HIPE LEGAL AND ETHICAL GUIDELINES

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1. Introduction

The aim of the HIPE Legal and Ethical Guidelines is to compile the most applicable legal and soft law instruments (i.e. guidelines) relevant for the 'Human-technology interoperability and artificial emotional intelligence' (HIPE) project concerning the processing of emotional data. 'Emotional data' are here defined as biometric and identifiable human based and human directed data, meaning :

Data representing the emotional, psychological or physical status of natural persons by identifying and processing their (facial) expressions, movements, behaviour or other physical or mental characteristics

    a. personal data resulting from specific technical processing like Artificial Intelligence (AI),

    b. relating to the physical, physiological or behavioural characteristics of a natural person/s,

    c. which allows or confirms the unique identification of that natural person/s.

    Such data include for instance sensored images or other representation of bodily or emotional functions, or related data. Recognizing that trust is a key enabler of digital transformation in general, and of the use of emotional data for the development of AI-driven concepts that process those data, especially, but also that, the nature of these AI applications and their implications may be hard to foresee, *it is necessary to ensure that the project partners are well-informed and aware on the matter, in order to guarantee capturing of the beneficial potential of the technology, while limiting the risks associated with it*.

It is also important for these guidelines to take into account the emotion data generating AI systems:

Data generating different emotional status by AI applications (sensors and Avatars)to influence the mood and emotional status of natural persons

As definitions we use the common descriptions of existing and draft (European)Regulations:

- 'Artificial intelligence system' (AI system) means a machine-based system that is designed to operate with varying levels of autonomy and that can, for explicit or implicit objectives, generate outputs such as predictions, recommendations, or decisions that influence physical or virtual environments. (Article 3 AIA)

Clearly, these Guidelines cannot be considered to replace or overrule existing legal and ethical obligations of the participating parties. Rather, the purpose of these Guidelines is to describe the most relevant legislation and ethical principles related to the processing of personal and confidential data collected and processed in the HIPE project. In addition to these Guidelines, the HIPE project has a separate data management plan (DMP) that defines the data used in the research and the principles and processes used for data processing and data sharing on a general level. Moreover, the DMP and the consortium agreement signed by all HIPE partners define the rights of ownership to the data and results

1.1.   Motivation and Background for the Guidelines

The HIPE Legal and Ethical Guidelines are based on existing guidelines that have to be applied in European and Finnish Research projects, on guidelines within the data processing and AI service industry, as well as on the international and national legal instruments on AI regulation. However, these Guidelines are tailored and more specifically developed to guide the work within the HIPE project that is a co-innovation project with six companies (Helvar, ISKU, Teleste, Framery, Ambientia and Mall of Tripla) and two research institutions (University of Lapland and VTT). The HIPE project aims to enhance the capability of the digital systems and services in physical spaces to understand and react to the human behaviour and emotional state. Therefore, the project touches on some of the most sensitive parts of human behaviour in society, namely *personal and emotional data.*

As a professional body, the HIPE project requires all participating parties to have high ethical standards, just as it requires high professional standards. Ethics, and ethical behaviour is a key part of professionalism and therefore vital to a successful cooperation between the HIPE parties. Developing ethical acumen is not only an essential personal skill; it is also a vital business skill. High standards of ethical behaviour in the profession benefit everyone: the status of the profession itself is enhanced, the quality of the delivery of projects is raised, and society benefits because project participants have completed their work to high ethical standards - not just on by being on schedule or within budget.

Ethical values are the compass by which we live our life. They are what is important to us as human beings, representing the moral principles that govern a person's behaviour or the conducting of an activity. *In the HIPE project key ethical values include fairness, justice and equality, human- and user-centricity, sustainability, inclusiveness, transparency, openness, security, collaborative working, as well as continuous developing.* On top of that *we have to respect the rule of law* in general and specifically the privacy and digital rights regulations, as well as the legal frameworks considering the use of advanced technologies such as AI. Moreover, Finnish research institutions need to comply with the *ethical principles of research* with human participants and ethical review in the human sciences in Finland (TENK 2019) if the research involves human participants or research methods used in human sciences.

The HIPE Legal and Ethical Guidelines are divided into three parts. First, the Guidelines describe the treatment and rights of the HIPE research participants (section 2). Second, the Guidelines specify the most important legal requirements relating to the processing of personal data in the HIPE project (session 3). Finally, the Guidelines introduce the general ethical principles that guide all the work done in the HIPE project (section 4).

2. Treatment and Rights of Research Participants in HIPE

It is of crucial importance that researchers master the knowledge, methodologies and ethical practices associated with their field. Failing to follow good research practices violates professional responsibilities. It damages the research processes, degrades relationships among researchers, undermines trust in and the credibility of research, wastes resources and may expose research subjects, users, society or the environment to unnecessary harm.

Therefore, the research conducted within the HIPE project will always comply with the Finnish National Board on Research Integrity's Ethical Principles of Research with Human Participants and Ethical Review in the Human Sciences in Finland (TENK 2019) and Responsible Conduct of Research and Procedures for Handling Allegations of Misconduct in Finland (TENK 2012). Special attention is given to the following principles:

- Research institutions of the HIPE project consortium (i.e. VTT and the University of Lapland) will request an ethical review statement from a human sciences ethics committee /board of their respective institutions, if considered necessary because of the possible intervention in physical integrity of the research participants. In this case, it is also necessary to check whether the research must be evaluated under the Medical Research Act;
- The HIPE project partners respect the dignity and autonomy of human research participants;
- Research in the HIPE project is conducted so that it does not cause significant risks, damage or harm to the participants;
- Research participants are always asked to give their prior informed consent to participate in the research.

As stated in the Ethical Principles of Research with Human Participants and Ethical Review in the Human Sciences in Finland (TENK 2019), people participating in research have the right to:

- participate voluntarily but also to refuse to participate;
- be given sufficient time to consider their decision whether to participate;
- discontinue their participation at any time without suffering any negative consequences. Discontinuing refers to the participant's right to withdraw from the research or an individual phase of the research permanently or for a temporary period. Discontinued participation in the research does not prevent the use of research data already gathered. The research participant does not have to give any reason for withdrawing their participation in the research;
- withdraw their consent to participation in the research at any time;
- request and receive information on the aims and content of the research, potential harm and risks associated with it, the processing of personal data and how the research will be conducted in practice. The information will be given in a language that the participant understands, in writing or in electronic form. The request may be submitted to any consortium partner, which will forward it to the consortium partner controlling the specific dataset.

Moreover, the HIPE project parties will follow the the European code of conduct for Research integrity (see: https://allea.org/code-of-conduct/) according to which the following has to be guaranteed as safeguard for ethical research and has to be taken into account for research of the participating parties:

- Researchers comply with codes and regulations relevant to their discipline;
- Researchers handle research subjects, be they human, animal, cultural, biological, environmental or physical, with respect and care, and in accordance with legal and ethical provisions;
- Researchers have due regard for the health, safety and welfare of the community, of collaborators and others connected with their research;
- Research protocols take account of, and are sensitive to, relevant differences in age, gender, culture, religion, ethnic origin and social class;
- Researchers recognize and manage potential harms and risks relating to their research.

These aspects will apply for the research institutes, as well as for the participating companies in the HIPE research project.

3. Key Legal Requirements for Processing Personal Data in the HIPE Project

3.1. General

Considering the sensitive nature that the use of AI technologies in combination with biometric data of personal behaviour will produce, in groups or as individuals, awareness and understanding of the legal requirements of use of such data have to be clear to all participating parties. Thus, there is a need for all the members of the HIPE consortium to be aware and understand the applicable principles of data protection laws, which in the EU are primarily the General Data Protection Regulation/GDPR, the draft of the so-called 'AI Act' and the Council of Europe's regulations.

3.2.   GDPR

The GDPR (4.5.2016L 119/38 Official Journal of the European Union) is applicable to the processing of personal data. The HIPE project is directed on the processing on emotional data. These kinds of data are considered to be of a special and sensitive nature because of the intimate character of these data and the severe identifying force towards natural persons. The processing of personal data in the HIPE project is regulated mainly by the GDPR article 6.1.(a), according to which *processing of personal data is lawful only if and to the extent that the data subject has given consent to the processing of his or her personal data for one or more specific purposes*, and article 9.2.(a), according to which *the data subject has given explicit consent to the processing of those personal data for one or more specified purposes*. The main principles that apply to the processing of personal data in the HIPE project are: *lawfulness, fairness, transparency, purpose specification, data minimisation, storage limitation, intergrity, confidentiality, security, accuracy and accountability*, where specifically article 5 and article 9 of the GDPR are of high importance.

The processing of personal data within the HIPE project will always be well planned in a responsible manner and in accordance with the law. Regarding the planning, special attention is given to the *purpose* for which personal data will be used and that that type of personal data to be gathered is *necessary for the purpose* of the research.

More specifically (and as stated in the HIPE DMP), the processing of personal data will be done in accordance with article 5 of the GDPR and data security and data protection policies and guidelines of the consortium partner controlling the specific dataset. Decisions regarding the processing of personal data are made by the consortium partners controlling the specific dataset or the HIPE steering group. The decisions are always clearly documented and checked subsequently by the data protection officer of the HIPE consortium partners controlling the specific dataset.

Personal data is removed from research data when it is no longer necessary in order to carry out the research. If personal data is to be stored solely to link the data, the identifiers and information needed to link the data are stored so that they are protected and separate from the data to be analysed. Regarding the publication of research results, no personal data is disclosed. Finally. research data containing personal data will not be made publicly available during or after the project.

3.3.   AIA

In April 2021, the European Commission published its Proposal for a Regulation of the European Parliament and of the council laying down harmonised rules on artificial intelligence (Artificial Intelligence Act, so called 'AI ACT/AIA') and amending certain union legislative acts (2021). As a legal framework for AI, the Act, although not yet in force, provides important information to the HIPE project parties about the legal obligations likely to be applicable to HIPE products and services in the next years.

The AIA defines AI as following:

"Artificial intelligence system (AI system) means a machine-based system that can, with varying levels of autonomy, for a given set of human-defined objectives, make predictions, content, recommendations, or decisions influencing real or virtual environments they interact with predictions, content, recommendations, or decisions influencing real or virtual environments they interact with".

The key principles set out in the AIA that are of high relevance for the activities of the HIPE project are:

- Scope: all AI providers, and users also outside EU;
- Human centric approach: all development and use of AI related applications should be guided by certain essential (human) value-oriented principles. This would enhance and promote the protection of the rights protected by the European Charter of Fundamental Rights (CFR), such as human dignity, freedom, democracy, the rule of law and respect for human rights;
- Risk-based on intended purpose: The AIA makes a difference between low and high-risk AI: the higher the risk the more severe the risk assessment procedure.
    - High-risk: safety components of machinery, toys etc. and failure or malfunctioning may put the life and health of persons at risk at large scale and lead to appreciable disruptions in the ordinary conduct of social and economic activities;
    - Forbidden: negative effects on natural persons, such as negative profiling, undifferentiated surveillance and social scoring.

Particularly important in respect to the HIPE products and services, the AIA considers concepts as 'remote biometric identification system'. It defines it as "an AI system for the purpose of identifying natural persons at a distance through the comparison of a person's biometric data with the biometric data contained in a reference database, and without prior knowledge of the user of the AI system whether the person will be present and can be identified". 'Real-time' 'remote biometric identification system' means "a remote biometric identification system whereby the capturing of biometric data, the comparison and the identification all occur without a significant delay. This comprises not only instant identification, but also limited short delays in order to avoid circumvention." The risk assessment requirements for these types of applications are rather severe and in several cases on basis even not allowed. For instance, some of such critically seen concepts could include the placing on the market, putting into service or use of an AI system that exploits any of the vulnerabilities of a specific group of persons due to their age, physical or mental disability, in order to materially distort the behaviour of a person pertaining to that group in a manner that causes or is likely to cause that person or another person physical or psychological harm.

In the most recent text of the AIA as accepted by the European Parliament (May 9, 2023) in article 5 the following applications are prohibited:

- "Real-time" remote biometric identification systems in publicly accessible spaces;

- "Post" remote biometric identification systems, with the only exception of law enforcement for the prosecution of serious crimes and only after judicial authorization;

- Biometric categorisation systems using sensitive characteristics (e.g. gender, race, ethnicity, citizenship status, religion, political orientation);

- Predictive policing systems (based on profiling, location or past criminal behaviour);

- Emotion recognition systems in law enforcement, border management, workplace, and educational institutions; and

- Indiscriminate scraping of biometric data from social media or CCTV footage to create facial recognition databases (violating human rights and right to privacy).

If the AIA would effectively come into force, HIPE concepts could be considered to apply for a "sandbox" development of the concept is put into real life circumstances. Regulatory sandbox means "a facility established by one or more Member States competent authorities in collaboration with the Commission or by the European Data Protection Supervisor, that provides an appropriate controlled and flexible environment to facilitate the safe development, testing and validation of innovative AI systems for a limited time before their placement on the market or putting into because of the sensitive service pursuant to a specific plan."

In HIPE, it is important that the parties acknowledge such requirements as part of project implementation proactively.

3.4. Council of Europe Regulations

All member States of the Council of Europe and the EU are bound to the (Modernised) Convention for the Protection of Individuals with Regard to the Processing of Personal Data. (https://www.europarl.europa.eu/meetdocs/2014_2019/plmrep/COMMITTEES/LIBE/DV/2018/09-10/Convention_108_EN.pdf) The Convention confirms the necessity to secure the human dignity and protection of the human rights and fundamental freedoms of every individual and, given the diversification, intensification and globalisation of data processing and personal data flows, personal autonomy based on a person's right to control of his or her personal data and the processing of such data. Also as the GDPR article 9 stresses that: Every individual shall have a right: a. not to be subject to a decision significantly affecting him or her based solely on an automated processing of data without having his or her views taken into consideration. This is especially important when AI applications are used in decision-making processes. AI development relying on the processing of personal data should be based on the principles of Convention 108+ on the protection of personal data as a consequence of AI applications and services. The key elements of this approach are: *lawfulness, fairness, purpose specification, proportionality of data processing, privacy-by-design and by default, responsibility and demonstration of compliance (accountability), transparency, data security and risk management*. This

approach is focused on avoiding and mitigating the potential risks of processing. Also, AI applications should allow meaningful control by data subjects over the data processing and related effects on individuals and on society. As the Council of Europe reiterates in their guidelines on Data protection and AI (Guidelines on Artificial Intelligence and Data Protection/T-PD(2019)01): "it is considered of the utmost importance that the protection of human dignity and safeguarding of human rights and fundamental freedoms, in particular the right to the protection of personal data, are essential when developing and adopting AI applications that may have consequences on individuals and society".

Further a special Committee is enacted to develop special rules for AI (a link will be included once this is released).

4. Key Ethical Principles for the HIPE Project

There are several basic principles that have to be followed in developing concepts on AI and sensing technology by human researchers in the HIPE project. These basic ethical principles always have to be taken into account on those concept-applications having effect on human beings. One should apply these principles by design or by default.

Fairness, justice and equality

The HIPE project promotes fairness, justice, and equality among individuals. Fairness means that everyone is treated with respect regardless of their socio-economical background or status.

Human-centricity

People live in different environments, and they have personal own life experiences. They must be respected and empowered. This means that both research participants in HIPE and people working for the HIPE project have to be seen and treated as active actors with opportunities to make their own choices in the project. They must be able to keep full and effective self-determination. Furthermore, their needs and wishes should be considered instead of reducing them as objects or subjects.

User-centricity

The user of the application has to be placed in the center of attention. Purpose orientation of the processing must be explainable and understandable for all users. Users have to be informed by the processers of their data. The application has to be user-friendly, accessible and the requirements and fundamental rights of the user have to be respected.

Sustainability

All the members of the HIPE consortium agree to aim at economically, environmentally and socially sustainable operations in regard to work done in the HIPE project.

Inclusiveness

All the members of the HIPE project will strive for inclusiveness and diversity within their teams as well in the using and development of the concepts.

Communication and transparency

Appropriate communication is fundamental throughout the life cycle of HIPE, as the above-mentioned ethical principles are put into practice with communication. Moreover, transparency is important to develop trust, both within the HIPE project and when communicating about the HIPE project for research participants and the public. All information addressed to the research participant or to the public must be concise, easily accessible, and easy to understand, and clear and plain language and, additionally, where appropriate, visualisation is used.

HIPE partners acknowledge data as legitimate and citable products of research and ensure that any contracts or agreements relating to research outputs include equitable and fair provision for the management of their use, ownership, and/or their protection under intellectual property rights. All authors of articles or other publications concerning the HIPE project will provide the project management information of their possible publications in advance – as established in the HIPE consortium agreement and in the HIPE Communication and Dissemination plan. Authors are fully responsible for the content of their publications, unless otherwise specified. If applicable, authors agree on the sequence of authorship, acknowledging that authorship itself is based on a significant contribution to the design of the research, concepts, relevant data collection, or the analysis or interpretation of the results, in accordance to the Vancouver Convention, as endorsed by the Finnish Advisory Board of research integrity (see https://www.tenk.fi/sites/tenk.fi/files/TENK_suositus_tekijyys_EN.pdf). Authors ensure that their work is made available to colleagues in a timely, open, transparent, and accurate manner, unless otherwise agreed, and are honest in their communication to the general public and in traditional and social media. Authors acknowledge important work and intellectual contributions of others, including collaborators, assistants, and funders, who have influenced the reported research in appropriate form, and cite related work correctly. All authors disclose any conflicts of interest and financial or other types of support for the research or for the publication of its results.

Openness of research data

The HIPE project is committed to open science and FAIR-data principles ((Findable, Accessible, Interoperable and Re-usable). This means that whenever possible, the research data and metadata will be made publicly available after the project by archiving it in a common and open data repository, such as CSC's IDA or CERN's Zenodo, and no definite period or time limit is planned for access or re-use of the opened data. However, confidential or personal data will not be made publicly available, but the metadata of such research data will be archived in a common and open data repository, such as CSC's IDA or CERN's Zenodo. The controller of the specific dataset is committed to make all efforts to make research data that contains or has originally contained personal or confidential data open where applicable and in compliance with legislation, the consortium agreement and the DMP.

Security

All the parties of the HIPE project are responsible that their collection, use, storage, sharing, and other processing of data are secure. This means that proper security solutions and processes are used and also that monitoring, patching, and reporting of security issues are properly designed.

Personal data on individuals must be properly secured and the risks to the rights and freedoms of individuals should be analyzed. All the necessary technical, organizational and personal actions must be implemented to minimize security threats to individuals whose information is processed. Considering the state of the art, the costs of implementation and the nature, scope, context and purposes of processing as well as the risk of varying likelihood and severity for the rights and freedoms of individuals, all the parties of the HIPE consortium project shall implement appropriate technical and organizational measures to ensure a level of security appropriate to the risk. Likewise, data breaches must be communicated to the data subject and the data breaches responded without undue delays by the consortium partner controlling the specific dataset.

Collaborative Working

All partners in research collaborations and development of possible service concepts take responsibility for the integrity of the research and the development of concept services. All partners agree upon these standards concerning research integrity, on the laws and regulations that will apply, on protection of the intellectual property of collaborators, and on procedures for handling conflicts and possible cases of misconduct. All partners are properly informed and consulted about submissions for publication of the research results.

Continuous improvement

Ethical issues vary and different issues may come up case by case. Thus, these ethical principles can be further developed based by user feedback and evaluations made during the service development processes.

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