



Survey Questionnaire

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TBO-Met

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TBO-Met

METEOROLOGICAL UNCERTAINTY MANAGEMENT FOR TRAJECTORY BASED OPERATIONS

This deliverable is part of a project that has received funding from the SESAR Joint Undertaking under grant agreement No 699294 under European Union's Horizon 2020 research and innovation programme.



Abstract

The TBO-Met project corresponds to the research topic “Environment & Meteorology for ATM”, which is part of the research area “ATM Excellent Science & Outreach” of the SESAR 2020 Exploratory Research programme (call H2020-SESAR-2015-1). TBO-Met is coordinated by the University of Seville (Spain) and the rest of the consortium is formed by the following members: University Carlos III of Madrid (Spain), University of Salzburg (Austria), MeteoSolutions GmbH (Darmstadt, Germany) and the Spanish meteorological agency AEMET (Agencia Estatal de Meteorología).

In this project we address the problem of analysing and quantifying the effects of meteorological uncertainties in Trajectory Based Operations. In particular, two problems are considered: 1) trajectory planning under meteorological uncertainties and 2) sector demand analysis under meteorological uncertainties, which correspond to two different scales: trajectory (micro) scale and sector (meso) scale. In each problem two types of meteorological uncertainties are considered: wind uncertainty and convective zones (including individual storm cells). Weather predictions will be based on Ensemble Probabilistic Forecasts and Nowcasts.

At the trajectory scale, the main objective is to assess and improve the predictability of efficient 4D trajectories when weather uncertainty is taken into account, both at the pre-tactical level (mid-term planning) and at the tactical level (short-term planning and execution). To reach this goal, a methodology based on the use of stochastic trajectory optimization will be used.

Founding Members



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At the sector scale, the main objective is to analyse the impact of trajectory planning under weather uncertainty (as performed at the trajectory scale) on sector demand. To achieve this objective, a methodology will be developed to measure the uncertainty of sector demand (probabilistic sector loading), based on the uncertainty of the individual trajectories. This analysis will also provide an understanding of how weather uncertainty is propagated from the trajectory scale to the sector scale (this problem of uncertainty propagation between different scales of the system is one of the main research challenges in the understanding of the effects of meteorological uncertainty in the ATM system).

The expected outcome of the project is two-fold: 1) to enhance our understanding of the impact of meteorological uncertainty in TBO, and 2) to develop methodologies to quantify the impact of meteorological uncertainty in TBO. The methodologies will be evaluated and assessed using advanced air traffic simulation facilities.

To help in achieving the project objectives, a survey among the stakeholders involved (airlines, ANSPs and Network Manager) is to be performed. The main result of the survey will be a first-hand expert description of current practice and future expectations, which will serve as a valuable reference for the project activities.

This project is fully aligned with the objectives of the SESAR 2020 Exploratory Research programme, in particular the following ones related to the “Meteorology” topic: “to enhance meteorological capabilities and their integration into ATM planning processes for improving ATM efficiency” and “to develop 4D trajectories that are optimised to take account of all environmental considerations”, and where the following impact is expected: “to enhance ATM efficiency by integrating meteorological information”.



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1. Executive Summary

This document addresses the TBO-Met Survey Questionnaire, including its **scope**, potential **participants**, **ethical issues** to be considered, the **questions** to be posed and the **instructions** to be followed by participants. The fundamental **objectives** of the survey are twofold: 1) ensure that TBO-Met project is aligned with current meteorological practices in aviation (particularly any issue regarding meteorological uncertainty); and 2) understand future expectations and needs regarding meteorological uncertainty management. The survey will provide **information** on the type of meteorological services/products being used; the common understanding of meteorological uncertainty; how the different actors provide robustness to the systems; the desired values of predictability; and the efficiency cost they are willing to pay. Because the Survey requires dealing with human participants, it must comply with certain **ethical requirements**, related to: 1) obtaining informed consent from the human beings who will participate in the survey; 2) the procedures to be implemented for data collection, storage, protection, retention and destruction and confirmation that they comply with national and EU legislation; and 3) obtaining informed consent from the survey participants to collect and process personal data.

Although the ethical requirements are defined in other deliverables of the project, for completeness they are also included in this document.

2. Introduction¹

In the future ATM system the 4D becomes the central element of a new set of operational procedures collectively referred to as trajectory Trajectory-Based Operations (TBO). TBO is a new concept envisioned to increase the capacity and efficiency of the system while preserving or augmenting the safety, evolving from the current airspace-based ATM system to a trajectory-based system.

One key factor that affects those goals is uncertainty. **Uncertainty** is an inherent property of real-world socio-technical complex systems, and ATM is clearly not an exception. All actors of the ATM system (flight passengers, pilots, air traffic controllers, airlines) are faced with the effects of the uncertainty present in the system. Uncertainty is critical from different perspectives in air transport: safety, environmental and cost dimensions. Researchers must accept the fact that uncertainty is unavoidable and must be dealt with, rather than ignored.

A better understanding of the elements introducing uncertainty in the air traffic is key when optimizing, planning, executing, monitoring and synchronizing trajectories with ground systems and/or other aircraft. In particular, the need of computing efficient, yet accurate trajectories becomes the fundamental cornerstone for reaching the expected benefits of TBO in terms of increased capacity, increased efficiency, and reduced environmental impact.

Weather uncertainty is one of the main sources of uncertainty that affect the ATM system. TBO-Met focuses precisely on the analysis of meteorological uncertainty coming from the following two sources: wind and convection.

In this work package, i.e. WP 3, we will conduct and process a survey among some selected stakeholders involved in air traffic. The goals are: to ensure TBO-Met is aligned with their current meteorological practices in aviation (particularly any issue regarding meteorological uncertainty); and to understand future expectations regarding meteorological uncertainty management. In this document, we elaborate the questionnaire of the survey to be distributed among the stakeholders.

The present document is structured as follows: Section 3 contains the scope of the survey, including its goals and initially selected participants; Section 4 includes the ethical issues to be considered;

¹ The opinions expressed herein reflect the author's view only. Under no circumstances shall the SESAR Joint Undertaking be responsible for any use that may be made of the information contained herein.

Section 5 describes the survey implementation issues and the instructions to complete the questionnaire; lastly, Section 6 poses the questions.

2.1 Acronyms and Terminology

Term	Definition
4D	Four Dimensional
ACC	Area Control Center
ANSP	Air Navigation Service Provider
ATC	Air Traffic Control
ATM	Air Traffic Management
DFS	Deutsche Flugsicherung
EPS	Ensemble Prediction Systems
EU	European Union
EWF	Ensemble Weather Forecasting
FMP	Flow Management Position
KPAs	Key Performance Areas
LAE	Líneas Aéreas Españolas
LIDO	Lufthansa Systems
MET	Meteorology
NM	Network Manager
PC	Project Coordinator
POPD	Protection of Personal Data
SESAR	Single European Sky ATM Research
TBO	Trajectory Based Operation
UAC	Upper Area Control Center
WP	Work Package

TBO-Met Consortium

AEMET	Agencia Estatal de Meteorología
MetSol	MeteoSolutions GmbH
PLUS	University of Salzburg
UC3M	University Carlos III of Madrid
USE	University of Seville

3. Scope of the Survey

3.1 Goals of the Survey

The objective of WP 3 is to elaborate a survey among all stakeholders involved in air traffic (airlines, ANSPs, NM, etc.), so that:

1. the project is aligned with their current meteorological practices in aviation; and
2. future expectations regarding meteorological uncertainty management and relevant issues are taken into account.

In particular, the main output of the survey will be:

1. a description of the current uses and needs in meteorological uncertainty management, which will be considered in the definition of the analyses to be performed in the project (e.g., the inclusion of uncertainty indicators already in use or expected by the stakeholders); and
2. a clear picture of the understanding that the different stakeholders have of meteorological uncertainty, which will be considered to set up a common framework for an effective communication of our results (e.g., definitions of uncertainty concepts, indicators, metrics, models, etc.).

For this purpose, the survey will provide information on:

1. the type of meteorological services/products being used,
2. the understanding of meteorological uncertainty,
3. The models and indicators used,
4. how the different actors provide robustness to the system,
5. the desired values of predictability,
6. the efficiency cost they are willing to pay, and
7. the gaps to be explored in the future.

3.2 Stakeholders

The survey will be addressed to particular members of some key representative stakeholders with sufficient experience in meteorological products, e.g., ensemble prediction systems and nowcasts, and who are expected to provide a realistic vision on the general understanding of the weather uncertainty. Each interviewee is expected to express his/her own opinions, and not to reflect the institutions' view: the particular members of the institutions are targeted, not the organizations

themselves. A preliminary list of stakeholders was agreed in the TBO-Met Kick-Off Meeting [1] and is the following:

- Flight Keys;
- Austro-Control;
- German Pilots Association;
- Lufthansa (LIDO);
- Deutsche Flugsicherung (DFS);
- Enaire - ACC Barcelona, ACC Seville FMP, ACC Seville ATC;
- Meteo France (Met forecasters);
- Eurocontrol - Network Manager, Maastricht UAC;
- INDRA;
- Honeywell;
- Iberia LAE.

Notice that this list might be slightly modified during the time that this WP is open, resulting in the withdrawal of any of the institutions and/or the addition of new ones if considered appropriate by the TBO-Met Consortium.



4. Ethical aspects

The survey requires dealing with human participants and some data related to them, and thus the survey must comply with certain ethical requirements that are described below:

- H-Requirement No. 3 of the project TBO-Met D8.1 [2], which deals with **obtaining informed consent** from the human beings who will participate in the survey.
- The POPD-Requirement No. 2 of the project TBO-Met D.8.2 [3], which deals with the **procedures to be implemented for data collection, storage, protection, retention and destruction** and confirmation that they **comply with national and EU legislation**.
- The POPD-Requirement No. 1 of the project TBO-Met D8.3 [4], which deals with obtaining **informed consent from the survey participants to collect and process personal data**.

5. Survey Implementation and Instructions

The ethical principles that underlie the ethics requirement implementation and documentation are based on the EU Directive 2001/20/CE and the European Code of Conduct for Research Integrity [5], and include the primacy of the human being; balancing benefits against risks; voluntary, free and informed participation of subjects; right to privacy; individual liability of researchers; and integrity in scientific research.

5.1 Informed consent to participate in the survey

For the ethics requirement No. 3, **informed consent** from each and every survey participant has to be obtained. This has been thoroughly covered in TBO-Met's D8.1 [2].

In order to obtain consent to participate in the survey, an interview will be conducted during which an information sheet will be given along with the corresponding informed consent form. This sheet, which is described in Section 4.1 of D8.1 (also provided as Appendix A to this Deliverable), **must be provided to participants so that they can read it and voluntarily sign it to consent participation in the TBO-Met Survey.**

It is important that, during the interview, the researcher emphasize the voluntariness of the participation and the participant's right to discontinue participation at any time. Furthermore, the researcher must allow the participant time to read and understand the information, and answer his/her questions. Then, once the signed consent is obtained, the survey can take place.

5.2 Data collection, storage, protection, retention, and destruction

The survey to be carried out in this project consists of questionnaire-based interviews, and therefore involves collecting and processing personal data: the professional opinions of identified interviewees. For the ethics requirement No. 2 addressed in TBO-Met's D8.2 [3], an **anonymization procedure** takes place, which ensures the confidentiality of the personal data. The elements of this procedure are described next.

First, each completed **questionnaire will not contain any personal information** that might allow connecting the opinions to the person who has expressed them. Second, the interviewee will **send the completed questionnaire to the Project Coordinator** by a courier delivery private company. Finally, when the PC receives each envelope he will make sure that it remains closed, **extract the content, destroy the envelope, and put the completed questionnaire together** with those already received. **The main consequence is that there will not be any file containing personal data.**



From the moment the PC has all the completed questionnaires onwards, only completely anonymized data are handled; therefore, **procedures subsequently applied for data storage, protection, retention, transfer, destruction or re-use do not fall under the data privacy rules.** Nonetheless, the completed anonymous questionnaire will remain under the custody of the PC, and they will not be transferred to any other third party.

5.3 Informed consent to collect and process personal data

For the ethics requirement No. 1, **informed consent** from each and every survey participant to **collect and process personal data** has to be obtained. This has been thoroughly covered in TBO-Met's D8.3 [4].

In order to obtain consent to collect and process data in the survey, during the interview an information sheet will be given along with the corresponding informed consent form. This sheet, which is described in Section 4.1 of TBO-Met's D8.3 [4] (also provided as Appendix B to this Deliverable), **must be provided to participants so that they can read it and voluntarily sign it to consent data collection and personal data processing in the TBO-Met Survey.** Once the consent is obtained, the data can be collected and processed.

During the interview, the researcher must allow the participant time to read and understand the information, and answer his/her questions.

6. Survey Questions

In this section we present the questions that will form the questionnaire of the survey.

Question 1: meteorological data

Related to your current activities, what meteorological data do you use? What kind of meteorological products/services do you use?

Question 2: confidence in forecasts

- a) Do you have confidence in meteorological forecasts? Please write down your answer in terms of a scale (1 = very poor, 5 = very confident).
- b) Do you think there is a lack of dialogue between ATM and the providers of meteorological services? Should the dialogue be improved?

Question 3: understanding of uncertainty

In your view, is meteorological uncertainty well understood by users? Related to your activities, is weather uncertainty taken into account? How do you characterize it?

Question 4: meteorological models

In case that you use meteorological models in your activities, are they probabilistic? What models do you use to simulate uncertain scenarios? How realistic are they?

Question 5: ensemble weather forecasting

- a) Do you have experience with Ensemble Weather Forecasting (EWF)/Ensemble Prediction Systems (EPS)? If yes, could you please detail what kind of ensemble are you using?
- b) Would EPS (together with adequate algorithms to process them) be relevant for your activities? What type of information would you need? How should it be presented/provided to you?



Question 6: impact of uncertainty

- a) Related to your activities, is the impact of meteorological uncertainty important? Has it ever been quantified? Is it low, medium, or high?
- b) Related to your activities, how lack of predictability, e.g. on aircraft trajectories and/or sector demand, affects them currently? How would a potential increase in predictability impact your activities?

Question 7: robustness and performance

- a) Is system robustness relevant to your activities? In your view, how does meteorological uncertainty affect robustness? Could you provide some indicators?
- b) Do you address the question of getting a trade-off between performance and robustness (with respect to weather uncertainty) in your activities within the air transport system?

Question 8: indicators

In your view, what Key Performance Areas (KPA), such as safety, capacity, cost efficiency, operational efficiency, and environment, are most affected by meteorological uncertainty? Could you provide some indicators?

Question 9: decision support tools

In your view, is there a need to include weather uncertainty in Decision Support Tools? Would this improve current operations?

Question 10: future

When dealing with weather uncertainty, could you identify any particular gap in current practice that could be explored in future research?

7. References

- [1] – Minutes TBO-Met Meeting, Kick-Off Meeting, 2016-06-07.
- [2] – **“TBO-Met Deliverable 8.1. H – Requirement No. 3.”** SESAR H2020 TBO-Met Project. Technical Report, Ed. 01.00, 2016.
- [3] – **“TBO-Met Deliverable 8.2. POPD – Requirement No. 2.”** SESAR H2020 TBO-Met Project. Technical Report, Ed. 01.00, 2016.
- [4] – **“TBO-Met Deliverable 8.3. POPD – Requirement No. 1.”** SESAR H2020 TBO-Met Project. Technical Report, Ed. 01.00, 2016.
- [5] – **“The European Code of Conduct for Research Integrity of ALLEA (All European Academies) and ESF (European Science Foundation)”**. March 2011 [Access Online on August 29 2016] http://www.esf.org/fileadmin/Public_documents/Publications/Code_Conduct_ResearchIntegrity.pdf

8. Appendix A

Documentation of Requirement No. 3

In order to obtain consent to participate in the survey, an information sheet must be given along with the corresponding informed consent form. The content of the information sheet and the informed consent form is included in subsections 8.1 and 8.2, respectively.

8.1 Information Sheet for participation in TBO-Met survey

Introduction

You are being asked to participate in a study involving research subjects, in the context of a project entitled “Meteorological Uncertainty Management for Trajectory Based Operations (TBO-Met)”.

Your participation is entirely voluntary. Please, do not feel pressured to participate and take your time to read and understand the information contained below. Furthermore, your consent is a continuing process, that is, you will have the opportunity to ask questions to the interviewer and to withdraw your participation and your data at any time without any harmful consequences.

TBO-Met project information

In TBO-Met project we address the problem of analysing and quantifying the effects of meteorological uncertainties in Trajectory Based Operations. In particular, two problems are considered: 1) trajectory planning under meteorological uncertainties and 2) sector demand analysis under meteorological uncertainties, which correspond to two different scales: trajectory (micro) scale and sector (meso) scale. In each problem two types of meteorological uncertainties are considered: wind uncertainty and convective zones. Weather predictions will be based on Ensemble Probabilistic Forecasts and Nowcasts.

At the trajectory scale, the main objective is to assess and improve the predictability of efficient 4D trajectories when weather uncertainty is taken into account, both at the pre-tactical level (up to three hours before departure) and at the tactical level (during the flight). To reach this goal, a methodology based on the use of stochastic trajectory optimization will be used.

At the sector scale, the main objective is to analyse the impact of trajectory planning under weather uncertainty (as performed at the trajectory scale) on sector demand. To achieve this objective, a methodology will be developed to measure the uncertainty of sector demand (probabilistic sector

loading), based on the uncertainty of the individual trajectories. This analysis will also provide an understanding of how weather uncertainty is propagated from the trajectory scale to the sector scale (this problem of uncertainty propagation between different scales of the system has been identified as one of the main research challenges in the understanding of the effects of meteorological uncertainty in the ATM system, see http://complexworld.eu/wiki/ComplexWorld_Wiki).

This survey among the stakeholders involved (airlines, ANSPs and Network Manager) will help in achieving the project objectives.

The expected outcome of the project is two-fold: 1) to enhance our understanding of the impact of meteorological uncertainty in TBO, and 2) to develop methodologies to quantify the impact of meteorological uncertainty in TBO. The methodologies will be validated using advanced air traffic simulation facilities.

This project is fully aligned with the objectives of the SESAR 2020 Exploratory Research programme, in particular the following ones related to the “Meteorology” topic: “to enhance meteorological capabilities and their integration into ATM planning processes for improving ATM efficiency” and “to develop 4D trajectories that are optimised to take account of all environmental considerations”, and where the following impact is expected: “to enhance ATM efficiency by integrating meteorological information”.

TBO-Met is coordinated by the University of Seville (Spain) and the rest of the consortium is formed by the following members: University Carlos III of Madrid (Spain), University of Salzburg (Austria), MeteoSolutions GmbH (Darmstadt, Germany) and the Spanish meteorological agency AEMET (Agencia Estatal de Meteorología). The coordinator of the project is Prof. Damián Rivas (drivas@us.es), director of the Group of Aerospace Engineering of ETSI.

TBO-Met research project has received funding from the SESAR Joint Undertaking under grant agreement No 699294 under European Union’s Horizon 2020 research and innovation programme. The project corresponds to the research topic “Environment & Meteorology for ATM”, which is part of the research area “ATM Excellent Science & Outreach” of the SESAR 2020 Exploratory Research programme (call H2020-SESAR-2015-1).

Survey information

As a relevant representative of the stakeholders involved into Air Traffic Management, you are being invited to take part in this survey, which will consist of a questionnaire-based interview with an expected duration of two hours. During the interview, you will be asked, among other things, about the way you manage meteorological uncertainty, the levels of trajectory predictability you think that should be obtained in the future, and the efficiency cost you are willing to admit in exchange of an increase in trajectory predictability, hence addressing technical aspects of your professional practice.

The main result of the survey will be a first-hand expert description of current practice and future expectations. It will serve as a valuable reference to align the project activities.



Benefits, risks and inconveniences

Due to the nature of your participation, there are not any benefits nor inconveniences directly related to participating in this study. The only foreseeable risk is the unauthorized disclosure of the information provided during the interview, and the identity of the interviewee. This risk is strongly mitigated thanks to appropriate data management procedures.

Data Management

Your participation in this study implies collecting and processing your professional opinions as an identified interviewee, which are considered to be personal data. However, an anonymization procedure takes place, which ensures personal data confidentiality. This is achieved thanks to considering the following cautions:

First, your completed questionnaire will not contain any personal information that might allow to identify your opinions as belonging to you. Second, you will send the completed questionnaire to the Project Coordinator by a courier delivery private company. Finally, when the PC receives your envelope he will make sure that it remains closed, extract the content, destroy the envelope (to avoid linking your opinions to you) and put the completed questionnaire together with those already received.

From the moment the PC has all the completed questionnaires onwards, only completely anonymized data are handled; therefore, your privacy is guaranteed.

Contact information

The preparation of the survey and the realization of the interviews and processing of the results are led by UC3M. The Responsible Researcher is Dr. Manuel Soler Arnedo, masolera@ing.uc3m.es, Tel. (+34) 916248219. You can contact him for answers to pertinent questions about the research and survey participant's rights.

8.2 Informed consent form for participation in TBO-Met survey

I hereby declare that

- 1) I have read the information sheet and I have been explained the relevant details of the research and the nature of my participation;
- 2) I am aware of my right to refuse to participate and to withdraw the participation at any time without negative consequences by revoking the informed consent;
- 3) I have been told the benefits, risks or discomfort that might arise from my participation in this study;
- 4) I have understood the data collection and anonymization procedure explained in the information sheet;
- 5) I agree to participate in this study under the conditions established in the information sheet.

Signed by: _____

Date: _____

REVOCATION:

I hereby revoke all prior signed consents to participate in this study:

Signed by: _____

Date: _____

9. Appendix B

Documentation of Requirement No. 1

In order to obtain consent to collect and process personal data, an information sheet must be given along with the corresponding informed consent form. The content of the information sheet and the informed consent form is included in subsections 9.1 and 9.2, respectively.

9.1 Information Sheet for data collection in TBO-Met survey

Introduction

You are being asked to participate in a study involving personal data collection and processing, in the context of a project entitled “Meteorological Uncertainty Management for Trajectory Based Operations (TBO-Met)”.

TBO-Met research project has received funding from the SESAR Joint Undertaking under grant agreement No 699294 under European Union’s Horizon 2020 research and innovation programme. The project corresponds to the research topic “Environment & Meteorology for ATM”, which is part of the research area “ATM Excellent Science & Outreach” of the SESAR 2020 Exploratory Research programme (call H2020-SESAR-2015-1).

Your participation is entirely voluntary. Please, do not feel pressured to give consent and take your time to read and understand the information contained below. Furthermore, your consent is a continuing process, that is, you will have the opportunity to ask questions to the interviewer and to withdraw your participation and your data at any time without any harmful consequences.

TBO-Met survey

In TBO-Met project we address the problem of analysing and quantifying the effects of meteorological uncertainties in Trajectory Based Operations. A survey among the stakeholders involved (airlines, ANSPs and Network Manager) will help in achieving the project objectives.

As a relevant representative of the stakeholders involved into Air Traffic Management, you are being invited to take part in this survey, which will consist of a questionnaire-based interview with an expected duration of two hours. During the interview, you will be asked, among other things, about the way you manage meteorological uncertainty, the levels of trajectory predictability you think that

should be obtained in the future, and the efficiency cost you are willing to admit in exchange of an increase in trajectory predictability, hence addressing technical aspects of your professional practice.

Data management

Your participation in this study implies collecting and processing your professional opinions as an identified interviewee, which are considered to be personal data. However, an anonymization procedure takes place, which ensures personal data confidentiality. This is achieved thanks to considering the following cautions:

First, your completed questionnaire will not contain any personal information that might allow to identify your opinions as belonging to you. Second, you will send the completed questionnaire to the Project Coordinator by a courier delivery private company. Finally, when the PC receives your envelope he will make sure that it remains closed, extract the content, destroy the envelope (to avoid linking your opinions to you) and put the completed questionnaire together with those already received.

From the moment the PC has all the completed questionnaires onwards, only completely anonymized data are handled; therefore, your privacy is guaranteed.

Benefits, risks and inconveniences

Due to the nature of your participation, there are not any benefits nor inconveniences directly related to participating in this study. The only foreseeable risk is the unauthorized disclosure of the identity of the interviewee and the information he or she provided during the interview. This risk is strongly mitigated thanks to the data management procedures explained above.

Contact information

The Coordinator of the TBO-Met project is Prof. Damián Rivas (drivas@us.es), director of the Group of Aerospace Engineering of ETSI (Escuela Técnica Superior de Ingeniería, University of Seville). You can contact him for answers to pertinent questions about the data collection and anonymization process.



9.2 Informed consent form for data collection in TBO-Met survey

I hereby declare that

- 1) I have read the information sheet and I have been explained the nature of the data I am providing;
- 2) I am aware of my right to refuse to participate and to withdraw the participation at any time without negative consequences by revoking the informed consent;
- 3) I have been told the benefits, risks or discomfort that might arise from my participation in this study;
- 4) I have understood the data collection and anonymization procedure explained in the information sheet;
- 5) I agree to give the data requested in the questionnaire under the conditions established in the information sheet.

Signed by: _____

Date: _____

REVOCATION

I hereby revoke all prior signed consents to participate in this study:

Signed by: _____

Date: _____

Founding Members



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