ISO/IEC TS 27571:2026-04 (E)

Information technology - Brain-computer interfaces - Data format for noninvasive brain information collection

Contents

Page

FOREWORD 2
INTRODUCTION 3
1 Scope 4
2 Normative references 4
3 Terms and definitions 4
4 Abbreviated terms 5
5 Basic data elements 5
5.1 Electroencephalography (EEG) 5
5.2 Magnetoencephalography (MEG) 5
5.3 Functional near-infrared spectroscopy (fNIRS) 5
5.4 Functional magnetic resonance imaging (fMRI) 6
6 Extensible and modular data 6
7 Metadata and annotation information 8
8 Standardized data format 9
8.1 Overview 9
8.2 BCI devices 9
8.3 Subjects 10
8.4 Data acquisition sessions 10
8.5 Data files 10
8.5.1 Overview 10
8.5.2 Data acquisition 11
8.5.3 Data processing 11
8.5.4 Annotations 12
8.5.5 Security by design 12
9 Naming convention for BCI data files 12
10 Integration of multiple BCI technologies 13
10.1 Overview 13
10.2 Compatibility with existing BCI technologies 13
10.3 Multimodal data integration and management for BCI technologies 14
11 Raw data format selection specification 16
12 Required metadata information 16
Bibliography 18

Figure 1 – Non-invasive unified BCI data formatting procedure 6
Figure 2 – Example of modular data structure for non-invasive data format 7
Figure 3 – Example of ETSI ENI format metadata and annotation structure 8
Figure 4 – Naming convention of data file 12
Figure 5 – File common dataset and each modality data designation 14

Figure 6 – Required data elements and extraction of required items 15
Figure 7 – Element composition and required itemized data..... 15
Figure 8 – Raw data converter and data combination 16

Table 1 – Required metadata elements..... 17