Final Societal Impact Report

September 2019 (M36)

D6.5: Final Societal Impact Report
WP6, D6.6

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Modelling the PRocesses leading to Organised crime and TerrOrist Networks
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Technical References

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<th>Project Acronym</th>
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<td>Project Title</td>
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1 PU = Public
PP = Restricted to other programme participants (including the Commission Services)
RE = Restricted to a group specified by the consortium (including the Commission Services)
CO = Confidential, only for members of the consortium (including the Commission Services)
## Document history

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1. Summary

This deliverable is the *Final Societal Impact report* (D6.6) of WP6 (*Ethical, Legal and Societal Implications of PROTON*) of PROTON. It follows the submission of D6.1 and D6.6, *Ethical and societal issues and safeguards*, and D6.2 on the legal aspects of PROTON.

The scope of this deliverable is to provide a Societal Impact Assessment (abbreviated, “SIA”) of PROTON, PROTON-S and PROTON-Wizard. In particular, this deliverable builds on the previous *Interim Societal Impact Report* (D6.4) in three ways. First, it assesses whether the safeguards and recommendations advanced in D6.4 have been implemented. Second, it integrates the previous *interim SIA* (D6.4) with the conclusions of the *Legal Analysis of the PROTON Simulations and Wizard* (D6.2) as well as with the results of other recently produced deliverables (especially D5.1; D5.2; D5.3). Finally, based on this updated analysis, it sets forth the final SIA of PROTON, which includes recommendations in sight of the completion and public release of the project.

It should be considered that the use of ABM models to test security-related policies raises also important societal, ethical and legal concerns – especially about the risk of oversimplifying complex problems and about the respect of fundamental freedoms and rights, transparency, justice and public engagement.
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2. Introduction

This deliverable is to be read as a completion of the ethical and societal impact assessment performed during the project and reported in D6.1 Ethical and Societal Issues Safeguards, D6.4 Interim societal impact report and D6.2 Legal analysis of the PROTON simulations and the PROTON Wizard (all these deliverable are available on the project web site1).

Reference may therefore be made to those text for methodological descriptions (especially regarding the ASSERT - ASSessing SEcurity Research: Tools and methodologies to measure societal impact - methodology2 for social impact assessment in security research projects and the general framework description).

The primary aim of the ASSERT toolkit is to provide an accessible, flexible and exhaustive methodology to conduct SIA of security-related project like PROTON. Following the ASSERT methodology, the interim and final SIA have considered six categories of "societal impacts": (i) Way of life, fears and aspirations; (ii) Culture and community; (iii) Political systems; (iv) Environment; (v) Health & well-being; (vi) Personal and property rights (Vanclay 2003; Barnard-Wills, Wadhwa and Wright 2014; D6.4).

In both SIA, these societal impacts have been explored by integrating the analysis of four different sources: (i) the relevant scientific literature; (ii) the conclusions of previous PROTON deliverables (T1.2, T2.2, D6.4, D9.6; D5.1; D5.2; D5.3); (iii) the feedbacks gathered from ELAG members; (iv) and, crucially, a series of in-depth semi-structured interviews with representative stakeholders.

The following analysis has some potential limitations: due to the project timetable it was not possible to test the final outcomes and products with external stakeholders and run a second round of semi-structured interviews with stakeholders on the PROTON Wizard. Nevertheless, the present deliverable took in consideration the concerns expressed by the stakeholders all along the project and the recommendations for the end-users expressed by the Ethics and Legal Advisory Group (ELAG) during the project meetings.

1 https://www.projectproton.eu/public-deliverables/

2 The ASSERT methodology is the outcome of a project that has received funding from the European Union’s Seventh Framework Programme for research, technological development and demonstration under grant agreement no 313062. For more information about the ASSERT project and consortium: http://assert-project.eu/
1. SIA in the PROTON project

In recent years, a wide-ranging debate on the role of ethics in defining and shaping the concept of security within the EU security research has involved ethicists and advisors\(^3\). As stated by Leese et al (2019) “critical scholars have foregrounded how security is tied to contested values and how it articulates a particular understanding of our relation to nature, other human beings and the self [...] Ethics, however, is not limited to conceptual reflections about security and its status in society and politics, but can also serve as a practical angle for engaging the ways in which security is imagined and produced”. This is the role of applied ethics, and the role that the Ethics WP tried to achieve in this project, foreseeing and limiting the possible negative impacts of the development of an ABM simulating the effects of policies in reducing the recruitment of members in organised crime networks (OCN) and terrorist networks (TN).

In order to achieve this goal, the Ethics WP established a dialogue with technical partners during the project meetings and raised awareness of ethical stakes; it provided safeguards for the selection of risk factors to be included in the PROTON Simulation – and therefore in the PROTON Wizard – and gave input to technical components and processes, applying the ASSERT methodology to evaluate the outcomes.

2. Summary of the main project outcomes

The project designed and implemented two agent-based models. One of these seeks to represent the dynamics of recruitment into organised crime networks (OCN) and the other does the same for recruitment into terrorist groups. The OCN model focuses on multiple network structures and how they influence recruitment. The TR model focuses on opinion dynamics and the role of physical and virtual space on radicalisation and recruitment.

1.2.1 OCN Model

As stated in D5.1, agents in this model represent a population of people that live and work in a European community (calibrated to a Southern and a Northern European context). Some of these people may commit crimes, either by themselves or together with other criminals. The model focuses on relationships between people and how they affect their chances of becoming criminals. The time scale of the model is that of multiple generations (30 years).

The model focuses on relationships and explicitly represents five types of links between agents: family, social, professional, criminal, and organised crime. The

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family links connect agents that are part of the same family. The social links connect agents that are friends or acquaintances. The professional links connect agents that work for the same employer or are in education together. The criminal links connect agents that commit crimes together and the organised crime network those that are connected as part of an OCN. Agents have the possibility of generating criminal opportunities, upon which they can choose to act or not. The model allows to examine the evolution of criminal networks and criminal activity under various conditions. It also allows to measure criminal embeddedness by looking at how agents that are not themselves criminals are connected to criminal networks and, consequently, to test the effects of different external interventions on these measures.

The OCN model tests the effect of four policies. Two of them aim to disrupt the OCNs in order to reduce recruitment. One targets and removes OC leaders — with the idea to remove those with decision-making powers — and the other targets and removes OC facilitators — people who act as bridges between legal society and criminal groups and that can help OCNs (like engineers, chemists, lawyers or even policemen).

The other two policies focus on the role of socialisation in shaping recruitment into OCNs. The first one considers the highly controversial and sensitive policy, already being used in Italy, of reducing the contact between children living in organised crime families and their families. The idea is to reduce the role of primary socialization in shaping recruitment. This policy was tested precisely because it is used even if it is considered highly controversial both form a legal and an ethical point of view. The second aims to reduce the role of secondary socialisation in OCN recruitment by increasing support to at-risk youths in school.

Preliminary results show that in Southern European context facilitators and primary socialization interventions have an effect on the number of recruited individuals, but interventions targeting OC leaders and secondary socialization had no effects. In Northern European context the only intervention reporting a statistically significant effect is the one targeting facilitators, but some results suggest that also policies tackling secondary socialisation may have an effect.

1.2.2 TRN Model

The agents in this model represent a population of people that live and work in a European community. These people are embedded in geographical space and gather in various locations: homes, workplaces, community centres, places of leisure and places of worship. They get together, talk to each other and exchange opinions about various topics. Agents can also communicate with each other online. Some opinions contribute to radicalization while others have a protective effect. The time scale of the model is six months and each step of the model represents one hour.

Agents go to their workplace at specific times if they have to and are otherwise free to engage in other activities. These activities happen at specific locations,
where agents have a chance of interacting with other agents. When successful interactions occur, agents move their opinion on a set of different topics slightly closer to the opinion of the agent they were listening to. Opinions held by agents play a crucial role on their chance of becoming radicalised. The simulation takes into account opinions on the self-perceived level of integration, on the trust/legitimacy of the institutions and on the subjective perception of deprivation. Together with other individual characteristics like gender, age employment status, criminal history, and authoritarian personality they form the basis of the algorithm used to calculate the risk of radicalisation. Once the risk of radicalisation reaches a given threshold, agents can become recruited.

The TR model tests the effects of three policies: employment, community workers, and community policing. Unemployment has long been considered as a risk factor in radicalisation. To test the effect of this variable on radicalisation, the model implements a policy to incentivise businesses to hire at-risk individuals. The second policy tested is an increase in the number of community workers at community centres. The hypothesis is that this policy increases social cohesion and reduces perceived inequalities and subjective deprivation that in turn reduces radicalisation.

The third policy implements a community policing approach. Community policing generally aims to interact more closely with the community that the officers serve. This can occur, for instance, by having specialised units who meet with community members or provide activities for at-risk youth in order to influences radicalisation and recruitment.

The results of the simulation show that policies tackling employment have a significant effect on recruitment but no effect on radicalization or on any of the opinion-related risk-protective factors. Initiatives involving community workers have significant effect on radicalization and on all the three opinion related factors. Community policing initiative significantly affect only the level of trust/legitimacy of the institutions among the agents.

In order to fulfill the ethical requirements and safeguards established by the interim SIA, the developers of the TN simulation (HUJI and CNR) provided evidence to support the generalizability of this model. Weisburd et al (2017) demonstrated that results from ABM at a borough level can be up-scaled to larger population. Christmann et al (2012) and Ranstop et al (2013) demonstrated that community workers initiatives in Europe are usually conducted at the borough level, while van Swaaingen et al (2008) and Fitzgerald et al (2013) demonstrated that community policing in the EU usually operates at the borough level.

1.2.3 PROTON Wizard

As described by the developers in D5.2, PROTON wizard is a visualization tool which presents the results of PROTON-S Agent-Based Modelling (ABM) simulation models, providing a user-friendly platform. PROTON Wizard is
available under two addresses: one for radicalization and recruitment to terrorism simulations and another for recruitment to Organized Crime simulations. The visualization is displayed in form of a table, where users can choose the simulation they are interested in exploring, and conduct online analysis that is displayed through charts. The tool doesn’t require any special expertise and is designed for policy makers and law enforcement agencies willing to explore and foresee the effects of the tested policies in their own environment and communities. Users can configure the datasets (i.e. demographic data, unemployment rates) according to their preferences.

### 3. SIA final results

This section reports the results of PROTON final societal impact assessment. Following the ASSERT methodology, the present SIA has been divided in three main conceptual units, related to: (i) how PROTON addresses the needs of society; (ii) PROTON’s potential negative impacts, related safeguards and mitigation strategies; (iii) PROTON’s potential benefits, and additional recommended strategies. After a short summary, for each conceptual unit the SIA results are summarized in a dedicated table structured in three parts. On the left column there are the questions that have been used to conduct the SIA and the semi-structured interviews with the stakeholders. These questions have been selected by taking into account the scientific literature, the blueprint provided by the ASSERT toolkit, and the specific features of the PROTON project (see also D6.4). On the central column, then, are reported the final SIA answers in relation to each question, which takes into consideration the present state of the art of the project. Finally, in the right column are reported suggested actions, safeguards and possible mitigation strategies.

Throughout the tables are inserted references to relevant PROTON deliverables or tasks.

**Table 1. How PROTON meets the needs of society.** PROTON aims is to enhance security by providing policy makers with new tools (PROTON-S and PROTON Wizard) to test and assess the impact of policies to reduce recruitment in OCTNs. To do so, PROTON aims also at improving the existing knowledge (WP5) on the recruitment processes of OCTNs through a multidisciplinary approach (social, psychological, economic and computational sciences, including data mining in social networks). As noted in D6.4, the increase of both perceived and actual security is beneficial to a society, as societies need security to exist and thrive. However, security is a complex societal value, as the fostering of security-based interventions and policies may hinder other fundamental rights (D6.4). Hence, the societal benefits deriving from security-based interventions must always be assessed within the context of other fundamental societal values, tampering off the possible risks connected to an excessive “securitization of society” (Buzan...
and Hansen 2009; Nissenbaum 2009; Barnard-Wills, Wadhwa, and Wright 2014; D6.4). Moreover, security-based interventions may disproportionately impact specific individuals and groups, who often already belong to the vulnerable and worse-off parts of society. As noted in the interim report D6.4 and D6.2, any increase in security ought thus to be measured and traded-off against other fundamental societal values:

(i) **Fundamental freedoms.** The development and adoption of new security measures and interventions increases the tension between two constitutive obligations linking modern states and their citizens, i.e. freedom and security, both of which are deemed fundamental by the Charter of Fundamental Rights of the European Union (CFR) and the European Convention for the Protection of Human Rights and Fundamental Freedoms (ECHR). In this respect, the crucial challenge is balancing the obligation of protecting people’s life and property while preserving their fundamental freedoms, of thought, conscience, religion, expression, information, assembly and association (CFR, artt. 1, 6, 10, 11, 12; ECHR, artt. 1, 9, 10, 11, D6.2);

(ii) **Respect for human dignity and diversity.** Non-discrimination is a fundamental EU value (CFR art. 21; ECHR P12, art. 1). Yet, “being identified as someone at “high risk” of recruitment in OCTNs – or someone belonging to a familiar, cultural, and religious group stigmatized and stereotyped for being associated with OCTNs activities – may negatively impact individuals, families and communities, exposing them to discrimination, stigmatization and violence” (D6.2, p. 9; T1.2, T2.2, D6.4, D9.6). A related issue arises from cases of “second-order harassment”, in which persons, groups, families or entire community are targeted by discriminatory or violent acts just for being related to someone who has been involved in a policy aimed at preventing or repressing OCTNs activities. With respect to PROTON as a research project, these risks are mitigated by the built-in safeguards and project design (D6.4; D6.2). These safeguards, however, do not apply to the further use of PROTON outcome that could be done by other researchers and policy makers.

(iii) **Transparency and accountability.** Security and surveillance technologies tend to operate in a grey-area, as their success may depend on remaining partially secretive and opaque to the public (D6.4). However, this opaque character may lower the level of actual and perceived accountability for the decisions taken by policymakers. Importantly, security should not unconditionally prevail over transparency and political accountability, values that should always be respected in democracies and EU.

(iv) **Participation.** In the case of policies regarding the delicate balance between security and other fundamental values, relying on a tool like PROTON-S and PROTON Wizard may bypass the public and political debate. Moreover, there always exists a risk of a lag in “social awareness”, for which an intervention receive adequate scrutiny once it has ben already implemented, hence hindering public confrontation.
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<th>Questions</th>
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<td>Which documented societal security needs does the proposed research address? What threats to society does the research address?</td>
<td>PROTON addresses the need to protect and foster the security of individuals and society by providing innovative tools to preview the effects of policies aimed to disrupt or interfere with the recruitment of people in organised crime and terrorist networks (OCTNs). PROTON outcomes could be a threat for the society if they are perceived by policymakers as a 100% predictive tool instead of a proof-of-concept modeling can be useful in planning policy intervention that should also be tested in real-life environments.</td>
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<td>How will the research output meet these needs?</td>
<td>PROTON meets the needs of society by: (a) improving existing knowledge on the recruitment in OCTNs (b) providing new tools for policy makers to adopt more evidence-based policies against OCTNs. PROTON has build: (c) The research activities conducted by PROTON’s researchers have shown that the recruitment dynamics into OC and TN differ significantly; hence, two distinct ABMs has been developed, one for OC and one for TN, each testing different policies (D4.1; D6.2). (d) a user-friendly software tool (PROTON Wizard) that will support policy makers in foreseeing the outcomes of policies against OCTNs</td>
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<td>How will this be demonstrated?</td>
<td>(a) PROTON-S and Wizard have been validated in a lab-environment by running pilot versions of the simulations as detailed in D5.1, D5.2 and D5.3.</td>
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<td>How will the level of societal acceptance be assessed?</td>
<td>(a) PROTON assessed its societal impacts through dedicated WPs and the involvement of stakeholders throughout its development (in WP1, WP2 and WP6)</td>
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Does addressing the documented societal needs through the proposed research require any trade-offs with other societal needs?

(a) **Fundamental freedoms.** The enhancement of security in society may disproportionately prevail over the respect and guarantee of other fundamental freedoms (see table 2; D6.4).

(b) **Respect for human dignity and diversity.** Security interventions and policies based on tools like the outcome of PROTON may require the identification, profiling and listing of “high risk” individuals, leading to possible concerns regarding non-discrimination and equality (D6.4; D6.2).

(c) **Transparency and accountability.** Security and surveillance technologies often operate within a grey-area, as their success may depend on remaining partially secretive to society and the public. Also, the opaque character of security technologies may lower the level of actual and perceived accountability with respect to the decisions taken by policymakers with PROTON-S and Wizard (D6.4).

(d) **Participation.** Using a computational model to support and/or base policymaking may lower the engagement and democratic participation of citizens with respect to decisions that have relevant impacts on society (D6.4).

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<th>Table 2. PROTON’s potential negative impacts on society. The present report is focused on the potential negative societal impact of PROTON outcomes (WP5; PROTON-S and PROTON Wizard), rather than on the specific societal impacts of the PROTON research project. Hence, this second table differs from the one presented in the interim report, as it builds upon the conclusions of D6.2, in which the legal implications related to the use of PROTON outcomes by policymakers have been examined from the point of view of human rights and fundamental EU charts. Our analysis can be summarized in two conclusions.</th>
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<td>First, the research activity during the PROTON project is not expected to have significant negative societal impacts. As noted in D6.4 and D6.2, this is mainly due to the internal design of the project, and to the various in-built safeguards implemented adopted throughout its development. For instance, the dataset used to build the ABMs are aggregated and do not allow for individual re-identification; the tested policies focus more on prevention rather than repression; PROTON designated end users are policymakers and not security agencies; and PROTON has received close ethical supervision, monitoring and approval, both from internal members of the consortium (WP6; WP9) and external independent sources (ELAG members and EU Commission) in all its phases. This general conclusion must nonetheless be contextualized in reference to the conclusions of all the previous documents and deliverables related to societal, ethical and its legal aspects of PROTON.</td>
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<td>Second, the completion and release of PROTON outcomes (WP5; PROTON-S, PROTON Wizard) in society raises a series of potentially important societal, ethical and legal issues related to the respect of fundamental freedoms, fundamental rights, transparency, justice and public engagement. More</td>
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precisely, with respect to PROTON outcomes, our analysis has identified two sets of issues – one general and one specific – related to the possible use of PROTON outcomes by other researchers and/or policy makers once the project is completed. The first set of issue is common to all security-related projects, and regard (i) the respect of fundamental freedoms and liberties; (ii) the possibility of discrimination, stigmatization and respect for diversities. The second set of issues, instead, regard the seven policies that can be tested using PROTON-S ABMs and Wizard (for an in-depth analysis of the legal implications of each policy with respect to fundamental EU values and human rights, see D6.2).

Even though each policy raises specific issues, our analysis has identified two general set of safeguards and strategies that could be deployed to mitigate potential negative societal implications deriving from the public release of PROTON outcomes.

The first group of mitigation strategies focuses on expanding the participation, public awareness, and transparency regarding the adoption of such tools by policy makers, especially if these tools are then used to test and inform decisions about security policies. The second group of recommendation, instead, concerns the technical competence and socio-ethical and legal awareness of the end-users of PROTON outcomes. Reiterating the conclusions of D6.2, “the final end users – i.e. the policymakers and stakeholders – have to be adequately informed about the possible legal and socio-ethical implications related to: (i) the implementation of the policies tested using the PROTON ABM; (ii) data protection and privacy in the construction of datasets for individuals at high-risk of being associated with OCTN activities, especially in the light of the GDPR (General Data Protection Regulation); (iii) the need of balancing the secrecy embedded in security interventions with the need for transparency and accountability related to the implementation of policies in democratic societies. In these respects, it is important to ensure to end-users and stakeholders the access to the relevant PROTON deliverables covering these critical aspects, by making them accessible on the project web site and by a specific dissemination activity” (D6.2, p.22). Therefore, as our analysis suggests, in order to mitigate the potential negative societal impacts of PROTON outcomes it is important to ensure that final end-users are both technically competent and aware of the multiple ethical, legal and societal consequences entrenched in the use of these tools, as detailed in previous PROTON deliverables.
### Questions

How could the outcome of the research project have a negative impact on fundamental freedoms?

### Final assessment

The application of PROTON outcomes (WP5; PROTON-S and PROTON Wizard) to test and select security policies to reduce recruitment in OCTNs may require the identification, profiling and listing of individuals at “high-risk” (T1.2, T2.2, D6.4, D9.6); such process may negatively impact the following fundamental freedoms:

- (a) freedom of thought, conscience, religion, expression, information, assembly and association of individuals and sub-groups, also with respect to digital environments and social media (D6.2)
- (b) All security projects present risks associated with their use for: (i) previously unintended and/or anticipated ends (i.e. “functional creep”); (ii) peaceful and military purposes (i.e. “dual use”; however, for an in-depth analysis of dual use issues see D9.6)
- (c) If implemented in real scenarios, each of the policies tested in PROTON ABMs raises its own set of specific challenges (D6.2; D5.3; D5.2; D5.1)
- (d) A lack of transparency and accountability may further enhance the above risks.

### Actions

With respect to the potential application of PROTON’s outcomes, PROTON-S and PROTON Wizard in real-life scenarios by policy-makers, the following actions and mitigation strategies are recommended:

- (a) Promote public transparency about PROTON
- (b) Promote early participation
- (c) Clarify consent procedures regarding the use of digital data, especially from social media.
- (d) Exclude operational law enforcement agents from end-users
- (e) Ensure that PROTON-S and PROTON Wizard are properly validated (D5.3)
- (f) Ensure that policy-makers are adequately informed about the legal, socio-ethical risks and implications of implementing actual policies on the basis of PROTON the outcomes with respect to:
  - i. Fundamental freedoms of expression and rights
  - ii. The respect of privacy and protection of personal data
  - iii. Transparency and public accountability (D6.2)
- (g) Ensure to end-users and stakeholders are aware and have access to the relevant PROTON deliverables dealing with the legal and socio-ethical implications of the project (D6.2; D6.4)
### How could the outcome of the research project have a negative impact on human dignity?

(a) Potentially, the application of PROTON outcomes (WP5; PROTON-S and PROTON Wizard) by policy-makers to test and select security policies to reduce recruitment in OCTNs requires the identification, profiling and listing of individuals at “high-risk” (T1.2, T2.2, D6.4, D9.6); such process may negatively lead to overly simplistic profiling, compromising human dignity and leading to risks of increased discrimination and stigma, diminishing the respect for diversity.

With respect to the potential application of PROTON’s outcomes, PROTON-S and Wizard in real-life scenarios to be used by policy-makers, the following actions and mitigation strategies are recommended:

(a) Follow recommendations (a-f) from the box above

(b) Ensure that policy-makers are adequately informed about the legal, socio-ethical risks and implications of implementing actual policies on the basis of the outcomes of PROTON WP5 (Wizard) with respect to:
   - i. Non-discrimination, Stigmatization and Respect of diversities
   - ii. possible cases of “second order harassment” deriving from the implementation of such policies

(c) Ensure to end-users and stakeholders the access to relevant PROTON deliverables dealing with the legal and socio-ethical assessment of the project

### How could the research have a negative impact on privacy and data protection?

(a) Privacy and data protection concerns may arise from the way in which PROTON data repository is maintained, extended, and modified to match more real life scenarios

(b) In case the main dataset is extended, modified or implemented, privacy and data protection concerns may derive from a lack of adequate consent procedures for data acquisition, especially from digital sources and social media

(a) Consider PROTON legal implications and possible mitigation strategies (D6.2)

(b) Enact ethical safeguards as those adopted in D6.1 and D6.6

(c) Implement appropriate data protection policies (34)

(d) Clarify the consent procedures regarding the use of data from digital sources and social media (20)
| How could the research have a negative impact on transparency? | (a) By leaving opaque how the data repository has been built, maintained and used  
(b) By leaving opaque how PROTON’s outcomes will impact policy-making | (a) Consider making the data repository open-source to increase transparency  
(b) Promote the engagement of end-users and stakeholders  
(c) Promote the open confrontation with other communities of scholars and scientists to extend the ABMs  
(d) Promote an inclusive public dissemination  
(e) Clarify the consent procedures regarding the use of data from digital sourced and social media |
| --- | --- | --- |
| If implemented, how could the research have a negative impact on other fundamental aspect (culture and community, way of life, etc.)? | (a) The research may have negative effects on the way of life of individual and specific groups by impacting their fundamental freedoms  
(b) Misuse of PROTON outcomes could lead to over simplistic profiling, thus harming individuals in vulnerable groups (e.g. ethnic and religious minorities, individuals belonging subcultures)  
(c) Policymakers could misunderstand the reliability of the project outcomes. PROTON-S, especially the one on OCN, is to be considered a scientific proof-of-concept | (a) Maximize the reliability of PROTON tools (D5.3; D5.1).  
(b) Enhance the trust of society in PROTON tools by promoting their public understanding  
(c) Consider making the present SIA report and other relevant ethical, societal end legal deliverables accessible at the end of the project (D6.4) |
| How could the research impact disproportionately upon specific groups or unduly discriminate against them? | (a) PROTON and its tools may impact disproportionately specific groups because of:
  i. their reliance on a potentially biased dataset
  ii. the use of insufficiently validated tools
  iii. the misuse of PROTON outcomes (PROTON-S and PROTON Wizard) | (a) Avoid the reinforcement of existing societal biases
(b) Ensure a representative and transparent data repository
(c) Ensure appropriate testing of PROTON-S and PROTON Wizard (D5.3)
(d) Promote accountability and participation (WP6)
(e) Ensure the technical competence of end-users (D5.2; D5.3)
(f) Avoid the replacement of human judgment with machine judgment, which could lead to a dangerous pre-deterministic approach (D5.2; D5.3)
(g) Ensure that policymakers are adequately informed about the legal, socio-ethical risks and implications of implementing actual policies on the basis of the outcomes of PROTON WP5 and have access to relevant PROTON deliverables dealing with the legal and socio-ethical implications of the project |
| How could the research increase discrimination? | (a) PROTON may negatively impact social groups that are already stigmatized as being intrinsically close to OCTNs (ex-prisoners; individuals belonging to subcultures; specific ethnic or religious minorities; etc.) depending on how (i) the source data are collected; (ii) the model is validated and tested; (iii) policy makers take actions based on PROTON-S and PROTON-Wizard | (a) See box above (a-g) |

Could the research have impacts upon vulnerable groups? (a) PROTON may negatively impact social groups that are already stigmatized as being intrinsically close to OCTNs (ex-prisoners; individuals belonging to subcultures; specific ethnic or religious minorities; etc.) depending on how (i) the source data are collected; (ii) the model is validated and tested; (iii) policy makers take actions based on PROTON-S and PROTON-Wizard (a) See box above (a-g)
Table 3. **PROTON’s potential benefits for society.** Potentially, PROTON outcomes may have significant direct and indirect benefits for society. In this respect, the present SIA assessment confirm the conclusions of the interim SIA report.

The first and most important direct benefit of PROTON outcomes would derive from an increase in the capacity of reducing recruitment in OCTNs, and thus their power and activities. Yet, PROTON outcomes may also have other relevant and indirect benefits. First, as a scientific research project and innovative technical endeavor, PROTON has developed a new methodology based on ABMs to analyse criminal behavior that may complement other traditional qualitative and quantitate approaches. Thus, PROTON outcomes (WP5) may benefit society by expanding the set of available methodologies in criminological research and scientific knowledge, with direct benefits for the scientific and academic community as well as for security-relates stakeholders.

Second, as the research conducted WP1 and WP2 has indicated, most risk factors for the recruitment and radicalization in OCTNs are related to socio-economic factors – such as social exclusion, poor integration, school drop-out, low social mobility, relative deprivation, economic inequalities, the existence of informal and illicit markets, etc. Accordingly, most of the risks-factors and interventions that have been selected to be tested in PROTON-S adopt a preventive and socially-oriented approach rather than a repressive one. This implies that the potential use by policy-makers of PROTON-S and PROTON Wizard to test and select more effective policies to reduce recruitment in OCTNs may then translate in the evaluation of diverse preventive measures based on societal and economic welfare, which might then lead to direct benefits for diverse societal groups beyond the sole enhancement of security.

Third, the availability of a validated tool to test interventions to reduce recruitment and activities of OCTNs may provide policy-makers with a new and economic way of comparing and testing in advance security-related policies. Field studies and large-scale social researches are often prohibitively expensive and difficult to run and potentially they may turn out to be a waste of public resources in the case in which they do not yield or corroborate the expected results. By contrast, simulation-based tools like PROTON-S and PROTON Wizard may allow researchers and policy-makers to model and test diverse crime prevention strategies in advance and without huge resources, fostering a better allocation of public resources, which represent another societal benefit.

As noted in D6.4, however, apart from the increase in scientific knowledge associated with the completion of the project (WP5), the achievement of other direct and indirect benefits related to PROTON outcomes is directly proportional to the respect of the other conditions, which include:
(i) **Quality of the dataset.** PROTON-S and Wizard capacity of being directly useful to policy-makers depends on the quality of the dataset and of the coded rules needed to run the simulations. Without a reliable dataset, the output of any simulation may be biased or unrepresentative. While these issues have been explicitly addressed within PROTON (WP5.1; WP5.2; WP5.3), they would still be relevant for any future possible application of PROTON outcomes, especially if those applications are tied to real societal scenarios. In the latter case, in fact, the end-users might consider extending or changing the original dataset, raising other societal concerns as detailed in the table above.

(ii) **Knowledge of local contexts.** In order to maximize the utility of PROTON-S and PROTON Wizard, it is essential to have a deep knowledge of the societal context in which the tested policies and interventions could be deployed. In this respect, the knowledge gathered from the use of an abstract simulation ought to be always complemented with the knowledge of the real context of application. As indicated by the interviews conducted with the selected stakeholders, a possible suggestion is to involve directly stakeholders and representative from local communities which might aid in interpreting and translating the results of ABMs simulations in actual society.

(iii) **Technical competence and socio-ethical awareness.** In order to maximize the direct and indirect benefit of PROTON outcomes, it is crucial that the end-users are properly trained. In this respect, the Wizard manual (D5.2) that has been produced as part of the project will play a crucial part. However, as noted previously in this and other preceding deliverables, technical competence is just one of the elements needed to secure that the benefits of PROTON are maximize for society. Another key-aspect, in fact, is represented by the socio-legal-ethical awareness of the end-users, without which the possible negative societal impacts of PROTON may eventually trumps its benefits. Therefore, it is recommended to complement the final materials addressed to the end-users with a reference to the relevant deliverables of the project addressing these issues.

(iv) **Societal acceptance.** The potential societal benefits of technological tools and innovation may be offset by the fear that such technologies elude public accountability, as they are often perceived as “black boxes” hard to understand, manage and control. In order to reduce this possible societal refusal, aside from ensuring that the final outcomes and tools are reliable and validated, it is important to implement appropriate strategies of technological education and scientific communication and engagement.
### ASSESSMENT ROUND 3
Ensuring security measures/research benefit society

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<th>Questions</th>
<th>Assessment</th>
<th>Actions - Suggestions</th>
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| What segment(s) of society will benefit from increased security as a result of the proposed research? | (a) Society will benefit from the reduction of power and activity of OCTNs  
(b) Policy makers will be able to better evaluate preventive rather than repressive interventions against OCTNs  
(c) Fostering preventive interventions, PROTON may indirectly support policies aiming at improving societal and economic welfare (e.g., education, employment, social cohesion)  
(d) Testing policies in a simulated environment could allow a better allocation of public resources  
(e) The scholarly and scientific community will benefit from the knowledge produced by the project | (a) Promote a deeper knowledge of local contexts to maximize the utility of PROTON-S and PROTON Wizard and future tools bases on them  
(b) Involve local communities in the further assessment and validation of the outcomes  
(c) Restrict the use of predictive tools to research environments before they receive proper and official validation (D5.3) |
| How will society as a whole benefit from the outcome of the research?     |                                                                                                                                                                                                           |                                                            |
| Are additional measures required to achieve this benefit?                 |                                                                                                                                                                                                           |                                                            |

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In what contexts might this benefit be lacking or not be delivered by the research project?

(a) The tools could be ignored by (local) policy makers that are more focused on personal rather than public interests (10)
(b) Lack of confidence in the reliability of PROTON outcomes (PROTON-S, PROTON Wizard) (44)
(c) Wrong implementation of PROTON outcomes (32)

a) Ensure a proper validation of the final outcome (27; 34; D5.3)
b) Provide technical support to end-users (37)
c) Enhance the awareness and acceptance of new technologies in society through education, proper communication (38)

Are there other European societal values that are enhanced by the proposed research?

(a) Besides security, the research may enhance:
   i. Good governance (15; 22; 24)
   ii. Societal and economic welfare (9)
   iii. Improvement of the academic knowledge

(a) Design and provide technical support for policy makers (37)

3.1. Conclusions

As clearly stated by the developers in D5.1 and during the project meetings, it is important to stress that the agent-based models are “simplified representations of reality that make a set of assumptions about, among others, how the recruitment and radicalisation occur in reality, the interactions between individuals, and how belief change and network formation occur”.

PROTON has aimed to validate these assumptions through internal and stakeholder discussion and has made substantial progress in modelling organised crime recruitment and terrorist radicalisation processes.

From a societal point of view, and in order to frame the project results for the end-users, it is necessary to stress that simulations help the understanding and countering organised crime and radicalization when real data are not available or these data when collected and used will have serious ethical problems. This point was already tackled in the interim societal report when the need of some basic technical knowledge to understand the limits of the tools was highlighted.

A manual produced by the consortium will help policy makers and practitioners to follow the methodology used in PROTON and to replicate it aware of the advantages and limitations.
Regarding policy recommendations, and according to the safeguards developed by HUJI for the TN simulation, it is important to stress that most Western countries already take a multi-faceted approach to reduce recruiting in OCTNs, but most of them have short-term expectations: their immediate outcome is to reduce recruitment but also secondary outcomes (like reducing radicalization) are important for the society even if there is no immediate spill-over effect onto primary outcomes of interest and even if they require more time. The ABM allows to simulate long-term effects of policies and could help policymakers to plan their decisions on a longer time span.

4. References


