An enhanced pre-frontier intelligence picture to safeguard the European borders

D8.9
GEN-Requirement No.9

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Editors	KEMEA - [redacted] CENTRIC - [redacted] External Ethics Expert - [redacted] (VUB)
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Abstract	D8.9 GEN-Requirement No.9 is the ninth deliverable of WP8-Ethics Requirements and the ninth ethics requirement that has been set out by the European Commission. According to the GA, a report by the Ethics Board must be submitted as a deliverable in M18. Therefore, the purpose of this deliverable is to provide the second report by the Ethics Advisory Board (EtAB) about how the NESTOR Consortium has dealt with the ethics issues in order to ensure compliance with ethical standards (national/EU), H2020 guidelines and applicable legislation, following the submission of D8.8 GEN-Requirement No. 8 that took place in M12.
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0.1	20/03/2023	KEMEA	Initial Draft - TOC preparation
0.2	27/03/2023	KEMEA	1st Draft Version
0.3	03/04/2023	KEMEA	Ready to send to the EtAB – Ethics Advisory Board
0.3.1	06/04/2023	EtAB	Additions by the EtAB
0.3.2	14/04/2023	EtAB	Additions by the EtAB
0.4	18/04/2023	KEMEA	Finalization of the chapters
0.5	20/04/2023	KEMEA	Peer and Ethics Review Forms were integrated, Ethics and Security assessment were filled in
1.0	20/04/2023	HP, KEMEA	Final version – Ready to submit

The NESTOR Consortium:

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3	MINISTRY OF INTERIOR	DBAM	Republic of North Macedonia
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20	HENSOLDT SENSORS GMBH	HEN	Germany
21	INGENIERIA DE SISTEMAS PARA LA DEFENSA DE ESPANA SA-SME MP	ISDEFE	Spain

Executive Summary

NESTOR aims to demonstrate a fully functional next generation holistic border surveillance system providing pre-frontier situational awareness beyond maritime and land border areas following the concept of the European Integrated Border Management.

D8.9 GEN-Requirement No.9 is the ninth and final deliverable of WP8 'Ethics Requirements' and the ninth ethics requirement set out by the European Commission for the NESTOR Project. As it is described in the Grant Agreement under D8.9 GEN-Requirement No.9 [18], a report by the Ethics Board must be submitted as a deliverable in month 18. The present deliverable is the second report by the Ethics Board, as D8.8 GEN-Requirement No. 8 [12] has already been submitted on time.

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Terms and Abbreviations

AR	Augmented Reality
D	Deliverable
DPIA	Data Protection Impact Assessment
DPO	Data Protection Officer
DU-Requirement	Dual Use - Requirement
EC	European Commission
EtAB	Ethics Advisory Board
EU	European Union
GA	Grant Agreement
GEN-Requirement	General - Requirement
H-Requirement	Humans - Requirement
M	Month
M-Requirement	Misuse - Requirement
NEC-Requirement	Non-European Countries - Requirement
PEO	Project Ethics Officer
POPD-Requirement	Protection of Personal Data - Requirement
RF	Radio Frequency
T	Task
UAV	Unmanned Aerial Vehicle
UGV	Unmanned Ground Vehicle
USV	Unmanned Surface Vehicle/Vessel
UUV	Unmanned Underwater Vehicle
UxV	Unmanned Vehicle of all aforementioned categories
VUB	Vrije Universiteit Brussel
WP	Work Package

1 INTRODUCTION

The present deliverable is the ninth (9th) and final deliverable of WP8 'Ethics Requirements' and the ninth ethics requirement within the NESTOR project. The present deliverable is the second report by the Ethics Board, following the D8.8 GEN-Requirement No.8 that was submitted in month 12. Further to the description of D8.8 GEN-Requirement No.8 in the NESTOR Grant Agreement, *"Due to the severity of the ethics issues raised by the proposed research, a report by the Ethics Board must be submitted as a deliverable in M12",* D8.9 GEN-Requirement No. 9 is described as follows *"A report by the Ethics Board must be submitted as a deliverable in month 18"*.

The purpose of D8.8 and D8.9 is to provide reports by the Ethics Advisory Board (EtAB) about how the NESTOR Consortium has dealt with the ethics issues related to the project in order to ensure compliance of the research activities with ethical standards, the H2020 guidelines and relevant applicable legislation (national/EU). Due to the interrelated nature of the above-mentioned two deliverables, the structure and content of the D8.8 GEN-Requirement No.8 will be retained in the present deliverable and any updates will be described in detail and emphasised accordingly.

In view of that, in Section 2 the composition of the Ethics Advisory Board is presented, and its role and function are described. Section 3 provides for the work done for the fulfilment of the WP8 'Ethics requirements' within the framework of the NESTOR project. Section 4 includes the general work progress until M18 while in Section 5 the recommendations by the EtAB are outlined. Finally, in Section 6 the concluding remarks are presented.

2 COMPOSITION, ROLE AND FUNCTION OF THE ETHICS ADVISORY BOARD

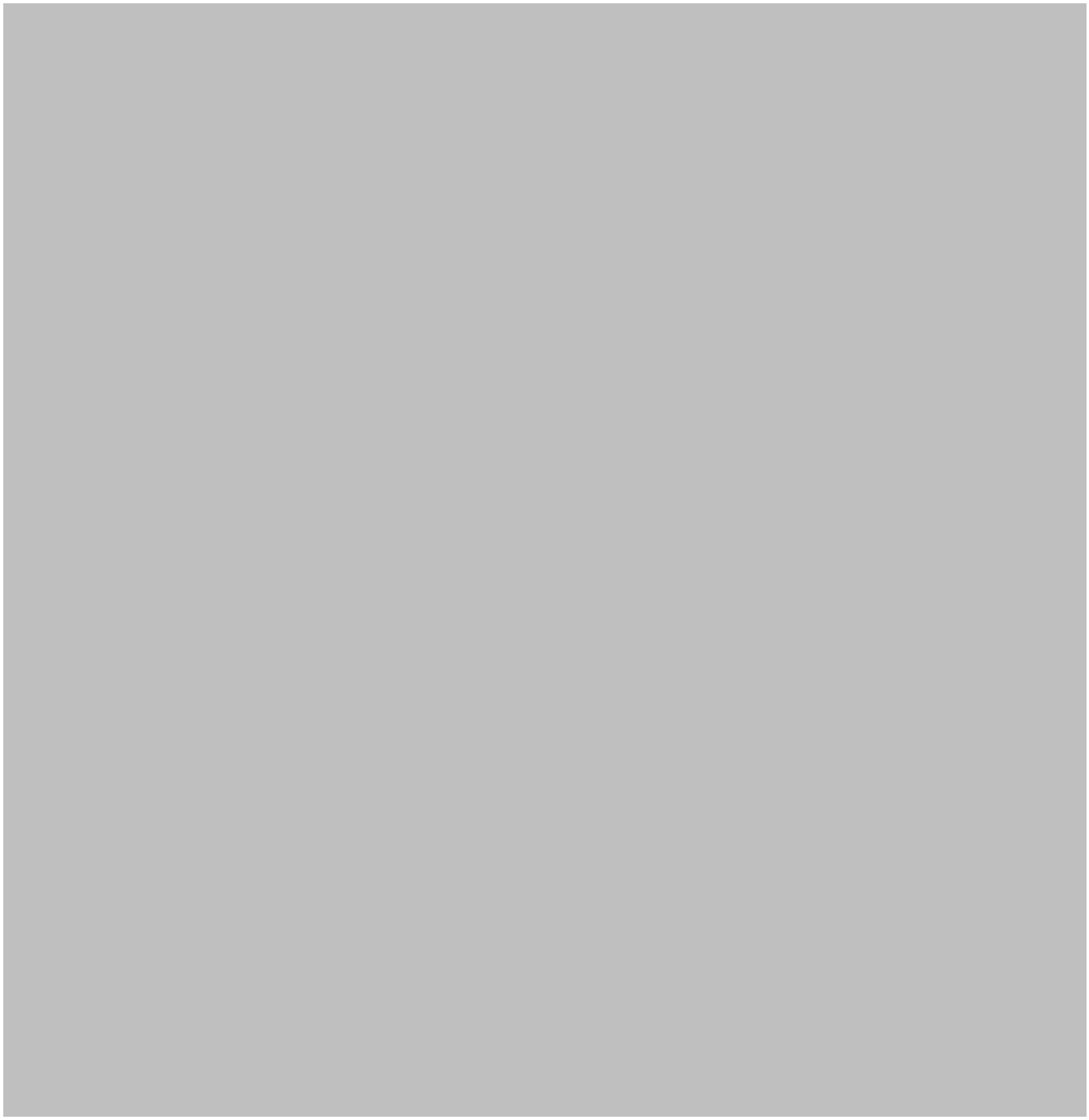
The NESTOR Consortium has been conscious of the significance of the legal and ethical aspects related to the project and to the NESTOR system, envisaged all related challenges which could arise during the lifetime of the project and committed itself to uphold ethical standards. To this end, specific tasks were developed to tackle all potential related issues; at the same time, the Ethics Advisory Board (EtAB) was set up, which consists of internal and external ethics advisors and its main responsibility was to conduct the ethics monitoring throughout the project's lifespan.

The EtAB is chaired by the Project Ethics Officer (PEO) and consists of three members (the PEO, one more internal expert from the NESTOR Consortium and an external ethics advisor). The external ethics advisor is independent with no link to the Consortium, hence, has signed a Confidentiality Undertaking as a prerequisite for his participation in the project's and the EtAB's meetings and his access to the project deliverables that are confidential amongst the Consortium and the European Commission.

Specifically, the EtAB consists of three members:

- from KEMEA, who has been assigned with the role of PEO and chairs the Board,
- , as an internal ethics expert from CENTRIC and
- , as an external ethics advisor from VUB.

For reasons of completeness, it should be mentioned that had initially undertaken the role of internal ethics expert from CENTRIC and then she was replaced by . In addition, is part of KEMEA's ethics team responsible for the ethics management of the NESTOR project and works in close collaboration with the PEO.



The EtAB was responsible for the ethical and legal monitoring of the project's activities and its aim was to ensure their compliance with the relevant applicable laws and ethical standards. In this context, the role of the EtAB was to address all potential ethical and legal risks including privacy risks and to prevent or mitigate them by giving advice and guidance to the Consortium. Therefore, the EtAB members participated in all project's meetings and other project's activities and reviewed deliverables that could raise ethical or legal concerns. In order to plan and distribute their work, they scheduled dedicated EtAB meetings. Extended reference is made in Section 4 below.

The ethical challenges of NESTOR that had been identified from the proposal phase and have been set out by the European Commission as post-grant requirements are related to the following categories:

- Human beings;
- Protection of personal data;
- Environment, health and safety;
- Third countries;
- Dual use;
- Potential misuse of research results;
- General issues (EtAB reports).

3 COMPLIANCE WITH ETHICS REQUIREMENTS

All ethics requirements of the WP8 -including the present report- have been prepared by KEMEA in close collaboration with the EtAB members and have been submitted as deliverables.

In the following table, the deliverable number and title are outlined as well as the status of every deliverable.

Table 1. Ethics Requirements submitted as Deliverables

Deliverable Number	Deliverable Title	Status
D8.1	H-Requirement No.1	Submitted
D8.2	H-Requirement No.1	Submitted
D8.3	POPD-Requirement No.3	Submitted
D8.4	NEC-Requirement No.4	Submitted
D8.5	EPQ-Requirement No.5	Submitted
D8.6	DU-Requirement No.6	Submitted
D8.7	M-Requirement No.7	Submitted
D8.8	**GEN-Requirement No. 8**	Submitted
D8.9	**GEN-Requirement No.9**	Submitted

3.1.1 Humans, Requirement No. 1

D8.1 H-Requirement No. 1 was focused on the research with humans and on the consent of the participants which is the cornerstone for research ethics. The NESTOR research activities included interviews, workshops/conferences/events and trainings/pilot demonstrations. In this context, the informed consent procedures were described both for the participation of humans in the project's research activities and for the processing of their personal data. It was highlighted that the participation would be on a voluntary basis based on consent and the participants would be well informed about the research details before deciding whether they wish to take part and whether they agree with the processing of their personal data by also having the right to withdraw their consent at any time without any consequences. Templates of Information Sheets and Informed Consent Forms were prepared and were included in D8.1. **The informed consent procedure was followed for each type of research activity based on the relevant templates that were modified each time accordingly.**

The recruitment criteria (inclusion and exclusion criteria) for the participation of humans in the pilot demonstrations were presented. It was also confirmed by the NESTOR partners that children, adults unable to give their informed consent, or other vulnerable individuals/groups would not be involved in the pilot demonstrations. **As confirmed, no children, adults unable to give their informed consent or other vulnerable individuals/groups were involved in the project's research activities.**

Finally, given that, apart from the planned findings, also unintended / incidental findings could occur during the carrying out of some testing activities and pilot demonstrations, an Incidental

Findings Policy was drafted which included the types of anticipated incidental findings and the procedures to be followed by the NESTOR Consortium upon their detection. Depending on the nature of the findings, different procedures would be followed *ad hoc* in accordance with the relevant international, European and national legislation. Upon detection of incidental findings, consultation by the PEO and the EtAB would be sought. The reporting procedures would be followed in accordance with the relevant applicable national laws. The participation of public authorities in the project constituted an additional safeguard to the rights and freedoms of the individuals. **No incidental findings, either anticipated or unanticipated, were identified during the lifetime of the project.**

Ethics Guidelines (see in the Annex of D1.6) that included obligations related to human participation and incidental findings were circulated to the Consortium prior to the start of each pilot demonstration. Compliance was monitored by the PEO that was present during the pilot demonstrations.

3.1.2 Humans, Requirement No. 2

According to D8.2 H-Requirement No. 2, the NESTOR partners that were obliged by law to establish an ethics committee should provide a copy of opinion/approval by their committee prior to the start of research activities with humans. In absence of an ethics committee, the NESTOR partners should provide a relevant opinion/approval by a competent authority.

In NESTOR, four partners have established an ethics committee as required by their national legislations. . The ethics committees of are not competent to issue approvals for the types of research activities conducted by these partners during the lifetime of the NESTOR project. Therefore, a declaration of compliance was signed by to ensure that applicable laws and ethics standards will be respected when carrying out research activities with humans.

DBAM did not conduct research with humans as part of the NESTOR project. Nevertheless, this partner signed a declaration of compliance considering its participation in a scientific research project.

The remaining NESTOR partners signed a declaration of compliance where they confirmed (a) that there was no obligation by national law to establish an ethics committee and that they were not subject to a competent authority and (b) that they would conduct research activities with humans by respecting the relevant applicable legislation and ethics standards.

All project's research activities that involved human participants were conducted in accordance with the applicable legislation and ethical standards. Ethics Guidelines (see in the Annex of D1.6) that included the relevant obligations were circulated to the Consortium prior to the start of each pilot demonstration. Compliance was monitored by the PEO that was present during the pilot demonstrations.

3.1.3 Protection of Personal Data, Requirement No. 3

D8.3 POPD-Requirement No.3 included information and confirmations provided by the NESTOR partners with respect to the necessary procedures that are stipulated by the GDPR, national data protection laws and relevant guidelines and aim to ensure protection of personal data and to safeguard the data subject's rights and freedoms. In particular:

1. In compliance with the respective GDPR requirement, the NESTOR partners that were obliged by law to appoint a Data Protection Officer provided the contact details of their DPO. In case the NESTOR partners were not required by law to have designated a DPO, their detailed data protection policy for the project was included in that deliverable.

2. The technical and organisational measures for the protection of personal data as well as the security measures for the prevention of accidental or unlawful destruction, loss, alteration, unauthorised disclosure or access or transfer of personal data were described by each NESTOR partner separately.

3. The pseudonymisation/anonymisation techniques that were implemented by specific NESTOR partners (CENTRIC, CERTH) were also included in that deliverable.

4. With respect to data transfers to/from non-EU countries, the relevant confirmations were included in that deliverable. Any transfer of personal data from the EU partners to CENTRIC (UK), to DBAM (Republic of North Macedonia), or to DCD (Switzerland) was in compliance with the relevant Chapter V of the GDPR. Any transfer of personal data from CENTRIC, DBAM, or DCD was in compliance with the national data protection legislations.

5. In case of further processing of previously collected personal data during the research period, the NESTOR partners involved in secondary use of personal data (KEMEA, CENTRIC and CERTH) declared the lawful basis and described the technical and organisational measures that would be implemented.

6. With respect to processing that constitutes profiling, such processing was not carried out in the context of the NESTOR project. The data processing operations that were performed by CENTRIC and CERTH as part of T3.4 were not considered automated given that human oversight and human intervention were ensured. Nevertheless, extended reference to the possible consequences of these data processing operations and to the appropriate safeguards was made in that deliverable as part of the assessment and evaluation of the ethics risks that required a data protection impact assessment.

7. In case of the use of publicly available data (non-personal or personal) during the research period, the NESTOR partners involved in such use provided the necessary confirmations.

8. An assessment and evaluation of the ethics/privacy risks was carried out which took into consideration each data processing operation separately. Following the risk assessment and evaluation, an opinion was drafted which considered necessary the conducting of a data protection impact assessment in two cases: (a) for the web monitoring operated by CENTRIC as part of T3.4 and (b) for the social media monitoring operated by CERTH as part of T3.4.

Albeit not mandatory according to the GDPR requirements, CERTH also included the data processing operations as part of T3.1 in their carried out DPIA.

The DPIA conducted by CERTH can be found in Appendix C of D8.3. **The DPIA of CENTRIC** was in progress at the time of D8.3's submission, but it **was finalised prior to the start of the relevant data processing operations (web monitoring services) and was included in D1.5 Ethics and Societal Issues Management Initial Report**. Based on the implemented measures and according to CENTRIC's and CERTH's Data Protection Officers, the output of each DPIA was that no high risks were anticipated for the rights and freedoms of the data subjects. **Considering that the DPIA is a living document, CENTRIC and CERTH were requested to review the content and make updates, if needed. CERTH's updated DPIA, as reviewed by that partner's DPO, can be found in the Annex of D1.6.**

Ethics Guidelines (see in the Annex of D1.6) that included obligations related to personal data protection were circulated to the Consortium prior to the start of each pilot demonstration. The Consortium strictly followed the applicable international, European and national laws to ensure a high level of personal data protection. Compliance was monitored by the PEO that was present during the pilot demonstrations.

3.1.4 Third Countries, Requirement No. 4

D8.4 NEC-Requirement no. 4 was focused on research that involved non-EU countries and on specific requirements that should be met in that case.

In the second chapter it was explained that fair-benefit sharing arrangements were not required in the NESTOR project since neither low-income countries nor lower-middle income countries participated in NESTOR, hence, this requirement was rendered not applicable.

The third chapter was focused on the materials that would be imported to or exported from a non-EU country during the lifecycle of the project. It was clarified that no materials were planned to be imported to non-EU countries.

the necessary export authorisations were timely obtained, and their copies were included in D8.6 DU - Requirement No. 6.

For the avoidance of overlaps, this deliverable did not include information about the import/export of personal data given that extended reference to all personal data related issues including data transfers from/to non-EU countries was made in D8.3 POPD-Requirement No.3 as explained previously.

Ethics Guidelines (see in the Annex of D1.6) that included obligations related to the import/export of materials and personal data were circulated to the Consortium prior to the start of each pilot demonstration. The Consortium strictly followed the applicable international, European and national laws. Compliance was monitored by the PEO that was present during the pilot demonstrations.

3.1.5 Environmental Protection and Safety, Requirement No. 5

D8.5 EPQ-Requirement No.5 was focused on research activities that could entail risks related to the health and safety of the staff and the research participants. Depending on the types of the risks that were identified, adequate and effective mitigating measures should be in accordance with the relevant EU and national laws.

Considering the operation of the aforementioned technologies and tools by certified and experienced operators, the carrying-out of the activities in a controlled environment, security-by-design functions of the technologies and tools and the procedures that were followed by the operators themselves and by the entire Consortium, as they were presented in that deliverable, in accordance with the applicable international, EU and national laws and with the safety instructions issued by the manufacturers, the likelihood of harm appeared to be remote, and the mitigating measures were considered to be adequate and effective. The participation of trained staff and of highly qualified LEA staff members constituted an additional safeguard and were an indicator that each pilot demonstration would be performed with professionalism under the safest conditions.

Health risks related to the COVID-19 pandemic were also taken into consideration. Albeit the Consortium was fully aware of the anti-COVID measures, and all partners were already implementing those measures internally, due to its nature this specific risk did not allow us to feel certain about the effectiveness of the mitigation actions. The Consortium committed to take all appropriate measures in accordance with the relevant local rules and guidelines as they were constantly updated and to exclude from the recruitment process any participants with COVID-19 symptoms or, if necessary, depending on the circumstances, any participants that were not medically tested prior to the start of a research activity. The research activities that could not be carried out remotely would involve a low number of participants (the minimum number needed for the operation of the tools and technologies and for the project's objectives to be successfully served) for the avoidance of unnecessary assemblies.

Only rational and healthy adults that followed the informed consent procedure participated in the pilot demonstrations and in all research activities. **The Information Sheets that were distributed to the research participants before the start of each pilot demonstration or other**

testing activity included inter alia a separate section dedicated to the potential health and safety risks and the mitigation actions as well as a relevant Annex which offered a more detailed description of the health and safety procedures. Informed Consent Forms were signed afterwards provided that the participants had read, understood and agreed with the information given to them.

Ethics Guidelines (see in the Annex of D1.6) that included health and safety obligations were circulated to the Consortium prior to the start of each pilot demonstration. The Consortium strictly followed the applicable international, European and national laws and the safety instructions to ensure a high level of protection and none of the aforementioned risks occurred during the project's research activities. Compliance was monitored by the PEO that was present during the pilot demonstrations.

3.1.6 Dual-Use, Requirement No. 6

D8.6 DU-Requirement No. 6 included detailed information regarding the use, production or development of dual-use goods, software and technology in the sense of the Regulation 2021/821 within the NESTOR project, based on the input provided by all partners through the relevant questionnaire. It was demonstrated that three partners deal with dual-use items while the other members of the NESTOR Consortium have clarified that they do not produce nor develop any dual-use items. For the three non-EU partners that deliverable was not applicable.

It was explained that there would be no export from EU to non-EU countries, as foreseen in the Regulation 2021/821, given that the NESTOR trials where the transferred items were utilised took place in the territory of the Union (Lithuania, Cyprus and Greece). The only applicable case was that of intra-Union transfers; [redacted] In addition, it was clarified that no transfer of dual-use items would take place between the NESTOR Consortium and the External Advisory Board members.

D8.6 also outlined the potential dual-use implications and the risk-mitigation strategy. In view of the limited potential implications, the mitigation measures were identified. It is worth mentioning that for the above-mentioned three items, the responsible partners had already taken all appropriate measures to obtain the relevant authorisations (where needed).

A dedicated section of D8.6 (section 6) was related to deliverable D8.4 NEC-Requirement No.4 and included the necessary copies of export licenses that were required for the transfer

Given that all deliverables of WP8 refer to the ethics requirements that should be fulfilled by the NESTOR Consortium during the research period, in order to ensure compliance of the research activities with applicable legal framework and ethics standards, it should be pointed out that any transfers of dual-use items after the end of the project and potential implications were out of the scope of D8.6 and have to be examined again under the new circumstances. Nevertheless, it needs to be highlighted that the NESTOR research results will rely upon existing technologies and market products and will build on the results of previous EU projects with an exclusive focus on civil applications.

Ethics Guidelines (see in the Annex of D1.6) that included obligations related to dual use were circulated to the Consortium prior to the start of each pilot demonstration. The Consortium strictly followed the applicable international, European and national laws. Compliance was monitored by the PEO that was present during the pilot demonstrations.

3.1.7 Misuse, Requirement No. 7

D8.7 M-Requirement No.7 explained the notion of 'misuse' to the NESTOR partners, included a risk assessment as regards the technologies and knowledge generated or used during the research that could be misused, i.e., could be used for unintended malicious and unethical purposes and presents a mitigation strategy.

The potential undesirable events were identified and described by the Consortium, their occurrence level was assessed by the risk holders after taking into consideration the nature of the risks and the effectiveness of the preventive procedures already established in the NESTOR project (ex-ante mechanisms), the severity level was assessed after considering the nature of the risks and their impact upon potential materialisation, the implemented measures were described and, finally, their level of effectiveness was presented.

The identified risks belonged to the following three categories:

- Research provides knowledge and technologies that could be channeled into crime or terrorism;
- Research involves developing surveillance technologies that could curtail human rights and civil liberties;
- Research develops social or behavioural profiling technologies that could be misused to stigmatise, discriminate against, harass or intimidate people.

The risk related to research resulting in chemical, biological, radiological or nuclear weapons and the means for their delivery was not applicable in the NESTOR research.

No vulnerable individuals or groups were involved in the project's research activities as further described in D8.1 H-Requirement No.1, hence, relevant risks were not identified.

No automated decision making was involved, and human intervention and oversight were ensured. NESTOR takes an intelligence-led approach to focus on detecting events that are highly correlated with known illicit activity on the borders and there is always human-in-the-loop decision making, hence, relevant risks were not identified.

The mitigation strategy included a variety of ex-ante and ex-post protective measures that were considered effective and ensured a high level of security of any sensitive information used or produced within the project. The ex-ante mechanisms were procedures that had been already established and were collectively followed in the project for the prevention of all types of potential risks of misuse, while the ex-post mechanisms were additional measures that were implemented by the NESTOR Consortium collectively or the risk holders individually to avoid potential materialisation of risks or to minimise their severity upon occurrence. **The Consortium took all necessary safeguards to prevent or mitigate the potential misuse of technologies and knowledge generated or used during the project's activities.**

Ethics Guidelines (see in the Annex of D1.6) that included obligations related to the prevention of potential misuse were circulated to the Consortium prior to the start of each pilot demonstration. The Consortium strictly followed the misuse mitigation strategy presented in D8.7. Compliance was monitored by the PEO that was present during the pilot demonstrations.

3.1.8 General, Requirement No. 8

The purpose of D8.8 was to provide a report by the Ethics Advisory Board (EtAB) about how the NESTOR Consortium dealt with any ethics issues in order to ensure compliance with ethical standards, the H2020 guidelines and with applicable legislation.

In view of that, in Section 2 the composition of the Ethics Advisory Board was presented as well as its role and function.

In Section 3 the compliance of the NESTOR Consortium with the WP8 ethics requirements was described in detail.

In Section 4 the work progress and the role of the EtAB and its contribution until M12 were outlined in a precise way.

Finally, in Section 5 the recommendations by the EtAB were included.

The EtAB devoted special attention and provided guidance to the Consortium in the form of written guidelines or orally during the project meetings and other project's events and activities.

All the information included in that deliverable was made available to the NESTOR Consortium through a dedicated session during the 3rd Project Meeting on October 24-26, 2022, in Larnaca, Cyprus.

4 WORK PROGRESS

In order to effectively perform its role, the EtAB had regular meetings, participated in all project's meetings and other research activities (workshops, trainings, pilot demonstrations), provided guidance to the NESTOR Consortium in the form of Ethics Guidelines, reviewed the deliverables raising ethical and/or legal concerns via an Ethics Review Table and co-drafted the ethics deliverables and other necessary documentation.

- **EtAB Meetings**

Considering its important role, the EtAB met regularly (every 3 months or similar), in order to discuss the ethical issues that were raised and the next steps that had to be followed. During the lifetime of the NESTOR project, **six (6) ordinary meetings were held.**

No extraordinary meetings were held.

The six (6) ordinary meetings that were held are the following, also reported in the relevant project's reports:

- 1st EtAB meeting : 24/11/2021
- 2nd EtAB meeting : 24/03/2022
- 3rd EtAB meeting : 31/05/2022
- 4th EtAB meeting : 20/09/2022
- 5th EtAB meeting : 27/01/2023
- 6th EtAB meeting : 22/03/2023

- **Deliverable Ethics Review Procedure**

The WP8 deliverables, as analysed above, were drafted by KEMEA and reviewed by the other two EtAB members prior to submission. The deliverables of the other WPs were also reviewed by the EtAB prior to submission through the Ethics Review Form/Table that was prepared by the EtAB and was attached to all project's deliverables. According to this process, each deliverable author had to respond to the questions included in the Ethics Review Form/Table prior to the submission of their deliverable. In case of at least one affirmative response, the deliverable was sent for ethics review and the EtAB members made comments and proposed modifications if needed. In addition, the EtAB contributed to the two deliverables of T1.5 "Ethics and societal issues management", i.e., D1.5 "Ethics and societal issues management initial report and D1.6 "Ethics and societal issues management final report" that were drafted by KEMEA.

- **Human Participation in Research Activities and Protection of Personal Data**

The recruitment of human participants including both recruitment and exclusion criteria, the procedures followed within pilot demonstrations, workshops, and other research activities were subject to the approval by the EtAB.

The templates of Information Sheet for Research Participation and the template of the Informed Consent Form for Research Participation, as well as the Information Sheet for Data Processing and the Informed Consent Form for Data Processing have been drafted and prepared. They were included in the D8.1 H-Requirement No. 1 that has been already submitted.

Depending on the nature and the specific conditions of each research activity the above-mentioned documents were modified accordingly. With respect to the NESTOR Project Meeting that took place on June 15-17,2022 in Alexandroupoli, Greece, the PEO had drafted and modified accordingly the Information Sheet for Data Processing and the Informed Consent Form for Data Processing that were distributed to all the participants. The same procedure was followed for the next Project Meeting that was held on October 24-26, 2022, in Larnaca, Cyprus.

In addition, online Information Sheet and online Informed Consent Form (check boxes) were prepared by the PEO as part of the online registration regarding the NESTOR training program in the context of T6.2 "Training Courses".

Furthermore, the informed consent procedure was followed prior to the start of the Workshop for 'Border Management Standardization Roadmap' that was organized on the 17th of February 2023, in Brussels, Belgium.

As foreseen, the informed consent procedure was also followed prior to the start of the NESTOR pilot demonstrations. In particular, prior to the start of the Lithuanian maritime trial (T6.3), of the Cypriot maritime trial (T6.4) and prior to the start of the Greek-Bulgarian land and maritime trial (T6.5), the PEO prepared the Information Sheet for Research Participation and Data Processing and the Informed Consent Form for Research Participation and Data Processing that were distributed to all trial participants. As regards the VIP Day that took place in the framework of the Greek-Bulgarian land and maritime trial on the 16th of March 2023 in Alexandroupolis, Greece, the Information Sheet and the Informed Consent Form also included a confidentiality clause that was addressed to the external guests.

Finally, online Information Sheet and online Informed Consent Form (check boxes) were prepared by the PEO as part of the NESTOR Demo Day & Final Workshop that will be held on 24th of April 2023 in Athens, Greece.

- **Data Protection Impact Assessments**

A risk assessment was conducted in order to evaluate the privacy risks in the framework of D8.3 POPD-Requirement No. 3. Following the risk assessment, an opinion of whether a Data Protection Impact Assessment (DPIA) is necessary according to Article 35 GDPR was included in that same deliverable. The assessment and the evaluation of the ethics/privacy risks took into consideration each data processing operation separately and based on these an opinion was drafted which considered necessary the conducting of a DPIA in two cases: (a) for the web monitoring operated by CENTRIC as part of T3.4 and (b) for the social media monitoring operated by CERTH as part of T3.4.

The DPIA of CENTRIC was in progress at the time of D8.3's submission but it was finalised timely prior to the start of the relevant data processing operations and was included in D1.5. The DPIA of CERTH can be found in Appendix C of D8.3 and its updated version can be found in the Annex of D1.6. Based on the measures that were implemented and according to the opinion of CENTRIC's and CERTH's DPOs, the output of each DPIA was that no high risks were anticipated for the rights and freedoms of the data subjects.

- **Joint Controllership Arrangements**

The Joint Controllership Arrangements were made pursuant to Article 26 GDPR and set out the rights and obligations of the NESTOR Consortium partners who acted as Joint Controllers with respect to the processing of the "on-the-field" trial participants' personal data as part of the NESTOR trials carried out in Lithuania under T6.3 ("Lithuanian Maritime Trial"), in Cyprus under T6.4 ("Cypriot Maritime Trial") and in Greece under T6.5 ("Greek-Bulgarian land and maritime trial"), respectively. The Joint Controllership Arrangements can be found in the Annex of D1.6.

- **Other documentation**

In the context of D8.3 POPD-Requirement No.3, a template of Data Protection Policy was prepared in case the members of the NESTOR Consortium were not obliged by law to designate a Data Protection Officer (DPO). This template was drafted by the PEO and the EtAB members in order to facilitate the NESTOR partners. The detailed Data Protection Policy included the types of processed data, the lawful basis and the purposes, the procedures for data handling, the applicable law, and the contact details of the controller.

In the context of D8.2 H-Requirement No.2, a template of Declaration of Compliance was prepared in case the members of the NESTOR Consortium were not obliged by national law to establish an ethics committee. This template was drafted by the PEO and the EtAB members in order to facilitate the NESTOR partners. The Declaration of Compliance contained all requirements that should be fulfilled by the partners conducting research activities with human participants during the lifetime of the NESTOR project.

- **General ethics guidance**

All WP8 ethics deliverables were based on the input provided by the partners of the NESTOR Consortium. The input was collected through questionnaires drafted and issued by the PEO as reviewed by the other EtAB members. The questionnaires were very analytical and contained the relative legislation so that the members of the NESTOR Consortium could be effectively informed and could provide precise responses in relation to the ethics issues, such as misuse, dual-use, personal data, etc.

Furthermore, Ethics Guidelines were drafted for the T6.2 training courses based on the content of deliverables D8.5 and D8.7 (summarised information in the form of bullet points).

The ethics guidelines accompanied the On-the-Job Training Guidelines drafted by STWS and aimed to ensure that both trainers and trainees would strictly follow the health and safety procedures and the misuse mitigation strategy during the training. Copies of the guidelines were distributed to the participants prior to the start of the training courses.

In addition, Ethics Guidelines were drafted for the NESTOR pilot demonstrations based on the content of all the ethics deliverables (D8.1, D8.2, D8.3, D8.4, D8.5, D8.6 and D8.7). They were adapted to each one of the three pilot demonstrations and copies of them were distributed to the NESTOR Consortium prior to the start of the three trials.

Moreover, the information included in the ethics deliverables was communicated and was made available to the NESTOR Consortium through dedicated sessions during the project meetings in order to ensure that the partners were aware of any ethical/legal risks and of the recommended or necessary actions in accordance with applicable EU and national laws and the ethics standards. Any ethical issues that were likely to appear during the NESTOR project were discussed first amongst the EtAB members and then among the members of the NESTOR Consortium. Guidance was provided on a constant basis either when considered necessary by the EtAB or whenever asked by a NESTOR partner.

Finally, the PEO and the EtAB members appointed for the NESTOR project monitored the research activities from an ethical and legal point of view both during the carrying out of the research activities (via ethics guidelines, Information Sheets and Informed Consent Forms, physical presence of the PEO and other EtAB members during the project meetings, physical presence of the PEO during the pilot demonstrations) and during the presentation and description of the research activities in the context of the project's deliverables (via the Ethics Review Form/Table).

5 RECOMMENDATIONS BY THE ETHICS ADVISORY BOARD

The EtAB was determined until the end of the project to continue aligning all activities including research and developments within the NESTOR project with ethical principles of the highest standard for research integrity as well as to ensure compliance with all applicable international, EU and national laws.

The members of NESTOR Consortium were sufficiently informed about the ethical and legal issues that have arisen or were likely to arise in the framework of the NESTOR project and they followed the guidance provided by the EtAB. Concrete examples can be found in the analysis of the above-mentioned deliverables of the WP8 'Ethics Requirements' in Section 3 as well as in the description of the general guidance provided to the NESTOR Consortium in Section 4.

As a final recommendation that extends beyond the research phase should be mentioned that the NESTOR partners must continue to align with the advice and guidance of the EtAB and to ensure compliance with the applicable international, EU and national laws during the deployment of the NESTOR system by the interested stakeholders. The NESTOR Consortium must respect the content of D2.2 'Report on the legal and security requirements for border security', as well as of the T1.5 and WP8 deliverables and be constantly updated in order to keep up with the legislative developments.

6 CONCLUSION

The purpose of D8.9 was to provide a report by the Ethics Advisory Board (EtAB) about how the NESTOR Consortium has dealt with the identified ethics issues in order to ensure compliance with ethical standards, the H2020 guidelines and with applicable legislation.

This deliverable constitutes the updated version of D8.8 including information that covers the entire research period.

In view of that, in Section 2 the composition of the Ethics Advisory Board was presented as well as its role and function.

In Section 3 the work related to the compliance of the NESTOR Consortium with the WP8 ethics requirements was described in detail.

In Section 4 the general work progress was presented and the role of EtAB and its contribution were outlined in a precise way.

Finally, in Section 5 the final recommendations by the EtAB were included.

7 REFERENCES

- Grant Agreement No 101021851 – Annex A Description of the action
- Grant Agreement Amendment AMD-101021851-3
- European Commission, Horizon 2020 Programme, Guidance How to complete your ethics self-assessment, v6.1 04/02/2019, available at https://ec.europa.eu/research/participants/data/ref/h2020/grants_manual/hi/ethics/h2020_hi_ethics-self-assess_en.pdf

Appendix A: Quality Review Report

NESTOR Consortium uses this Quality Review Report process internally in order to assure the required and desired quality assurance for all project's deliverables and consequently the consistency and high standard for documented project results.

The Quality Review Report is used individually by each deliverable's peer reviewers with allocated time for the review to be 7 calendar days. The author of the document has the final responsibility to reply on the comments and suggestions of the peer reviewers and decide what changes are needed to the document and what actions have to be further undertaken.

1.1 Reviewers

Project Coordinator	HP-
Management Team Member	KEMEA-
Internal Peer Reviewers (who have also drafted this deliverable)	CENTRIC – (EtAB member), External ethics expert– (EtAB Member)

1.2 Overall Peer Review Result

The Deliverable is:

☒ Fully accepted

☐ Accepted with minor corrections, as suggested by the reviewers

☐ Rejected unless major corrections are applied, as suggested by the reviewers

1.3 Consolidated Comments of Quality Reviewers

General Comments	
Deliverable contents thoroughness	Reviewers' comments: Good Author's reply:
Innovation level	Reviewers' comment: Good Author's reply:
Correspondence to project and programme objectives	Reviewers' comment: Good Author's reply:
Specific Comments	
Relevance with the objectives of the deliverable	☒Yes ☐ No ☐ Partially ☐ Not applicable Reviewers' comment: Author's reply:
Completeness of the document according to its objectives	☒Yes ☐ No ☐ Partially ☐ Not applicable Reviewers' comment: Author's reply:

Methodological framework soundness	☒Yes ☐ No ☐ Partially ☐ Not applicable Reviewers' comment: Author's reply:
Quality of the results achieved	☒Yes ☐ No ☐ Partially ☐ Not applicable Reviewers' comment: Author's reply:
Structure of the deliverable with clear objectives, methodology, implementation, results and conclusions	☒ Yes ☐ No ☐ Partially ☐ Not applicable Reviewers' comment: Author's reply:
Clarity and quality of presentation, language and format	☒Yes ☐ No ☐ Partially ☐ Not applicable Reviewers' comment: Author's reply:

Detailed Comments (please add rows if needed)		
No.	**Reference**	**Remark(s)**
1		
2		
3		

Appendix B: Deliverable Ethics Review

Ethical and Legal Issues	Yes/No by Partner & EtAB comments (if needed)
General	
This deliverable includes the opinion/input of a DPO, Legal or Ethics Advisor.	**Yes** **EtAB comments: Due to its nature the deliverable is drafted by the PEO and the EtAB members.**
Human Participation in research activities (questionnaires, workshops, pilots or other research activities)	
This deliverable is based on research activities (questionnaires, workshops, pilots or other tasks) that involve human participants.	**No** **EtAB comments:**
This deliverable is based on research activities (either during pilots or during the execution of other tasks) that may involve children or adults unable to give informed consent or vulnerable individuals/groups.	**No** **EtAB comments:**
Informed Consent Forms for the participation of humans in research have been/will be signed.	**No** **EtAB comments:**
Measures for the protection of vulnerable individuals/groups have been/will be implemented.	**No** **EtAB comments:**
Incidental findings, i.e., findings that are outside the research's scope, may be detected as part of the research activities described in this deliverable (criminal activity or personal data of non-volunteers during trials).	**No** **EtAB comments:**
Data Protection	
This deliverable is based on research activities that involve processing of personal data.	**No** **EtAB comments:**
This deliverable is based on research activities that involve processing of special categories of personal data according to Article 9 GDPR. Special categories of personal data means personal data revealing racial or ethnic origin, political opinions, religious or philosophical beliefs, or trade union membership, and the processing of genetic data, biometric data for the purpose of uniquely identifying a natural person, data concerning health or data concerning a natural person's sex life or sexual orientation).	**No** **EtAB comments:**
This deliverable is based on research activities that involve further processing of previously collected personal data or publicly available personal data.	**No** **EtAB comments:**
Informed Consent Forms for the personal data processing have been/will be signed and data subjects have been duly informed about their rights.	**No** **EtAB comments:**
The conditions for consent cannot be fulfilled. Another legal basis exists.	**No** **EtAB comments:**
This deliverable is based on research activities that involve transfer of personal data from/to non-EU/EEA countries (non-EU/EEA partner sor advisory board members from non-EU/EEA countries) or processing of personal data during the use of platforms regulated by non-EU/EEA law.	**No** **EtAB comments:**
This deliverable implements appropriate technical measures that constitute safeguards (encryption or anonymisation or pseudonymisation).	**No** **EtAB comments:**

This deliverable implements other security measures for the prevention of unauthorized access to, unauthorized transfer of, loss or erasure of personal data.	**No** **EtAB comments:**
This deliverable is based on research activities that involve profiling of data subjects. Profiling means any form of automated processing of personal data consisting of the use of personal data to evaluate certain personal aspects relating to a natural person, in particular toanalyse or predict aspects concerning that natural person's performance at work, economic situation, health, personal preferences, interests, reliability, behaviour, location or movements.	**No** **EtAB comments:**
Health and Safety procedures (for the staff and the participants in the pilots or other research activities)	
This deliverable refers to activities that may raise health and safety concerns (e.g., from the use of UAVs or from other risks during the pilots).	**No** **EtAB comments:**
This deliverable integrates the measures and mitigation actions presented in D8.5 EPQ-Requirement No.5.	**No** **EtAB comments:**
Dual use	
This deliverable refers to research activities that involve dual-use items in the sense of Regulation (EC) 428/2009, or other items for which an authorization is required.	**No** **EtAB comments:**
Potential misuse of the research findings	
This deliverable includes methodology, knowledge or references to tools and technologies that could be misused if they ended up to the wrong hands or could lead to discrimination and stigmatization of humans.	**No** **EtAB comments:**
This deliverable integrates the mitigation actions presented in D8.7 M-Requirement No.7.	**No** **EtAB comments:**