



# MindSee Ethical Guidelines

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# 1 ETHICS IN MINDSEE

This document describes potential ethical issues met during the activity foreseen in the project and the way in which MindSee consortium commits to deal with them.

Aspects of the project activity that might raise ethical issues are: the involvement of human beings in the research activity, which in MindSee will be adult healthy volunteers; the collection and processing of personal data including sensitive data<sup>1</sup>; the use of copyrighted material; the development of technologies using implicit data. This might lead in principle to the following ethical risks:

- User's identification based on collected data
- Profiling (by merging databases, by data-mining) and attribution of new property to the individual derived from implicit patterns
- Misinterpretation of data disregarding their original meaning when produced
- Public disclosure of confidential information about an individual
- Disguised data collection devices that are difficult to recognize (ambient interfaces, wearables, ...)
- Public, unrestricted access to collected data
- Pain or discomfort
- Coercive participation
- Deceit and hidden or malevolent persuasive strategies embedded in the technology
- Use of data for monitoring and surveillance of sanctionable acts
- Infringement of copyright

The project consortium commits to avoid these risks and to reflect on possible other ethical risks through a set of provisions and activities planned in this document. For aspects that are not specified in this document, partners are referred to the general professional and international regulations listed in section 2.

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<sup>1</sup> *Personal data* is any information relating to an identified or identifiable natural person ('data subject'); an identifiable person is one who can be identified, directly or indirectly, in particular by reference to an identification number or to one or more factors specific to his/her physical, physiological, mental, economic, cultural or social identity (95/46/EC, Art. 2). *Sensitive data* is any information that might result in loss of an advantage or level of security if disclosed to others who might have low or unknown trustability or undesirable intentions.

## 2 GENERAL REFERENCE

MindSee activity will operate in compliance with the code of conducts for **professionals working with humans and with technologies**. These codes are elaborated by the following international associations:

- the American Psychological Association (APA)  
<http://www.apa.org/ethics/code/index.aspx>
- the British Psychological Society (BPS)  
[http://www.bps.org.uk/document-download-area/document-download\\$.cfm?file\\_uuid=E6917759-9799-434A-F313-9C35698E1864&ext=pdf](http://www.bps.org.uk/document-download-area/document-download$.cfm?file_uuid=E6917759-9799-434A-F313-9C35698E1864&ext=pdf)
- the Association for Computing Machinery (ACM)  
<http://www.acm.org/about/code-of-ethics>

It also operates in compliance with the following regulation:

- EU Data protection Law (the Directive 95/46/EC and the Directive 2002/58/EC on privacy and electronic communications)  
<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:31995L0046:EN:NOT>  
<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32002L0058:en:HTML>

## 3 LOCAL REFERENTS

### 3.1 Project Data Controller

A **Data Controller** is the natural or legal person, public authority, agency or any other body which alone or jointly with others determines the purposes and means of the processing of personal data (Directive 95/46/EC and 1/2010 Opinion). The data controller determines the purpose of the data processing but can delegate the processing itself.

MindSee data controller is: Giulio Jacucci

### 3.2 People in charge of ethical issues and data management

Each partner appoints one person as responsible for ethical issues regarding its unit activity in MindSee and data management. This person must be part of the partner's unit for the whole length of the project and be directly involved in MindSee.

This person is responsible for:

- 1) compliance with this policy for each project partner,
- 2) informing his/her collaborators involved in MindSee activity about the present policy
- 3) obtaining ethical approval for research s/he leads (or even contributes to in case this is needed by his/her institution).
- 4) protection of MindSee data stored in his/her institution after the end of the project or - in case s/he leaves their institution - for the appropriate transfer of responsibility to protect the data confidentiality

Any modification in this list during the project should be communicated to the Coordinator.

Table 1. People in charge of ethical issues

<i>Partner's name</i>	<i>Short name</i>	<i>Person in charge</i>
HELSINGIN YLIOPISTO	UH	Giulio Jacucci
AALTO-KORKEAKOULUSAATIO	AALTO	Samuel Kaski
UNIVERSITA DEGLI STUDI DI PADOVA	UNIPD	Anna Spagnolli
i2 media research limited	i2 media research ltd	Eva Ferrari
TECHNISCHE UNIVERSITAT BERLIN	TU	Markus Wenzel

### 3.3 Institutional/national ethic committees for partners collecting users' data

Table 2. Ethical committee of reference for each MindSee partner collecting data

<i>Partner's name</i>	<i>Short name</i>	<i>Committee</i>
HELSINGIN YLIOPISTO	UH	the University of Helsinki review board in the Humanities and Social and Behavioral Sciences
AALTO-KORKEAKOULUSAATIO	AALTO	Not applicable
UNIVERSITA DEGLI STUDI DI PADOVA	UNIPD	Comitato etico del centro interdipartimentale HIT
i2 media research limited	i2 media research li	Psychology Department Ethics committee.
TECHNISCHE UNIVERSITAT BERLIN	TUB	Ethikkommission des Instituts für Psychologie und Arbeitswissenschaft und des Zentrum Mensch-Maschine-Systeme der Technischen Universität Berlin

## 4 CODE OF CONDUCT

### 4.1 Data

**4.1.1** The **type** of data collected and their **usage** is coherent with the purpose of the project as described in the technical annex.

In particular:

- *For input in the system, data will be collected and used only for the specific purposes described in the technical annex (i.e., eyetracking data will be used to determine objects in focal point during visual exploration; EEG and peripheral physiology data will be used to detect perceptual, cognitive and emotional aspects during the information retrieval activity; pupillometry will be used to detect initial processing of perceived stimuli during visual exploration).*
- *For the evaluation of the system, the exact material and protocol will be defined in advance, according to a set of metrics (WP1, D1.2 at M24) and measures (WP5, Milestone 9 at M18).*

**4.1.2** Collection and usage of types of data **not foreseen** in the technical annex must be relevant to the purpose of the project and approved by the data manager. This approval must be documented and reported.

**4.1.3** All the data samples used in this project are either legitimately available commercially or have been obtained following appropriate ethical approval. The **source** of all data used by MindSee prototype will be declared and for each data source, it will be explained whether ethical or legal approval for usage has been obtained.

**4.1.4** Access to data is regulated.

**4.1.5** Technical measures to **protect** personal data against accidental or unlawful destruction or accidental loss, alteration, unauthorized disclosure or access are taken.

**4.1.6** Partners in the project commit themselves not to **misuse** the data collected during and after the project. In particular they commit not to use them against participants, nor to sell this information to third parties, and to use the data only in anonymous format unless specifically agreed with participants

**4.1.7** Data collected with any tool is stored in **anonymized** form; this means that participants have to be identified only with a code. The association between participants' identity and codes has to be kept in a different file, securely stored. This file, allowing to associate data to the identity of their owners, must be destroyed when MindSee project ends. Any data that cannot completely be separated from the identity of the owner (e.g. video recordings) is stored in locked rooms and publicly displayed only if-and according to what is expressly allowed in the informed consent.

**4.1.8 Identity information and data** are accessible only to research groups partners in MindSee for purposeful reasons connected and compatible with MindSee goals, who have permission from the people storing the data. By "MindSee researchers" we mean the people listed in the technical Annex and, through them, the people collaborating with them in the project.

## 4.2 Participants

**4.2.1** The MindSee partners will not involve **minors** in their research.

**4.2.2** The MindSee participants will be **volunteers**, healthy, of full age and legally responsible for their own actions (sui juris).

**4.2.3** Participation is **voluntary**; monetary compensation can be given and will be justified.

**4.2.4** Participants must have the right:

- a. To know that participation is voluntary
- b. To ask questions and receive understandable answers before making a decision
- c. To know the degree of risk and burden involved in participation
- d. To know who will benefit from participation
- e. To know how their data will be collected, protected during the project and either destroyed or reused at the end of the research, if plan to reuse the data exist,
- f. To withdraw themselves and their data from the project at any time
- g. To know of any potential commercial exploitation of the research. .

**4.2.5** To avoid any **coerced participation**:

- No course credits will be given for participating
- The participant can withdraw from participation at any moment written in the informed consent
- The participant will be explained that no unpleasant consequences will follow refusal to participate or withdrawal

**4.2.6** Users' **concerns** that might arise during studies, demos or trials must be adequately addressed.

**4.2.7** The table below synthesizes the kind of monitoring equipment used to collect psychophysiological data, its invasiveness and the compensating procedures adopted to reduce **discomfort and pain**.



Monitoring equipment	Invasiveness, discomfort, pain	Procedure to reduce discomfort and pain
Eyetracking device (500Hz SMI ET system) attached to the computer monitor.	Not worn by the participant and it is not invasive or dangerous.	No invasiveness, discomfort or pain foreseen.
Certified (CE; medical device class IIa, type BF) electroencephalography (EEG) amplifiers 'BrainAmps' by Brain Products and 'Mobita' by TMSi, and electrode caps 'Fast'n'Easy' and 'ActiCap' by EasyCap as well as ConfiCap with gel-based and with water-based electrodes by TMSi;  peripheral physiological signals (EDA, fEMG) will be collected with specific sensors attached to the EEG amplifiers	Booth EEG and peripheral physiology are non-invasive. Non-invasive scalp-EEG with the electrical contact between scalp and sensor being established by conductive electrolyte gel;  discomfort: very infrequent occurrences of skin irritation as a reaction to the electrolyte gel	No pain and very rare discomfort. Washing the hair and applying a skin calming cream/gel helps ease the symptoms. Informed consent implemented and possibility to abandon the experiment at any time without disadvantages.
Pupillometry measured by a off the shelf eye tracking system such as SMI 500Hz attached to the screen.	The pupillometry is measured by stand devices attached to the screen and do not constitute any invasive or discomforting	Not applicable - no invasiveness, discomfort or pain foreseen.

### 4.3 Informed consent

4.3.1 Personal data is collected only after the owner of this data signs an informed consent which is read and signed before the data collection and includes descriptions of the:

- study goals, funding agency, institution performing the data collection, usage of the data collected (e.g., research, dissemination material, ...);
- data collection techniques employed involving the participant, of the general topic of the data collected and of the length of the data collection procedure;
- kind of people who can access the data and way in which they are processed and disseminated;
- mutual commitment to confidentiality; and

- benefits, risks (if any) in participating, right to refuse/end participation, possibility to ask questions prior or after the research, debriefing modality and contact info of a person in the research team.

The consent form is written so as to be **comprehensible** to participants, without jargon or technicalities.

**4.3.2** Users are alerted if content sent through the system is **monitored** or made public.

**4.3.3** If the data collection takes place **without directly interacting** with the user i.e. in public places or by using archives, then the informed consent must be obtained from the institution where this data is stored if these places already make clear to the users that their data can be given to third parties. Otherwise, permission must be also obtained from each user.

**4.3.4** The consent can be asked about the whole data collection and treatment or **split** into consents to each specific aspect (e.g. separating data collection from dissemination) so that the risk of excluding a certain participant altogether is reduced.

**4.3.5** The **trial/demos** involve the same responsibilities illustrated above. In addition, a specific agreement with the participants must define the following aspects:

- Responsibilities for *damage* caused to participants by MindSee system are defined before trials start; presence or absence of *compensation* to participants is made explicit from the start as well as the responsibility for *installation* and *removal*
- *Temporary 'opting out'* from the service by trial participants is allowed and monitored; its consequences are explained to participants beforehand.
- *Terms of usage* of the tools, tool set up, users' training and maintenance are responsibility of the Consortium in ways to be specified.

## 4.4 System

**4.4.1** MindSee prototypes must comply with all **safety** standards.

**4.4.2** The development cycle includes the identification of privacy risks and the **implementation** of measures to prevent these risks in accordance with the present document provisions.

**4.4.3** Content of the MindSee applications and their purpose is neither **offensive** nor discriminatory.

**4.4.4** The system increases **transparency** compared to current search engines by allowing the users to feedback directly to the mechanisms behind the search queries.

## 5 ACCOUNTABILITY

Compliance with the code of conduct described in section 4 can be checked in several reports and deliverables.

MindSee outputs **specifically related to ethics** are:

- Deliverable 1.4 Ethical guidelines and approvals, including detailed base information (UNIPD), due at M12
- Deliverable 1.3 Report on ethics, acceptance, and design of symbiotic system (UNIPD), due at M36

These deliverables will include the description of:

- Novel risks identified and not included in section 1 of this document
- Composition of advisory board and record of activity
- Description of source of data and usage clearance
- Regulation for access to data
- Way in which transparency, anonymization and safety are implemented in the system

**Other outputs** that include information relevant to ethics are:

- Advisory Board written recommendations, to be included in period reports 1 and 2
- Description of compliance with code of conduct, to be included in WP1 and WP7 deliverables

In particular, **each partner** carrying out users' study is responsible to produce in its own deliverables:

- Ethical approval from local committee
- Data controller's approval in case of collection and usage of types of data not foreseen in the technical annex
- Participants' profile, recruitment, compensation if any, informed consents, and procedure to reduce discomfort

The workflow leading to these outputs is sketched in Figure 1.

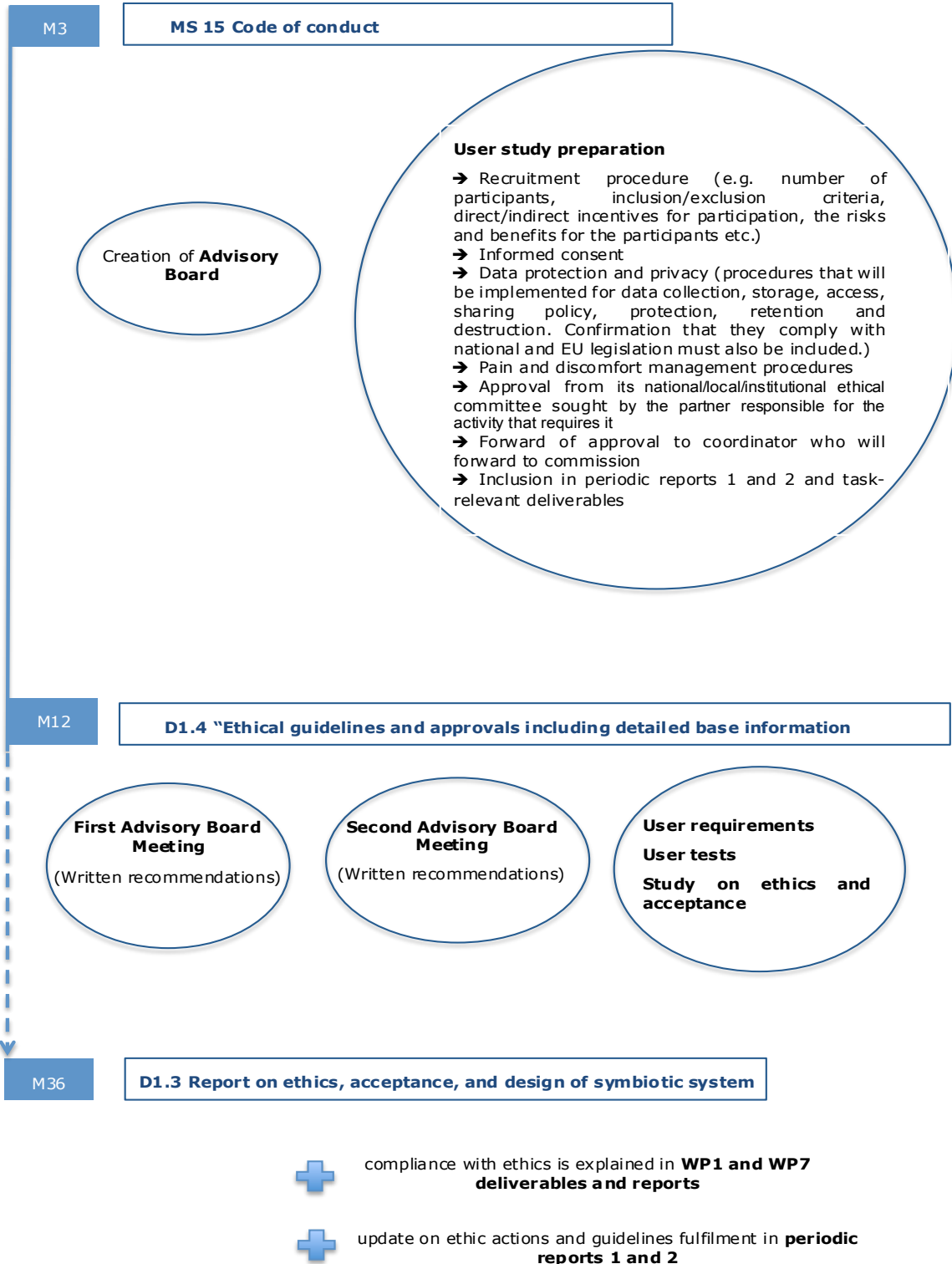


Figure 1. Overview of MindSee strategies to deal with potential ethical issues: Main deadlines and intermediate activity

## 6 ADOPTION

The Consortium knows, approves and adopts this document during the PMB meeting held on 07. May 2014, Espoo/Finland and makes it continuously *available* from the MindSee websites (public and internal).

## 7 MODIFICATIONS

This code can be updated during the life of the project with the approval of the PMB. Modifications must be added at the end of the document.