IOWN INTEGRAL

NTT R&D FORUM 2024

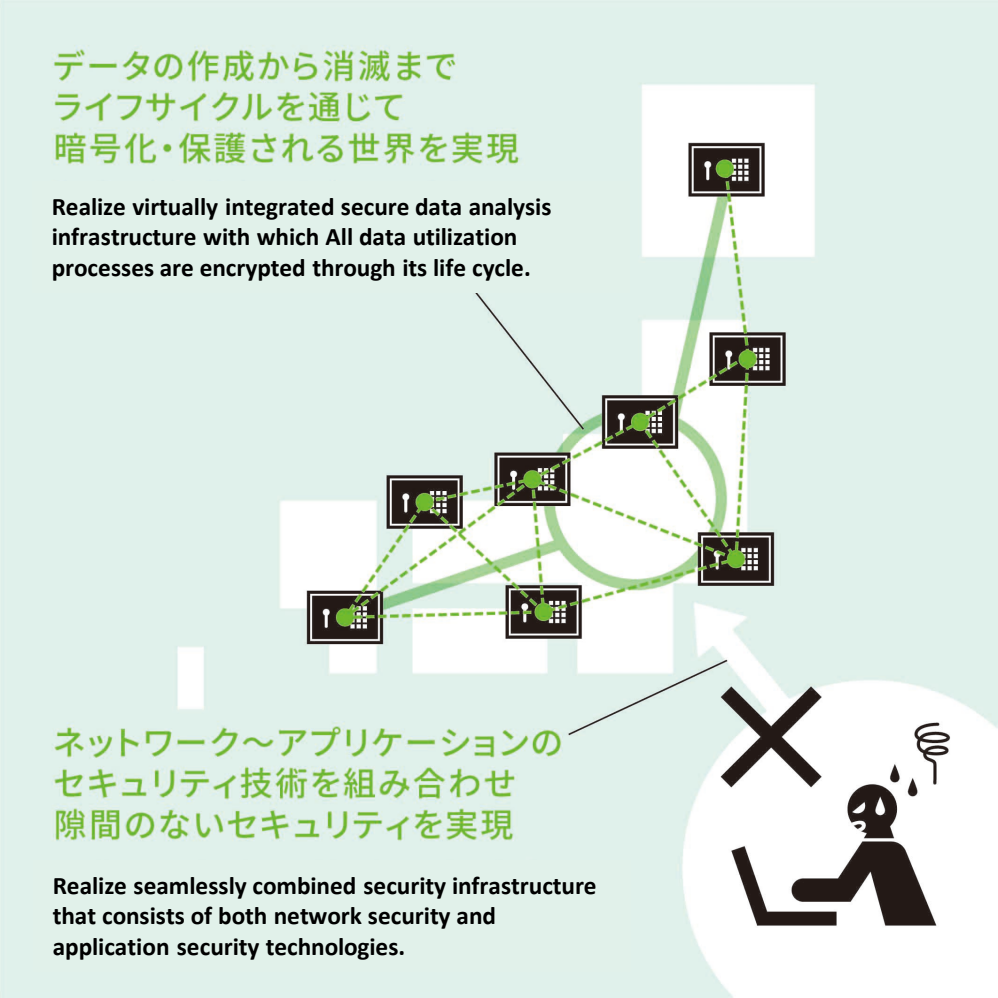
DEVELOPMENT

δ03-08

Computing environment with end-to-end confidentiality

Realize security and data sovereignty in virtually integrated large-scale data utilization infrastructures

#Productivity Improvement #Regional Revitalization



///Technical Issue

Plain data (in use) can leak by internal issues, or unauthorized use by partners. Encrypted data (in transit/ at rest) can leak by exploitation of keys or decryption.

///Research Goal

By securing data in all phases (e.g., data in transit, at rest, and in use), we provides confidentiality for all business applications.

---Technology

Realize virtually integrated data analysis infrastructure with which data is always encrypted in all phases of utilization, by connecting several confidential environments with communication paths encrypted by post quantum cryptography.

---Novelty

Realize secure application infrastructure including;

- Isolated computation environments using TEEs
- Secure communication between above environments using post quantum cryptography
- Integrated large virtual computation environments among several data centers with IOWN APN

---Applicable Business

Assuming applications for areas like ICT industry (data utilization companies, cloud providers, etc.) or social infrastructures which need economic stability. This technology realizes learning and inference of LLM/AI with large amount of external and/or confidential data by developing an infrastructure to manage those data securely. Also, it realizes virtually integrated large and secure computing environments by integrating data centers with this technology and APN. We'll develop a prototype which connects TEEs securely with Elastic key Control technology in FY 2024.

Related Exhibition=δ03-05/ δ02-01 Exhibitors= NIPPON TELEGRAPH AND TELEPHONE CORPORATION Related URL=IOWN PETs

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