

Smart Mobility in the Blockchain: 360° Multimodal Logistics Supply Chain Management

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CEDR, GB Workshop: “Shaping green and smart mobility together”

Vienna, 11 May 2023



Business opportunities for logistics and supply chain management with blockchain technology

Setting the scene and introduction to Blockchain technology for CEDR:

“Shaping green and smart mobility together”

- Introduction to CEDR workshop, group work and blockchain as business enabler as well as driver for innovation and transformation
- Presentation use case of Vehicle Life Cycle Management in the blockchain
- Creating a bridge to logistics supply chain management and apply use case to co-create a “360° logistics supply chain management ecosystem with blockchain technology”
- Sketching and proposing actors / stakeholder of digital ecosystem for logistics
- Draft (possible) vision

Introduction, Austrian CEDR presidency, background and aim

- In line with the European Green Deal, Austria has dedicated its CEDR Presidency under the theme of “*shaping green and smart mobility together*”, focusing on the transport of goods. Major supply chains do not stop at national borders nor is there just one single transport option
- Cooperation between neighboring countries and regions as well as between modes are crucial and will become even more important in the future if we take the Green Deal seriously. CEDR has already initiated several activities to analyze and prepare recommendations for road authorities in this context
- Cooperation within the CEDR partnership but also with the logistics sector should be further strengthened to support and secure supply chains and to make (road) transport greener. Therefore, the GB workshop in Vienna will focus on smart logistics solutions

CEDR Workshops and four themes

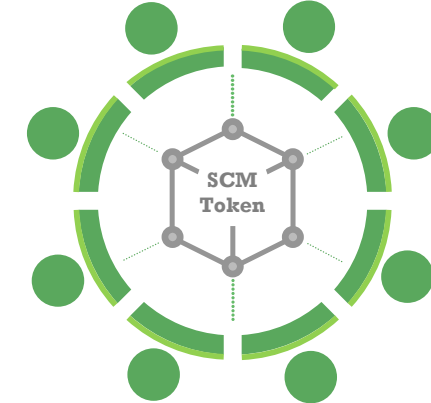
Following an initial keynote from the logistics sector experts, group work and discussions will focus on:

- a) multimodal cooperation opportunities and the digitalisation of hubs,
- b) realistic alternative propulsion technology scenarios for heavy traffic and
- c) emerging technologies for multimodal logistics chains, like blockchain and
- d) opportunities and obstacles in implementing the Fit for 55 package

World Café hosts of CEDR Workshops

Governing Board (GB) Members will discuss topics in a so-called World Café setting. The four hosts of the World Café tables will be:

- Multimodal cooperation opportunities and the digitalisation of hubs – Manfred HARRER, ASFINAG, Co-Chair of CEDR WG Connectivity, Automation and Data (CAD)
- Realistic alternative propulsion technology scenarios for heavy traffic – Thomas KNOBLINGER, ADL, Expert on Electric Charging Infrastructure and Zero Emission Vehicles
- Emerging technologies for multimodal logistics chains, like blockchain – Dr. Otto C. FROMMELT, Director National Road Office Liechtenstein, CEDR GB and EB Member Liechtenstein
- Opportunities and obstacles in implementing the Fit for 55 package – René MOSER, ASFINAG, CEDR EB Chair 2023



CEDR GB Workshop Theme C and Group work

“Shaping green and smart mobility together”

**Smart Mobility in the Blockchain:
360° Multimodal Logistics Supply Chain Management**



Emerging technologies for multimodal logistics chains, like blockchain (Workshop Theme C)

Briefing and short introduction to blockchain

- Blockchain technology will disrupt, transform and innovate the current way we conduct business. Blockchain stores information decentrally in blocks that are logged to each other in a chronological order generating a chain of blocks
- Smart contracts will drive process automatisation and absolute digitalisation will take over. Blockchain technology constitutes the bridge for a new Economy of Things (EoT) based on digital tokens
- New business models will emerge and create “Mobility as a Service” (MaaS) standard
- Decentralised applications (DApps) will be the means to its end. For more information see also: <https://ottocfrommelt.li/Blockchain>

CEDR GB workshop questions for Theme C

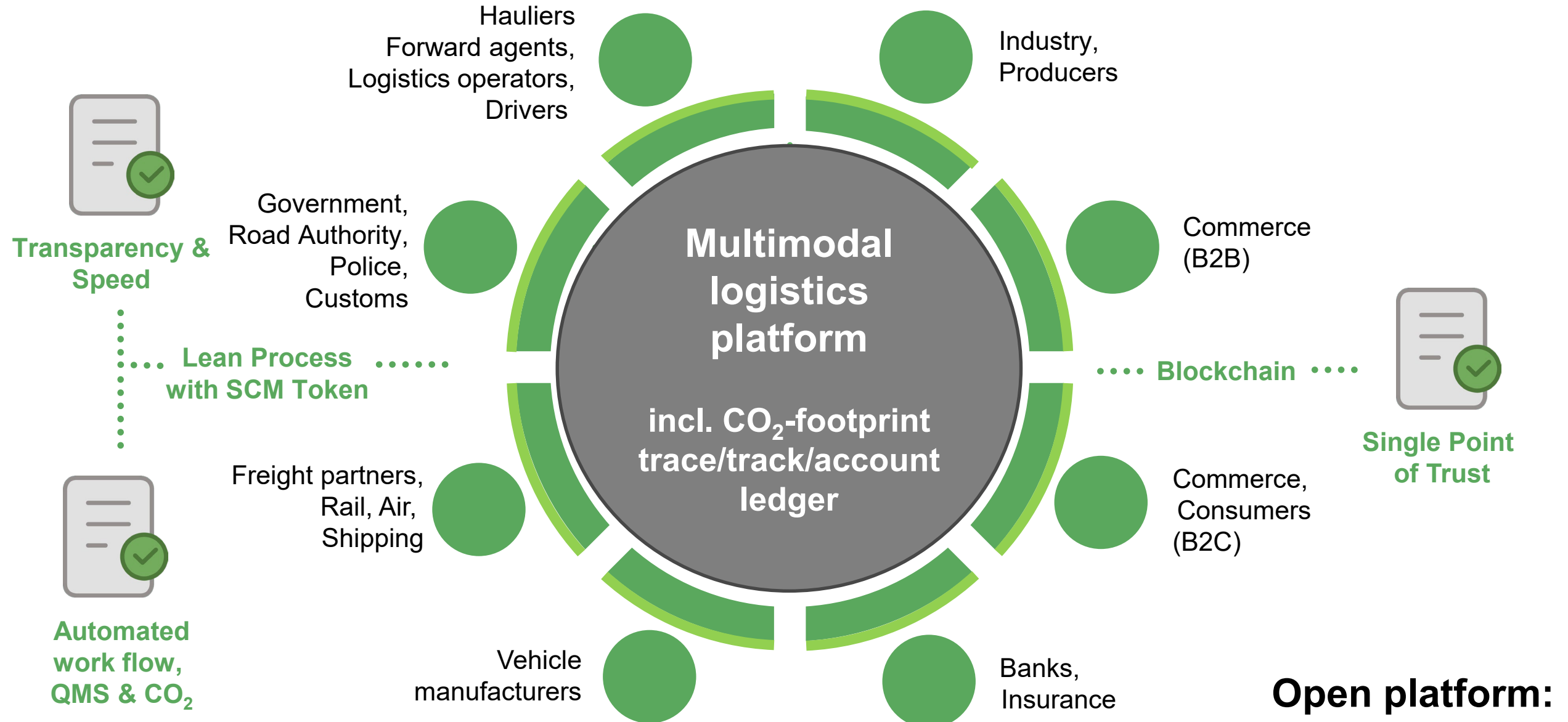
Questions to answer

- How would a multimodal logistics ecosystem look like?
- What would be the actors and stakeholders?
- Could a public-private partnership (analog use case) be a possibility to build a new ecosystem?
- What could be the vision of a multimodal logistics ecosystem in the blockchain?
- What would need to be done to start the journey and create a multimodal logistic token economy chain?

Note: © Token design and notion of T (Tau) by Dr. Otto C. Frommelt



Creating a multimodal logistics ecosystem: Actors and stakeholders



Note: CEDR GB Workshop, Input participants and discussion with Oliver Wagner, Managing Director at the Austrian Central Association of Freight Forwarding & Logistics.

Leading to green and smart mobility

- Build and optimize technical infrastructure for Supply Chain Management (SCM) and Quality Management System (QMS) in the area of manufacturing, inventory management, logistics, admin, customs, insurance, marketing and sales
- Account and document cradle-to-cradle (C2C) CO₂-footprint for sustainability management, i.e. environmental and social governance (ESG)
- Guarantee adherence to regulatory standards incl. to enhance ESG reporting / audit
- Create a transparent supply chain by tracking, tracing and accounting for all kinds of assets, goods and services incl. CO₂-footprint



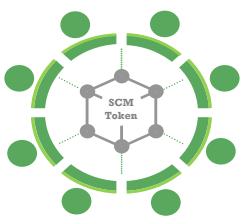


Vision

Co-creating seamless 360° multimodal logistics supply chain management ecosystem with blockchain technology

- All relevant information during the life cycle of a product available with CO₂-footprint and according to ESG standards
- Transparent, trustworthy and verified product, manufacturing, transportation, customs, insurance, payment, sales and repair history
- Secure reliable data exchange, customised data ownership and tokenization (T) to transfer value
- Digitalization of all processes in one decentralized digital ecosystem (24/7)





Group / participant quotes

Vision for 360° multimodal logistics supply chain management ecosystem

- Seamless chain
- True supply chain
- Connected trustful data
- Trust and all information in the system
- Tokenize every part of the chain
- Dynamic token for traffic management and intelligent logistics
- You never loose data
- Quality of data for all partners by track and trace
- You have information on the “quality” of your suppliers performance, such as CO₂-footprint, speed, safety, etc.
- Full track vision (no empty trucks)



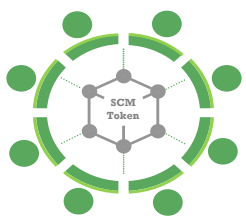
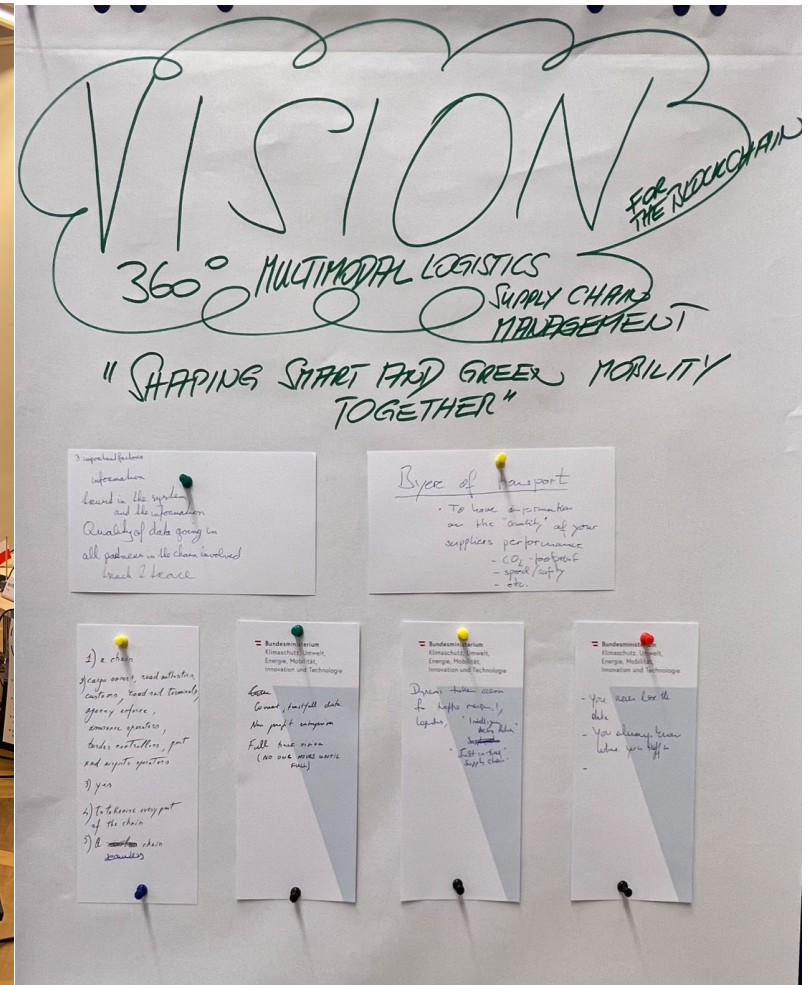
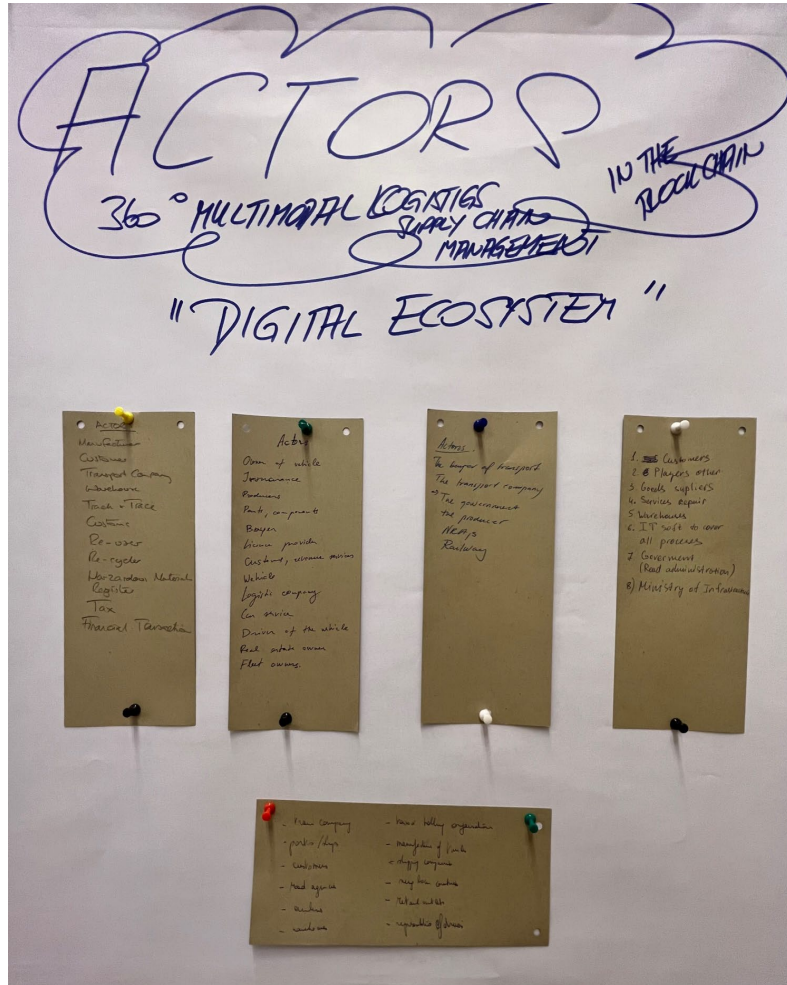
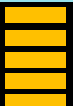


Photo wall: Group Work / participant workshop output actors and vision



Use case presentation for introduction to Blockchain Technology



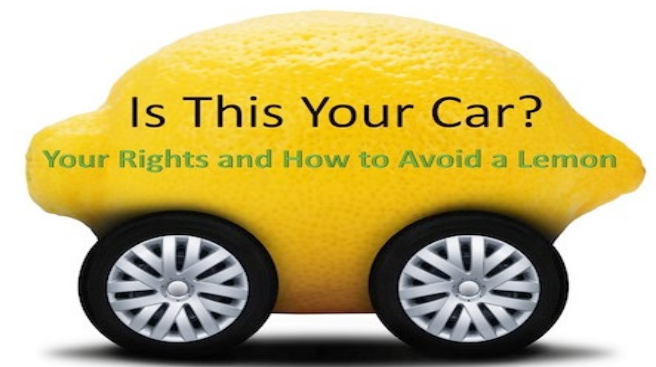
Have you ever bought a lemon car?

Buying a used car is a question of trust

- Questions to reflect:
 - ✓ How can you trust?
 - ✓ Have you ever got duped?
 - ✓ Have you ever owned a lemon car?
 - ✓ What can Blockchain technology contribute?

Building trust is key by conducting business

Note: Lemon law and Lemon Squad, Get your expert car inspection today, <https://lemonsquad.com/>



Imagine...

YOU

- Have a decentralised digital register where all vehicle life cycle data is stored over time
- Can utilize verified vehicle information to buy and sell in a simple and efficient way
- Have a trustful market easy to access
- Get verified vehicle data making fraud close to impossible

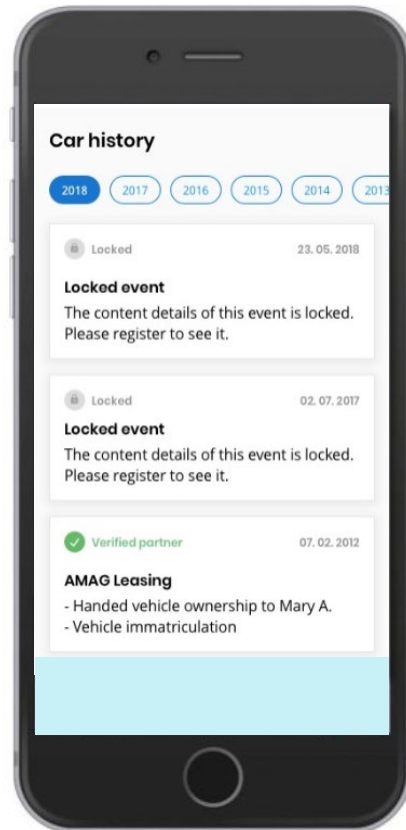
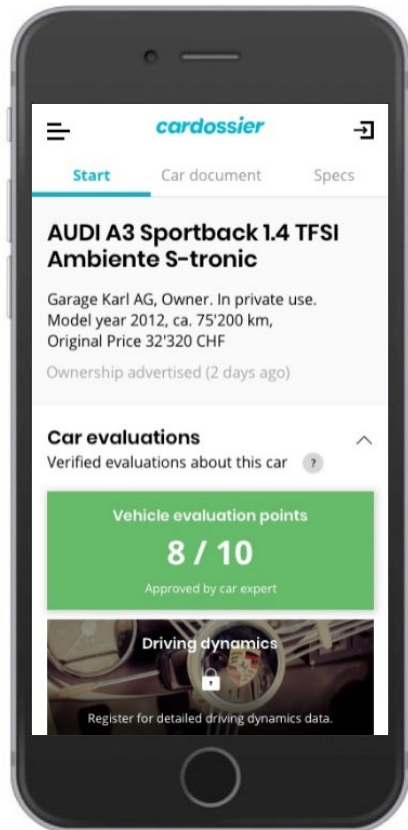
Business | Road Traffic Authority

- Access verified dataset that is constantly updated
- Have all insurance information digital available
- Make CO₂ footprint or emissions transparent
- Schedule service and inspections in ecosystem
- Have a reliable database for safety recalls
- Create sales valuation file based on trustful data

No lemon car anymore and a higher sales price



Do you want to transfer value, i.e. buy and sell: Tokenization validated vehicle information and ownership



All vehicle data and information:

- Homologation / immatriculation
- Service, repair and inspection
- History of (no) accidents

Transaction folder for tokenization:

- Data / asset / ownership



Agenda



1. Value chain actors and landscape



2. Digital ecosystem for vehicle life cycle management



3. Tokenize mobility to transfer value and three take-aways

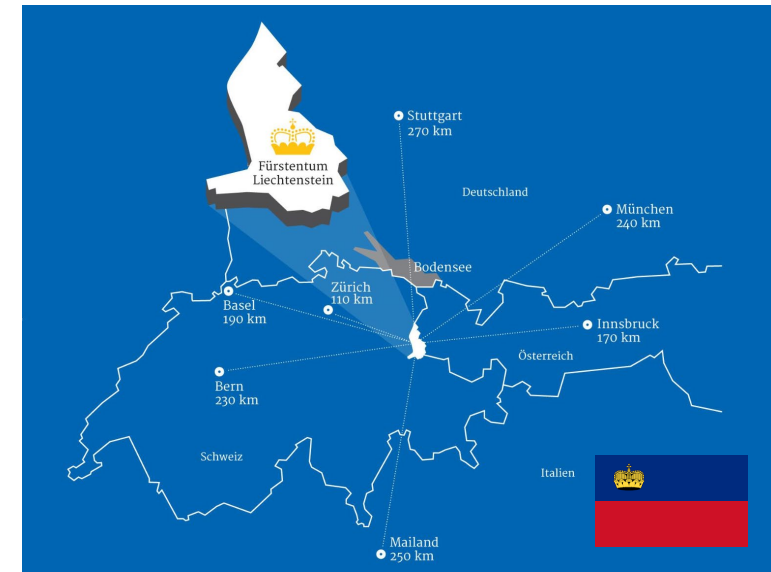


4. CEDR GB workshop and future vision for 360° multimodal logistics



National Road Office (NRO) Principality of Liechtenstein

NRO is acting on behalf of the Principality of Liechtenstein Government and its Ministry (MINF) with the following tasks and responsibilities:

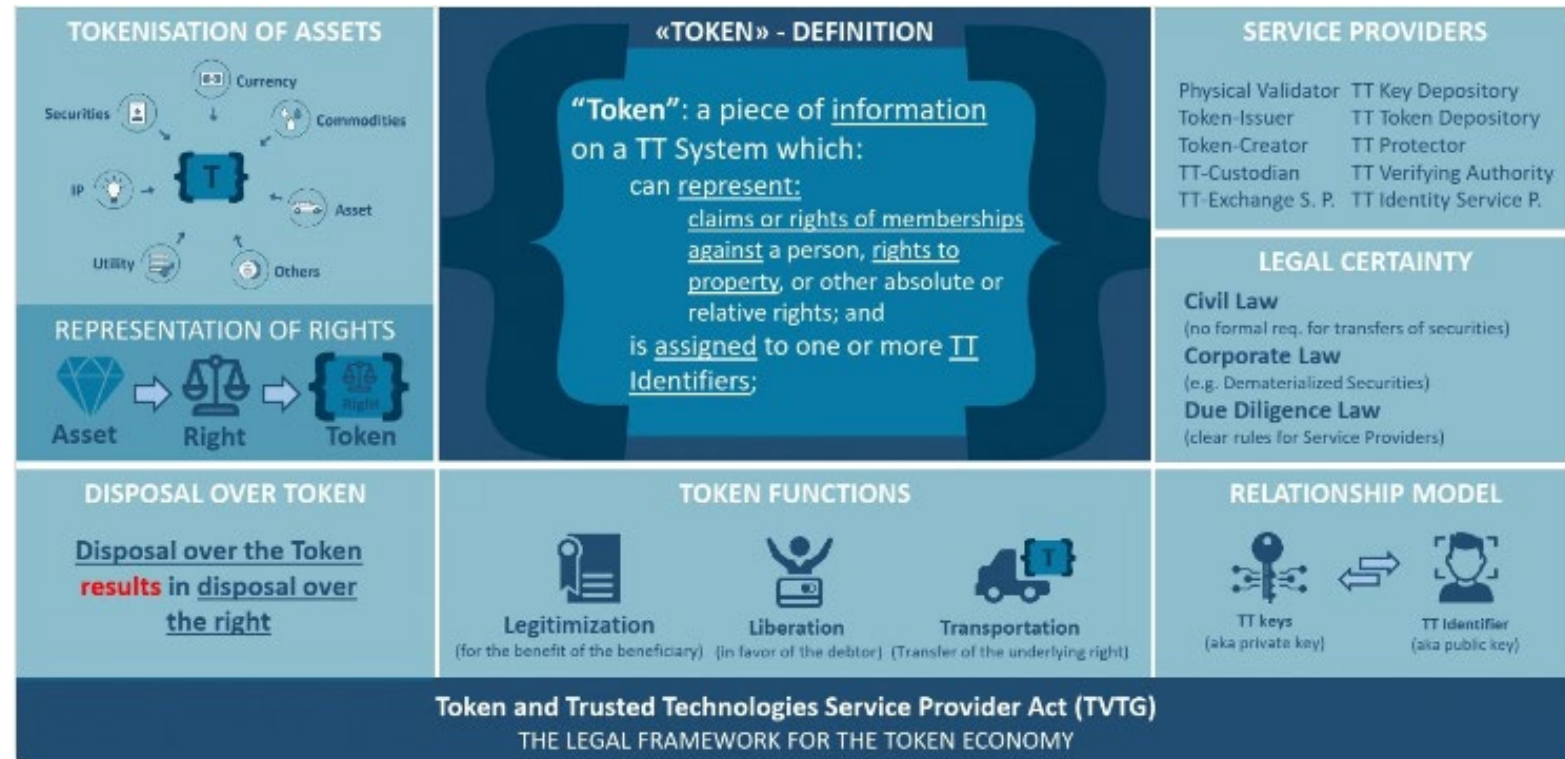


- Contributing to road traffic safety, blockchain mobility, autonomous driving and sustainability
- Drafting and implementing European Union/Swiss/Liechtenstein policy and laws
- Collaborating with stakeholders: e.g. government, EU institutions, UNECE, CEDR, industry and society
- Issuing (e)driving licenses and (e)vehicle registrations including “FL” number plates
- Technical inspection of all types of light, medium and heavy duty vehicles

Note: Highest motorisation in Europe with 777 cars per 1.000 capita

Liechtenstein Blockchain Act provides legal certainty to tokenize mobility

- One of EU first Blockchain Acts (1 January 2020)
- Concept of the “Token Container Model” with “Trustworthy Technology” (TT)
- Results to conduct business under legal certainty
- Supervision by Financial Market Authority (FMA) Liechtenstein

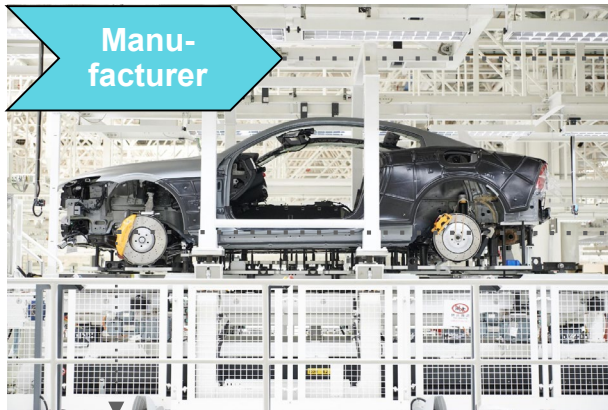


Source: Nägele Rechtsanwälte GmbH

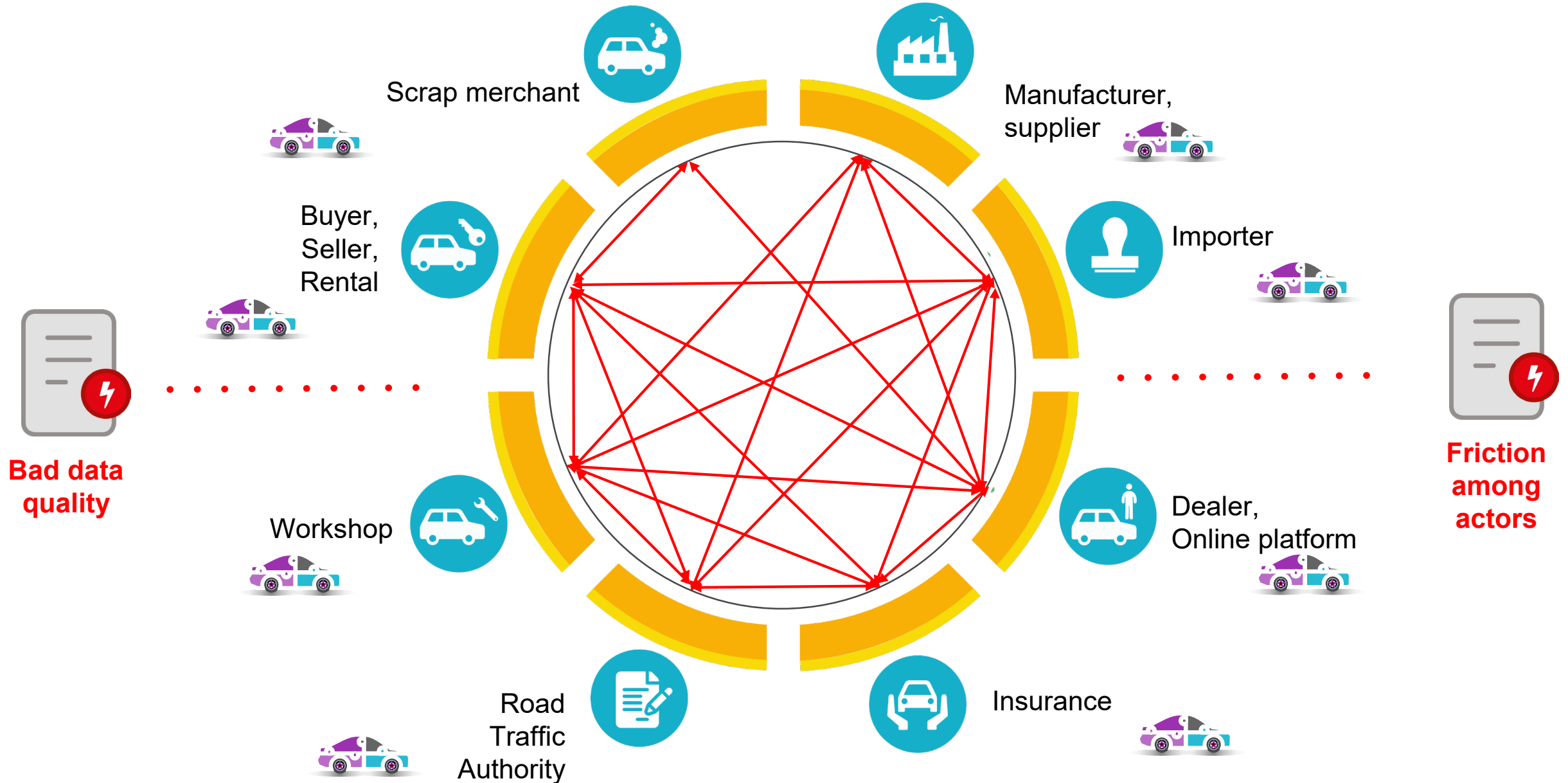
=> Hygiene Factors: KYC - AML - GDPR



Today's Vehicle Life Cycle Management: time wasting landscape



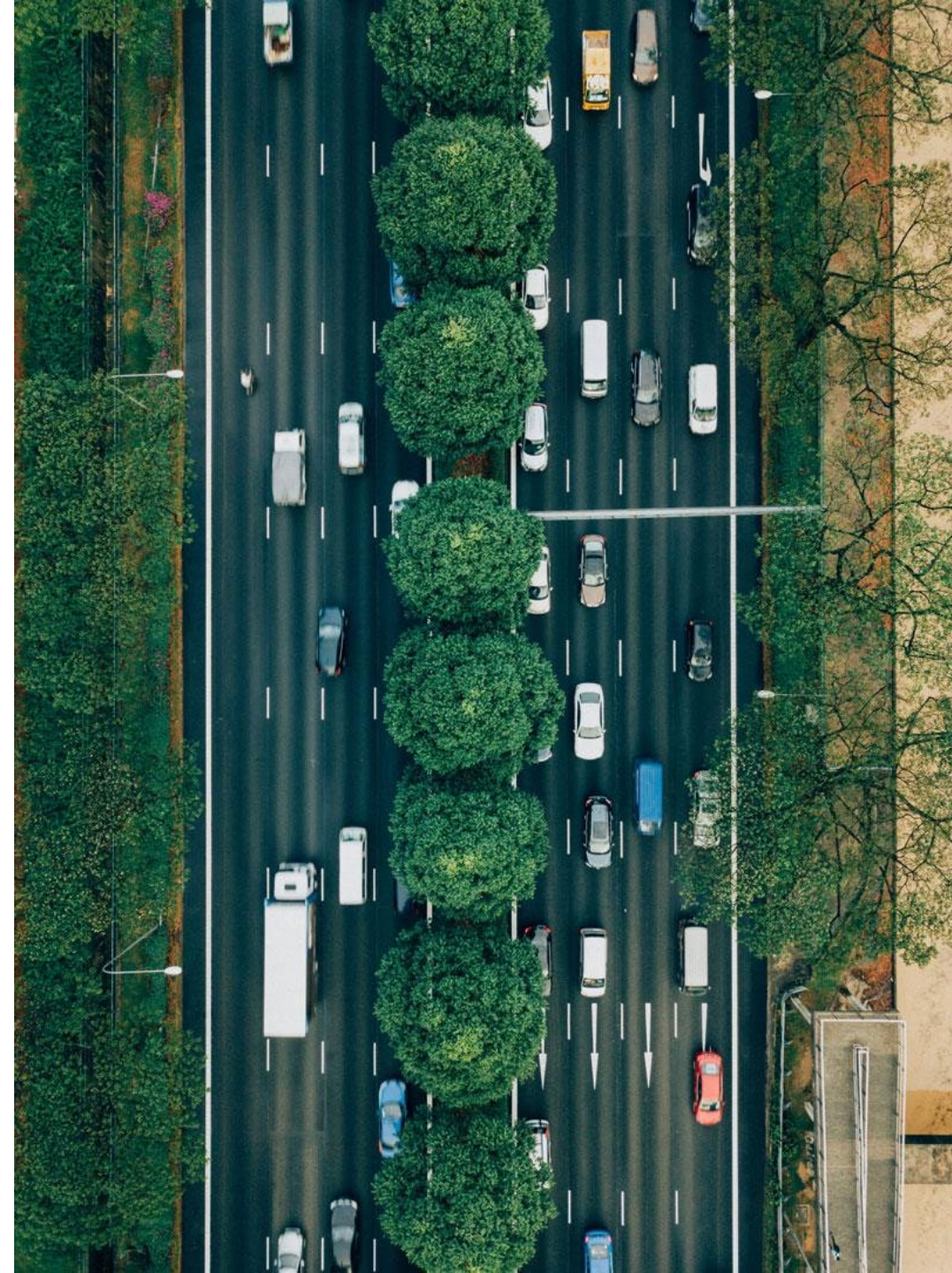
Current situation: friction and bad data quality



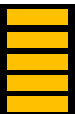
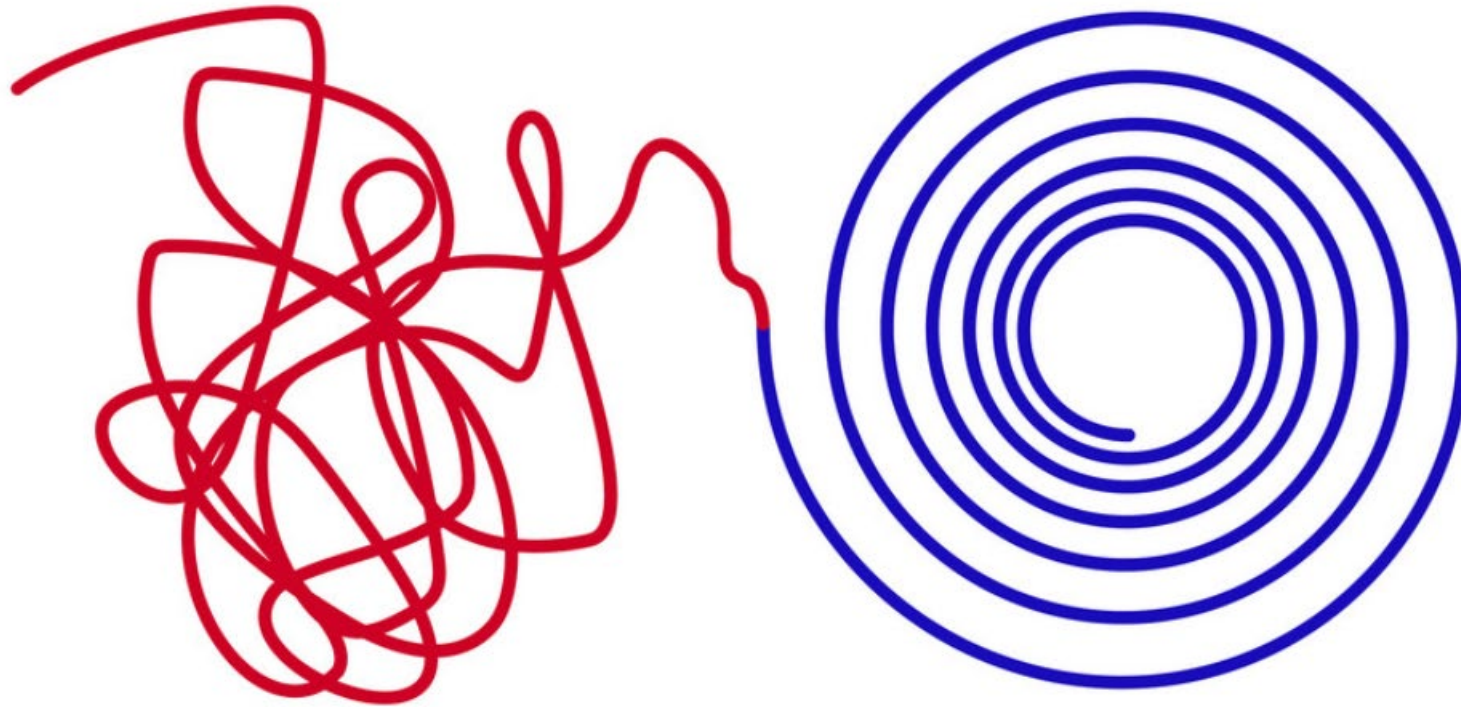
Vision

Co-creating and participating in 360° vehicle's life cycle management with **blockchain technology via PPP**

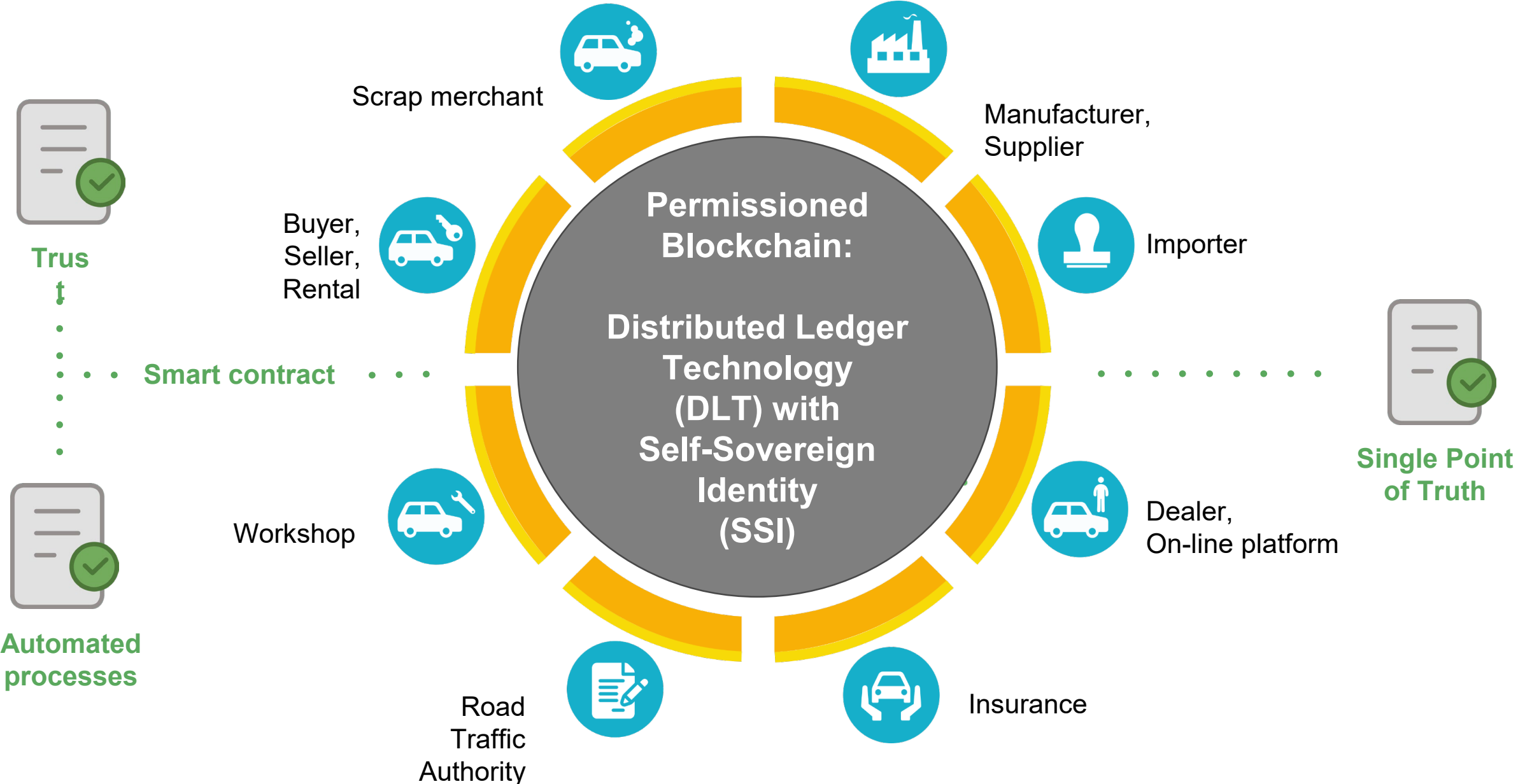
- ✓ All relevant information during the life cycle of a vehicle
- ✓ Transparent, trustworthy and verified vehicle history
- ✓ Secure reliable data exchange, customised data ownership and tokenization (T)
- ✓ Digitalization of customer/citizen processes in own digital ecosystem (24/7)



Chaos → **Order**



Digital ecosystem, smart contract and tokenization to transfer value



Vision National Road Office, Principality of Liechtenstein: Digital ecosystem, Blockchain and distributed applications (DApps)

Importing Process

Digital eNumber
Plate

Digital eDriver
License

Digital Vehicle
Information
(eCoC)

Vehicle Tax
Management

Vehicle
Inspection

Digital eVehicle
Document

Truck Road
Pricing (LSVA)

Mobility and
Process Token (T)

Benefits for citizens, public and private organizations

Tokenize (T) mobility:

- ✓ Vehicle data management
- ✓ Trusted distributed data
- ✓ Transfer value and ownership



Distributed product innovation

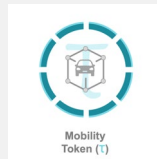


Shared operational efficiency

- New faster processes by:
 - ✓ Standardization
 - ✓ Automatization
 - ✓ Cost reduction

- Availability of trustful vehicle data to buy and sell
- Market creation to exchange new respective products and services
- New business models (24/7)

New market platform



Secured customer trust



- Owner owns his data
- Tailor made peer-to-peer data transfer to respective partners
- Customized “citizen” services

Three take-away messages

1) Blockchain tech as enabler for innovation:

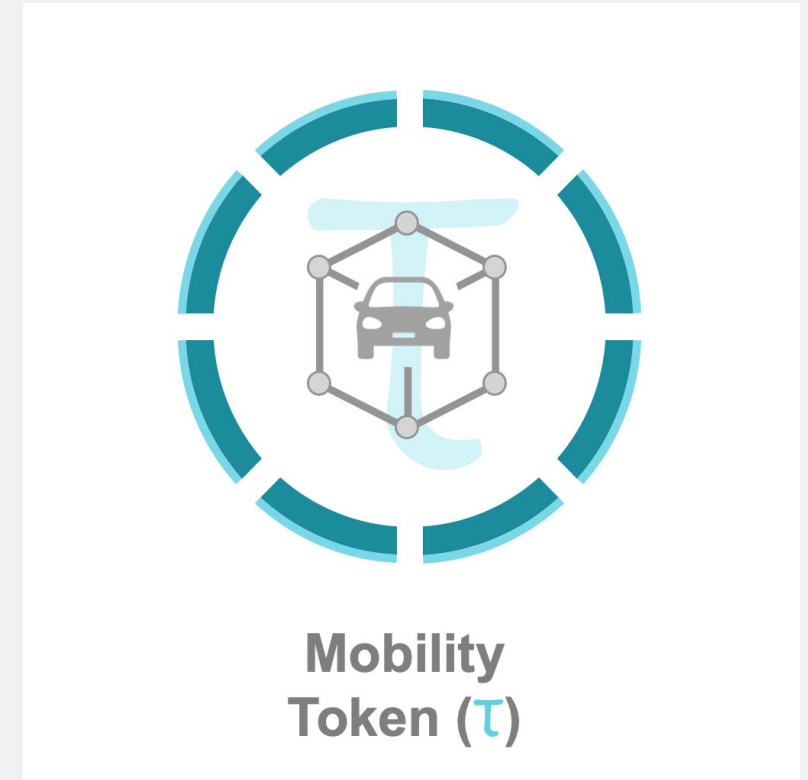
- Trustful environment and verified dataset
- Tokenize mobility to transfer value

2) Digital ecosystem as new platform:

- New concept of digital vehicle and data management
- Fast, trustful, peer-to-peer services in 24/7 mode

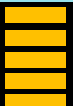
3) Major step towards Liechtenstein digital strategy:

- E-Government in practice
- Light house projects (e.g. digital eDriving License)



Note: © Token design and notion of T (Tau) by Dr. Otto C. Frommelt

Additional information



Biography



Dr. Otto C. Frommelt, MBA is Director of the National Road Office at the Principality of Liechtenstein and Governing Board Member Conference of European Directors of Roads. He has top management expertise and significant international experience within the automotive industry, governmental administration, non-profit organizations and innovative start-up companies.

His Senior Executive roles have been diverse and include those of CEO & Managing Director, Chief Financial Officer (CFO), Chief Information Officer (CIO), Business Development Director, Marketing Manager, and Chairman/Board Member of Dealership Groups, Leasing and Rental companies, Start-ups and Non-Profit Organizations (e.g. the Economic and Social Research Council, UK). Moreover, he is a Blockchain Strategy Advisor, Mentor, Keynote Speaker, an international Scenario, Strategy and Foresight Expert as well as Business Angel. Most recently, he has published several articles about Leadership in Public Administration, Digitalization to Touch, Autonomous Vehicles, 360° Vehicle Life Cycle Management with Blockchain Technology and Smart Mobility in the Blockchain by Touch & Drive.

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Homepage: <https://ottocfrommelt.li> **NRO:** www.llv.li **Telegram:** @DOCFTEL

Twitter: @DOCFTWEET



Online resources

✓ Strategic conversation

- Publications in smart mobility
- Blockchain and Tokenisation (T) as key strategic enabler
- Foresight Strategy Leadership xLAB
- More information:

<https://ottocfrommelt.li>

Dr. Otto C. Frommelt

Blockchain

European Academy
for Public Economics & Law

Blockchain technology, competence platform and business opportunities

Blockchain is "the" key strategic enabler to change and transform business for both: our future and the good of all. It will alter business, administration and society of how we conduct

360° Vehicle Life Cycle Management with Blockchain Technology (IfM Impulse, Wissensmagazin)

Blockchain technology will disrupt, transform and innovate the current way we conduct business. Smart contracts will drive process automation and absolute digitalisation will take over. Blockchain technology constitutes the bridge for a new Economy of Things (EoT) based on digital tokens. New business models in the automotive industry will emerge and create a "Mobility as a Service" (MaaS) standard. Time to get ready for blockchain mobility by just click & drive.

Wasserstoff (H2): der Antrieb der Zukunft (Unternehmer, Liechtensteinischer Wirtschaftsmagazin)

3) Driving strategy and change

Internationalization Strategy for Small Medium Enterprises (SME) and Start-ups (FH Wien, Course Outline, freely available)

The Future of the Automotive Truck Industry: An exploratory perspective between a business and political strategy process (London Fora Series, Warwick Business School)

Strategic Foresight: Dynamic Scenario Planning in Action (IfM Impulse)

Managing uncertainty and complexity: The value of a scenario-based strategic conversation (Oxford Futures Forum - OFF)

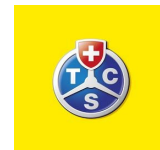
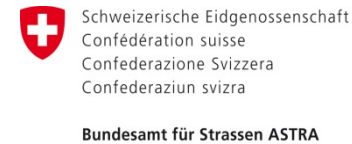
Mind the gap: Strategy, scenarios and strategic conversation: An exploratory study in the European Truck Industry (Oxford Futures Forum - OFF)

My Liechtenstein 2039 (Projekt Zukunft)

Mission statement for digital ecosystem

- To create a **digital platform** for data exchange and to manage **cross-company business and government processes** throughout **Liechtenstein and Switzerland** firstly, and then the **EU**
- To **democratise data access** and become a **catalyst for the digitalization** of all actors in the ecosystem (digital commons)
- **Digital ecosystem** in Blockchain mobility space is **open and jointly developed** by all stakeholders
- To contribute to e-Government and the **Liechtenstein digital** strategy

Digital ecosystem cardossier association's members



Digital commons:
Public-private partnership

Digital commons (Allmende): a disruptive concept

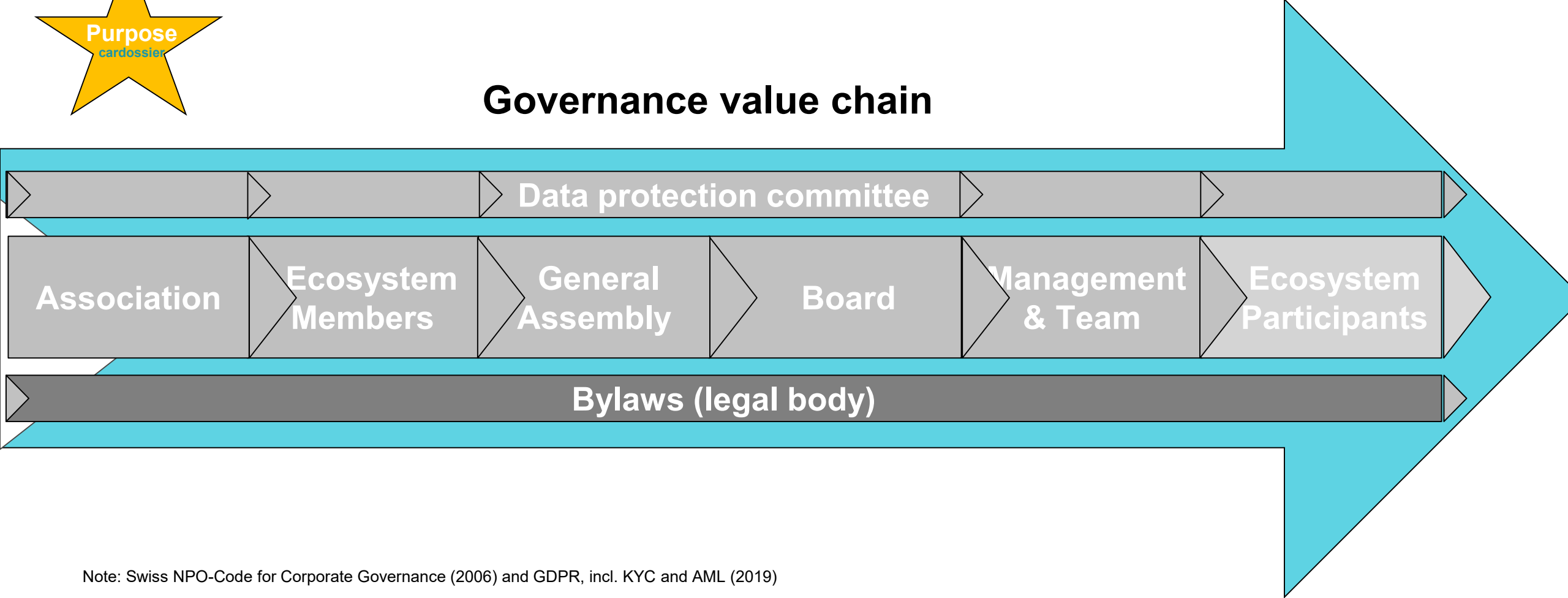
- Public-private partnership with 28 actors
- Co-creation of digital ecosystem in Blockchain mobility space
- Polycentricity
- Self-determination
- NPO association to govern the commons



Association's purpose drives governance of digital ecosystem

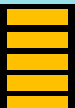


Governance value chain

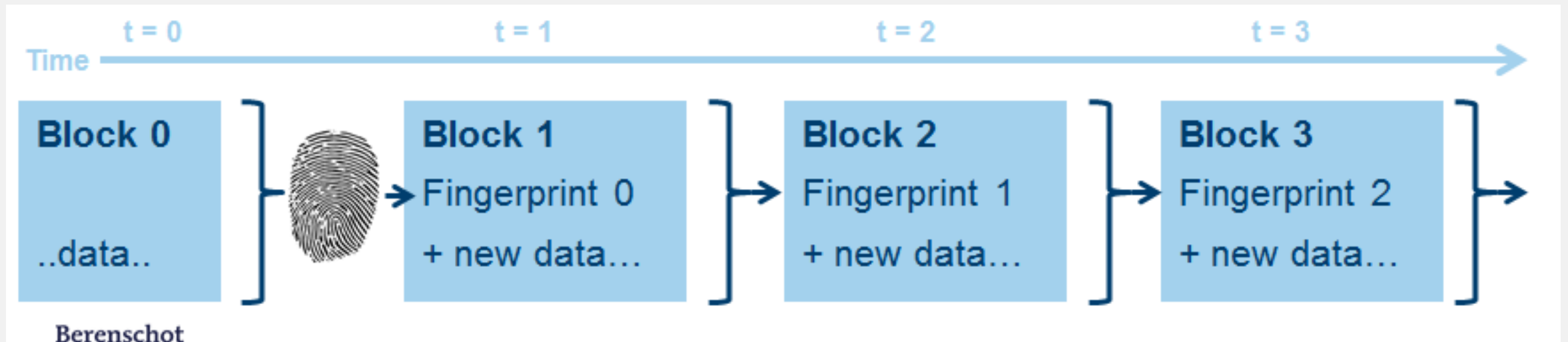


Note: Swiss NPO-Code for Corporate Governance (2006) and GDPR, incl. KYC and AML (2019)

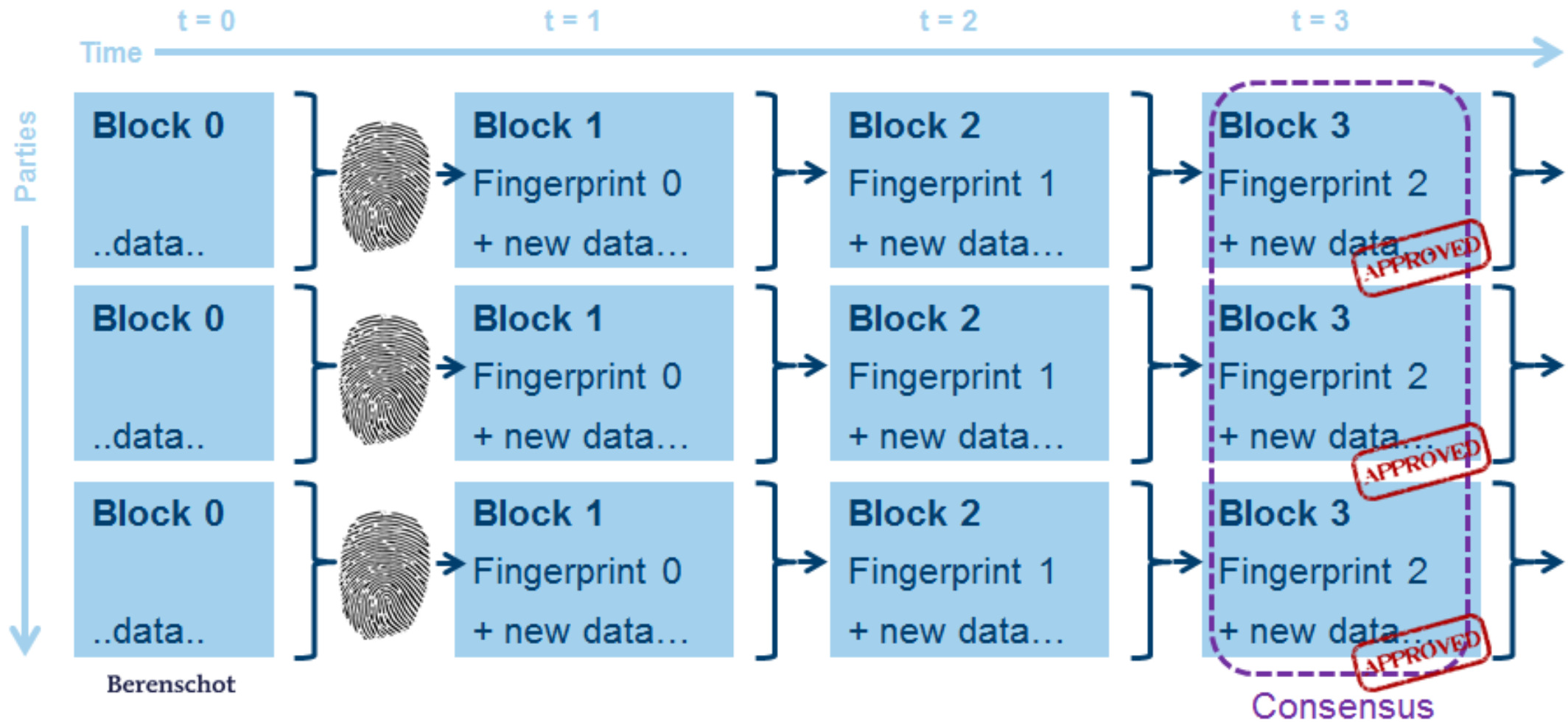
Blockchain @ cardossier



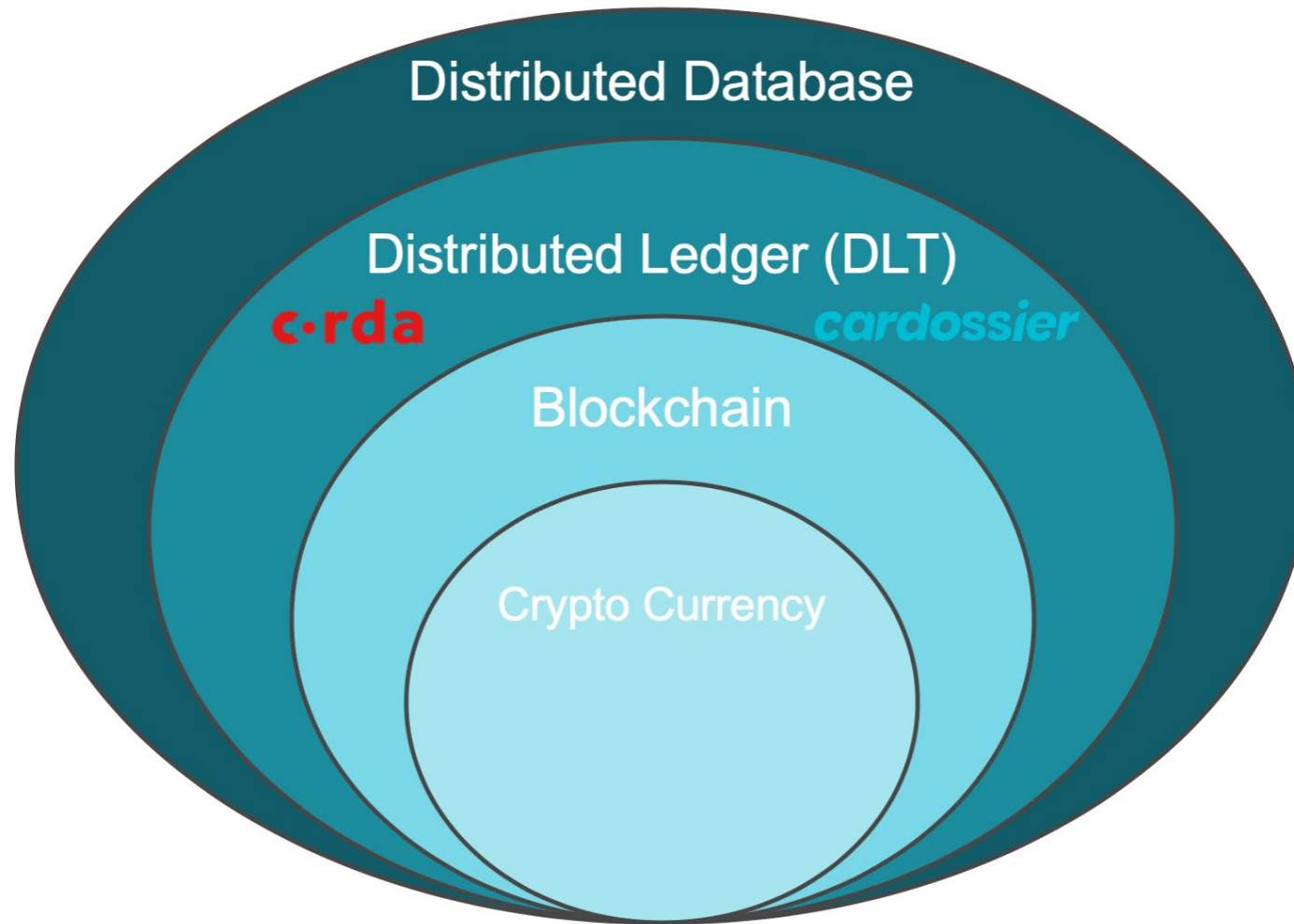
The Blockchain



Blockchain distribution and consensus

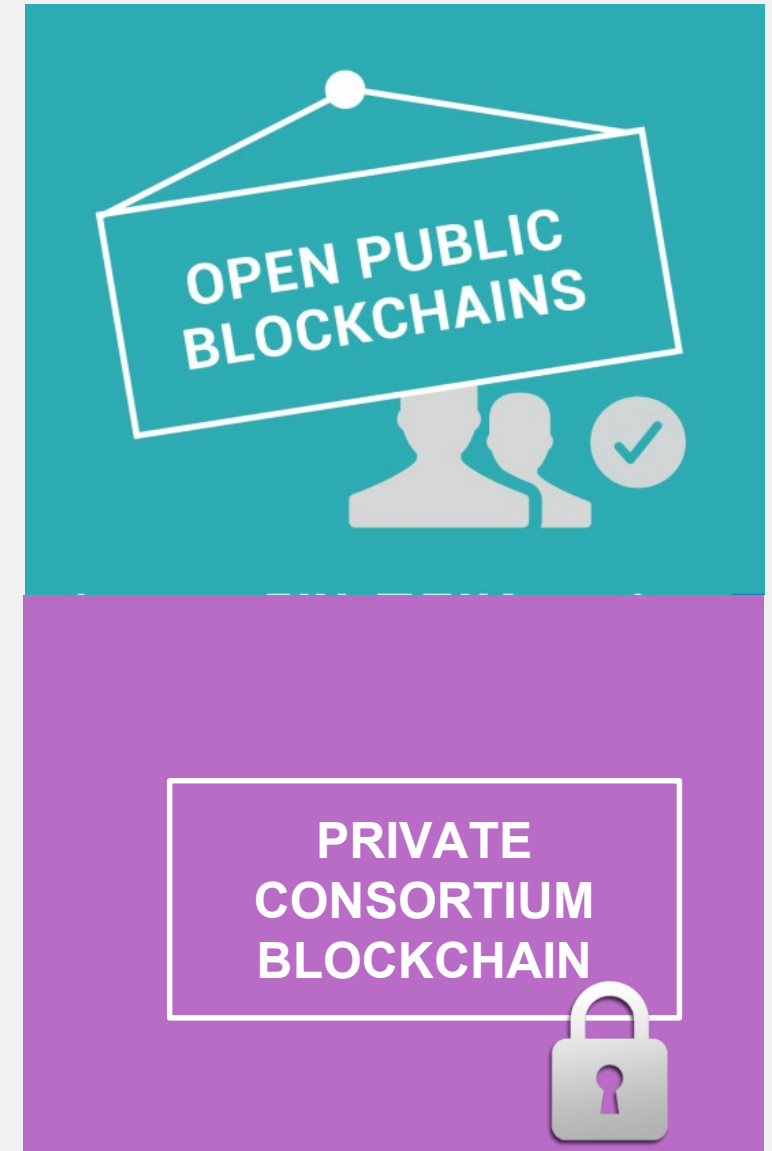


Blockchain context

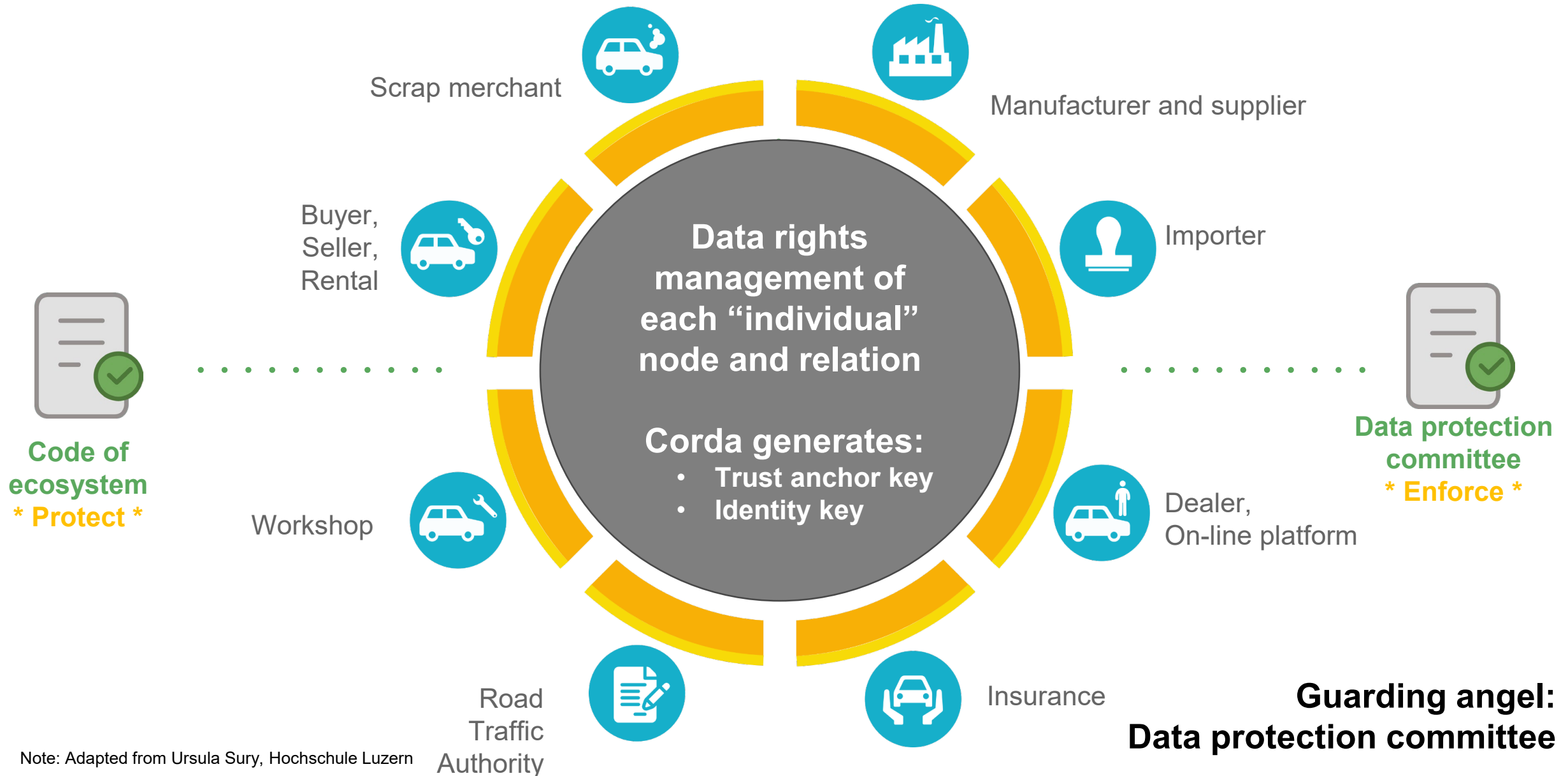


Blockchain types

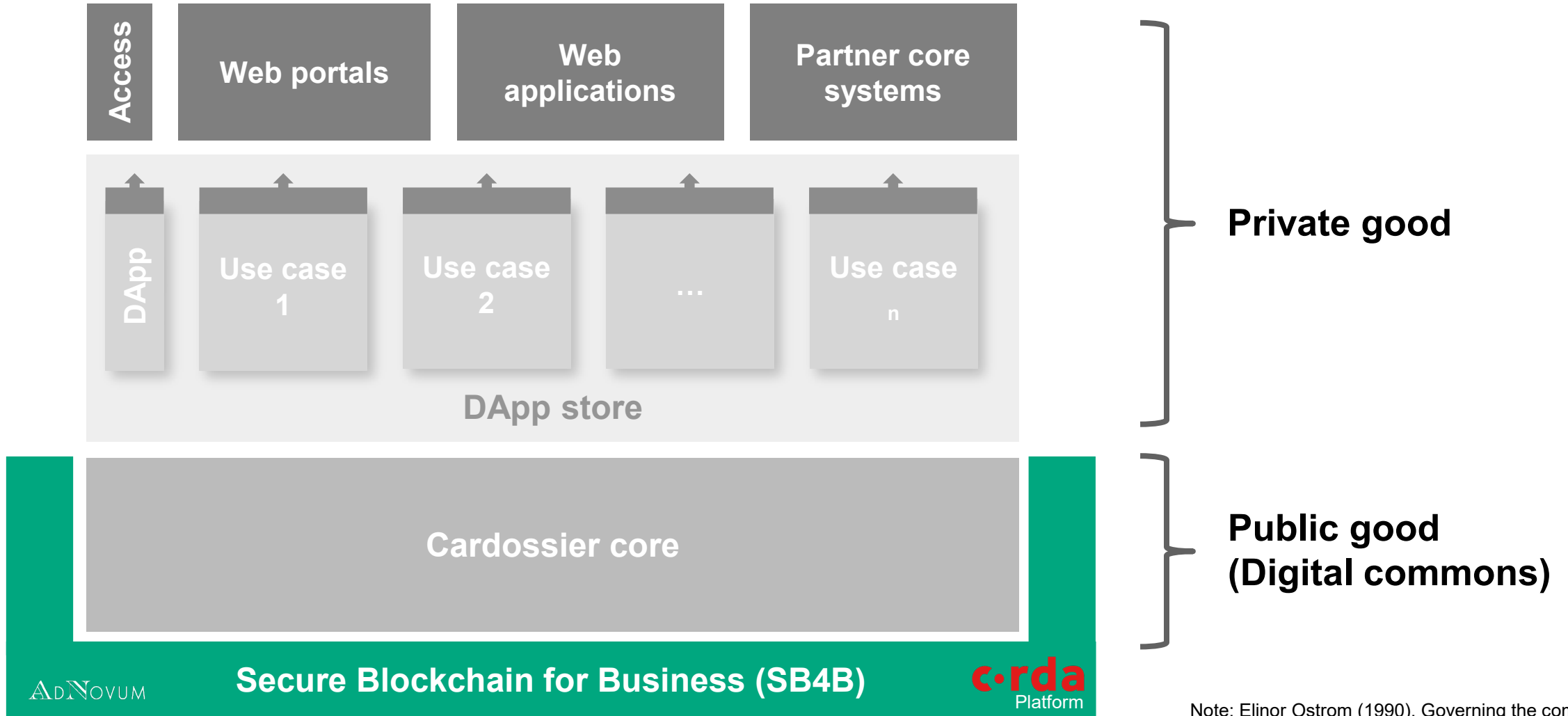
- Open to everyone
 - Global
 - Transactions public and transparent
 - Similar to «Internet»-concept
 - Examples: Bitcoin, Ethereum
-
- ✓ Only registered members
 - ✓ Company- or consortium based
 - ✓ Improved privacy: transactions are private
 - ✓ Similar to «Intranet»-concept
 - ✓ Examples: Hyperledger Fabric, R3 Corda



Permissioned Blockchain with node management to ensure trust

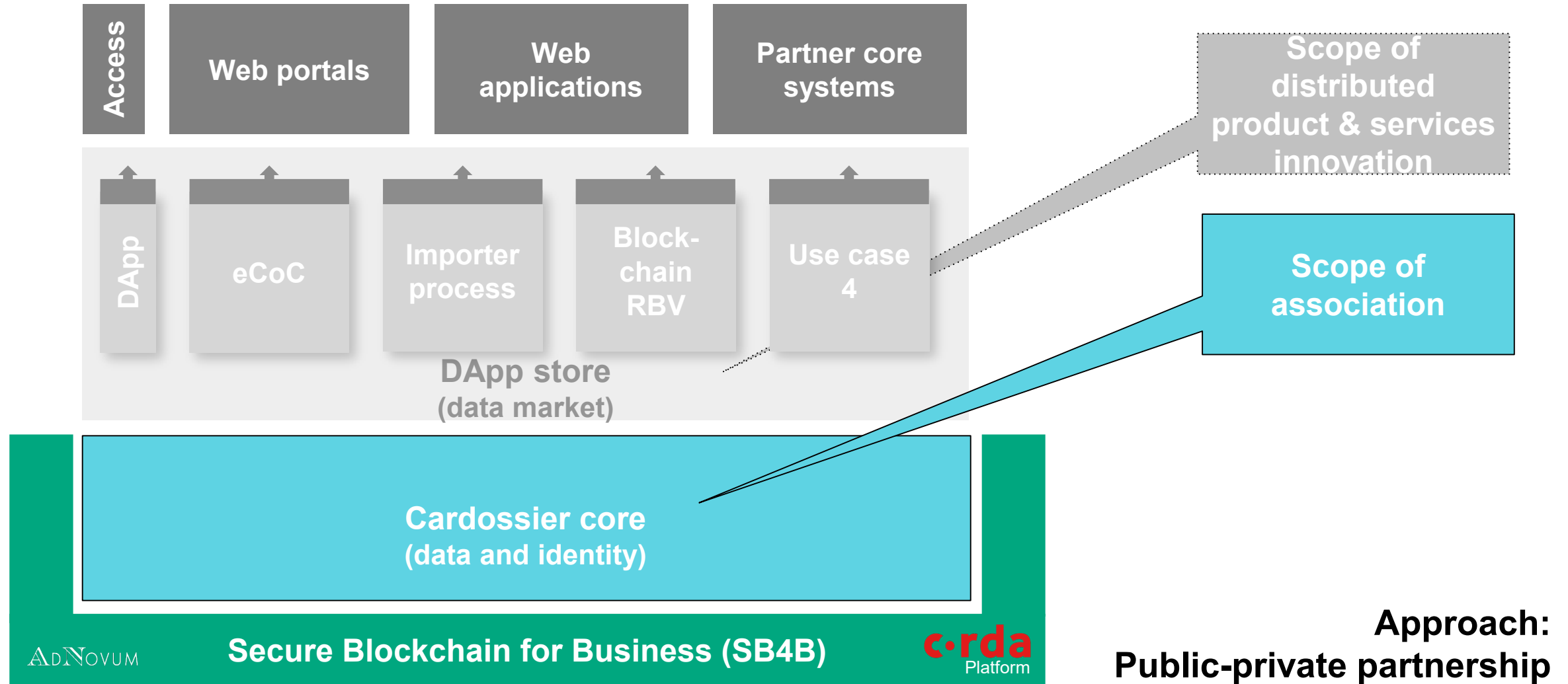


Blockchain architecture and platform overview



Note: Elinor Ostrom (1990), Governing the commons

Cardossier association's scope



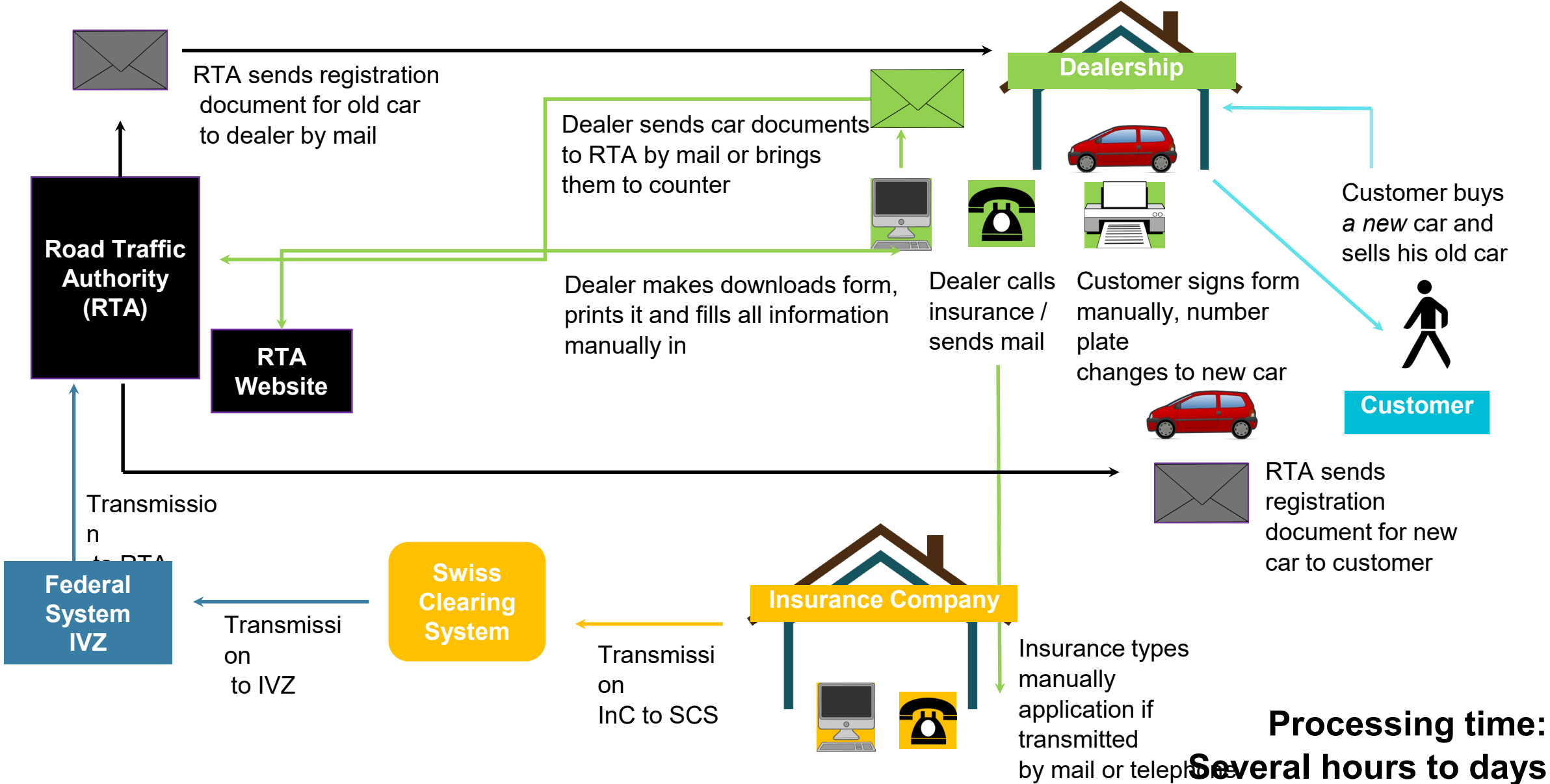
Private Blockchain with General Data Protection Regulation (GDPR) and data privacy management



Note: Self-sovereign identity (SSI) based on decentralised identity (DID) technology and management

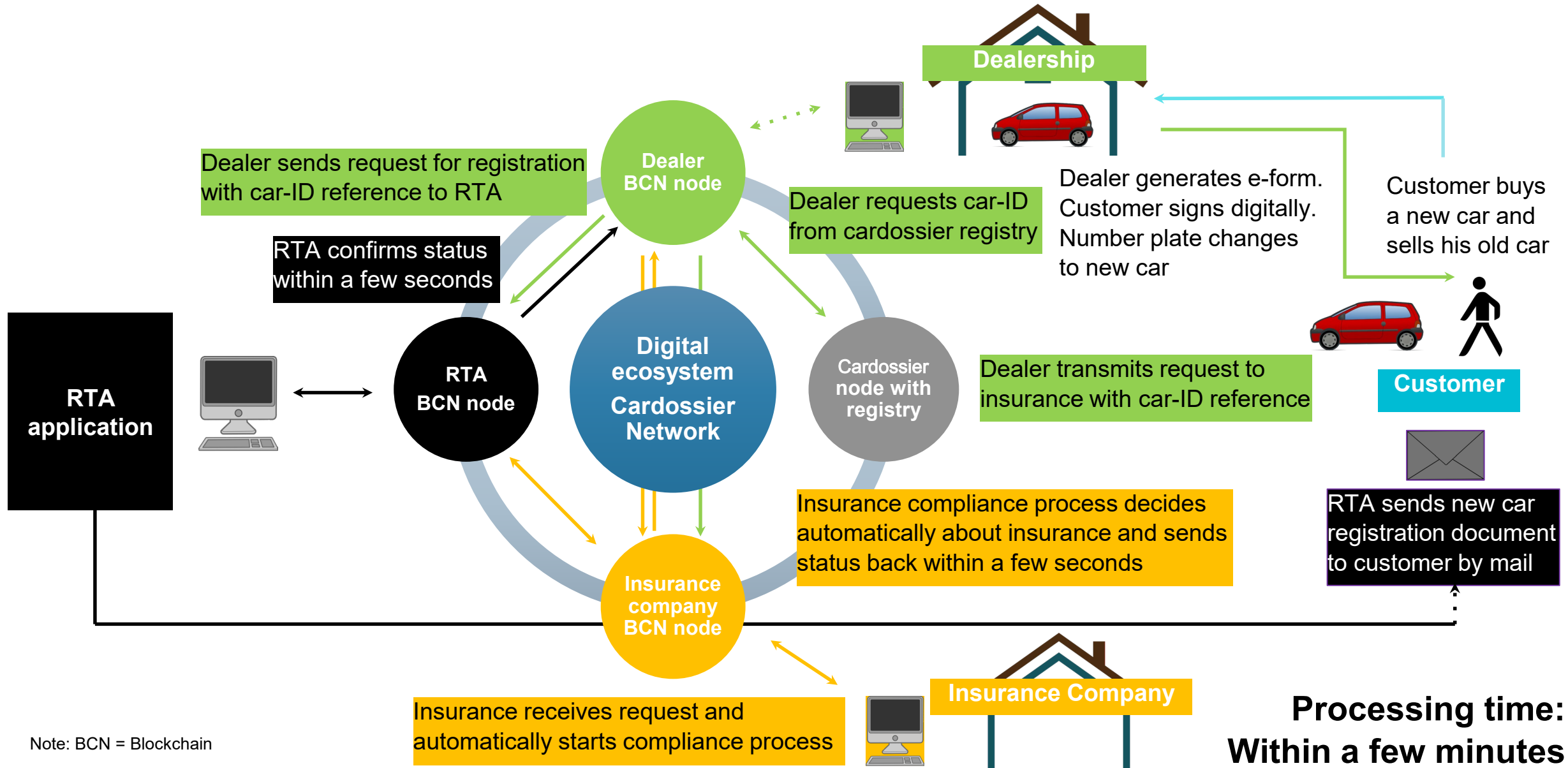


Actual «temporary registration certificate» process



**Processing time:
Several hours to days**

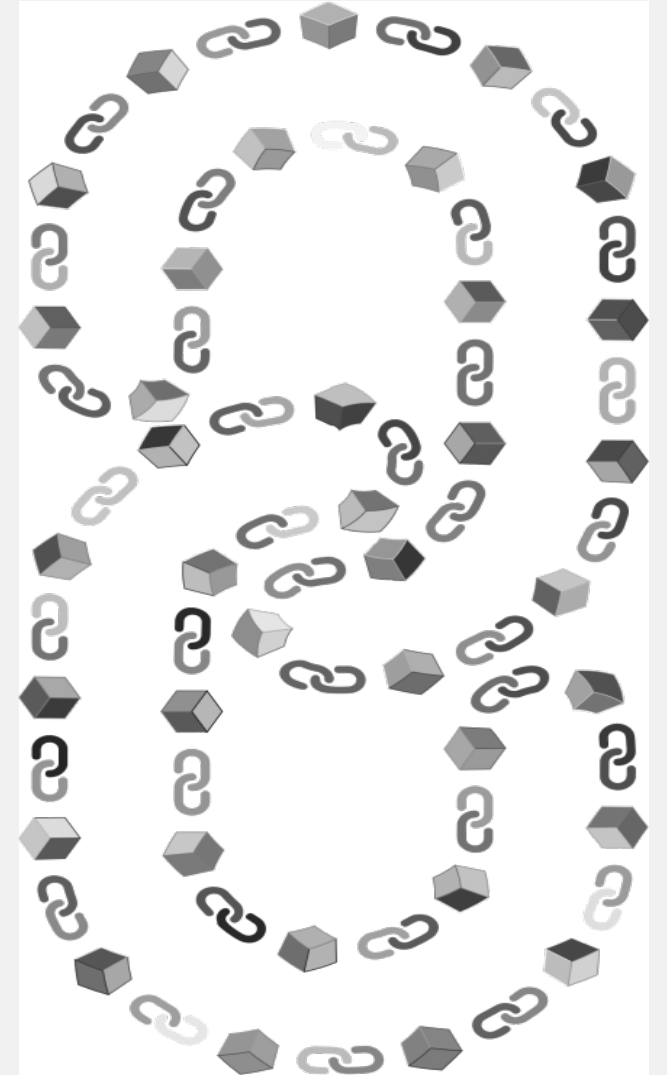
New Blockchain registration process within digital ecosystem



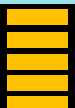
Note: BCN = Blockchain

Blockchain use case applications to be considered

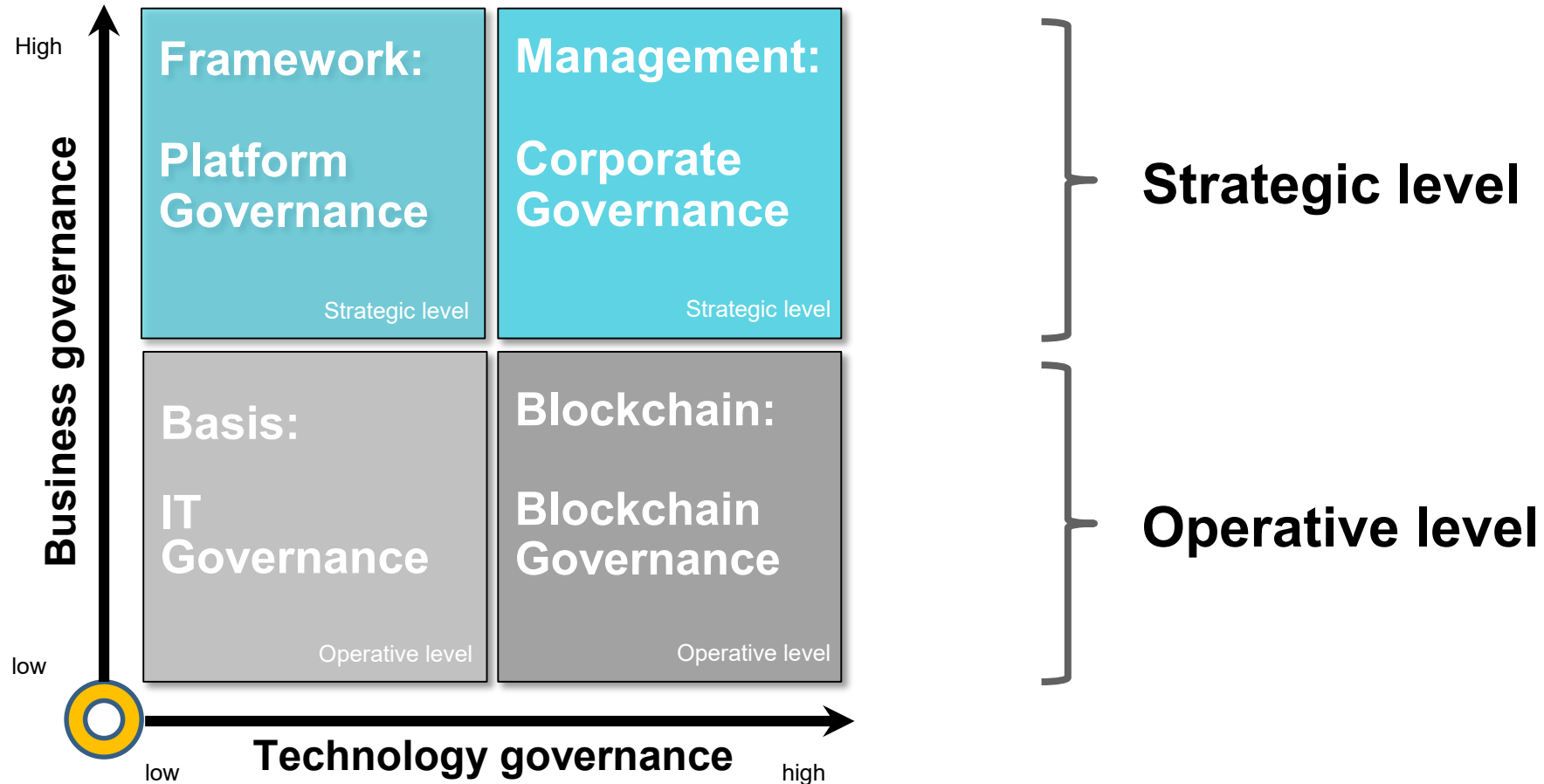
- Electronic Certificate of Conformity (eCoC) in the Blockchain
- Repair Confirmation Procedure (RCP)
- Complete Vehicle Registration Process
- Vehicle Inspection Management
- All (Application) Documents etc.



Strategy and Governance



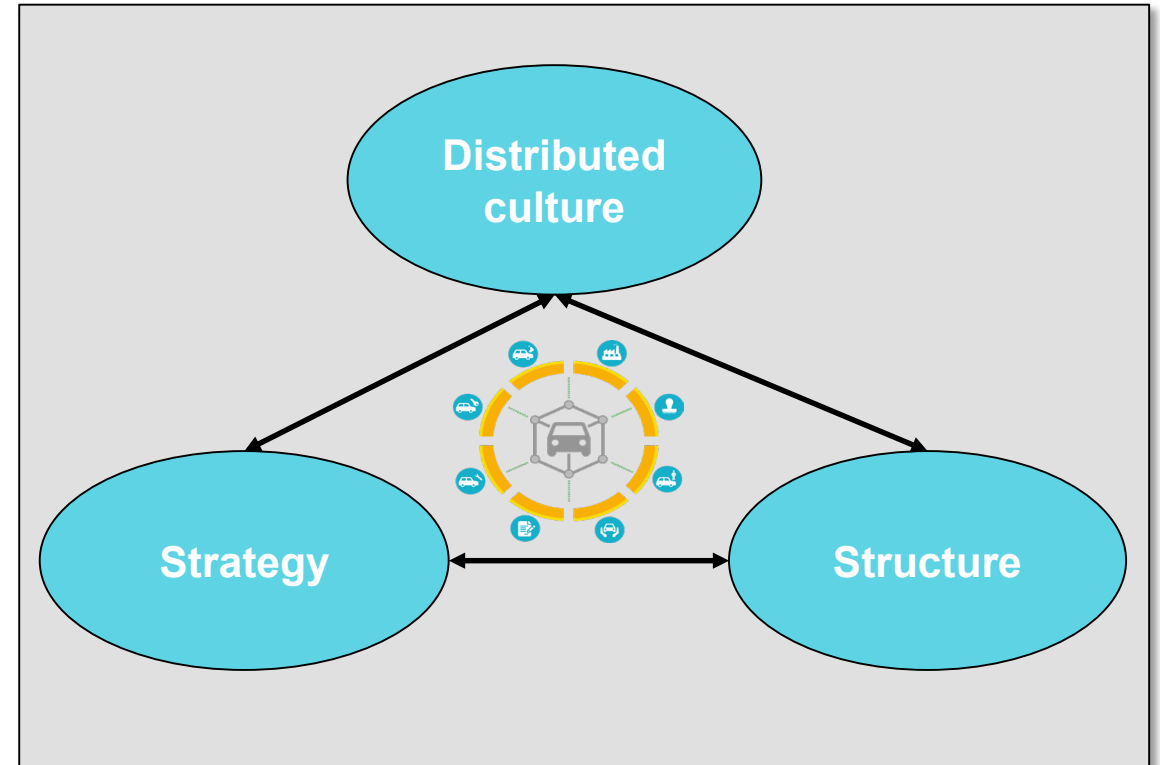
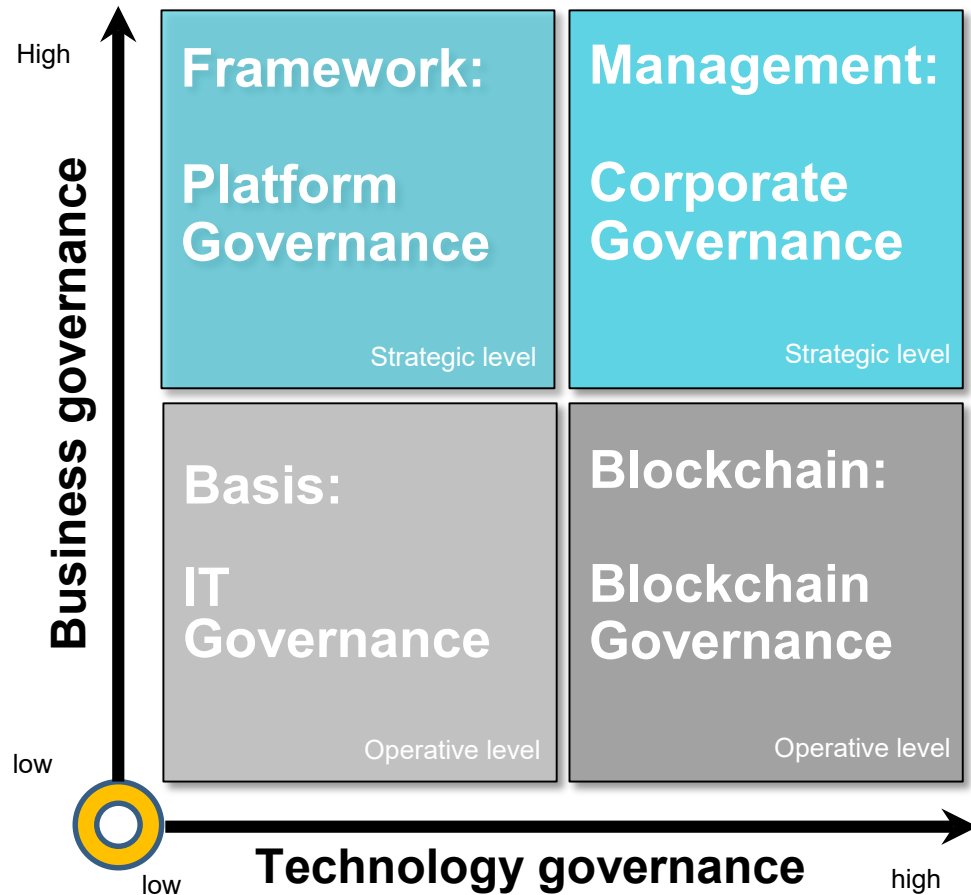
Strategic and operative governance in the Blockchain



Note: Corporate Governance Matrix (CGM) in the Blockchain developed by Otto C. Frommelt, adapted from Rafael Ziolkowski and Gerhard Schwabe, University of Zurich



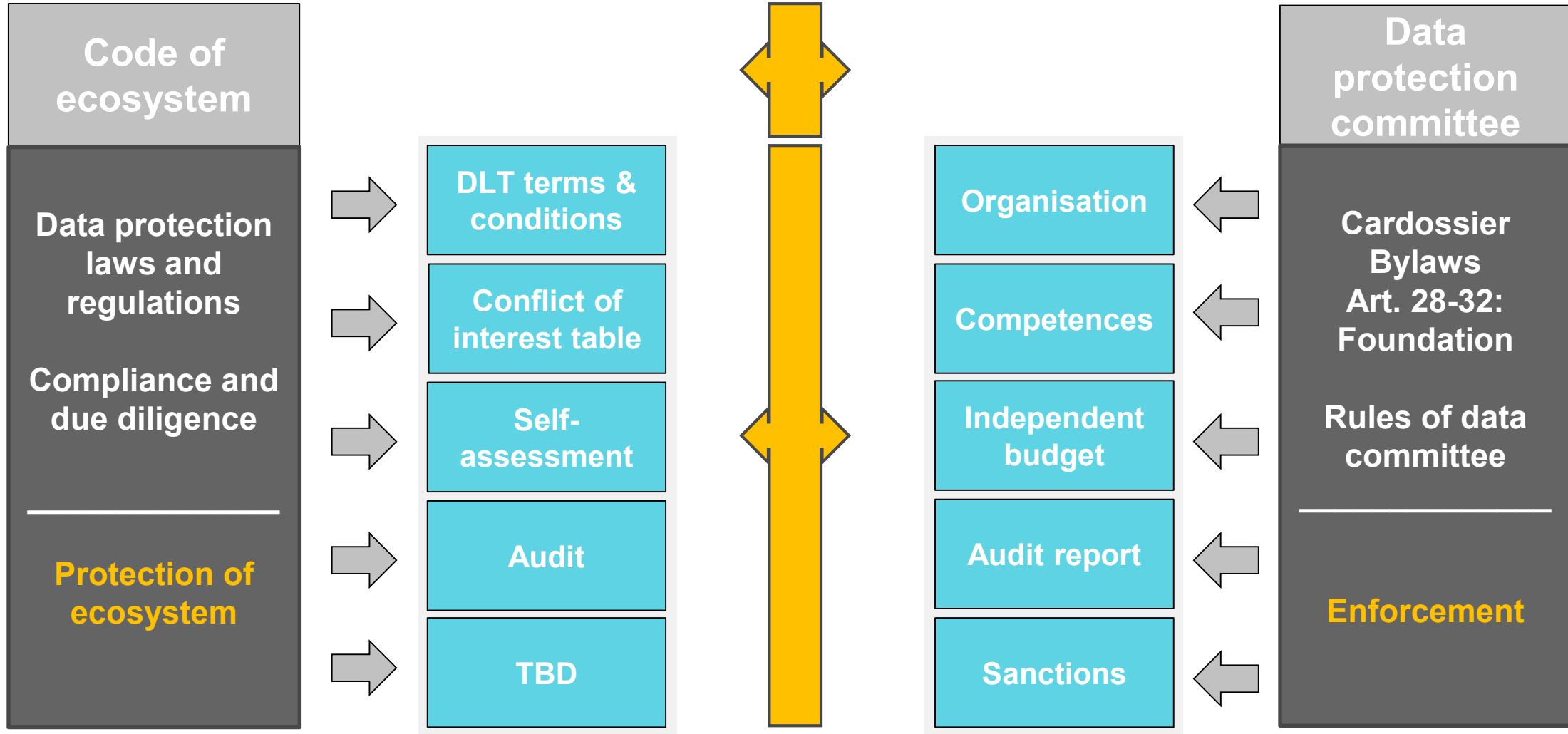
Corporate Governance in the Blockchain and the distributed culture mindset



Note: Corporate Governance Matrix (CGM) in the Blockchain developed by Otto C. Frommelt, adapted from Rafael Ziolkowski and Gerhard Schwabe, University of Zurich



Data compliance and data protection management



Governing the commons: 8 core design principles



- 1) Clearly defined boundaries for the common pool resources (CPR)
- 2) Appropriation and provision of common resources fit local needs and conditions
- 3) Collective choice arrangements and decisions
- 4) Effective accountable monitoring of common resources
- 5) Scale of graduated sanctions
- 6) Mechanisms of fast, fair and informal conflict resolution
- 7) Self-determination of community recognised by higher-level authorities
- 8) Scale up by organization in multiple layers with local CPR at base (polycentric governance)

Source: Elinor Ostrom (1990), *Governing the Commons: The Evolution of Institutions for Collective Action*. Nobel Memorial Prize in Economic Sciences (2009): Economic governance and how common property can be managed by groups using it as well as how to avoid the ecosystem to collapse. See also ourcommons.org: #No commons, No future - social | environmental | digital -

Liechtenstein digital



Digitales Ökosystem für Bürger / Ämter / Wirtschaft

- Möglichkeit, alle Marktteilnehmer über eine gemeinsame non-profit Plattform zu verbinden, Prozesse zu digitalisieren, komprimieren und zu automatisieren
- Für den Bürger bietet das zukünftig die Möglichkeit, alle Prozesse komplett digital anzustossen (24/7)
- Für die Ämter und Wirtschaft bietet sich die einzigartige Gelegenheit, Prozesse miteinander über cardossier komplett digital abzuwickeln und dabei Kosten und unnötige (Warte-)Zeit zu sparen

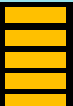
=> Digitales Ökosystem ist die einmalige Chance für alle Marktteilnehmer und ein riesiger Schritt in Richtung Liechtenstein digital

Was brauchen wir dazu?

- Gemeinsames integratives Denken der Prozesse über alle Unternehmensgrenzen hinweg (also Wirtschaft und Verwaltung)
- Offenheit gemeinsam in einer non-profit Organisation eine einzigartige Plattform zu schaffen
- Engagement von allen Beteiligten, um es möglich zu machen – für alle!
- Ein Rechtsrahmen, der die Digitalisierung fördert
 - Digitales Signieren ohne zusätzliche Hürden
 - Digitales Mitführen von digital signierten Dokumenten
 - Papierlose Prozesse fördern, digitale Alternativen zulassen
 - Modernste Technologie enablen (Self Sovereign Identity (SSI), Blockchain)

NRO DApp

Repair confirmation procedure (RCP)



NRO vehicle report for defect remedy: inspection not passed

MOTORFAHRZEUGKONTROLLE
FÜRSTENTUM LIECHTENSTEIN

Kundennummer
[redacted]

Fahrzeug Prüfbericht

Prüfungsgrund: Periodische Kontrolle
Prüftermin: [redacted]

Experte: [redacted]

Kontrollschild: [redacted]
Fahrzeugart: Personenwagen
Marke / Typ: [redacted]
1. Inverkehrsetzung: [redacted]

Stammmnummer: [redacted]
Fahrgestellnummer: [redacted]
TG-TS-Nummer: [redacted]
km Stand: [redacted]

Prüfungsergebnis: Prüfung **NICHT** bestanden - RBV / Mängelkontrolle

Mängel/Bemerkungen

- (2) Rad - vorne rechts - Spiel
- (2) Koppelstange - vorne links - Manschette - gerissen
- (2) Fernlicht - vorne links - Höhe - einstellen
- (1) Bordapotheke - abgelaufen

Schwere des Mangels: (1) gering, (2) erheblich, (3) gefährlich

Bitte beachten Sie die Rückseite!

(Digitaler Prüfbericht ohne Unterschrift)

Geschätzte Kundin, geschätzter Kunde

Auf dem vorliegenden Prüfbericht sind vom Verkehrsexperten festgestellte Mängel dokumentiert. Die auf der Vorderseite dokumentierten Mängel sind unverzüglich, spätestens **innert 30 Tagen, fachmännisch zu reparieren.**

Es stehen Ihnen **zwei Möglichkeiten für den Abschluss der Prüfung** zur Verfügung:

a) Die Reparatur wird **durch eine RBV-berechtigte Werkstatt** durchgeführt. Diese muss nach der Reparatur den Prüfbericht **innert 30 Tagen unterschreiben und stempeln.** Zusammen **mit dem Fahrzeugausweis** muss der **unterschiedene Prüfbericht bei der MFK eingereicht** werden.

b) Sollten Sie **für die Reparatur keine RBV-berechtigte Werkstatt beauftragen,** können Sie **innert 30 Tagen bei der MFK unter dispo.mfk@ilv.li einen Termin vereinbaren.**

Wenn die **Prüfung nicht innert 30 Tagen mit einer der beiden genannten Möglichkeiten abgeschlossen** werden kann, wird das **Fahrzeug erneut für eine komplette Prüfung angeboten.**

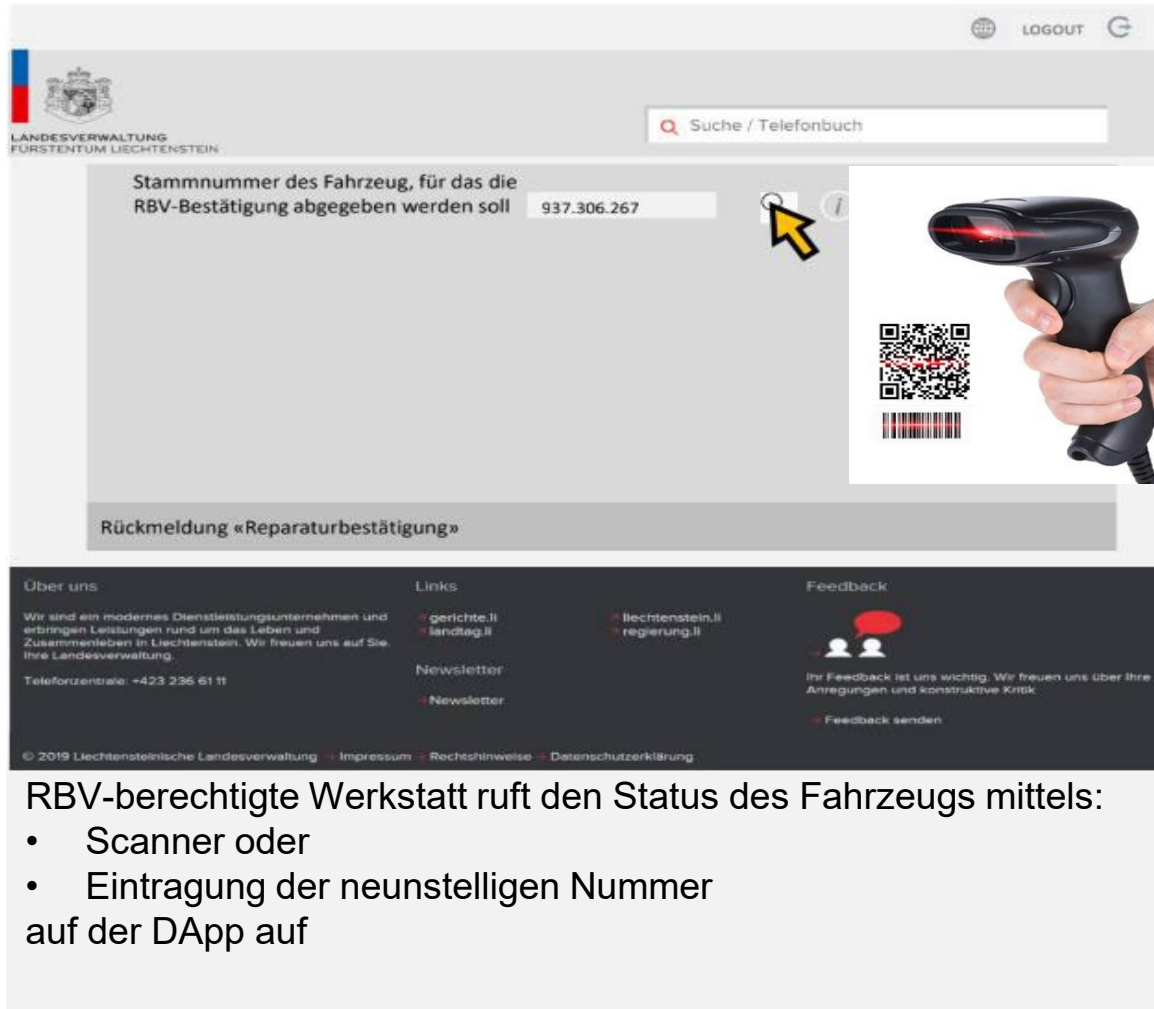
Stempel vom RBV-berechtigten Betrieb	Unterschrift vom RBV-berechtigtem Mitarbeiter

Rechtliche Grundlagen:
EU RL 2014/45 Art. 9 Abs. 1
SVG Art. 27
VRV Art. 55 Abs. 3
VZV Art. 85 Abs. 1, bst. b

Motorfahrzeugkontrolle
Gewerbeweg 2
9490 Vaduz
E-Mail: dispo.mfk@ilv.li
Tel. 00423 / 236 75 01
Fax. 00423 / 236 75 09

- ➔ Mängel sind spätestens innert 30 Tagen fachmännisch zu reparieren
- ➔ Zwei Möglichkeiten für den Abschluss der Fahrzeugprüfung: RBV oder nicht
- ➔ Stempel vom RBV- autorisierten Werkstatt mit Unterschrift

DApp: vehicle inspection report and authentication by token



Stamnummer des Fahrzeug, für das die RBV-Bestätigung abgegeben werden soll 937.306.267

Rückmeldung «Reparaturbestätigung»

Über uns
Wir sind ein modernes Dienstleistungsunternehmen und erbringen Leistungen rund um das Leben und Zusammenleben in Liechtenstein. Wir freuen uns auf Sie.
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RBV-berechtigte Werkstatt ruft den Status des Fahrzeugs mittels:

- Scanner oder
- Eintragung der neunstelligen Nummer auf der DApp auf

Fahrzeugprüfung wird durchgeführt
• Fahrzeugprüfung bestanden?

Nein

Mängel sind spätestens innert 30 Tagen fachmännisch zu beheben:
• Zwei Möglichkeiten für den Abschluss der Fahrzeugprüfung

RBV oder nicht

Möglichkeit 1: Reparatur durch RBV autorisierte Werkstatt

- RBV Werkstatt Prüfbericht innert 30 Tagen nach Reparatur unterschreiben und abstempeln
- Fahrzeugausweis wird mit Prüfbericht bei ASV eingereicht
- ASV bestätigt Eingang

DApp: confirmation of defect remedy triggering a smart contract

LANDESVERWALTUNG
FÜRSTENTUM LIECHTENSTEIN

Suche / Telefonbuch

Für das Fahrzeug mit der Stammmnummer 937.306.267 (Triumph Tiger 900 / ZH 6806) sind folgende Mängel protokolliert:

Rechtlicher Hinweis:
Der Bestätigende nimmt zur Kenntnis, dass er wegen Urkundenfälschung bzw. Erschleichen einer falschen Beurkundung verzeigt wird, sofern er die Reparaturbestätigung abgibt, ohne dass die aufgeführten Beanstandungen behoben wurden.

Alle aufgeführten Mängel wurden fachgerecht behoben. Das Fahrzeug ist verkehrs- und betriebssicher.

[Rechtliche Hinweise](#) werden akzeptiert

Der Fahrzeugausweis des Kunden wurde eingezogen und vernichtet.

Rückmeldung «Reparaturbestätigung»

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Durch Bestätigen von „rechtliche Hinweise werden akzeptiert“ und absenden des Formulars wird:

- eine rechtskonforme Reparatur angezeigt (mit Zeitstempel)
 - alter Fahrzeugausweis kann durch Werkstatt eingezogen werden
- Smart contract löst „automatisch“ das Drucken des Ausweises aus

Fahrzeugprüfung wird durchgeführt
• Fahrzeugprüfung bestanden?

Nein

Mängel sind spätestens innert 30 Tagen fachmännisch zu beheben:
• Zwei Möglichkeiten für den Abschluss der Fahrzeugprüfung

RBV oder nicht

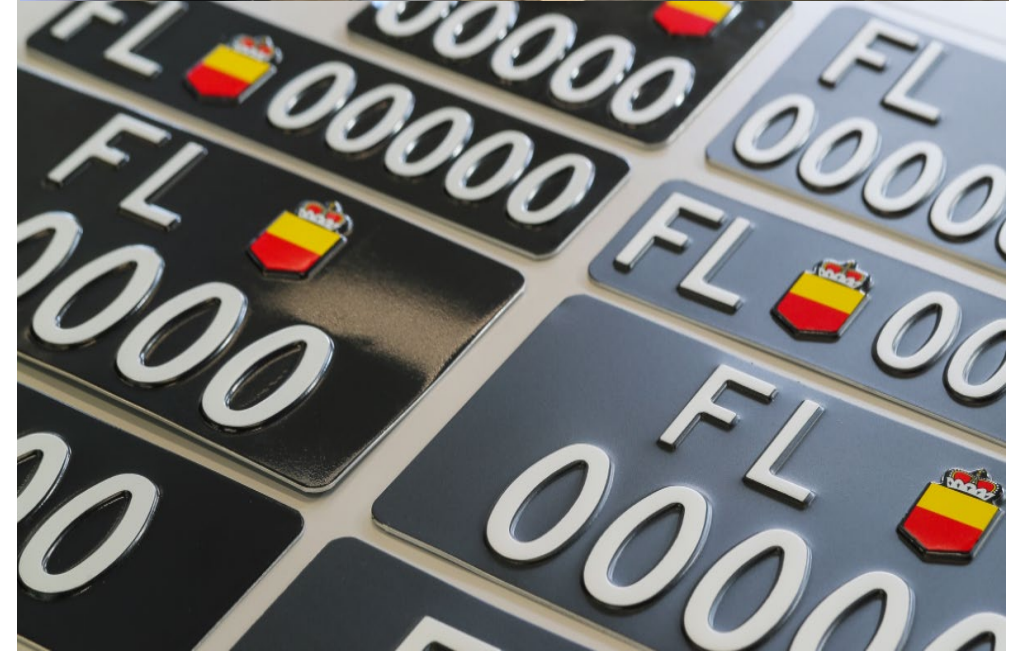
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- ASV bestätigt Eingang

Blockchain breakthrough at the cutting edge of eGov

Vehicle life cycle management and tokenization (T):

Are you ready to drive token mobility fast forward?



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Token design



Mobility
Token (τ)



Mobility
Token (τ)



Mobility
Token (τ)



Mobility
Token (τ)

Note: © Token design and notion of T (Tau) by Dr. Otto C. Frommelt



Multimodal digital ecosystem for logistics with SCM Token

