PROTEUS

Scalable online machine learning for predictive analytics and real-time interactive visualization

687691

D7.2 OEI - Requirement No. 1

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Abstract

The present document is part of the ethic deliverables of the PROTEUS project, funded by the European Commission, under Horizon 2020 – Research and Innovation Framework Programme [1]. The PROTEUS project will touch on issues in human research ethics by collecting data from respondents in Spain and thus raises research-ethical concerns. This report outlines the ethics requirements and highlights where these requirements have to be fulfilled.

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Abstract **(for dissemination)**	The present document is part of the ethic deliverables of the PROTEUS project, funded by the European Commission, under Horizon 2020 – Research and Innovation Framework Programme [1]. The PROTEUS project will touch on issues in human research ethics by collecting data from respondents from Spain and thus raises research-ethical concerns. This report outlines the ethics requirements and highlights where these requirements have to be fulfilled.
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Issue Date	**Rev. No.**	**Author**	**Change**
19/01/2016	0.1	European Commission	Definition of the new WP7 "Ethics requirements" and corresponding deliverables
04/02/2016	0.2	TREE	Initial structure
09/02/2016	0.3	TRI	First draft of contents
09/02/2016	0.4	TREE	Internal review
09/02/2016	1.0	TREE	Final release

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Abbreviations

PROTEUS: Scalable online machine learning for predictive analytics and real-time interactive visualization

EC: European Commission

EU: European Union

AEPD: Spanish data protection agency

TRI: Trilateral Research Ltd.

TREE: Treelogic Telemática y Lógica Racional para la Empresa Europea S.L.

1   Introduction

PROTEUS is an EC-funded project under Horizon 2020 – Research and Innovation Framework Programme. The mission of the project is to evolve massive online machine learning strategies for predictive analytics and real-time interactive visualization methods - in terms of scalability, usability and effectiveness dealing with extremely large data sets and data streams - into ready to use solutions, and to integrate them into enhanced version of Apache Flink, the EU Big Data platform. PROTEUS will contribute to the EU Big Data area by addressing fundamental challenges related to the scalability and responsiveness of analytics capabilities. The requirements are defined by an industrial use case: the prediction of defects in hot strip mill (steelmaking industry); but the outcomes of PROTEUS are flexible and scalable to solve problems in many other domains.

The PROTEUS project will touch on issues in human research ethics by collecting data from respondents from ArcelorMittal in Spain via its stakeholder engagement activities. Specifically, it will include professional contact data collected as part of the dissemination and awareness raising work in WP6 and the requirements gathering and industrial validation in WP2. The primary focus of the project on publicly available data will be a key aspect in assisting us to meet privacy and data protection expectations. However, some privacy and data protection issues remain. Specifically, the consortium's contact list constructed in WP6 will focus on identifying individuals relevant to the project. The starting point of such data is the existing contact lists of PROTEUS partners and will expand via web searching and other stakeholder engagement activities and networking. As such, the consortium will engage in some secondary processing of information. However, stakeholders will be informed about this data collection and will be given the opportunity to opt out as part of our first PROTEUS communication. To the degree that these research activities implicate human subjects, either individually or in a group settings, they engage conventional ethical issues.

Ethical safeguards in these activities are foreseen in the projects 'Description of Work' and will be deployed where appropriate, on various levels and at various stages, throughout the course of the project. The design and ongoing development of the PROTEUS project ethical plans will be compliant with the ethical guidelines set out by the EC HORIZON 2020 (https://ec.europa.eu/programmes/horizon2020/en/h2020-section/ethics) [2][3][4].

2 Other ethical issues

2.1 Tasks and Deliverables in relation to other ethical issues

The Task T2.2 description addresses issues specifically dedicated to research ethical concerns. A data management plan will construct robust data protection and management procedures that meet good practice in research ethics, and national legal and regulatory requirements. These processes will include the creation of ethical documents such as informed consent plans and documentation. These will also outline a recruitment procedure and clear plan for ensuring that research participants are participating voluntarily, that their employer is not unduly influencing them, that their privacy is being protected and that the research activities or tools developed cannot "creep" beyond the objectives originally defined. Central to this is the informed consent process. It will also include a specific plan for protecting personal data generated as a result of project activities, and in order to mitigate any potential issue derived from the use of data, the system architecture and implementation will include privacy by design standard principles.

In order to report into detail on the way ethical issues are addressed by the project, three specific Deliverables dedicated to ethical issues will be produced. The deliverables D2.2, D2.3, and D2.4 comprise three versions of PROTEUS ethic plan, which will only be shared within members of the consortium (including the Commission Services). Specifically, D2.2 includes a research ethics plan for the PROTEUS project that will be initially produced at M6 and updated at M18 and M36 (D2.3. and D2.4). This evolving document will be linked with the work of the IPR & Innovation Committee and the project exploitation plan and will include relevant documentation from the external ethics advisor as well as DPAs and ethical review boards as necessary. D2.3 contains an intermediate version of the research ethics plan, including the first report from the independent ethical advisor. D2.4 produces the final version of the research ethics plan, including the final report from the independent ethical advisor.

While producing the final industrial demonstration and conclusion, the Task T2.7 includes descriptions stating 'in order to avoid ethical concerns the test results will be collected either based with full consent of the test participants to later publication or in an anonymous form'.

In addition, PROTEUS will contribute to Open Research through Open Access to scientific and other kind of publications, (in addition to contribution to Open Source communities, i.e. Apache Flink). Open Access choice will be evaluated, subject to ethical and security considerations, on an individual basis as described T2.2.

Most of the consortium partners are familiar with the ethical requirements associated with research involving humans, given their training and previous experience in research methodology, and are familiar with the sorts of processes needed to meet and exceed these requirements when conducting workshops, meetings and research tasks. For example, in relation to informed consent, the consortium will adhere to the following principles. All activities will be conducted using fully rational adults, which means that they will be in a position to understand their role in the project. Participants will be given information on who will benefit from their participation in the research and what risk or burden they are undertaking by participating. The consortium will outline the procedures that will be implemented in the case of incidental findings and whether there will be any potential for commercial exploitation of the research. Participation in the project will be fully voluntary and all participants will be given the opportunity to ask questions and receive understandable answers before making decisions about their participation. Participants will also have the right to withdraw and terminate their participation in the research at any time and will be reminded about their right before participation. Participants will be given this information via an information sheet and be asked to sign a consent form to document and verify the information they have been given.

2.2 Independent external ethics advisor

An external ethical and data management advisor, Mr. Ricard Martínez, has been appointed to oversee these plans and to certify that the project is compliant with best practice in data management and research ethics as well as national and European legal and regulatory frameworks. Mr. Martínez will also check that the project activities have been reviewed by relevant national authorities, including the Spanish data protection agency (AEPD) and any relevant ethical review boards. As an independent ethics advisor, Mr. Martínez will report

on ethics issues alongside the project, in particular, two ethics reports will be provided together with the Periodic Reports (mid term, and at the end). Minor budget adjustment (reallocation), considering 2,000€ for ethics audit costs (1,000€ per report) on TREE under other direct costs, taken from the original equipment costs. TRI, as the leader of task T2.2, will provide Mr. Martínez with the ethical procedures upon which Mr. Martínez will issue his independent ethics report. This audit report will be released twice during the project, in the mid-term and at the end, as part of V2 and V3 of the PROTEUS Data management & ethics plan (D2.3 and D2.4).

Mr. Ricard Martínez' profile:

Mr. Ricard Martínez is Ph.D. in Constitutional Law, with a dissertation subject of Privacy in Constitutional Law, Data protection Officer at the University of Valencia and Chairman of the Spanish Professional's Privacy Association. Previously he was Head of the Research Area of the Spanish Data Protection Agency (2007-2011). He has been a lecturer and a teacher in a M.Sc. program and a number of relevant events on this subject in Spain (for more info please have a look at: http://estudios.unir.net/programa/master-proteccion-datos/539000005501/). He has been involved in several monographs and numerous articles about data protection and related topics such as security, privacy on the Internet, social networks, cloud computing, among others (for more information, see http://bit.ly/wkPhI0). The result of this task are documented in deliverables D2.2 to D2.4.

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3 Conclusion

Ethical issues are foreseen and clearly addressed in the project 'Description of Work' and Deliverables. These ethical issues concern primarily work package 2 and a research ethics plan for the PROTEUS project will be initially delivered as part of D2.2 at M6 and updated at M18 and M36.

An independent ethics advisor has been appointed, who will report on ethics issues alongside the project. Two reports will be provided together with the Periodic Reports.

References

[1]   http://ec.europa.eu/research/index.cfm

[2]   https://ec.europa.eu/programmes/horizon2020/en/h2020-section/ethics

[3]   http://ec.europa.eu/research/participants/data/ref/h2020/wp/2016_2017/main/h2020-wp1617-swfs_en.pdf

[4]   http://ec.europa.eu/research/participants/data/ref/h2020/wp/2014_2015/main/h2020-wp1415-swfs_en.pdf