



Security of Air Transport Infrastructures of Europe

## D8.3 – Ethics Briefing Pack

Deliverable Number	D8.3
Author(s)	ERI
Due/delivered Date	M3/2019-08-30
Reviewed by	DLR
Dissemination Level	PU
Version of template	1.06

**Start Date of Project:** 2019-05-01

**Duration:** 24 months

**Grant agreement:** 832969



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 832969

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Revision	Date	Comment	Author
V0.1	2019-07-16	Initial draft	Victoria Peuvrelle (ERI)
V1.0	2019-08-30	Final Review, Quality Check	Meilin Schaper (DLR)

## Executive summary

The present deliverable is aimed at establishing an adequate ethical framework for the preparation of the research activities in SATIE so all the members of the consortium are aware of the ethical challenges posed by the project and the mitigation measures that must be implemented. This is achieved in various steps. After introducing the project and the deliverable in section 1, section 2 describes the most important legal requirements and ethical principles to be followed by the SATIE consortium when conducting research within the project. After this, section 3 analyses the project activities in light of the normative dimensions defined in the previous section. This includes the tasks in which the involvement of human being is required are identified in section 3.1. The nature of such participation is also described. After that, section 3.2 includes all the ethical issues caused by the involvement of human participants in the research activities (admission and exclusion criteria, vulnerable subjects, informed consent, etc.) and advances how the SATIE consortium will address them. Third, section 4 identifies practical and actionable guidelines to be observed by the members of the consortium. These guidelines are organised by the ethical issue they are intended to address. Finally, the main topics that will be tackled during the training sessions on ethical issues to be held in M7 in Milan are laid out.

In addition to that, samples of the information sheet and consent form to be used during research activities are included as annexes in order to further illustrate how informed consent will be gathered from research participants within SATIE.

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## List of Acronyms

Acronym	Definition
API	Advanced Passenger Information
BHS	Baggage Handling System
CNN	Convolutional Neural Network
CNN	Convolutional Neural Network
D	Deliverable
DLR	Deutsches Zentrum für Luft- und Raumfahrt (German Aerospace Center)
DPIA	Data Protection Impact Assessment
EAB	Ethics Advisory Board
ERI	Ethics Research & Innovation
GDPR	General Data Protection Regulation
GDPR	General Data Protection Regulation
IDEMIA	IDEMIA IDENTITY & SECURITY FRANCE
MRZ	Machine Readable Zone
SAV	Ustav Informatiky, Slovenska Akademia Vied
T	Task
TraMICS	The Traffic Management Intrusion and Compliance System
WP	Work Package

# 1 Introduction

The project is divided into nine Work Packages, the eighth of which is the Ethics Work Package. This WP ensures that the project follows the EU's guidelines and standards in terms of ethics. This document aims at providing the consortium with a roadmap to follow by the project partners in order to ensure that SATIE is compliant with data protection regulation, whilst being more focused on the ethical questions derived from the project activities. A legal state of the art will be delivered in D8.1, and an operationalization of privacy by design principles will be delivered in D8.2. Furthermore, the Data Management Plan, part of the Quality, data and IP management plan (D1.1) focuses on the management of personal data within the frame of the project. Consequently, while D8.1, 8.3 and 8.4 address the legal requirements and ethical principles guiding SATIE and how they are reflected in **its technological development**, this deliverable is more focused on the ethical requirements to be followed within the **research activities** conducted as part of the project, including the demonstrations.

The document structure is as follows:

- Section two describes the ethical requirements to be followed in SATIE.
- Section three goes over the ethical issues present in the project and the measures in place to tackle them.
- Section four provides a set of recommendations.
- Section five describes the main content of the training activities to be conducted in order to ensure that all partners from the consortium have accessed to the information reflected in this document.

The Ethics Briefing Pack is thus aimed at assisting the participants in applying ethics principles practically during the research.

## 2 SATIE Ethical Requirements

In this section, the main ethical issues related to SATIE research development are identified and defined. The list of aspects to be considered by the ethics assessment of SATIE, including human participants, dual use or misuse, are in line with the items covered by the ethics screening established by the European Commission.

In line with the above items of the ethics assessment, Article 19 of Regulation (EU) No 1291/2013 establishing Horizon 2020 describes basic ethical principles every researcher is meant to follow. These are then detailed in Article 34 of the Annotated Model Grant Agreement (European Commission, 2019) as:

1. Respecting human dignity and integrity
2. Ensuring honesty and transparency towards research subjects and, notably, getting free and informed consent (as well as assent whenever relevant)
3. Protecting vulnerable persons
4. Ensuring privacy and confidentiality
5. Promoting justice and inclusiveness
6. Minimising harm and maximising benefit
7. Sharing the benefits with disadvantaged populations, especially if the research is being carried out in developing countries
8. Maximising animal welfare, in particular by ensuring replacement, reduction and refinement ('3Rs') in animal research
9. Respecting and protecting the environment and future generations
10. Following the highest standards of research integrity (i.e. avoiding any kind of fabrication, falsification, plagiarism, unjustified double funding or other type of research misconduct)

SATIE is committed to respect the above principles and it will establish specific safeguards to ensure that they are reflected in each of its research and dissemination activities. As already described in the Section 5 of the project proposal, the main ethical issues within the SATIE project relate to the participation of human in its demonstration and validation and with the processing of their personal (sensitive) data. Moreover, the consortium partners must be aware about its implications in terms of dual use and potential misuse, even though the project does not present a high risks in these regards. Before addressing these aspects in the actual project development the normative definitions of these four issues will be outlined below.

### 2.1 Human participants

Multiple concerns arise from empirical research involving the participation of humans, particularly regarding their **rights to autonomy, integrity and privacy**, rights recognized by international law. These are universal rights recognized by all EU Member States. The Universal Declaration of Human Rights (UN General Assembly, 1948) established the right to no "arbitrary interference" with individuals' privacy as a fundamental right in its Article 12. In the same line, the European Charter of Fundamental Rights (European Parliament, Council of the European Union and European Commission, 2000) recognizes the right to physical and mental integrity in its Article 3.

International standards and requirements for research with human subjects, which include the above rights, have been established since the beginning of the second half of the 20<sup>th</sup> century. In particular,

the Declaration of Helsinki (World medical Assembly, 1964), and The Belmont Report (The National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research, 1978) provided with key references in this regard. The Nuremberg Code underlined the need of guaranteeing and respecting the **voluntary nature of human participation** in research and pointed out the requirement of establishing instruments for **informed consent**, guaranteeing also that people involved in research can withdraw from it whenever they want. The code also underlines that researchers must **ensure the wellbeing and protect the interests of participants**. With this aim in mind, researchers must establish in advance mitigation measures for addressing any risk of harm for them. The Declaration of Helsinki followed the same approach. Conversely, the Belmont Report advanced four key ethical principles to be considered when carrying out research activities:

- **respect for people:** research subjects must be treated protecting their safety, respecting their autonomy and ensuring their consent on an informed basis,
- **beneficence:** possible benefits for the participants will be maximized while possible harm or risk will be minimized,
- **justice:** any benefits and burdens derived from research must be weighted,
- **competence:** the limitations and boundaries of the researcher competence must be recognized and made explicit.

SATIE, which involve direct participation of human subjects, must therefore put in place strong ethical and privacy management procedures to ensure that participants' privacy, dignity and welfare are upheld. In this context, some relevant questions to ask oneself when carrying out research with participants are:

- Can the tests harm the participants?

*Certain tests can potentially affect the health and well-being of participants, by inducing bodily harm for instance, or psychological pressure (stress, fear, etc.).*

- Is there a risk that they be coerced into participating?

*Care must be taken to verify that participants have not been coerced into participating: by their employers, family, relatives for instance.*

- Are the research participants able to provide full informed consent?

*Participants must be able to provide informed consent. This capacity may be hampered for instance if the consent form is not presented in a language understandable by the participant, if no information as to the nature of the experiment is attached to the consent form, etc.*

- Have the participants understood their rights?

*The participant's rights must be clear from the consent form. The researcher may also explain them out loud to the participant, in order to make sure that the participant has understood. (See below at 2.1.4 for more information on informed consent)*

- Have the participants understood what the study is about and what it entails for them?

*The information imparted to the participants must be clear and give sufficient information so as not mislead them. They need to understand what they are agreeing to.*

- What are the risks of my participants' data being accessed without authorization?

*Researchers must make sure participant's data is properly protected from unauthorized access. The more sensitive the data, the more measures need to be in place.*

- Am I planning to disseminate information that could identify my participants?

*When disseminating research results, care must be taken to make sure no participant can be individually identified.*

In brief, following the above definitions, all participants in SATIE will have to be **recruited on the basis of an ethical and methodological criteria, not coerced in any way** and establishing mechanisms for ensuring that any form of discrimination occurs. Moreover all of them will have to **provide their free, informed and explicit consent** before their participation, which will have to include all the details about the security aspects of the fieldwork/research activities and concerning the data management of their personal data. The consortium will have to ensure the physical and psychological integrity of these participants during their collaboration in the project activities, in particular concerning vulnerable groups.

## 2.2 Data Protection

As stated in the previous section, SATIE involves the design of hardware and software which involve the use of personal data and the development of a series of research activities to validate this system where personal data will be processed. Data Protection must be therefore framed on the basis of the most important piece of legislation in this domain, the General Data Protection Regulation (GDPR), which provides safeguards for protection of natural persons. This regulations sets a series of principles and definitions for the collection and processing of **personal data** which will be shortly described below.

Article 4 GDPR, defines personal data as:

*“(1) ‘personal data’ means any information relating to an identified or identifiable natural person (‘data subject’); an identifiable natural person is one who can be identified, directly or indirectly, in particular by reference to an identifier such as a name, an identification number, location data, an online identifier or to one or more factors specific to the physical, physiological, genetic, mental, economic, cultural or social identity of that natural person;”*

In order to deal with this type of data both **controllers and processors** must respect a set of requirements and principles. Article 4 defines data controllers and data processors as below:

*“(7) ‘controller’ means the natural or legal person, public authority, agency or other body which, alone or jointly with others, determines the purposes and means of the processing of personal data; where the purposes and means of such processing are determined by Union or Member State law, the controller or the specific criteria for its nomination may be provided for by Union or Member State law;*

*“(8) ‘processor’ means a natural or legal person, public authority, agency or other body which processes personal data on behalf of the controller;”*

The main applicable principles to be considered by partners when processing personal data within the scope of the SATIE project research activities are summarized below:

- **Legitimate purpose (article 5(1)(b) of GDPR)**

The purpose limitation principle (Article 5(1)(b) of GDPR) means that personal data will only be collected for specified, explicit and legitimate purposes and will not further processed in a manner that is incompatible with those purposes. This principle is very important to having in mind that there is a technical possibility of collection of a vast amount of data by SATIE and risk for so-called “function creep”. In this sense all personal data generated within and for SATIE must only be used for

the originally specified purposes for which they were created or acquired. Also any further processing of personal data for a different purpose from the one for which they have been collected should be made in accordance with the provisions of the GDPR, which includes the explicit consent of the individual involved.

- **Lawfulness, fairness and transparency (article 5.1.a GDPR)**

This principle has a broad character but one of its most important aspects for SATIE is that, in order to process personal data, the controller (the individual or entity that decides the means and the purposes of the processing) has to do it on the grounds of some of the possible causes laid down in Article 6 GDPR "Lawfulness of processing". In the case of the SATIE research and fieldwork activities with human intervention, the lawfulness of the processing will be legitimized by the consent given by the individuals who wish to participate.

- **Data minimization (article 5(1)(c) GDPR)**

This principle involves that no data should be collected if they are not strictly necessary for the declared purposes of the processing. In other words, if the utility of a piece of data is unclear, it should not be gathered. Personal data collected must be adequate, relevant and limited to what is necessary in relation to the purposes for which they are processed. This practically means that personal data must be "relevant" to the purpose for which it is being collected and the data collected must be the minimum amount of data necessary for the purposes pursued. Evidently, this requires a contextual judgement that takes into consideration the purposes of the processing and the suitability of certain categories of data to achieve them. In the context of this analysis, data minimisation is related to the principle of proportionality, which means that the data collection process should use least intrusive technological means of collecting and saving only personal data necessary for the purposes pursued.

- **Accuracy (article 5(1)(d) GDPR)**

This principle relates to the right to rectification contained in Article 16 GDPR, which grants data subjects the right to request the revision of the personal data that is not correct or precise enough. The importance of this principle stems from the potential damage that can be caused to a data subject if inaccurate data is associated to him or her.

- **Integrity and confidentiality (article 5(1)(f) GDPR)**

This principle means that personal data collection and processing must be protected against misuse or any action that could be hazardous for the identifiable subject. This means that if his or her information were to end up in the wrong hands, his or her integrity and fundamental rights could be put in danger. Therefore, both controllers and processors must aspire to implement measures that ensure high levels of security for the system.

- **Pseudonymisation techniques (article 4(5) of GDPR)**

In accordance with Article 4(5) of GDPR pseudonymisation means the processing of personal data in such a manner that the personal data can no longer be attributed to a specific data subject without the use of additional information. On the other hand anonymous data does not relate to an identified or identifiable natural person and GDPR is not applicable for them.

- **Storage limitation (article 5(1)(e))**

The concrete retention period/s to be established are not fixed by law. Conversely, **it has to be determined on a case-by-case basis in attention to the nature of the processing and its purposes**. In other words, the retention period needs to be justified on the grounds of its utility. No data can be

held if they do not serve the purposes for which they were collected in the first place. All data will be stored on secured, password protected computers. Sensitive data, such as biometrics or voice data will be encrypted and/or subject to access control. Raw data from the experiments will only be retained only as long as is strictly necessary and for no longer than the data protection period. The timescales in most cases are not set. They will depend on the project activities circumstances and the reasons why the project and the project partners collect this data.

- **Consent and other legal basis for lawful data processing**

It is important to note that GDPR requires that consent must be given by freely given, specific, informed statement or a clear affirmative action and that silence or inactivity should not therefore constitute consent. However, in most situation when using final product it would be very difficult to meet all requirements for the consent so the other legal basis should be considered which are prescribed by Article 6 of GDPR:

- (a) processing is necessary in order to protect the vital interests of the data subject or of another natural person;
- (b) processing is necessary for the performance of a task carried out in the public interest or in the exercise of official authority vested in the controller;
- (c) processing is necessary for the purposes of the legitimate interests pursued by the controller or by a third party, except where such interests are overridden by the interests or fundamental rights and freedoms of the data subject which require protection of personal data, in particular where the data subject is a child.

## 2.3 Dual use

Dual use items are defined in article 2 of the Council Regulation (EC) No 428/2009 of 5 May 2009 setting up a Community regime for the control of exports, transfer, brokering and transit of dual-use items as follows:

*‘dual-use items’ shall mean items, including software and technology, which can be used for both civil and military purposes, and shall include all goods which can be used for both non-explosive uses and assisting in any way in the manufacture of nuclear weapons or other nuclear explosive devices’ (European Commission, n.d.)*

This definition is not as clarifying on the nature of the devices to be produced by SATIE as one would expect, given that “military purposes” is a wide notion that can be interpreted in several ways. However, Annex I in the above-mentioned regulation includes a comprehensive list of all the items that can be considered as dual-use items.

## 2.4 Misuse

According to the guidance note of the EC EUROPEAN Commission, n.d), misuse could be understood in the following terms:

*“Some research involves materials, methods or technologies or generates knowledge that could be misused for unethical purposes. Although such research is usually carried out with benign intentions, it has the potential to harm humans, animals or the environment. Although the risk of misuse of research can never be eliminated, it can be minimised by recognising risks in good time and taking the right precautions. All H2020-funded projects must avoid such misuse and comply with the numerous international, EU and national laws that address concerns*

*relating to potential misuse of materials, technologies and information. If beneficiaries breach any of their obligations under the Grant Agreement, the grant may be reduced or terminated. “*

Therefore, potential unethical or harmful uses of the results of the project must be anticipated in this section in order for the members of the consortium to be able to devise counter-measures in order to address them.

Within the guidance note we can find very useful indications pointing to the types of research that are the most likely to end up producing outcomes that are likely to be used in an unethical way. These would be the following:

- *provides knowledge, materials and technologies that could be channelled into crime or terrorism*
- *could result in chemical, biological, radiological or nuclear weapons and the means for their delivery*
- *involves developing surveillance technologies that could curtail human rights and civil liberties*
- *involves minority or vulnerable groups or develops social, behavioural or genetic profiling technologies that could be misused to stigmatize, discriminate against, harass or intimidate people.*

## 3 Application of ethical principles to ethical issues in SATIE

### 3.1 Human participants

In order to test whether SATIE solutions function, human participants need to be involved during the following stages of the project:

#### 1) Risk assessment (Tasks 2.1 and 2.2)

In order to provide a state of the art about airport security and scenarios of threat and cyber-physical risk analysis, **three focus groups** are to be carried out in all three airports: Athens (M3), Zagreb (M5) and Milan (M7). The Ethics focus group will be added to the Milan focus group.

#### 2) Access request in restricted zones (Task 3.3)

This task aims at combining access control technologies based on biometrics, with video analytics to improve the prevention against physical threats and to improve resilience and security response of the people and the airport infrastructure. In order to do so, IDEMIA's Morpho Video and Image analytic platform will match the **face of the person seeking access to a whitelist**.

#### 3) TraMICS (Task 4.2)

Based on the chosen controller working position, existing system components will be selected, if necessary enhanced, and integrated. The configuration will be modelled reflecting the air traffic controller's specific area of responsibility, thereafter integrated and tested. Configuration-specific modules will be designed and implemented to detect if: (a) the aircraft move non-compliant with the air traffic controller's commands, b) the air traffic controller issue unusual commands, (c) there are conflicts, provoked by the aircraft or by the air traffic controller, (d) the speaker of the commands is not authorized (e) speakers are stressed. This set of single indications will be taken to correlate a higher-level threat-indicator in real time. TraMICS will be integrated to the SATIE simulation environment as far as needed. (SATIE consortium, 2019)

This system is not going to be tested at any of the airport of the project, but shall instead **be simulated at DLR facilities and SAV facilities, where human participants will be involved**.

#### 4) Extended Passenger Identity (Task 4.4)

The objective of this task is the detecting of threats, through the analysis of check-in data and the extended passenger identity with baggage tracking. The API (Advanced Passenger Information – check-in data) data contains the Travel Document information ("MRZ" Machine Readable Zone) of all passengers checked-in, the flight data, and when possible the seat and luggage information. This data is used by the Smart API data analysis system, to query the passengers against the Governmental Watch lists ("screening"), prior to the arrival of the plane.

In addition, the concept of extended passenger identity is implemented: considering baggage as an extended passenger identity, this innovation element is a complement to the BHS, which provides baggage identification functionalities as well as cross relations between passenger and baggage, by means of CNN (Convolutional Neural Network).

#### 5) Demonstrations (WP6)

The access request in restricted zones will be validated during a demonstration at the Milan Airport, though this might be subject to change in WP6. The extended passenger identity system will be validated during demonstrations at the Zagreb airport. At the time of writing the scenario definitions have not been finalised yet. This implies that additionally other participants might be recruited. The consortium will prefer the recruitment of project internal staff over external participants.

### **6) Dissemination (Task 7.3)**

After the task leader will have delivered a report (D7.3) about best practices for updating airport security standards and airport security policies, this report will be shared with a large number of airports and relevant security practitioners (e.g. border control, police...), after which a survey will be conducted in order to retrieve their valuable feedback.

#### **Personal data to be processed within these activities:**

The SATIE solutions are meant to enhance the security at airports. The solutions that involve personal data are meant to:

1. Find the owner of a baggage that has lost its tag,
2. Make sure that the individuals entering restricted areas are cleared to do so
3. Identify threats and breaches at the air-traffic controller level
4. Anticipate any threat in the above contexts in order to support preventive strategies

SATIE will be equipped with cameras. Because the video material can include human beings, the project should take data protection regulations into account and accurate measures to protect personal privacy ought to be deployed.

#### **3.1.1 Procedures and criteria used to identify/recruit research participants**

**Demonstrations, focus groups and tests** will occur during the project and will require human participants. Though the exact nature of all those to be recruited is not yet certain, as the scenarios are still to be fully determined, an approximation of the following procedures and criteria will be used to identify and recruit research participants:

- For the Zagreb airport demonstration:

Recruitment will be based on responsibility in particular processes which are under demonstration. Additional participants will be required to provide their biometrics in the context of the extended passenger identity, these will be consortium members.

- For the Milan airport demonstrations:

Once the scenario is defined in full details, participants wishing to take part will be chosen according to their role in the demonstration, after obtaining the permission of their superior.

- For the Athens demonstration:

Recruitment shall be based on the roles and responsibilities of certain members of the staff that best fit the profiles needed for the demonstration. They will participate after obtaining the permission of their superior, and after providing clear informed consent. Dummy data may also be used in Athens pilots.

- For the focus groups:

Each focus group session involves approximately 10 participants of airport stakeholders (airlines, ground handlers), as well as consortium members.

- For the validation tests of TraMICS:

DLR has a list of possible participants that are currently active, former or retired air-traffic controllers. For testing (T4.2) DLR will follow recruitment procedures that they already have in place, which they normally use to recruit ATCOs. The demonstration will take place in a simulated environment. Possible participants for the demonstration would be air traffic controllers.

Consequently, participants will most likely be needed in all scenarios, for their expertise in their field. Hence, air-traffic controllers are needed for the scenario involving TraMICS, BHS staff for the scenario involving physical attack, perhaps security staff to demonstrate reactions if alerts are raised, and staff used to check in passengers are needed in the extended passenger identity scenario.

Additionally, individuals not recruited for their expertise will be needed in some cases, for instance to provide biometrics in the case of the extended passenger identity.

Taking into account the above research activities for which human participants are required, **SATIE will recruit members of the consortium and airport personnel with expertise in the mentioned fields**, reducing as much as possible the amount of third-parties participants.

When recruiting participants, **care needs to be taken to make sure that the selection criteria cannot lead to discrimination or biased results**. If certain participants are rejected due to certain attributes, there should be valid reasons why, that would have led to skewing the results.

### 3.1.2 Vulnerable subjects

Due to the nature of the systems, the participants in SATIE will either be consortium members or experts in their fields, hence, **it is not foreseen that any participants pertaining to vulnerable groups will take part in the demonstrations and/or focus groups**. Furthermore, the different technologies developed within SATIE should not affect any group more than any other.

### 3.1.3 Informed consent

Voluntary participation in a study, as previously mentioned, is an essential aspect of carrying out ethical research. As such, participants **need to be fully informed of the purpose of the study, of what the risks, of their rights and of the handling of their personal data**. In the context of SATIE, what informed consent entails given the tasks to be carried out by the participants, is at a minimum:

- The voluntary character of the participation;
- Their rights to ask further questions and obtain comprehensible responses before making decisions;
- The degree of risk that participation involves in each specific exercise;
- The beneficiaries of the research activities;
- Their right to withdraw from the exercise at any time;
- Information about data collection, protection, sharing, retention period and deletion.

A sample of information sheet and consent form is included as an annexes to this document and shall be uploaded separately to the Teamsite for project partners to access more easily. These are to be

used during the course of the project **in all cases where human participants are involved**. The informed consent strategy and procedure is also addressed in detail in Deliverable 9.2, to be delivered in Month 3. These forms thoroughly and plainly present the characteristics and goals of the project as well as the rights of the participants. They describe the right to withdraw consent at any moment, as their elaboration will take into account the guidelines laid out in the GDPR (Regulation (EU) 2016/679 of the European Parliament) for informed consent as well as other relevant documents, such as the opinions of the Article 29 Working Party<sup>1</sup>. Moreover, the forms will be translated by each end user organization into all the relevant languages, including Greek, Italian, Croatian and German.

### 3.2 Protection of personal data and data management

Data protection issues are addressed in different deliverables within SATIE. The Consortium will monitor the national laws that complement the GDPR as well as the EU new developments in T8.1. This will be done in order to ensure compliance with the ongoing developments in EU data protection laws and regulations through other tasks in WP8, such as the Privacy Impact Assessment (T8.3). Furthermore, the Quality, Data and IP Management Plan (D1.1) goes over data protection, as well as POPD - Requirement No. 7 (D9.7). This section, therefore, will approach these issues from an ethical standpoint.

The aspects most sensitive in the context of SATIE **are the use of facial and voice analysis technology**, in T3.3/T4.4 and T4.2 respectively, because these process ‘special categories’ of data, the processing of which is prohibited by the GDPR, save for certain exceptions.

The purpose of the processing of personal data in the context of SATIE is to ensure the correct functioning of the various systems. Their handling would be legitimized by the fact that the **processing is necessary for the performance of a task carried out in the public interest or in the exercise of official authority vested in the controller**. Moreover, SATIE should base its activities on the principle of transparency, particularly concerning the information gathered and the materials produced by the consortium.

According to Article 5 GDPR on purpose limitation, “The basis for the processing referred to in point (c) and (e) of paragraph 1 shall be laid down by: Union law; or Member State law to which the controller is subject”. Therefore, it is essential for the data controllers of SATIE to take into consideration the applicable legislation in this regard. Deliverable 8.1 will dive deeper into this question, providing the members of the consortium with more certainty. It will combine an analysis of the data protection regulations and of the relevant regulations that concern the borders.

Concerning the principle of Data minimization, SATIE partners must ensure that **personal data processed during the project development is adequate, relevant and limited** to what is necessary in relation to the project activities processing purposes.

Following the principle of accuracy, SATIE partners must take every reasonable step to update or **remove data that is inaccurate or incomplete**. All data subjects whose personal data is managed by the project have the right to request that project partners erase or rectify erroneous data that relates to them, and the partner responsible within the consortium must do so within a month. Furthermore, partners must keep personal data safe and protected against unauthorized or unlawful processing and against accidental loss, destruction or damage, using appropriate technical or organizational measures.

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<sup>1</sup> The Article 29 Working Party was an advisory board made up of a representative from the data protection authority of each EU Member State, the European Data Protection Supervisor and the European Commission. On 25 May 2018, it was replaced by the European Data Protection Board (EDPB) under the EU General Data Protection Regulation (GDPR) (Regulation (EU) 2016/679).

Finally, the SATIE project must establish measures to ensure that partners delete personal data when they no longer need it or following the defined data retention period. The Data Management Plan of SATIE (D1.1) establishes this period.

### Biometrics

As part of T4.2 and T3.3/T4.4, voice recognition/stress detection and facial recognition will be carried out respectively. All of these systems will be tested in WP6. Under the GDPR, these constitute special categories of data for which a data protection impact assessment may need to be carried out. This, however, is addressed in D9.5, where it is argued that such assessment is not mandatory. Furthermore, a societal and privacy impact assessment will be carried out in D8.4 in Month 24, as well as an early Privacy Impact Assessment in D9.10 in Month 6.

### 3.3 Dual use

Certain systems embedded in the CyberRange, developed by Airbus Cybersecurity, are concerned by dual use. It must be noted that the French National Agency for the Security of Information Systems controls their encryption. Though these systems having been approved by the relevant French authorities, a prevention strategy is preferable. For this reason, consortium members shall be trained on this issue during the ethics focus group (T8.2). Furthermore, all export safeguards will be detailed in D9.13.

The main risks involved from dual use consist in **data breaches**. However, these systems are encrypted and all measures are in place to protect these systems from unauthorized access. Furthermore, as part of T3.2 INOV shall make use of existing protocols and cryptographic algorithms in order to provide secure communication modules. They have not selected the protocols and algorithms yet, but are more inclined to using existing open-source and widely proven cryptographic implementations. They will not be developing a new protocol or algorithm, which means they will not change the dual-use status of the existing technology.

### 3.4 Misuse

The research undertaken by the SATIE project is susceptible to produce outcomes that could fit the first and last definition of misuse mentioned above, namely:

- Provide knowledge, materials and technologies that could be channeled into crime or terrorism.
- Involve developing surveillance technologies that could curtail human rights and civil liberties.

Indeed, some of the surveillance technologies developed within SATIE, such as those involving the processing of personal data to **surveillance purposes**, could curtail human rights and civil liberties if deployed without considering their social and ethical implications, these will be assessed in D8.4 and D9.10. Furthermore, part of the research carried out necessitates to identify several of the threat scenarios that could hit the various airports, and what the effects would be. If this information were to be obtained by malicious actors, the consequences for the airports would be drastic in terms of security.

For this reason, SATIE has set out the dissemination level of all deliverables, and defined security measures for those most sensitive. Partners dealing with personal data already have measures in place to ensure their protection, such as encryption, anonymization and access control. Though partners are aware of misuse issues, this will nevertheless be discussed during training in M7.

## 4 Recommendations

As examined in the previous sections SATIE does not involve major risks in terms of ethics beyond the participation of humans in many of its research activities and the handling of special categories of data. Hazards concerning dual use and misuse are in this case quite associated to the data management security standards. Still, the consortium must follow a preventive approach to ensure that personal data and human participants are secure within all the project activities and scenarios. In line with this, this section summarizes a set of recommendations and protocols to be taken into account during the demonstrations and the research process more generally. The list of recommendations and considerations are organized in four categories: 1) human participants and testing; 2) data protection; 3) security, misuse and dual use and 4) responsible research.

### 1. Human participants and testing

- 1.1. Participants recruited for the in the focus groups, testing and demonstrations **must be adults who are voluntarily engaged in the research**. Such participants must provide an informed and free consent in order to take part in the research. They will also be free to cease their participation if they so wish. The GDPR and other relevant regulations and documents analyzed in D8.1 will constitute the legal basis based on which consent will be required within the project.
- 1.2. **When possible, participants should be recruited from inside the consortium**. Dummy databases will be used when possible.
- 1.3. **No specific individuals from vulnerable groups** are projected take part in the demonstrations to be conducted in simulated operational scenarios. If they are, **adequate means of providing consent** should be provided.

### 2. Data protection

- 2.1. SATIE is committed to **respecting and protecting the personal data** gathered from the individuals involved in the project. Any report produced by the consortium must respect the privacy of the participants.
- 2.2. **No personal data should be gathered within the SATIE demonstrations without informed consent of the data subject**. Data minimization will be ensured. The data retention period for the data derived from these processes is defined in the Data Management Plan, and is set to be five years after the end of the project. The purpose of the study and of the processing of personal data will be specified. Anonymization will be pursued when possible.
- 2.3. SATIE must implement measures described in D8.1 to ensure that processing is performed in accordance with the GDPR. Information on privacy/confidentiality and the procedures that will be set up for data collection, storage, protection, retention and destruction will be published. The Quality, Data and IP Management Plan (D1.1) delves deeper into these issues than the deliverable herein does, and shall be later refined in D9.7.
- 2.4. Third parties related to the project will be informed of the strict confidentiality requirements and of the need to respect the principle of non-disclosure. Third party organizations sharing personal data with SATIE will also have to sign a non-disclosure agreement with the SATIE consortium.

- 2.5. When asking for authorizations or notifications from the competent local/national Ethics Committees/authority clear and detailed information must be provided regarding the source of the personal data to be used, the procedures that will be used for the recruitment of participants and the nature of the material that will be collected.
- 2.6. Measures should be adopted in order to ensure that **privacy is embedded into the activities carried out by the SATIE consortium**. Privacy by design standards must be considered by the consortium, particularly by technical partners. This issue will be addressed in T8.2, where recommendations shall be issued to the consortium as to how the platform should be created to ensure adequate data protection.
- 2.7. Privacy Impact Assessment: The SATIE outcomes can be classified as a security system, which implies that it will likely be presented with challenges regarding privacy and data protection rights. That is why an early privacy impact assessment shall be delivered in D9.10, and another shall be delivered in D8.4.

### 3. Security, misuse and dual use

- 3.1. **A preventative approach to misuse must be taken.** This means that it is necessary to give some thought to the possible ways in which the systems developed by SATIE could be tweaked or upgraded in a way that could be detrimental in terms of how it would affect vital European values. This will be checked as part of D8.4. Particular attention should be paid to the detrimental effects that the project could have on human rights.
- 3.2. The outcomes to be produced by the consortium will be examined in the light of the **regulations on dual use**, mainly EU Regulation No 428/2009 setting up a Community regime for the control of exports, transfer, brokering and transit of dual-use items in D8.1. This analysis must be conducted in order for the consortium to be able to rule out the possibility of them being susceptible of being used with military ends. Though the export of dual-use items is not foreseen, the partner developing the dual use technology will need to seek the relevant authorizations to do so.
- 3.3. The dissemination of the results of the project must be done with caution and ensuring the rights to privacy and data protection at all times. The consortium needs to be particularly careful when publishing data that contains any kind of personal data, in which case informed and free consent must be guaranteed. The dissemination of the project is ensured in WP7, which is led by AIA.
- 3.4. As part of its activities cited in the Grant Agreement, the Security Advisory Board shall advise the project on its ways of development, integration and adoption of innovative elements.

### 4. Responsible research

- 4.1. The **impartiality and independence of the researchers who participate in the project must be guaranteed.** This takes into account the cases where the boundaries between researcher, developer and participant may be blurred and where some may want to make their contribution known to, for instance, their professional associations as part of a dissemination strategy.
- 4.2. All research partners have a mutual duty of care to each other and to maintaining the project's autonomy. **Proper and fluent communication** is an essential aspect of this. They

also have a duty of care to participants in ensuring that they are not put at risk of harm as a result of their participation.

- 4.3. Rewards and possible incentives for participation in the demonstrations and research activities have to observe the principle of proportionality in order to **avoid any form of coercion** from occurring and tampering with the voluntary and free nature of consent.
- 4.4. The informed consent procedures detailed in D9.2 must be observed. Copies of models of Informed Consent Forms and Information Sheets are included in that document as annexes, and are made available on the Teamsite for the partners. **The final version of these documents will be provided in plain language and in terms that are understandable to participants.**

## 5 Training modules and content

The consortium shall be trained on ethical aspects of research. The date set for this was originally in M16, however, given that validation demonstrations are due to begin in M10, it was decided that the ethics training shall be added at the end of the Milan focus group in M7 as part of T8.2. This therefore ensures that all members of the consortium are trained in relevant aspects of research before the demonstrations begin.

The training shall tackle the above-mentioned issues, namely:

- General considerations of ethics in research
- Recruitment of participants
- Carrying out of demonstrations that include human participants
  - Safety
- Consent
- GDPR definitions and responsibilities
- Data protection
  - Definition of personal data
  - Definition of sensitive data
  - Data protection principles
- Dual use
  - Security measures
- Misuse
  - Risk mitigation measures
- Social impact
  - Desirability
  - Acceptability

Other relevant topics might be added as seen fit.

## 6 Conclusion

The deliverable has outlined for the consortium the main ethics issues that might arise during the project, which requirements and principles these issues must be driven by, and the manner in which to apply these principles. The following deliverables provide further information concerning a number of topics:

- D9.1: Information on human participants
- D9.2: Information on the consent procedures in place to recruit human participants
- D9.3: The procedure to follow in cases of incidental findings

## 7 References

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## Annex 1 – Information sheet

This information sheet serves as template. All parts needing customisation are highlighted yellow.

### The SATIE Project

The SATIE project is funded by the European Commission's Research Executive Agency (REA), under its Horizon 2020 Framework Programme for Research and Technological Development. It aims to build a security toolkit in order to protect critical air transport infrastructures against combined cyber-physical threats. Over a 24-month time frame, the SATIE consortium will develop, test, validate and demonstrate in operational conditions 14 innovative elements which will optimise airport security.

### The Exercise: Title of the Exercise (Test/Demonstration/Focus group/other)

Give a short description of the exercise, as well as the role of the participant within that exercise.

### The personal data that will be gathered

Give description of the personal data that shall be gathered as part of the exercise.

### How to withdraw from the exercise?

Participation is entirely voluntary. The participant can withdraw from the exercise at any moment by informing the exercise leader of his/her wish to withdraw from the exercise.

### Who will be responsible for the information once the Project is completed?

The collection, storage, protection, retention and destruction of personal data will be in the remit of xxx (insert company name), and of its the Data Protection Officer, XXX. Please insert contact details as applicable for your company.

### Who will have access to the information?

The feedback given in written or verbally to any questionnaire will be anonymous.

Apart from the participant (data subject), the data controller XXX and the Data Protection Officer of XXX will have access to the participant's personal data. Please insert contact details as applicable for your company!

Your personal data shall not be shared outside of the XXX (insert company name)/ Your personal data might be shared with XXX (insert as appropriate).

### The Data Subject's Rights

The participant is granted, free of charge, access to all data concerning him/her and, as appropriate the right of rectification, erasure or blocking of data, in particular because of the incomplete or inaccurate nature of the data. The data subject also has the right of notification of rectifications to third parties to whom the data have been disclosed.

## Annex 2 – Consent form

This consent form serves as template. All parts needing customisation are highlighted yellow.

CONSENT	YES	NO
Hereby, I ..... (name) freely consent to my participation in the SATIE [give activity] activity in [location].	<input type="checkbox"/>	<input type="checkbox"/>
The purpose of this activity has been explained to me in writing and I am fully informed about the way in which my personal data is going to be processed.	<input type="checkbox"/>	<input type="checkbox"/>
I will not receive any compensation or incentive for having taken part in this exercise. [Delete this row if participants are receiving compensation]	<input type="checkbox"/>	<input type="checkbox"/>
I am participating voluntarily and understand that I can withdraw from the activities at any time without any penalty or prejudice.	<input type="checkbox"/>	<input type="checkbox"/>
Hereby, I freely consent to the processing of my personal data for the purpose of participating in this SATIE activity.		
I understand that my personal data will not be processed outside the SATIE project.	<input type="checkbox"/>	<input type="checkbox"/>
I understand that in the unlikely event that the research leads to findings regarding criminal or harmful activities, the Exercise Leader, or SATIE’s Project Management Board in case the Exercise Leader is unable to provide an opinion, shall be made aware of this and decide on whether or not to pass this on to the relevant authorities, depending on the finding and national legal requirements.	<input type="checkbox"/>	<input type="checkbox"/>
I understand that my answers to any questionnaire will remain anonymous, and that should I not wish to answer any particular question(s), I am free to decline without any penalty or prejudice.	<input type="checkbox"/>	<input type="checkbox"/>
Some picture/video could be taken during the exercise and may be published digitally or in print for communication and dissemination purposes. I give authorization to use my image only for these purposes and am aware that giving consent for this is not necessary in order to participate in this exercise.	<input type="checkbox"/>	<input type="checkbox"/>
I have been informed that the length of the personal data retention period will be five years after the end of the project.	<input type="checkbox"/>	<input type="checkbox"/>
I have the right to request access to my personal data, and to have it rectified or deleted at any time by contacting the DPO at (XXX@YYY.ZZ) (insert contact details).		
Finally, I acknowledge that once the DPO or Exercise Leader receives notification should I choose to withdraw my consent, my information will no longer be processed for the purpose or purposes I originally agreed to, unless there are other legitimate bases for doing so in the law.	<input type="checkbox"/>	<input type="checkbox"/>

The personal information included in this form (name and surname) will be kept by the Data Protection Officer for a maximum of five years after the end of the project, in a secure environment

according to data protection guidelines. It will be permanently destroyed or anonymized five years after the end of the project.

A copy of the information sheet and this (signed) consent form will be given to the signee and a copy will be kept by XXX (insert company name) for their record.

Print name (participant) .....

Signature (participant):.....

Date: .....