin, E. (2015). Neural correlates of presenile dementia
  ],
  "DatasetDOI": "doi:10.0.2.3/dfjj.10",
  "HEDVersion": "8.0.0",
  "GeneratedBy": [
    {
      "Name": "reproin",
      "Version": "0.6.0",
      "Container": {
        "Type": "docker",
        "Tag": "repronim/reproin:0.6.0"
      }
    }
  ],
  "SourceDatasets": [
    {
      "URL": "s3://dicoms/studies/correlates",
      "Version": "April 11 2011"
```


JSON sidecar files give meaning to the data

modality specific file


```
{
        "Manufacturer": "Hamamatsu",
        "ManufacturersModelName": "C9600-12",
        "PixelSize": [0.23, 0.23],
        "PixelSizeUnits": "um",
        "Magnification": 40,
        "BodyPart": "BRAIN",
        "BodyPartDetails": "corpus callosum",
        "SampleEnvironment": "ex vivo",
        "SampleFixation": "4% paraformaldehyde, 2% glutaraldehyde",
        "SampleStaining": "LFB",
        "SliceThickness": 5,
        "TissueDeformationScaling": 97
}
```

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BIDS Extension Proposals

The BIDS specification can be extended in a backwards compatible way and will evolve over time. This is accomplished with BIDS Extension Proposals (BEPs), which are community-driven processes (see BEP guidelines Google Doc).

On the BIDS homepage you can find a list of extension proposals that are currently being worked on.

All changes that are **not** backwards compatible with the current BIDS specification will be implemented in BIDS `2.0`. See the corresponding GitHub repository.

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BIDS Microscopy

A

```
dataset
├── sub-<label>
│   └── ses-<label>
│       └── micr
│           ├── sub-<label>_ses-<label>_sample-<label>_stain-<label>_chunk-<index>_<suffix>.<extension>
│           └── sub-<label>_ses-<label>_sample-<label>_stain-<label>_chunk-<index>_<suffix>.json
├── dataset_description.json
├── participants.json
├── participants.tsv
├── samples.json
└── samples.tsv
```

B

sample_id	participant_id	sample_type
sample-<label>	sub-<label>	tissue

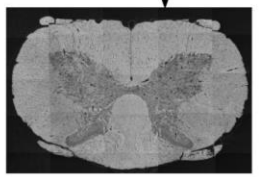
C

participant_id	species	strain	strain_rrid
sub-<label>	rattus norvegicus	SPRD Sprague-Dawley	RRID:RGD_1566457

D

```
{ "PixelSize": [0.07, 0.07],
  "PixelSizeUnits": "um",
  "BodyPart": "CSPINE",
  "SampleEnvironment": "ex vivo" }
```

E



[4]

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Specification

… for all the details

https://bids-specification.readthedocs.io/en/stable/

Starter Kit

… for getting started

https://bids-standard.github.io/bids-starter-kit/

Validator

… for checking BIDS compliance

https://github.com/bids-standard/bids-validator

Apps

… for working with BIDS datasets

https://bids-apps.neuroimaging.io/

NFDI4 BIOIMAGE

JÜLICH Forschungszentrum

Funded by the Deutsche Forschungsgemeinschaft (DFG, German Research Foundation) under the National Research Data Infrastructure-NFDI46/1-501864659.

Resources

Unless otherwise noted, all images are from [1].

[1] BIDS-contributors, 2022. The Brain Imaging Data Structure (BIDS) Specification. https://doi.org/10.5281/ZENODO.3686061. https://bids-specification.readthedocs.io/en/v1.8.0. CC BY 4.0.

[2] Gorgolewski, K.J., Auer, T., Calhoun, V.D., Craddock, R.C., Das, S., Duff, E.P., Flandin, G., Ghosh, S.S., Glatard, T., Halchenko, Y.O., Handwerker, D.A., Hanke, M., Keator, D., Li, X., Michael, Z., Maumet, C., Nichols, B.N., Nichols, T.E., Pellman, J., Poline, J.-B., Rokem, A., Schaefer, G., Sochat, V., Triplett, W., Turner, J.A., Varoquaux, G., Poldrack, R.A., 2016. The brain imaging data structure, a format for organizing and describing outputs of neuroimaging experiments. Sci Data 3, 160044. https://doi.org/10.1038/sdata.2016.44. CC BY 4.0.

[3] Jentoft, E.E., Asko, O., 2020. BIDS for fMRI [WWW Document]. URL https://www.sv.uio.no/psi/english/research/projects/human-time-data/documents/BIDS/bids-for-fmri/index.html (accessed 28.11.23).

[4] Bourget, M.-H., Kamentsky, L., Ghosh, S.S., Mazzamuto, G., Lazari, A., Markiewicz, C.J., Oostenveld, R., Niso, G., Halchenko, Y.O., Lipp, I., Takerkart, S., Toussaint, P.-J., Khan, A.R., Nilsonne, G., Castelli, F.M., The BIDS Maintainers, Cohen-Adad, J., Appelhoff, S., Blair, R., Earl, E., Feingold, F., Galassi, A., Gau, R., Markiewicz, C.J., Salo, T., 2022. Microscopy-BIDS: An Extension to the Brain Imaging Data Structure for Microscopy Data. Frontiers in Neuroscience 16. https://doi.org/10.3389/fnins.2022.871228. CC BY 4.0.