INTERNATIONAL DATA SPACES
IDS CLEARING HOUSE
CONSIDERATIONS FROM A SERVICE PROVIDER PERSPECTIVE

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BACKGROUND

ENABLING THE IDS SERVICE ECOSYSTEM

IDS, sounds good

- Are my services IDS compliant?
- What do I have to do?

Major Service Provider Ltd

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CONTENTS

• The Challenge
• The Scope
• The Issues
• The way forward?
THE CHALLENGE
ENFORCEABLE DATA SHARING CONTRACTS

• Legal Enforceability
  Ensuring that digital data sharing agreements which have been generated by means of automation are juridically correct and acceptable in legal procedures.

• Technical Enforceability
  Giving the data owner the means that the agreed-upon data sharing agreements are (securely) implemented in the data sharing environment.
DATA SHARING AGREEMENTS

COMBINATION OF CONTRACTUAL CONDITIONS AND TERMS-OF-USE

• **Contractual conditions**
  
  Including the juridical statements, pricing conditions, service levels, governing law, IPR-conditions.

• **Terms-of-use**
  
  Combining both the data providers internal (business) data sharing policies and the external (regulatory) policies.
ENFORCING DATA SHARING AGREEMENTS

ENABLING (TRUST) CAPABILITIES (1)

• Terms-of-Use Enforcement

Taking care that data is verifiably shared under agreed upon conditions. This encompasses the functions for defining the conditions under which the data is provided, mutual agreement on these conditions and managing the actual sharing of data under these conditions.

• Logging, Provenance and Reporting

This includes: keeping a record trail of the performed data sharing transactions (logging), accounting for the origin, ownership, custody or location of the data (provenance) and the reporting thereof to the various data sharing participants.

The ledger of record trails of data sharing transactions may e.g. be used for billing, conflict resolution, etc..
ENFORCING DATA SHARING AGREEMENTS

ENABLING (TRUST) CAPABILITIES (2)

• **Financial Clearing, Settlement and Billing**

  Taking care that data is verifiably shared under agreed upon financial conditions.

  This encompasses the functions for defining the financial conditions under which the data is provided, mutual agreement on these financial conditions and managing its associated processes.

• **Conflict Resolution and Auditing**

  Conflicts can be resolved based on the information that has been logged in the ledger of data sharing transactions. This may for instance occur when it needs to be clarified / confirmed that a specific data transaction has occurred and that the data has been received by a data consumer or for auditing goals.
THE IDS ECOSYSTEM
MULTITUDE OF TRUSTED, INTEROPERABLE, INTERMEDIARY ROLES
ISSUES

• **Functional architecture, e.g. on:**
  - Non-repudiation: Is it required and what is the role of the clearing house in it (PKI-solution)
  - Storing only meta data or also (hashes of) actual data shared in the CH
  - Linking individual data sharing transactions to applicable data sharing agreements
    - Access and usage control policies linked to data sharing agreements
    - Role of clearing house i.r.t. data broker on registering agreements
  - Relationship with blockchain technology: See also IDS Blockchain WG: Issues on: interoperability, security/certification, management, ...

• **Technical architecture**
  - **Interoperability**
    - Between clearing house of data provider and data consumer
    - Between clearing house and data broker (e.g. on agreements / contracts)
ISSUES

- **Business / organizational architecture**
  - **Business model**
    Is the clearing house a commercially viable role? Can (sufficient) money be made for this role?
  - **Relation to IDS reference architecture**
    - What is in scope of the IDS reference architecture and what is internal implementation?
    - Will the (interfacing with the) clearing house be part of the IDS reference architecture? If so, how (API, Messages specification / standard)?
WAY FORWARD

• Where (in which WG) will these issues be addressed
  ▪ Relation to usage control WG / data provenance
  ▪ Goal and outcome of the work w.r.t. IDS specifications / standards
  ▪ Where (in time) on the IDS Development Roadmap

Discussion
THANK YOU FOR YOUR ATTENTION

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