UNECE High-level Group for the Modernisation of Official Statistics

Project extension: Input Privacy preserving Techniques

Prepared by the IPPT project team

1 Purpose

Continuing the existing collaboration between the involved participating organizations to further explore and broaden the applicability of input privacy preservation techniques due to the need to become part of data ecosystems, use of private data between NSOs and, more generally, between organizations.

2 Project description

The input privacy preservation technique project has been running for over a year now. A number of important milestones have been achieved during this time. A template was developed to describe use cases and this was then applied in practice. This has resulted in a common picture of what kind of use cases are involved. The described use cases have been generalized. Two prototype use cases have been jointly described and subsequently realized as a test. The experiences formed the basis for a public consultancy that has yet to start.

In the discussion during the project it became clear that much more is needed to make input privacy preservation techniques suitable for application at NSOs. On the one hand, it concerns a joint deepening of the experiments carried out. On the other hand, an initial consultation on what is needed to make these use cases a success.

The latter relates to the environment in which these use cases will run. The environment has to be intended not only within a single NSO but rather cross-NSOs and, more in general, cross-organizations.

Another factor is that such an environment is expensive, so it can take a long time to come into existence.

The project outputs will be:

1. Next level of knowledge and experience what it takes to access resources that are hitherto inaccessible due to privacy rules.
2. Documented use cases that transcend NSOs with pilot implementations.
3. Community of experts on the theme of input privacy preservation techniques.

3 Alternatives considered

1. End the project this year and document the results of the project with advice on possible next steps. Then leave it to the NSOs/organizations involved to continue working together themselves, if there is interest.

4 Expected Benefits

☒	Reduced costs
☒	Increased efficiency
☐	Reduced risks
☒	New capabilities to meet user needs

5 Which key priorities in the HLG-MOS Strategic Framework does the proposed project relate to?

☒	Take cost out of our organizations to reinvest in more value-added areas
☒	Explore new areas collectively and leverage each other's' research investments in specific areas
☐	Provide whole of government data ecosystems based on international standards, for better estimates in key policy areas

☐	Renew our governance and operating processes

Justification:

Exploiting the potential of new sources, which we do not have direct access to for privacy reasons, or the exploitation of sources in different countries, requires further research into techniques for preserving the privacy of inputs. The project has given a lot of insight that much is still needed. What we need is a Secure Private Computing-as-a-service to process information from sources that may not be shared among themselves. Such an environment requires much more than technology. Public trust is needed. While certainly not the goal of the project, input from legal experts, privacy advocates, civil rights activists is a possible by-catch of the public consultation. At the same time, the use of these types of techniques, where sources are no longer accessible, poses methodological challenges that we have not seen before.

An extension is highly recommended in order to be able to continue the collaboration between experts that originated in the UNECE project. And it contributes to the UN Task Team for the UN Handbook by providing practical examples.

6 How does the proposed project relate to other activities under the HLG-MOS?

This project brings one long-term goal of the HLG-MOS closer to modernize the production of statistics when it comes to using resources instead of surveying.

It also potentially makes it possible to produce statistics that are not yet possible, such as trade between countries that requires resources from both countries.

The aim of the project is not to replace other efforts, such as those of the UN Privacy Preserving Techniques Task Team, but rather to collaborate with them to collaborate with them in activities that leverage work of both teams such as providing use cases and concrete requirements and use testing environment facilitated by the UN Privacy Preserving Techniques Task Team.

7 Proposed timetable

The first phase of the project focuses on continuing the existing tracks with deepening of the tracks:

- Private set intersection
- Private machine learning

The mini use cases are further elaborated. The track private machine learning also explores methodological challenges.

With the track Organize a public consultancy, the consultation is first completed and based on the results of the consultation it is determined which next steps are beneficial.

For the rest of the year, the working group will focus on those areas where more in-depth research is needed to make input privacy preservation techniques a success.

Participation of this group in the HLG-MOS workshops will yield activities that stimulate thinking as a community that shares things from the start. Participation of this group in the HLG-MOS workshops will bring activities that stimulate thinking as a community that shares things from the start.

8 Expected resources and costs

These are the expected resources needed for 2022:

- Experts in statistical methodologies, privacy preservation techniques, information management and information technology
- Space in UNECE's Wiki to facilitate community
- Virtual meeting facilities to support monthly meetings
- Resources to organize a physical sprint
- Resources to organize a physical workshop
- Support to the UN/ECE HLG-MOS Secretariat to help coordinate the group