

**INVITATION TO PARTICIPATE IN
PRIVACY ENHANCING TECHNOLOGY SANDBOX
“PET SANDBOX”**

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Supported by:



In support of:



WHY IS PRIVACY ENHANCING TECHNOLOGY (PET) USEFUL?

1. PETs, which are based on cryptography, give data providers the ability to either disclose data for analysis but not in its original form (in techniques like Differential Privacy or Homomorphic Encryption), or allow insights to be pulled from data which remains undisclosed at all times (in techniques like Federated Learning or Multiparty Computing).
2. These help to address industry concerns around risks of traditional data sharing and open opportunities for B2B data collaboration, cross-border data flow, making more data available for AI development, and other industry use cases currently facing data barriers. Businesses can harness technology to generate business value while strengthening data protection. For instance:
 - Investing in tools and processes to extract value from data without exposing the data itself; and
 - Developing useful AI systems, e.g. banks can pool data and build AI models for better fraud detection, while protecting their customers' identity and financial information.
3. There is evidence that PETs are market-ready, and their uptake is impending. OECD and MIT's 2020 study on adoption of PETs identified a subset of PETs as more mature and operational in the market such as Differential Privacy, Multiparty Computing, Homomorphic Encryption and Federated Learning. Examples of real use cases:
 - DataCo utilized PET to improve predictive model performance and deliver valuable customer proposition
 - Estonia Govt's Education and Tax agencies used MPC to overlap datasets and find correlation between dropouts and apprenticeship sign ups.
4. Many of the business challenges that can be addressed by PET fall into 3 common use case archetypes:
 - a. identifying common customers in multiple datasets;
 - b. deriving additional features or attributes of common customers from multiple datasets, e.g. to establish a more holistic view of customer preferences; and
 - c. making data available for AI model development and testing.

CHALLENGES IN PET USE

5. While PETs have seen some market adoption, many companies face deployment challenges, such as:
 - a. lack technology benchmarks for PET solution providers, leading to difficulty in identifying and selecting the right PET solution provider;

- b. lack of knowledge about which PETs to use and how to shape use case requirements while working within the PET's technical constraints, leading to mismatched expectations for PETs; and
- c. lack of clarity on compliance requirements, such as regulators' positions on the conditions of use of this new technology on regulated data (e.g. personal, financial, healthcare)

WHY PARTICIPATE IN THE PET SANDBOX?

- 6. The PET Sandbox will provide a testing ground for businesses to pilot their PET use cases, with the technology, financial and regulatory support from IMDA. Drawing on the lessons from these pilot projects, IMDA plans to develop useful guides and tools to support industry adoption of PETs.
- 7. Through the Sandbox use case owners and PET solution providers will be provided with the following support:
 - Match making to qualified PET solution providers: Use case owners can choose to tap on solution providers pre-qualified by IMDA, which will help shorten time taken to identify relevant PET solution and providers. Pre-qualified solution providers will have to meet IMDA's criteria, such as relevant PET solutions that can address the 3 archetypes of common use case, relevant track record in PET implementation, and financially sustainable operations.
 - Co-funding for pilot projects: There will be grant support (up to 50%) for eligible cost items during the project. Examples of cost items include manpower, professional services and hardware/software required for the 6 months project period.
 - Access to regulatory guidance: Regulatory guidance will be provided by PDPC throughout the project, to address questions and provide clarity to companies participating in the sandbox.

BENEFITS OF PARTICIPATION

- 8. By participating in the sandbox, use case owners will be able to
 - Identify the best PET to address their use case needs
 - Gain ready access to qualified PET solutions and providers
 - Bear lower risks while in investing in a new technology
- 9. Similarly, PET solution providers will have the opportunity to work with business with real need for PET, and complete a demonstrable project for future clients.

10. Through the pilot projects, both user companies and PET solution providers will better understand how PETs can be used to address real world applications and needs, while gaining insights on the technical and regulatory bounds.

HOW TO PARTICIPATE

11. The PET Sandbox is open to use case owners who wish experiment with PETs through use case centric pilot projects that will demonstrate how PETs can be used. IMDA is inviting Singapore-registered companies (“use case owners”) to submit proposals for a 6-month project.
12. A complete proposal should include (i) details of use case, and (ii) proposed PET solution to address the use case needs.

Use cases

13. Use case owners will be required to bring use cases based on one or more of the three archetypes of common use cases:
 - Identifying common customers in multiple datasets
 - Example: Retailer and Insurance companies would like to find out the number of customers they have in common before establishing a data sharing partnership
 - Deriving additional features or attributes of common customers from multiple datasets
 - Example: Travel agent and telco would like to create a joint data model with features that best describe their travel preference without disclosing commercially sensitive data
 - Making data available for AI model development and testing
 - Example: Investment company would like to train an investment risk AI model on supply chain data of its portfolio companies overseas, but facing regulatory or confidentiality constraints
14. These use cases may be intra-company (e.g. data sharing across subsidiaries, MNC operating across jurisdictions) or inter-company (e.g. B2B data sharing for customer servicing, B2B data sharing along the supply chain).

Proposed PET solutions

15. Use case owners may source and partner any PET solution provider to submit a proposal. For use case owners who require assistance in finding a PET solution, please contact IMDA or approach IMDA’s pre-qualified PET solution providers.

16. PET solutions identified in the proposal must be mature, in market and available for use. Research oriented proposal may not be suitable for this programme.

Application Submission

17. Interested use case owners can submit their use case through the online application form at <https://go.gov.sg/petsandbox>. IMDA will follow up with further clarifications thereafter.
 - Period of application: 20 July 2022 to 31 October 2022
18. PET solution providers who are interested to be part of IMDA's pre-qualified PET solution providers, please contact: data_innovation@imda.gov.sg.
19. For queries on the PET Sandbox programme, please contact data_innovation@imda.gov.sg.