Asset Schemas
(aka Asset profiles)

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ASSET SCHEMAS

General Definition of the structure of an asset schema

Specialisation

Industry-specific asset schemas

Instantiation

Asset Instances managed by a given Network (system)
Asset Schema – Data Requirements

• Identification
  • On-chain (token) unique ID – Network-specific ID
  • Off-chain unique ID – Off-Network (LegacyID, PhysicalID,...)
  • Normative identification
    • Code (e.g. LU0001234567)
    • Code Kind (e.g. ISIN)
    • Description (e.g. Prospectus/KID/ReferenceDoc/...)

• Asset Attribute Data Structure (schema level – e.g. using of JSON LD and JSON Schema)

• Capabilities
  • Transfer-ability
  • Trade-ability
  • Extinguish-ability
  • Tax-ability
  • Collateralise-ability
  • Confiscate-ability

• Ownership
  • CreatorID
  • ProcessorID
  • DistributorID
  • CustodianID
  • OwnerID

• Validity/Compliance
  • AssetDefinitionAuthorityID
  • Issuance Date
  • Expiration Date
  • AuditEvidence
  • AuditorID

• Jurisdiction
  • ownerJurisdictionScope
  • processorJurisdictionScope
  • creatorJurisdictionScope
Asset Instance – Processing Requirements

Asset Instances must:

• Be Identifiable: asset instances have universal IDs
• Be Typed: asset instances must contain an explicit reference to their assetSchemaID
• Be Trackable: asset instances shall contain references to the previous ID in case of transfer
• Be “Serialisable stable”:

  \[
  \text{assetInstance} = \text{deserialise}( \text{serialise}( \text{assetInstance} ) )
  \]

• Be “Persistent stable”:

  \[
  \text{serialise}( \text{assetInstance} ) = \text{fetch}( \text{persist}( \text{serialise}( \text{assetInstance} ) ) )
  \]

• Be “Hash stable”:

  \[
  \text{hash}( \text{serialise}( \text{assetInstance} ) ) = H,
  \]
  where $H$ is identical in computing language and technological stack

  → Possible implementation: Serialisation w/ JCS (RFC8785), Signing w/ JWS (RFC7515)

Optional: An Asset Discovery Service may be implemented as a global directory of assets and asset schemas