

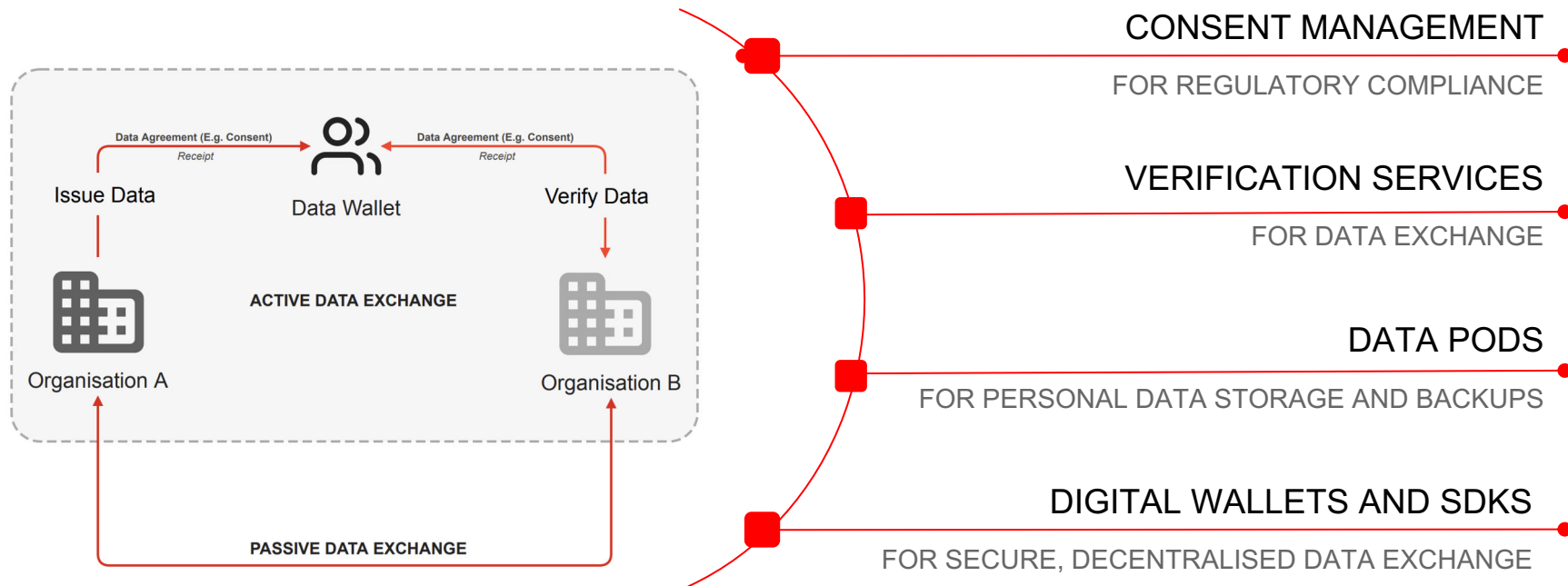
Consented Data Exchange and Verification Services with Digital Wallets

Making personal data spaces trustworthy, auditable and immutable

Workshop at EWC Consortium
13-April-2023

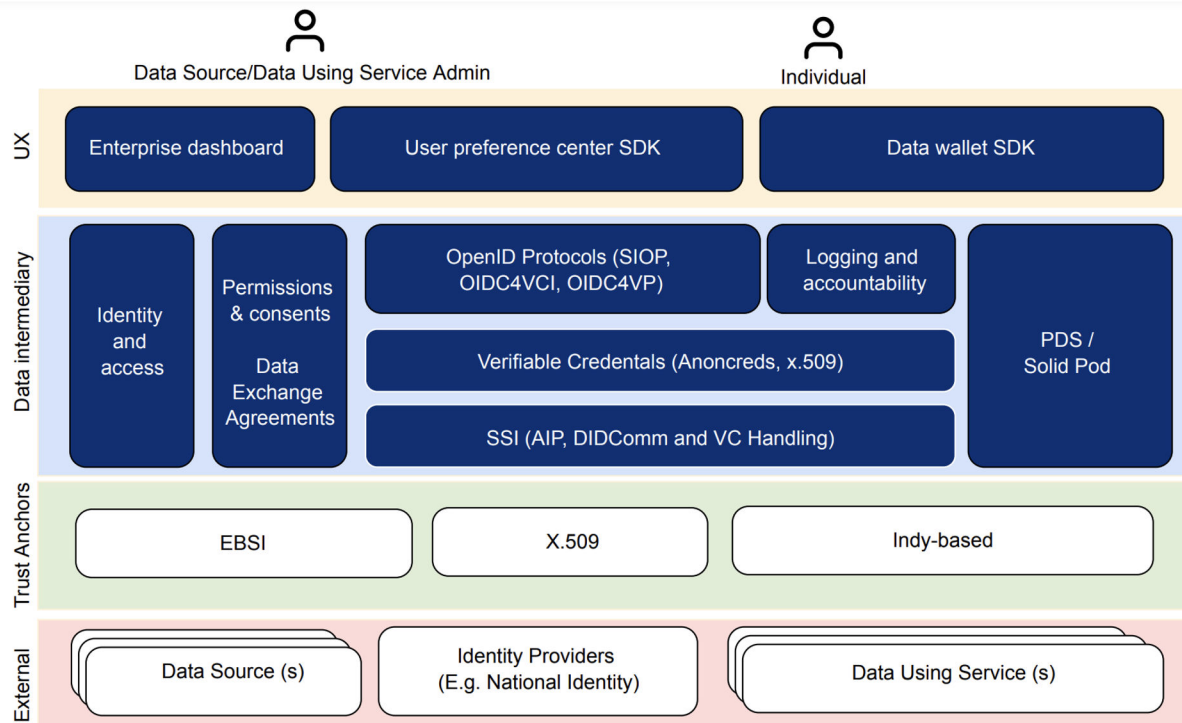


iGrant.io B2B/2G solution offering

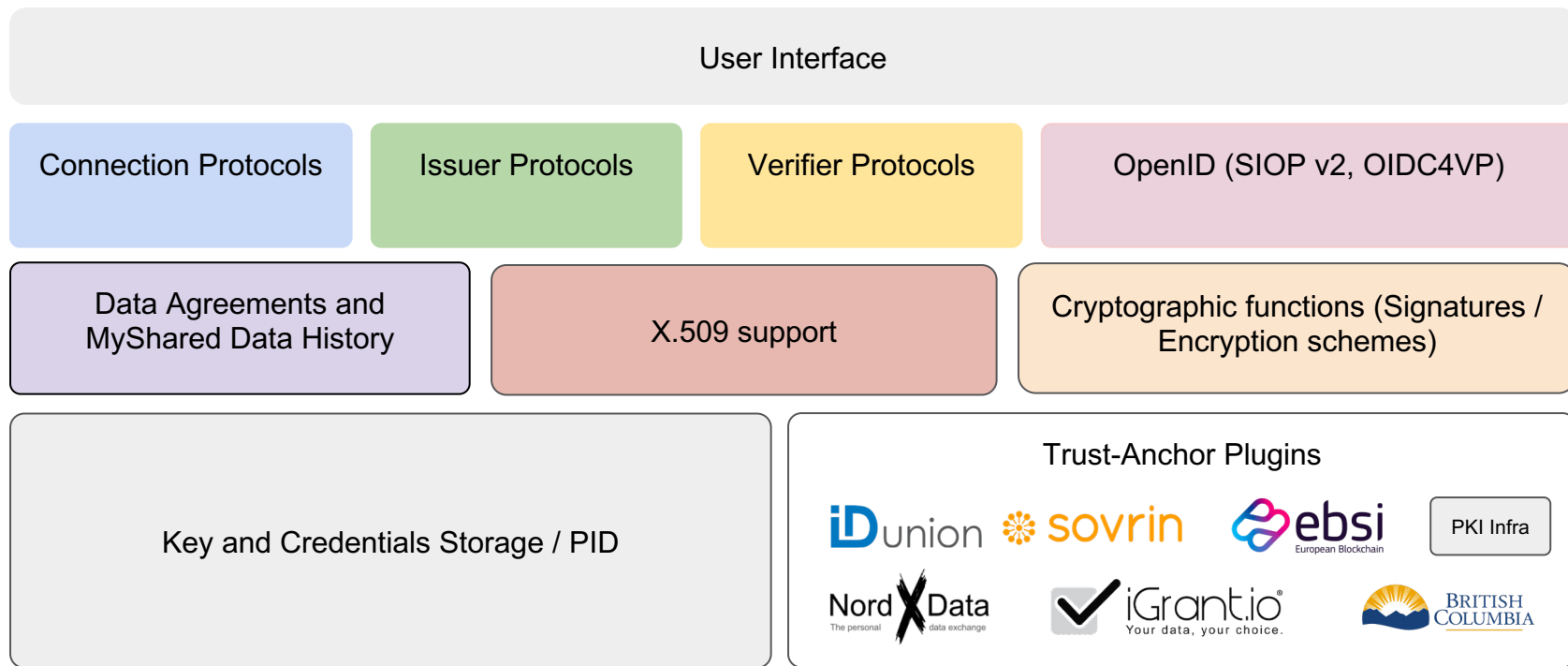


High-level architecture

- Supports GDPR compliance including consents via data exchange agreement protocols (ISO 27560)
- Supports multiple trust anchors
 - All indy ledgers (IDUnion, Sovrin, iGrant.io, NordXDataspace, BCGov)
 - EBSI (Ethereum)
- Supports mobile based as well as cloud based wallets



Data Wallet: Overall Architecture

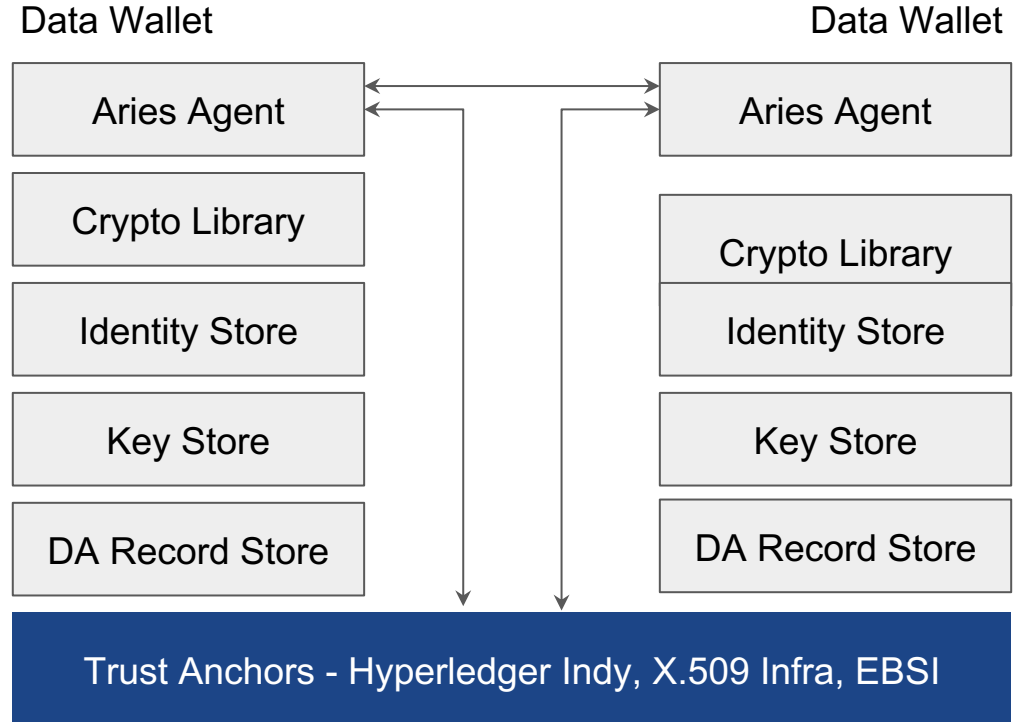


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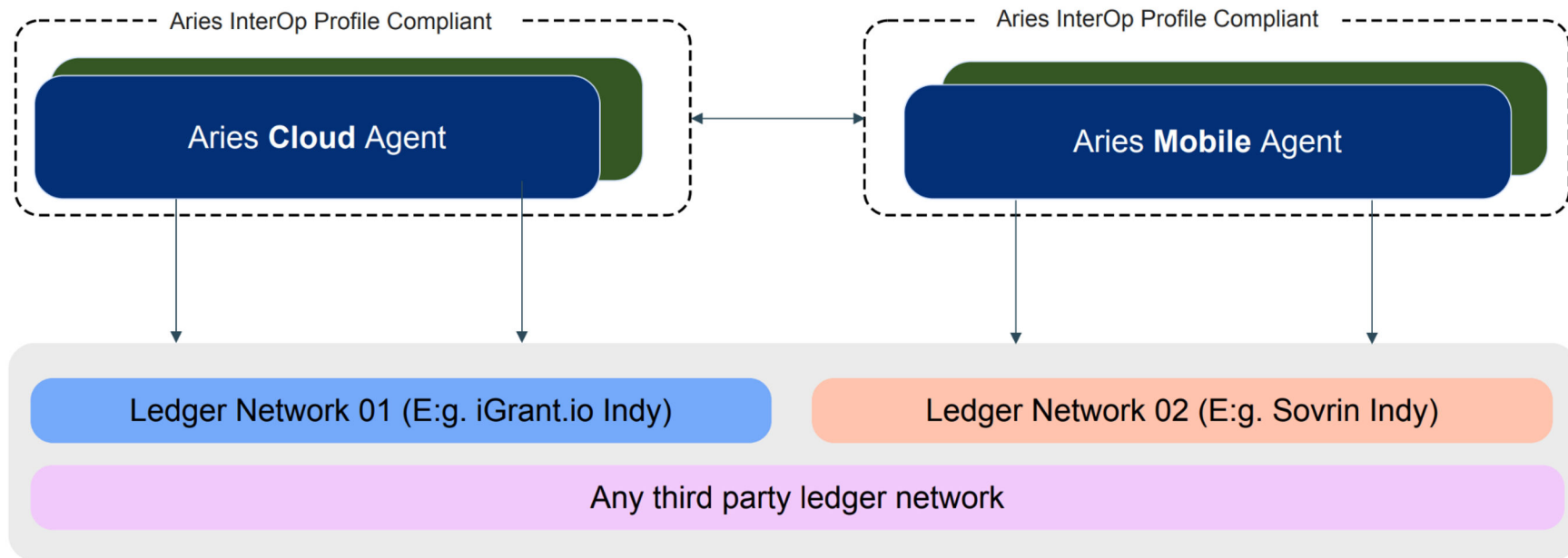


Data Wallet Communication and Storage Stack

- Compliant to Aries Interop Profile (AIP) 1.0
- Interaction between agents is using DIF DIDComm protocols which provides an end-to-end encrypted channel for secure communication.
- Agents are connected to trust anchors for e.g. Indy to resolve and verify credential schemas and decentralised identifiers
- Every data exchange transaction is mutually signed cryptographically between the parties ensuring full auditability.



SSI interoperability with Aries Interop Profile



 Aries agents from multiple vendors

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Additional information

Supported Crypto Libraries	Anonymous credentials (AnonCreds)
Wallet-to-wallet protocols	DIDComm v1, OpenID - SIOP v2 , OIDC4VP (EBSI)
Supported signatures	Ed25519 (EdDSA), CL (RSA based), BLS
Supported trust anchors	<ol style="list-style-type: none">1. Hyperledger Indy: IDUnion, Sorvin, BCGov2. EBSI - European Blockchain Service Infra3. X.509/PKI based (Supported data schemas*)
Revocation	Indy based credential revocation, PKI renovation lists - Link
Permissions and Consents and GDPR Compliance	Via Data Agreements - Link
Identity Management	Link

*Takes approx a week to production rollout a new data schema and x.509 support

iGrant.io Supported credential profiles and status

Credential Format	Signing Algorithm	Revocation Algorithm	Key Management (Issuer)	Key Management (Holder)	Trust Management
AnonCreds	CL	Indy Revocation	did:indy	link secrets	Verifier knows Issuers
JWT-VC	ECDSA	W3C Status List 2021	did:ebis (Legal Entity)	did:ebis (Natural Persons)	EBSI Trust Registries
ICAO DTC	ECDSA	SLTD database (travel and identity documents)	raw public keys (non-jwk)	raw public keys (none jwk)	ICAO Trust list
x.509	ECDSA	CRL - certificate revocation list	raw public keys (non-jwk)	raw public keys (none jwk)	X.509 certificates

Supported data schemas:

- PKPass (Air Tickets largely), NFC Passport formats (EU/Singapore/China), Covid Vaccination Certificate, Covid Test Certificate (EU/India/Philippines), Aadhar (India), MyData Profile, eReceipts (PEPPOL), EBSI (Student ID, Verifiable ID, Diploma, ESSPASS/PDA1) etc.



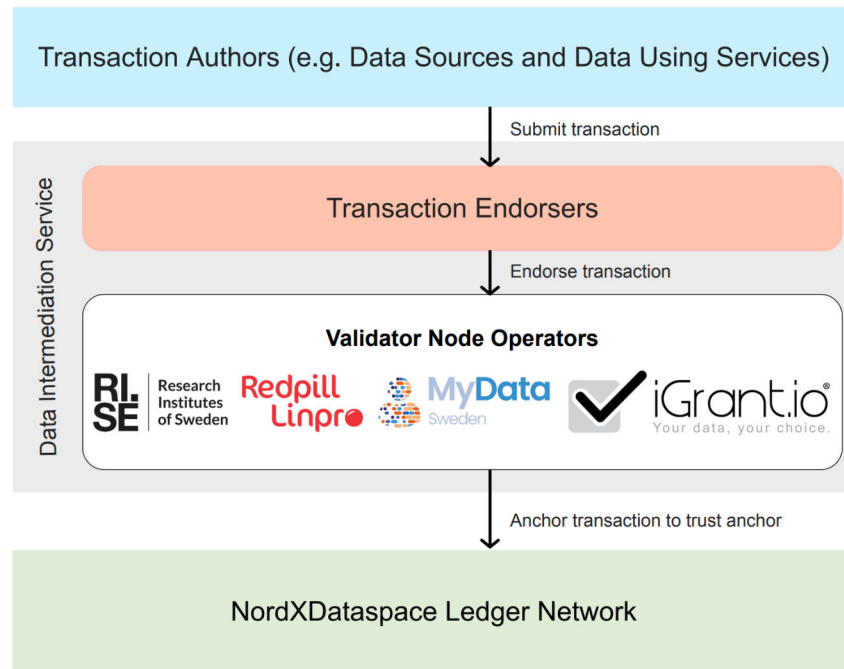
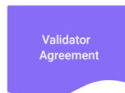
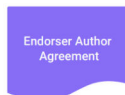
The ledger network, with four validator nodes

- Today, has 4 validator nodes

- [Redpill-Linpro](#)
- [RI.SE](#)
- [MyData Sweden](#)
- [iGrant.io](#)

- Supported usecases

- Diabetes data exchange
- Remote patient monitoring usecase
- Public sector trials (E.g. Bolagsverket)
- All iGrant.io [demo usecases](#)

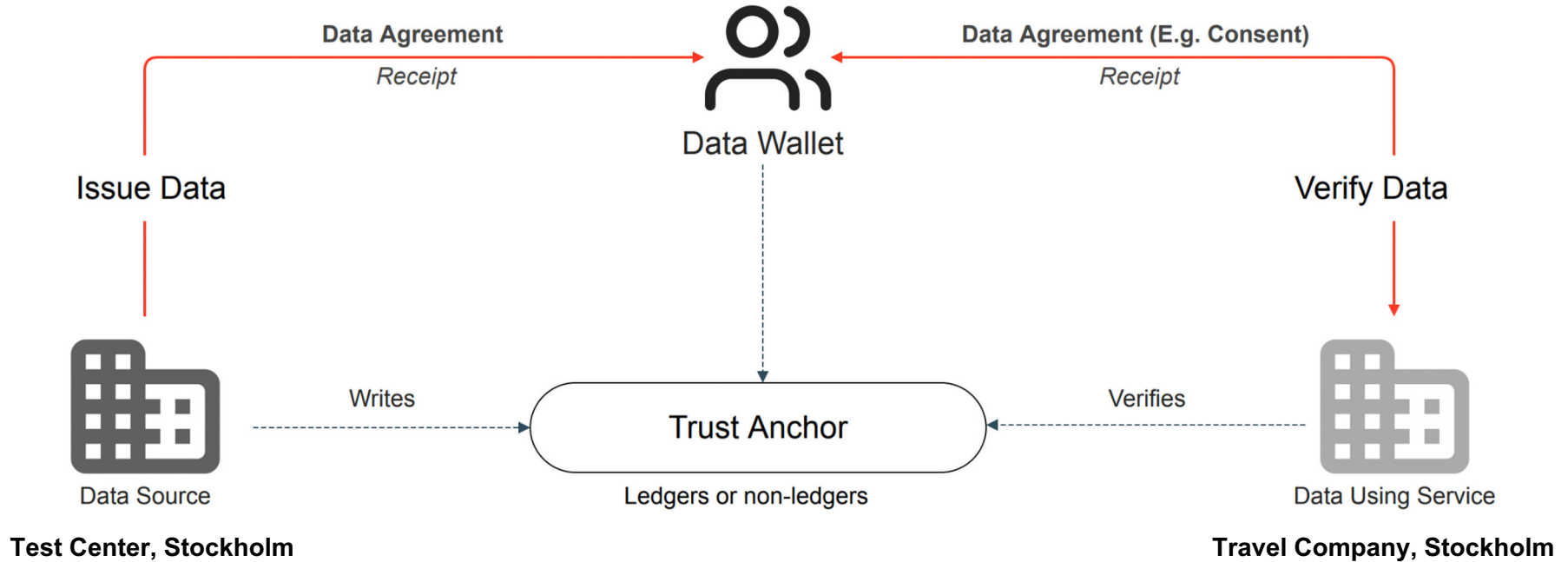




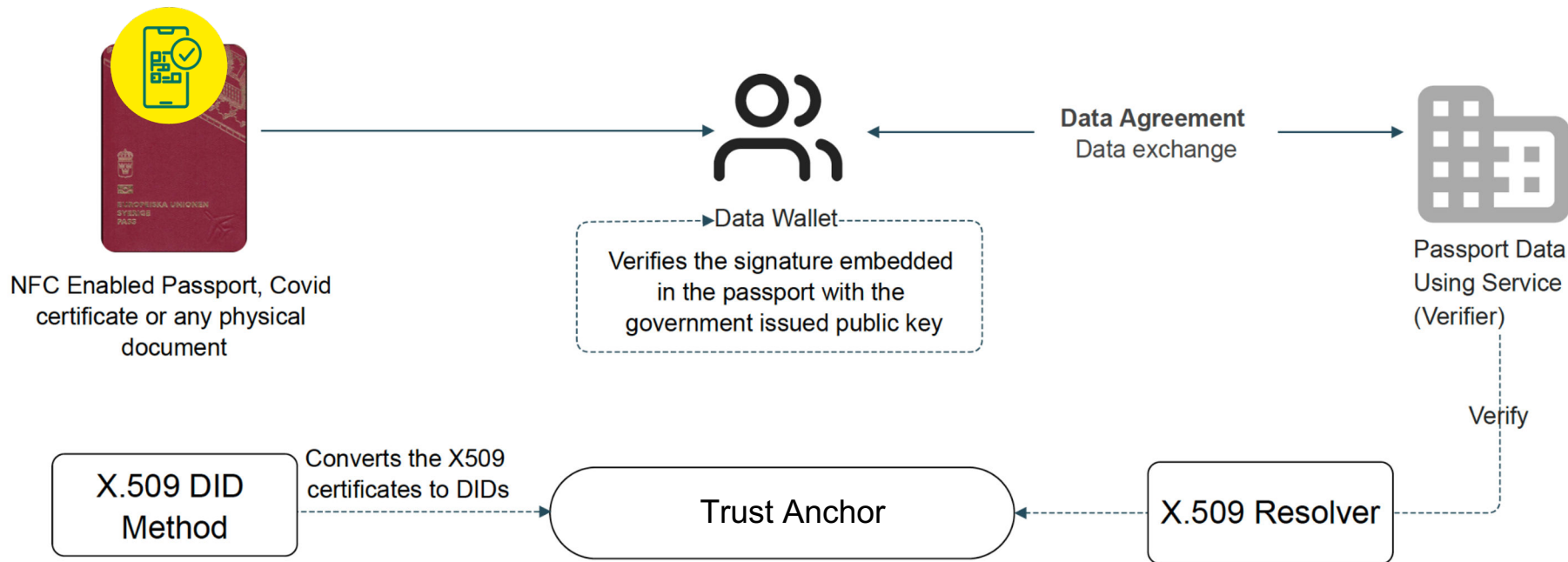
DEMO

Data Wallet Demo: <https://www.youtube.com/watch?v=NF81dIISBeA>

Usecase 01: Issuer/Verifier Data exchange end-to-end



Usecase 02: X.509 credentials verification



Usecase #03: Peppol receipt sharing with organisational wallets

Try out available at: <https://igrant.io/data4receipts.html>

Organisational wallet

The Nordic Organisation Digital Wallet Pilot

Multiple **ledger networks**

- <https://indy.nxd.foundation>
- <https://minisuumiledger.northeurope.cloudapp.azure.com/>

Multiple **organisational identity issuers** in various countries

- Bolagsverket (Sweden)
- PRH (Finland)
- BRC (Norway)

Multiple **credential issuers** in various countries

- Vero (Finland): Issuing tax record
- Skatteverket (Sweden): issuing tax record
- Companies issuing and receiving payment receipts (Remppa & Vasara AB, FöretagsFix AB, Bygg AB)
- Ecolabel issuer (Sweden)
- Real estate insurance issuer (Sweden)



Organisational digital wallet - Reference infrastructure



Issuer Admin



Company Admin

Issuer Admin Portal

MyCompany Portal
Manage company credentials

Wallet

Issuer Controller

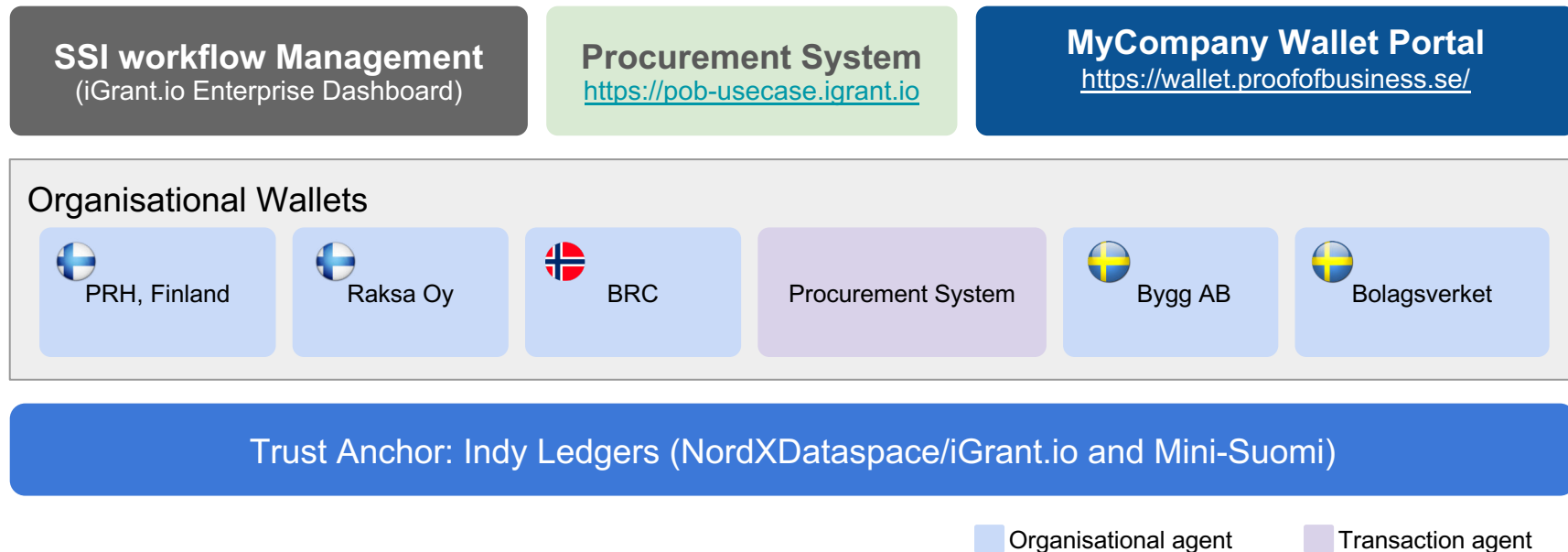
Company wallet (s)

MyCompany
Controller (s)

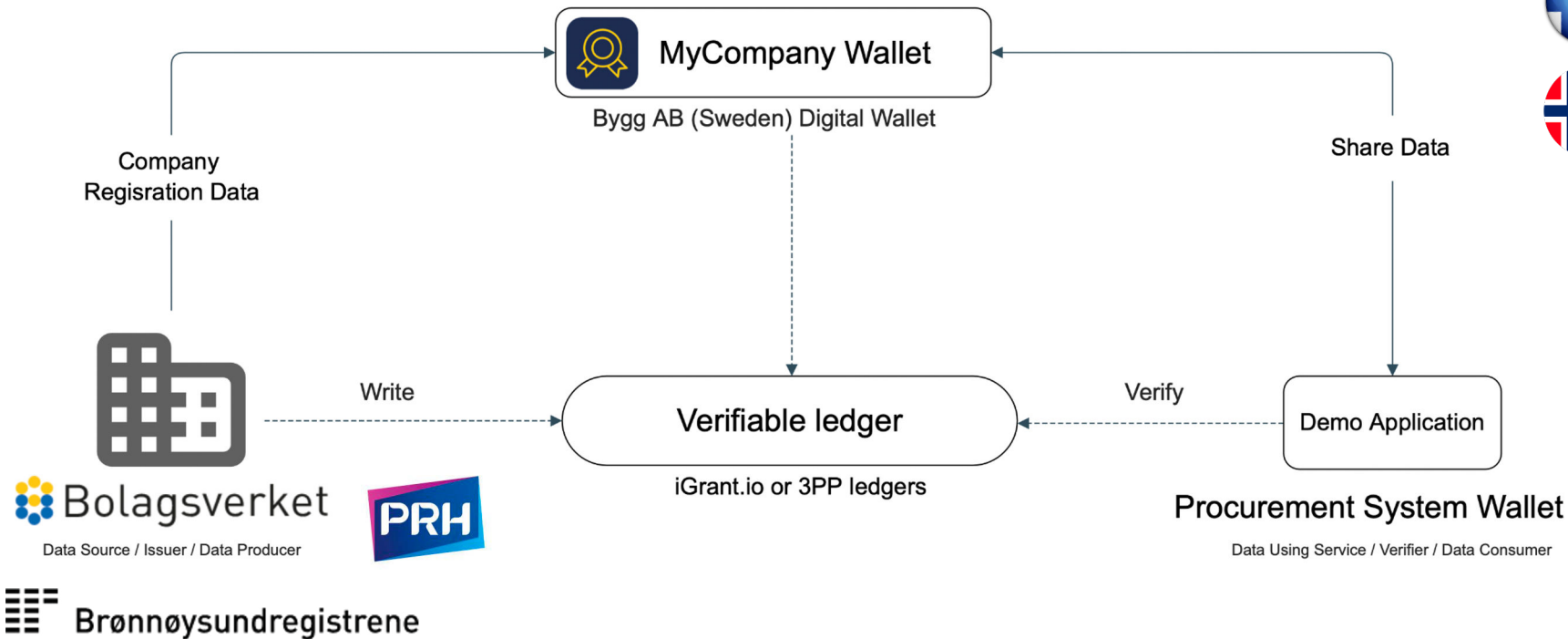
Trust Anchor: Indy Ledgers (NordXDataspace/iGrant.io and Mini-Suomi)



Trial setUp - Cross-border deployment landscape



Usecase: Issuer / Verifier / MyCompany Wallet



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