

TDSH Project — Trusted Privacy-Preserving Data Sharing

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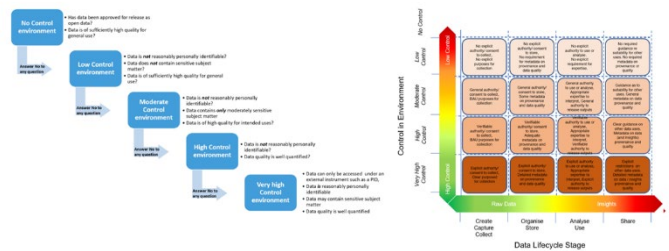
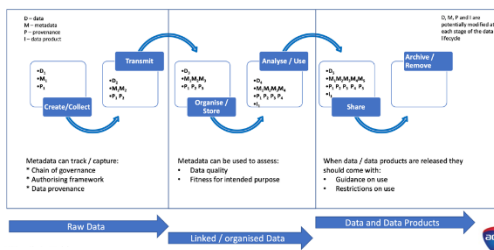
This project seeks to provide frameworks which help answer important questions about data and products derived from data:

1. How can I determine if data is fit for the purposes I plan to use it for?
2. How can I provide guidance / restrictions / prohibitions for future uses of the products I create from this data?
3. How can I enforce restrictions / prohibitions for future uses of the products I create from data?
4. How can I determine if a data product has been manipulated in ways that I did not expect?

Previous work – ACS Data Sharing Frameworks and ISO/IEC Standards

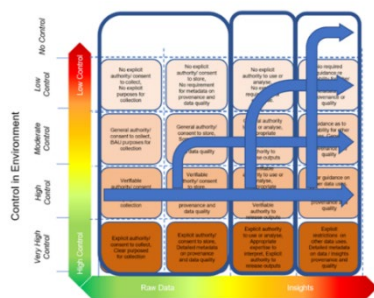
Several data whitepapers on data sharing were released through the Australian Computer Society, the last in February 2023. In April 2024, two international standards were published by ISO and IEC which built on the work undertaken with the ACS:

- ISO/IEC 5207:2024 Terminology and use cases)
- ISO/IEC 5212:204 (Guidance for data use)



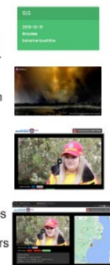
Previous work – UTS developed an example of the ACS framework for data sharing in emergency response

SMODS System Design — Trusted Privacy-Preserving Data Sharing



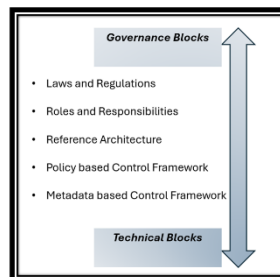
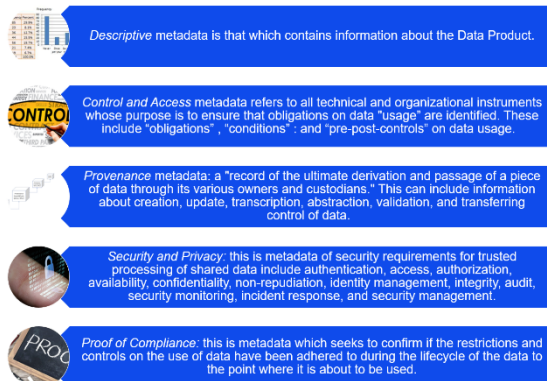
Four data products could be created:

- **No Control Environment:** Data insights without personal information and with rough location information made publicly available.
- **Low Control:** Video screenshots without personal information and with rough location information. Used for internal training.
- **Moderate Control Environment:** Raw video/photos without personal information and with rough location information. Accessed by policy makers.
- **High Control Environment:** Raw video/photos with personal information and accurate location information. Streamed by responders under conditions of confidentiality.



This Project – Exploring Metadata based controls and developing new ISO/IEC Standards

The Approach – Layered Metadata



```
metadata {
  Descriptive {
    Identifier: "12345"
    Creation date: "2024-12-09 08:08:08"
    Custodian: "ServiceNSW, NSW Government"
    Content descriptors: <freeform text>
    Geographic descriptors: <freeform text>
    Status: "Active"
    Format: "CSV"
  }
  Control {
    Storage: <address>
    Control requirement: "High Control"
    Usage restrictions {
      Minimum read access: "High Control"
      Minimum copy access: "High Control"
      Minimum modify access: "High Control"
      Screenshot: false
      Print: false
      General restrictions: <freeform text>
      Usage recommendations: <freeform text>
      Usage guidance: <freeform text>
    }
  }
  Provenance {
    Parent identifier: NA
    Usage history {
      Access date: "2025-02-15 08:07:18"
      Access type: "copy and save as new"
    }
    Last modified date: NA
  }
  Security and privacy {
    Quality: "Low"
    PI type: "Identified"
    Sensitivities: "school address"
  }
  Proof of compliance {
    Digital signature: "abc123def456"
    Signature valid: true
    Content watermark: "zzzyy8762876"
    Watermark valid: true
    Minimum controls maintained: true
  }
}
```



UNSW
SYDNEY



UTS

Trustworthy
Digital Society