Documentation Changes

For External Users and DMAT Team

Version	Author(s)
1.0	Taheriyan, F.
Date	**Editor(s)**
April 17, 2024	Taheriyan, F., Das, D., Kahraman, K., Sripad, P., Brown, T., Melloni, L., Bonacchi, N.

TABLE OF CONTENTS

Introduction

In this document, a record of changes made to previous versions of the Data Release Document is maintained.

v1.0 → v1.1

Page*	Heading	Description of Change	Changed by
4	Updates	**1st Paragraph:** first version (V1.0) → second version (V1.1) **2nd Paragraph:** In V1.0, we released a subset of magnetoencephalography (MEG) data (batch 1) in the Brain Imaging Data Structure (BIDS) format. It includes data from 48 subjects who participated in Experiment 1, packaged in a Bundle format. → In V1.1, the raw/unprocessed and BIDS (Brain Imaging Data Structure) format of iEEG (intracranial electroencephalography) data, collected by the Cogitate Consortium for Experiment 1, are released. **3rd Paragraph:** Removing "**The demography of subjects for this release can be found here."	Fatemeh Taheriyan
4	Future Releases	• BIDS format of the rest of the M-EEG data along with the unprocessed/raw data • Unprocessed/raw and BIDS format of fMRI and iEEG data → • BIDS format of the M-EEG data (batch 2) • Unprocessed/raw format of all M-EEG data (batch 1 and batch 2) • Unprocessed/raw and BIDS format of fMRI data	Fatemeh Taheriyan
5	Overview of COGITATE	Updating Harin's figure: overview_graphic Deleting "(over 550 subjects from different populations)"	Fatemeh Taheriyan
7	Sample Size	44 for iEEG → 38 for iEEG	Fatemeh Taheriyan
8	COGITATE Dataset	**1st Paragraph:** 266* subjects → 262 subjects *The total number of subjects was wrong even with considering the reported number of subjects for each modality	Fatemeh Taheriyan

9	COGITATE Dataset	**4th Paragraph**: 44 patients → 38 patients	Fatemeh Taheriyan
10	COGITATE Dataset	Substituting the plots [Age Histograms across Modalities, Sex Proportions across Modalities, Handedness Proportions across Modalities] with the updated versions Minor change in the captions: Age Histograms across Modalities → Age histograms across modalities Sex Proportions across Modalities → Sex proportions across modalities Handedness Proportions across Modalities → Handedness proportions across modalities	Fatemeh Taheriyan
11	Demography of Subjects	Updating the file of subjects_demography	Fatemeh Taheriyan
13	File type glossary	Changing the format of title: File type glossary → File Type Glossary	Fatemeh Taheriyan
15	File type glossary	Adding ECoG (iEEG) related information to the table	Fatemeh Taheriyan
15	Data Acquisition	data release: M-EEG → data release: M-EEG, iEEG	Fatemeh Taheriyan
15	Procedure	Stimuli were presented in a sequence, all supra-threshold, with half being task-relevant and half task-irrelevant. Only one stimulus was present on the screen at any given time. To define task relevance, on a subset of stimuli, subjects were instructed to detect (press a button; non-speeded response) the occurrences of two targets belonging to two different categories, regardless of their orientation. This online reporting allowed for an explicit assessment of subjects' performance, and engaged report-related areas, which were later identified in one of the planned analyses. In each block, subjects were asked to perform the task on stimuli from different categories, thereby redefining task relevance of the different stimuli. A block started by notifying the subject about the two target stimuli. These were either pictorial (faces and objects) or symbolic (letters and false fonts). These couplings were designed to create a clear difference between the task-relevant and the task-irrelevant stimuli, thereby making their classification as either relevant or irrelevant trivial. At the beginning of each block, the specific target stimuli were disclosed by presenting the instruction "detect face A and object B" or "detect letter C and false-font D" for a face/object or letter/false font block, respectively (targets did not repeat across	Fatemeh Taheriyan

		blocks). Each run contained two blocks of the Face/Object task and two blocks of the Letter/False-font task. The order was counterbalanced across runs. Subjects were further instructed to maintain central fixation on a black circle with a white cross and another black circle in the middle throughout each trial. Gaze was monitored online through an eye tracker, and repeated calibrations were performed to assure good quality eye tracking data. Each block comprised a series of stimuli representing all four categories, with each stimulus displayed for one of three predetermined durations (500, 1000, or 1500 ms), followed by a blank interval, ensuring a consistent trial duration of 2000 ms. Within each block, three distinct trial types were presented: i) Task Relevant Targets, consisting of the two specific stimuli participants were tasked with detecting (e.g., a particular face and object); ii) Task Relevant Non-Targets, encompassing stimuli from the relevant categories that were not the designated targets (e.g., alternate faces and objects); and iii) Task Irrelevant Stimuli, comprising stimuli from the remaining two categories (e.g., letters and false-fonts). → Stimuli were presented sequentially, all supra-threshold, with half being task-relevant and the other half task-irrelevant. Only one stimulus was shown on the screen at any given time. To define task relevance, subjects were instructed to detect two targets from different categories, regardless of their orientation. This online reporting enabled an explicit assessment of subjects' performance, engaging report-related areas for later analysis. Each block began with notification of the two target stimuli, either pictorial (faces and objects) or symbolic (letters and false fonts), creating a clear distinction between relevant and irrelevant stimuli. At the start of each block, specific target stimuli were revealed with instructions such as "detect face A and object B" or "detect letter C and false-font D." Targets did not repeat across blocks. Each run included two blocks of the Face/Object task and two blocks of the Letter/False-font task, with the order counterbalanced across runs. Subjects were instructed to maintain central fixation throughout each trial. Gaze was monitored online through an eye tracker, with repeated calibrations ensuring good quality data. Each block comprised stimuli from all four categories, with each stimulus displayed for 500, 1000, or 1500 ms, followed by a blank interval, ensuring a consistent trial	

		duration of 2000 ms. Within each block, three trial types were presented: i) Task Relevant Targets, consisting of the specific stimuli participants were tasked with detecting; ii) Task Relevant Non-Targets, encompassing stimuli from relevant categories that were not designated targets; and iii) Task Irrelevant Stimuli, comprising stimuli from the remaining categories.	
18	Anatomical MRI Data Acquisition	**For CHBH:** Adding TR/TE = 2000/2.03ms; TI = 880 ms; 8° flip angle **For PKU:** Correcting 1 x 1 x 1 mm → 0.5 x 0.5 x 1 mm, 198 sagittal slices → 192 sagittal slices, FOV: 256 × 256 matrix → 448 × 512 matrix Adding TR/TE = 2530/2.98ms; TI = 1100 ms; 7° flip angle, 192 sagittal slices; FOV: 448 × 512 matrix Adding “The FreeSurfer standard template was used (fsaverage) for participants lacking an anatomical scan (N=5).”	Fatemeh Taheriyan
18	Behavioral Setup	Changing the title: Behavioral Setup → Behavioral Data Acquisition	Fatemeh Taheriyan
18	Behavioral Setup	Adding “The task was run on Matlab (PKU: R2018b; UB: R2019b) using Psychtoolbox v.3 (Pelli, 1997). The MEG version was run on a custom PC at UB and a Dell XPS desktop PC at PKU.” Adding “Subjects responded with an 8-button response box (Millikey LH-8).”	Fatemeh Taheriyan
18	Eye Tracking	Changing the title: Eye Tracking → Eye Tracking Data Acquisition	Fatemeh Taheriyan
21	Task (tM-EEG)	Adding “tM-EEG consisted of 10 runs, with 4 blocks each. During each block, a ratio of 34-38 trials was presented, with 32 non-targets (8 of each category) and 2-6 targets (number chosen randomly). Rest breaks between runs and blocks were included. Random jitter was added at the end of each trial (mean inter-trial interval of 0.4 s jittered 0.2-2.0 s, truncated exponential distribution) to avoid periodic presentation of the stimuli.”	Fatemeh Taheriyan
22	Between “Quality Check and Exclusion Criteria” and	Adding iEEG section	Fatemeh Taheriyan

	"Data Curation Procedures"		
22	After "Data Curation Standard Operating Procedure"	Adding Metadata Curation Standard Operating Procedure section	Fatemeh Taheriyan
34	After "Raw M-EEG Data Directory Structure"	Adding "Raw iEEG Data Directory Structure"	Fatemeh Taheriyan
34	BIDS Format	Adding a paragraph explaining BIDS file structure	Fatemeh Taheriyan
36	After "BIDS M-EEG Data Directory Structure"	Adding "BIDS iEEG Data Directory Structure"	Fatemeh Taheriyan
39	Links and Reference Materials	**1st Table, Column 1:** Adding YouTube logo to the "YouTube Demos" **1st Table, Column 2:** Updating the link of Subjects Demography **2nd Table, Column 3:** Changing 44 to 38 **2nd Table, Column 4:** Adding iEEG reference materials	Fatemeh Taheriyan
40	Appendices	Adding Appendix 8. Metadata Curation Standard Operating Procedure Adding Appendix 9. iEEG Standard Operating Procedure Adding Appendix 10. Documentation Changes	Fatemeh Taheriyan
41	Appendix 1. Screening Form	Adding "M-EEG Screening Form" title	Fatemeh Taheriyan
42	Appendix 2. Case Report Form	This form is for reporting → This form was for reporting the operator should fill out this form → the operator filled out this form	Fatemeh Taheriyan
42	M-EEG Case Report Form	the below items are asked → the below items were asked	Fatemeh Taheriyan
42	After "M-EEG Case Report	Adding "iEEG Case Report Form" information	Fatemeh Taheriyan

	Form”		
43	References	Adding new references	Fatemeh Taheriyan

***Page*:** *Page number is based on the pdf version of each Data Release Document which is uploaded in COGITATE GitHub repository. For instance, for v1.0 → v1.1, the MEEG-DR-doc_2024-03-18_v1.0.pdf is considered as the reference file and all of the differences between v1.0 and v1.1 are listed based on it.*