d i s c i p l

as a global society architecture

Contact us
discipl@ictu.nl

DIStributed Collaborative Information PLatform.

We work from the conviction that together we can build solutions that contribute to a better society for everyone.

Inclusive society

Human centered technology

Open collaboration

Society of today and tomorrow

A changing society, technological innovations. With issues such as privacy, ethics and trust. Discipl works on solutions that contribute to an answer to these issues. From a set of coherent principles. Solutions that contribute to a better society for today and tomorrow. Read more...

Pilots, projects and products

Discipl works on pilots and practices in projects.

Waardewisselaar

Focused on the automatic support of the implementation of selected legislation traceable to the law. Together with Manifestgroep (Grant scheme for teachers' grants).

Waardepapieren

Focuses on the development of the basic Discipl building blocks with which the provision of, for example, signed certificates can be digitized and automated.

Discipl

≠

- not a religion
- not a single project
- not a single product
- not a political view
- not bitcoin nor blockchain
- not AI
- nor any specific hype
- nor any specific technology, … well ...

Discipl is a programme for facilitation on a (global) society level

=

- A society architecture
- Attending to all the needs of all as core (organising) principle
- A set of concrete building blocks
- An innovation programme
- Multidisciplinary
- Holistic

Society Architecture

Following ISO 42010-2011 a “society architecture” would describe:

- an architecture for society facilitation as system of interest
- how this system continuously identifies all people’s and autonomous systems needs (stakeholder concerns) within a society
- how this system continuously helps people and autonomous systems attend to those needs

In a society architecture:

- Stakeholders are a variable
- Needs are a variable
- Solutions to conflicting needs in the form of agreements (constitution, laws, policies, contracts, etc.) are a variable

With discipl we focus on non controversial needs (which is a relatively limited list of types of needs) of anyone and a framework that focuses on getting them all attended to effectively, continuously, all the time.

Supports a changing world

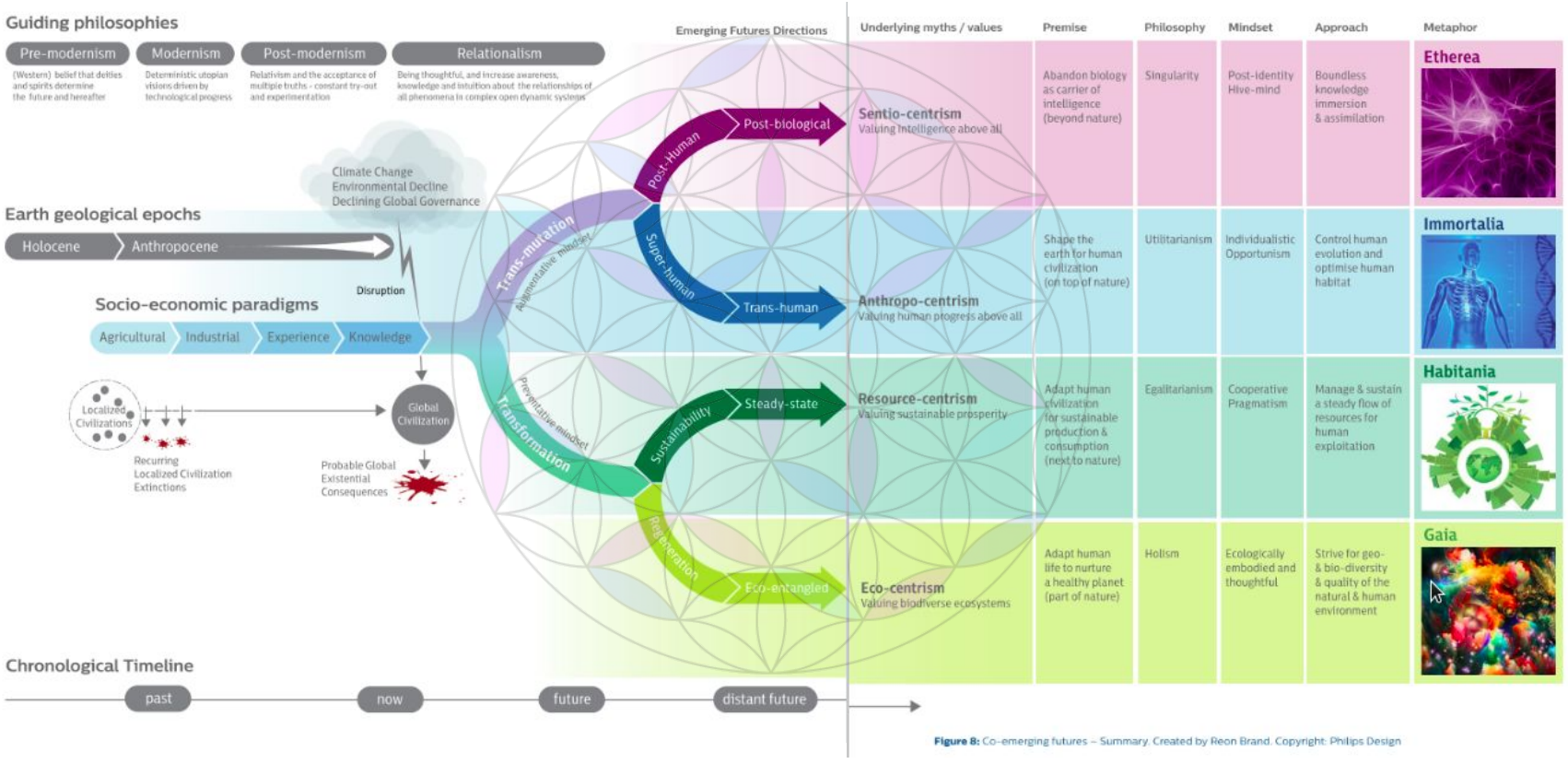
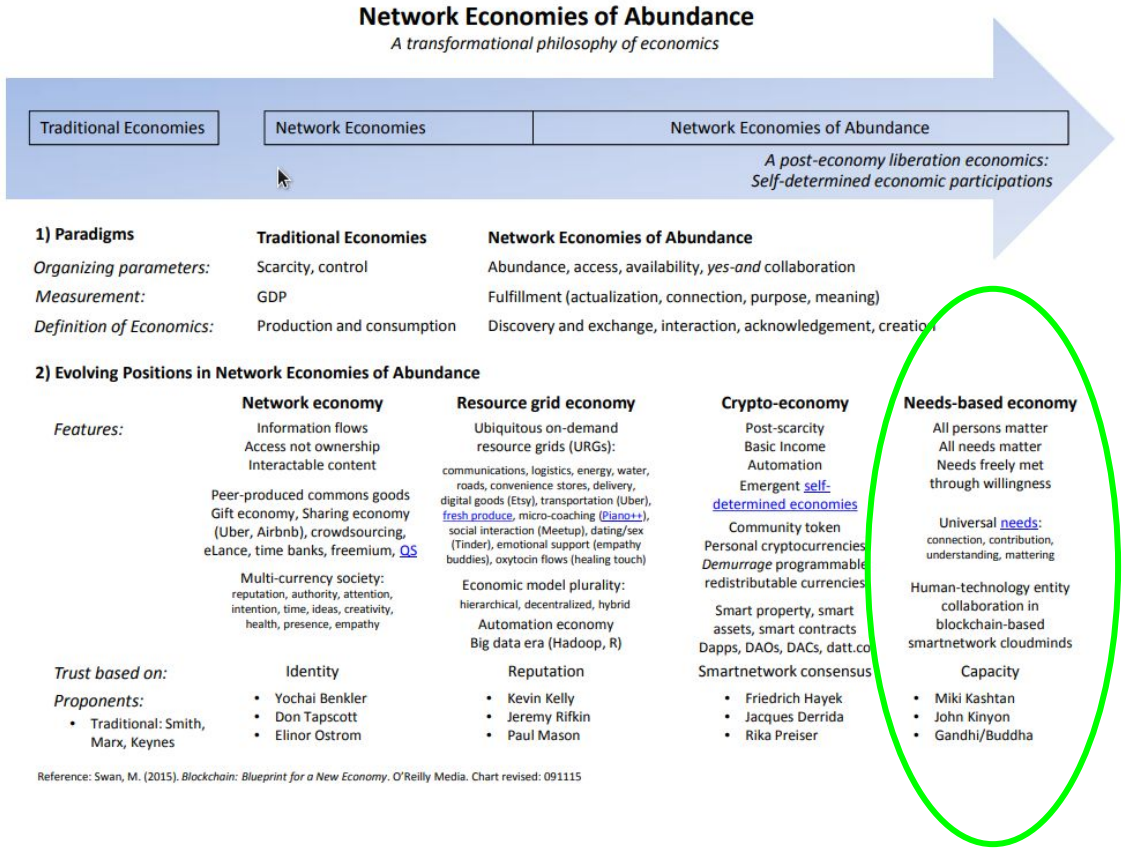


Figure 8: Co-emerging futures – Summary. Created by Reon Brand. Copyright: Philips Design

… with a changing economy ...



Network Economies of Abundance

A transformational philosophy of economics

Traditional Economies | Network Economies | Network Economies of Abundance

A post-economy liberation economics:
Self-determined economic participations

1) Paradigms	**Traditional Economies**	**Network Economies of Abundance**
Organizing parameters:	Scarcity, control	Abundance, access, availability, *yes-and* collaboration
Measurement:	GDP	Fulfillment (actualization, connection, purpose, meaning)
Definition of Economics:	Production and consumption	Discovery and exchange, interaction, acknowledgement, creatio

2) Evolving Positions in Network Economies of Abundance

	Network economy	**Resource grid economy**	**Crypto-economy**	**Needs-based economy**
Features:	Information flows Access not ownership Interactable content Peer-produced commons goods Gift economy, Sharing economy (Uber, Airbnb), crowdsourcing, eLance, time banks, freemium, QS Multi-currency society: reputation, authority, attention, intention, time, ideas, creativity, health, presence, empathy	Ubiquitous on-demand resource grids (URGs): communications, logistics, energy, water, roads, convenience stores, delivery, digital goods (Etsy), transportation (Uber), fresh produce, micro-coaching (Piano++), social interaction (Meetup), dating/sex (Tinder), emotional support (empathy buddies), oxytocin flows (healing touch) Economic model plurality: hierarchical, decentralized, hybrid Automation economy Big data era (Hadoop, R)	Post-scarcity Basic Income Automation Emergent self- determined economies Community token Personal cryptocurrencies *Demurrage* programmable redistributable currencies Smart property, smart assets, smart contracts Dapps, DAOs, DACs, datt.co Smartnetwork consensus	All persons matter All needs matter Needs freely met through willingness Universal needs: connection, contribution, understanding, mattering Human-technology entity collaboration in blockchain-based smartnetwork cloudminds
Trust based on:	Identity	Reputation		Capacity
Proponents:	• Yochai Benkler • Don Tapscott • Elinor Ostrom	• Kevin Kelly • Jeremy Rifkin • Paul Mason	• Friedrich Hayek • Jacques Derrida • Rika Preiser	• Miki Kashtan • John Kinyon • Gandhi/Buddha

• Traditional: Smith, Marx, Keynes

Reference: Swan, M. (2015). *Blockchain: Blueprint for a New Economy*. O'Reilly Media. Chart revised: 091115

… but what needs do they attend to ?

NIEUWS DIGITALE SAMENLEVING 10 MEI 2017

Digitale tijdperk vereist nieuwe mensenrechten

ROBOTS MENSENRECHTEN

In een vandaag gepubliceerd rapport pleit het Rathenau Instituut voor een nieuw Europees verdrag dat de mensenrechten aanpast aan de digitale samenleving.

Robots, kunstmatige intelligentie en het internet-of-things leggen steeds meer druk op onze mensenrechten, zoals het recht op privacy, op vrijheid van meningsuiting en op bescherming tegen discriminatie. Het behoud van de menselijke waardigheid vereist bovendien twee nieuwe mensenrechten: het recht niet gemeten, geanalyseerd of

Adviesrapport De bestuurlijke verantwoordelijkheid voor systemen

Systeemverantwoordelijkheid; een begrip waarover recent veel gepubliceerd is. In gesprekken tussen Rijksoverheid en andere overheden wordt het begrip vaak gebruikt om aan te geven dat de uitvoering weliswaar buiten de Rijksoverheid is belegd, maar dat de eindverantwoordelijkheid nog steeds onveranderd bij een minister berust. De Raad voor het openbaar bestuur pleit voor een herbezinning op de vraag wat systeemverantwoordelijkheid in deze tijd nog behelst.

Download 'De bestuurlijke verantwoordelijkheid voor systemen'

PDF document | 40 pagina's | 193 kB

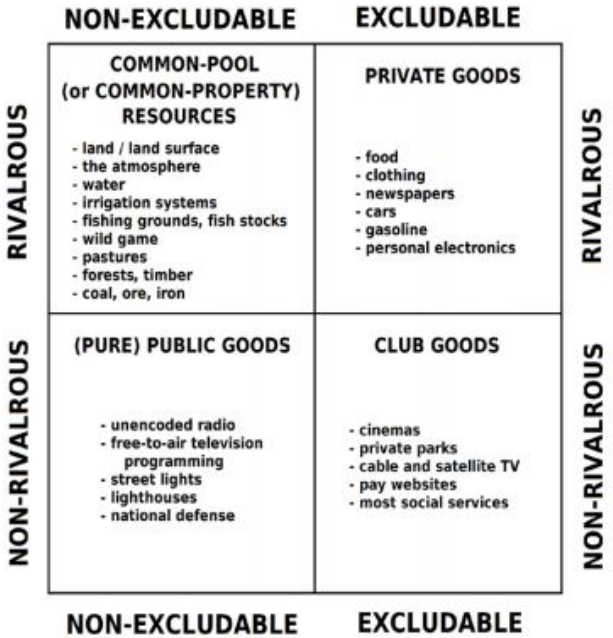
Publicatie | 07-11-2016

3. Legal status / protection of data

- **Data *as such*** are not regarded as property but can be protected via trade secrets, copyright, and other means
- For structured **databases**, a sui generis database right was created by the ***EU Database Protection Directive (29/9/EC)*** which protects the
  "substantial investment in either the obtaining, verification or presentation of the contents" [Art. 7(1)]
  – but data as such are not content!
- Similarly, pro-arguments for ownership and trade in data often rely on "***return on investment***" justifications
- But: who invests, and who pays – with what? Many different stakeholders and "currencies"!

4. Property in data?

- challenges traditional concepts of civil law
- data are intangible goods
- match the public good character of information and knowledge (Arrow 1962; Nelson 1959), at least with respect to non-rivalry in use
- a non-rivalrous good to be used infinitely by multiple actors even simultaneously without being "used up" → "overuse" can never occur!
- questions of collection, access and exclusion of data are strongly associated with distribution of power
- **4 Models to be scrutinized**



Public administration

Ingrid Schneider (political science professor at U Hamburg) described four main proposals around the economics of a data society:

- Individual data ownership + micropayments (Jaron Lanier, 2015).
- Data as public goods, managed by the state (Evgeni Morozov , 2017).
- Data as commons (Elinor Ostrom, 1990), managed by communities.
- Fiduciary trust (David Winickoff (2003 & 2005), where people commit their data to fiduciary trust, who governs the system.

Schneider discussed the relative merits of these four models, and made a case that Europe is currently “squeezed” between a Lanierian-dystopian America and a Morozovian China, but maybe Europe could (and should) develop a third way.

Synopsis

	Private good	Public good	Commons	Charitable trust
	Lanier	Morozov	Ostrom	Winickoff
Main actor	user	state	community	fiduciary
Funding	platforms	taxes	communitarian	fees
Administration	user	state	community	fiduciary
Legitimate goals of use	economic and social good	benefit to society	benefit of community, if consented	Ex-ante declared purposes, i.c.
Who decides - legitimacy and purpose	user	IRB	Community of users	IRB
Supervision & Sanctions	state	state	community of users	fiduciary
Participation/ Access	All those paying	Companies academics	community of users	Everyone who applies for
Precondition for legitimacy of purpose	Legality			

Discipl main focus is attending to all the needs of all continuously

- A lot of conflicts are wicked : a siloed approach / limited scope will not work
- **Human centered** : everything starts with needs of people, not with law and regulations
- … because laws and regulations are established solutions for typical conflicts in needs
- … because laws and regulations are a variable and produced in conflict resolution processes

In essence it aims at facilitating society through continuous agile architecture by design

But this means:

- knowing all needs
- facilitation of continuous true dialogue between people about their needs
- automate attending to needs as much as possible
- real conflict resolution if anyone is not happy
- applies from local to global level

DISCIPL

architectural pattern

For more information, start here:
http://discipl.eu/principles/

… (6) and **publish these solutions** as principle based law, policy and or contracts to be interpreted **as guidelines** for attending to all needs

(1) **People with needs** …

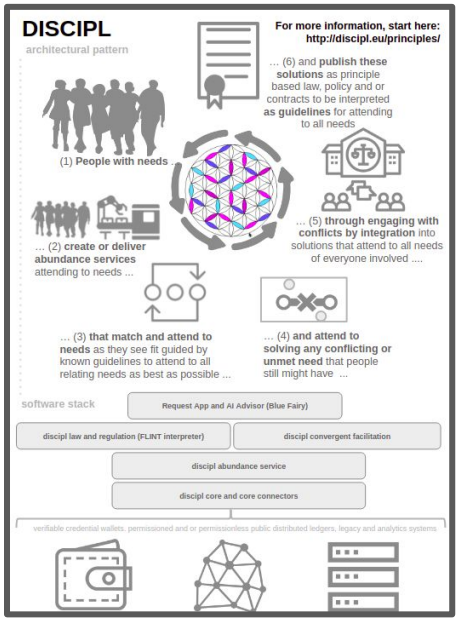
… (2) **create or deliver abundance services** attending to needs ...

… (5) **through engaging with conflicts by integration** into solutions that attend to all needs of everyone involved ....

… (3) **that match and attend to needs** as they see fit guided by known guidelines to attend to all relating needs as best as possible ...

… (4) **and attend to solving any conflicting or unmet need** that people still might have ...

NORA 5 layer model:



software stack

Request App and AI Advisor (Blue Fairy)

discipl law and regulation (FLINT interpreter)

discipl convergent facilitation

discipl abundance service

discipl core and core connectors

verifiable credential wallets. permissioned and or permissionless public distributed ledgers, legacy and analytics systems

MAIL, NEWS, BLOGS, PODCASTS, AND TUTORIALS

- News
- Weekly Newsletter
- W3C Blogs
- Mailing Lists
- Podcasts and Video
- Tutorials and Courses
- Team Submissions

CALL FOR REVIEW: VERIFIABLE CREDENTIALS DATA MODEL 1.0 IS A W3C PROPOSED RECOMMENDATION

5 September 2019

The Verifiable Claims Working Group has published a Proposed Recommendation of Verifiable Credentials Data Model 1.0. Credentials are a part of our daily lives; driver's licenses are used to assert that we are capable of operating a motor vehicle, university degrees can be used to assert our level of education, and government-issued passports enable us to travel between countries. This specification provides a mechanism to express these sorts of credentials on the Web in a way that is cryptographically secure, privacy respecting, and machine-verifiable.

Comments are welcome through **3 October 2019**.

Post navigation

← Updated Candidate Recommendation for CSS Writing Modes Level 3 | Blog home | First Public Working Drafts: Pronunciation →

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Decentralized Identifier Working Group Charter

URL-based identifiers (URIs) in use on the Web today (2019) require that the identifier be leased from an authority such as a Domain Name Registrar. A Decentralized Identifier (DID) is an identifier that does not need to be leased; its creation and use is possible without a central authority to manage it. The advent of Blockchains and Decentralized Ledger Technologies have led to other innovations that support this new type of decentralized URI. DIDs have various benefits over more traditional URIs:

- DIDs are controlled by individuals, organizations, and machines.
- DIDs enable cryptographic authentication of a DID controller (e.g., DID-based website login using a WebAuthn/FIDO token).
- DIDs provide discovery information for bootstrapping into secure and privacy preserving communication protocols (e.g., encrypted messaging endpoints).
- DIDs provide a path to service-agnostic data portability (including, but not limited to, switching between Verifiable Credential digital wallet providers).

W3C Members that would like to learn more about the motivations that led to this work may find the Primer for Decentralized Identifiers useful. There are also a set of Decentralized Identifier Use Cases that have been curated by the various organizations implementing and deploying this technology in commercial environments, resulting in a set of requirements to guide this work. Finally, there are a set of Self-Sovereign Identity Principles that have influenced the direction of this work.

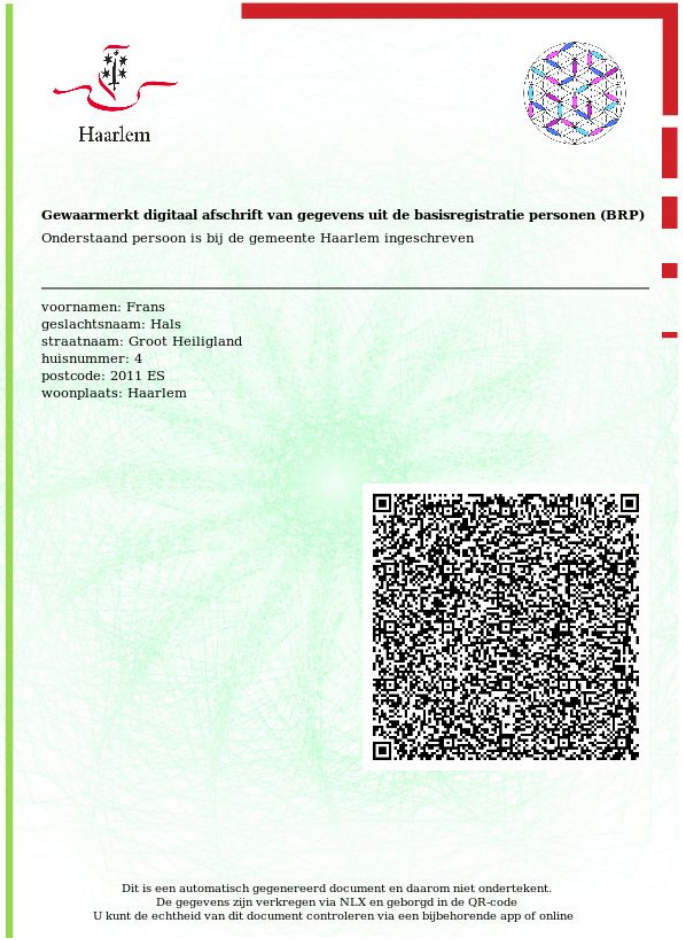
The **mission** of the Decentralized Identifier Working Group is to standardize the DID URI scheme, the data model and syntax of DID Documents, which contain information related to DIDs that enable the aforementioned initial use cases, and the requirements for DID Method specifications.

Join the Decentralized Identifier Working Group.

Start date	September 2019
End date	September 2021
Chairs	Daniel Burnett (Consensys) Brent Zundel (Evernym)
Team Contacts	Ivan Herman (0.2 FTE)
Meeting Schedule	**Teleconferences:** 1-hour calls will be held weekly **Face-to-face:** we will meet during the W3C's annual Technical Plenary week; additional face-to-face meetings may be scheduled by consent of the participants, usually no more than 3 per year.

Discipl Core, a single interface to :

- Ephemeral
- NLX
- IOTA
- Solid
- IRMA
- Trustchain
- Sovrin
- uport
- (L)BTC
- Smilo
- ….



Private information held and distributed in (Verifiable Credential) Wallets like:

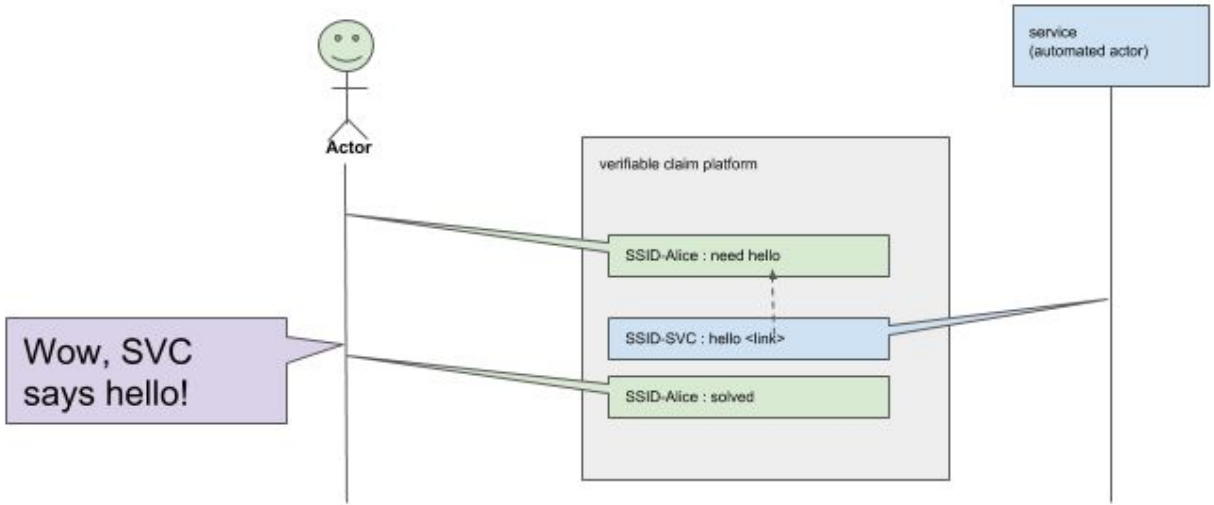
- Paper Wallet
- IRMA
- Apple Wallet
- Sovrin
- etc.

Read and validated by discipl validation app.

Using information from services through NLX.io, signing proofs with your NLX.io key

Verifiable Claims Sequence Diagram

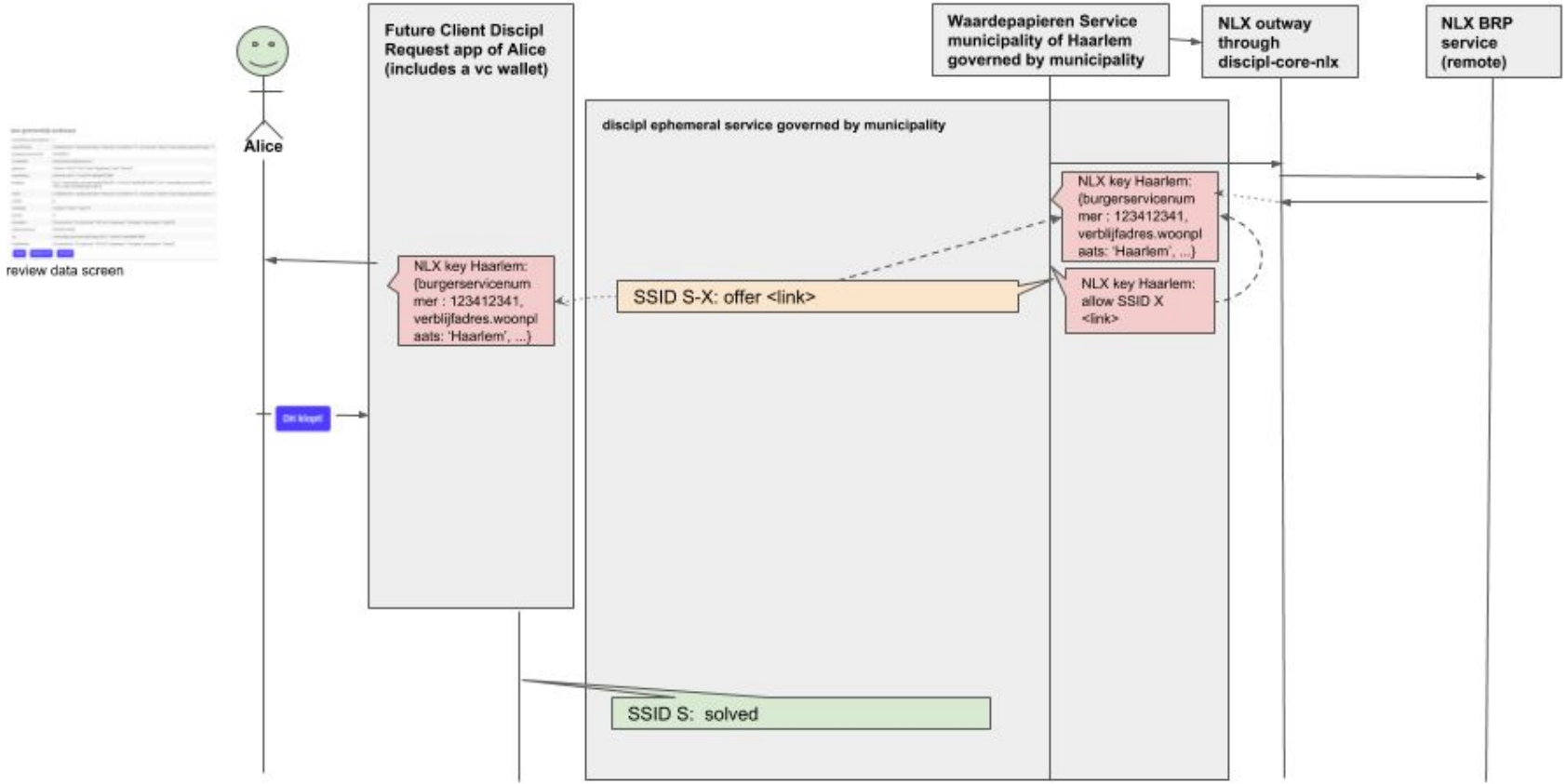
- Like a UML sequence diagram but with added conversation in spoken language and / or verifiable linked data claim channels as information layer



A channel is the list of verifiable linked data claims signed by the same SSID being the subject of those linked data triples (same color in diagrams), stored on a given platform (text boxes within platform area).

Verifiable claims can link to SSID's (through it's DID) or other claims making them linked data. (denoted by a dashed arrow)

Alice - Municipality through discipl (part 2 of 2) - SOLL



FLINT-LD

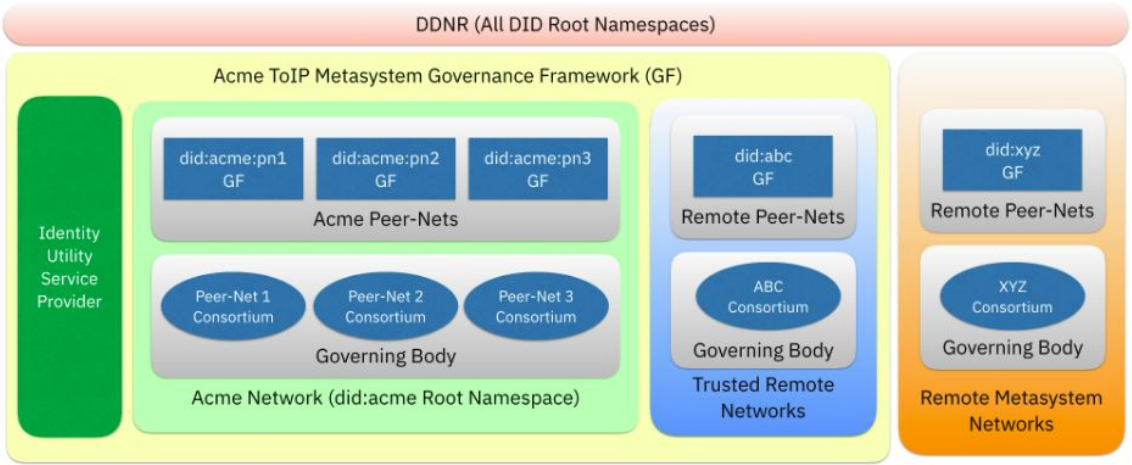
@prefix bag <did:discipl:jci1.3:c:BWBR0023466&z=2018-07-28&g=2018-07-28...>

did:discipl:ephemeral:234973298… “bag:woonplaats” “Den Haag”

Envisioning a Network of Decentralized Identity Ecosystems

As ToIP Architecture is adopted, the flexibility of Layer One and Layer Four concepts will allow for ecosystems of interoperable and trustworthy DID Ledgers to co-exists at scale. These DID Ledgers, or *Peer-Nets*, represent distinct systems of domain specific ledgers operated by decentralized peer nodes and are associated with a DID root or sub namespaces (i.e.: did:xxx, did.xxx.yyy). Each Peer-Net is managed by a specific organization or consortium that establishes the governance framework. While these Peer-Nets may be operated by different governing bodies and leverage different governance frameworks, they may adhere to a common ToIP Metasystem Governance Framework, the set of business, legal and technical governance documents that describe how members of a distinct ToIP Metasystem will operate. New opportunities may also reveal themselves whereby governing bodies may outsource the operations and maintenance of a Peer-Net to *Identity Utility Administrator*, service providers that specialize in the implementation of governance frameworks at Layer One.

In ToIP Architecture the topic of *trust* is handle at Layer One with respect to cryptographic keys and at Layer Three with respect to data. As independent yet interoperable Peer-Nets emerge, the topic of trust is also addressed at Layer Four whereby governance frameworks at the metatsystem level can declare which Peer-Nets are trusted.



A
Hyperledger Aries
RFC …

https://github.com/hyperledger/aries-rfcs/blob/master/concepts/0289-toip-stack/README.md

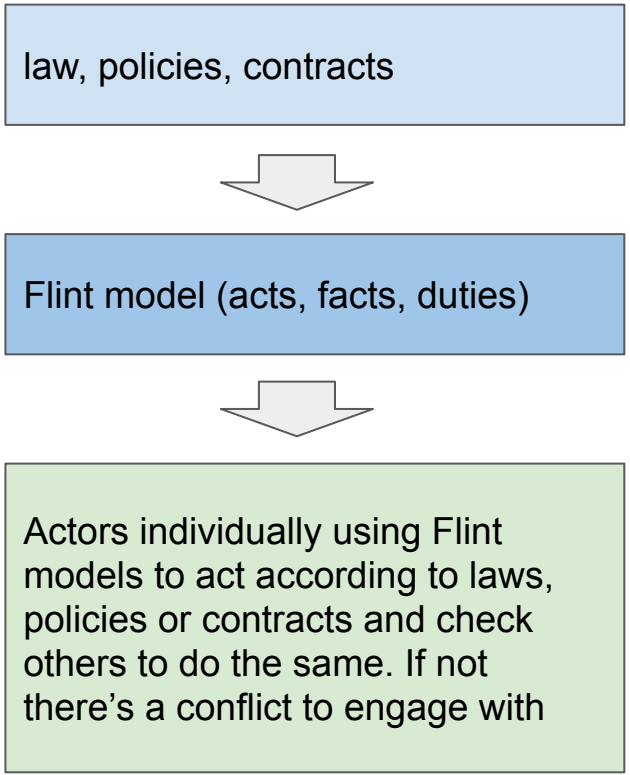
FLINT

Every law, policy, contract can be seen as a set of:

- **acts** (every atomic action an actor can do)
- **facts** (actor identification, a criteria , ...)
- **duties** (acts actors are held to do in the future)

All these are simple easy to follow interpretations of referenceable citations of little fragments of the original text of the law, policy or contract. Interpretation is only a matter of direct references between acts, facts and duties and limited usage of boolean and sometimes simple arithmetic logic.

This together is what a FLINT model is made out of. It seems to be possible to automatically generate them using narrow AI techniques.



bronnen van normen

Juridische bronnen (wet- en regelgeving) en beleidsregels

bronnen voor andere normen, zoals ethische, sociale, culturele, religieuze

interpretatie van bronnen (FLINT)

interpretatie

generatieve normen (handelingen)
(*actor, handeling, object, voorwaarden, resultaat, belanghebbende*)

handelingen zijn geldig of ongeldig

situationele normen (rechten en plichten)
(*plichthouder, aanspraakhouder, creërende, terminerende en corrigerende handeling)*

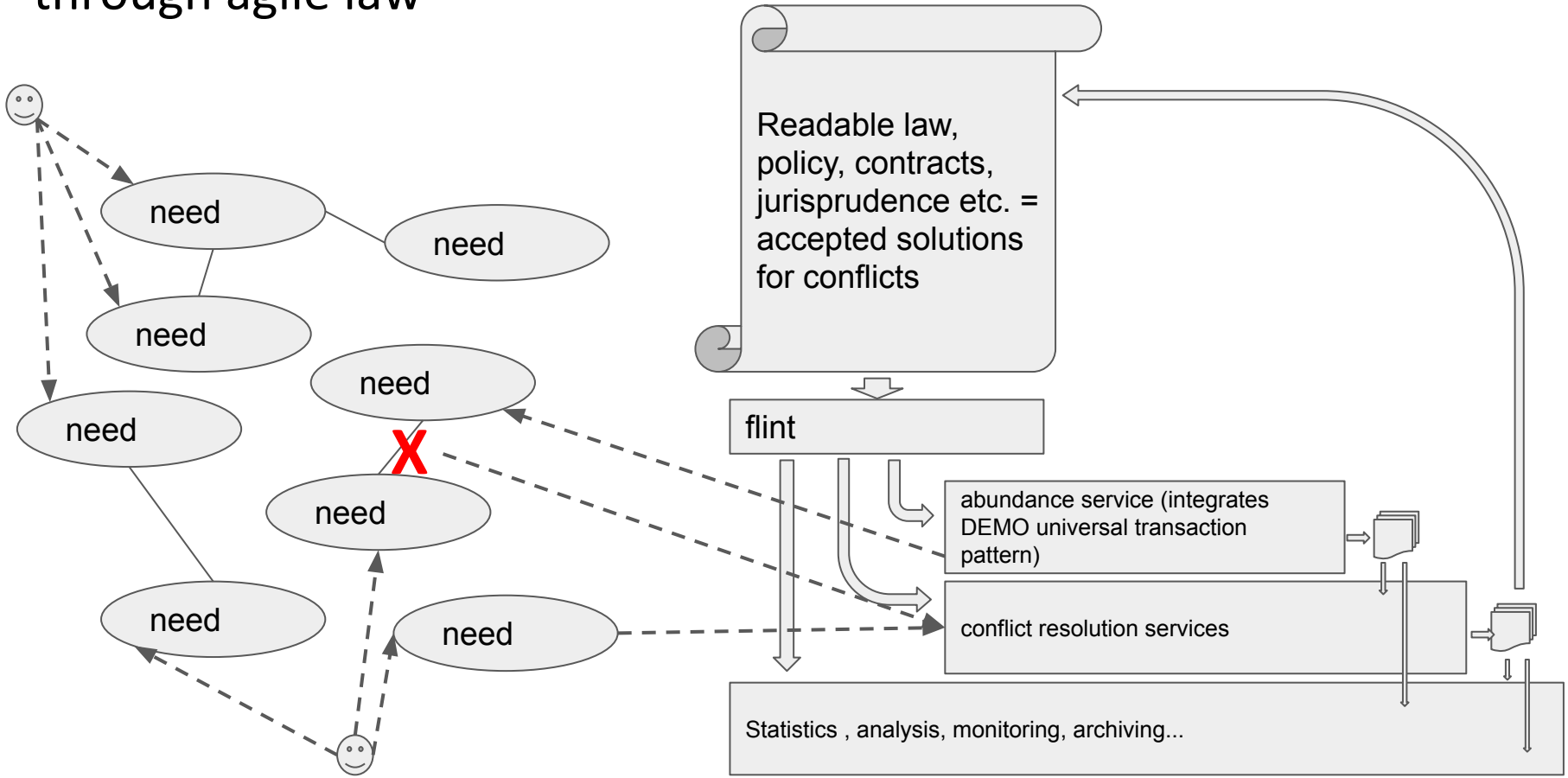
feiten (propositie of predicaat)

beschrijving van zaken

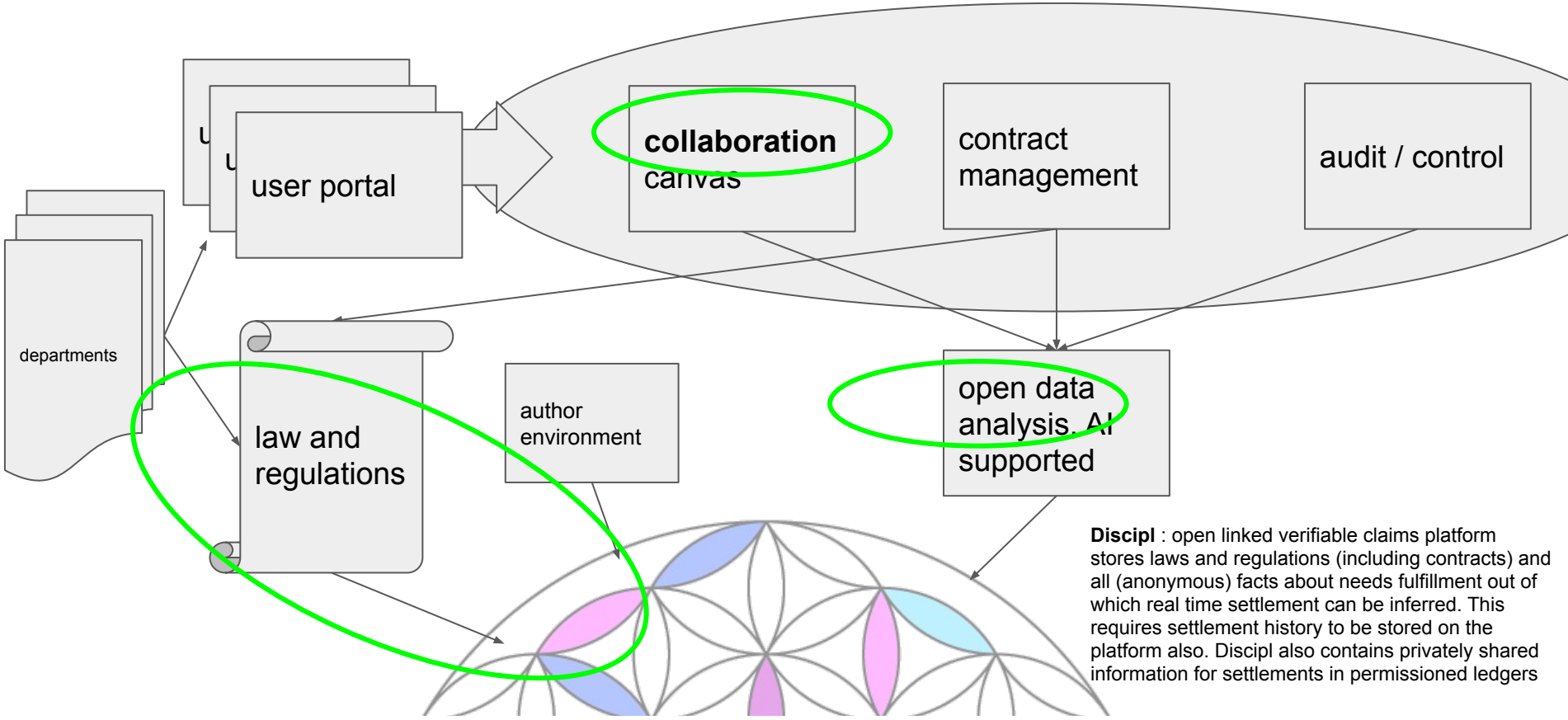
kwalificatie

1. verklaringen (schriftelijk of mondeling)
2. andere bewijsmiddelen

Needs as organising principle. All aspects by design guided through agile law

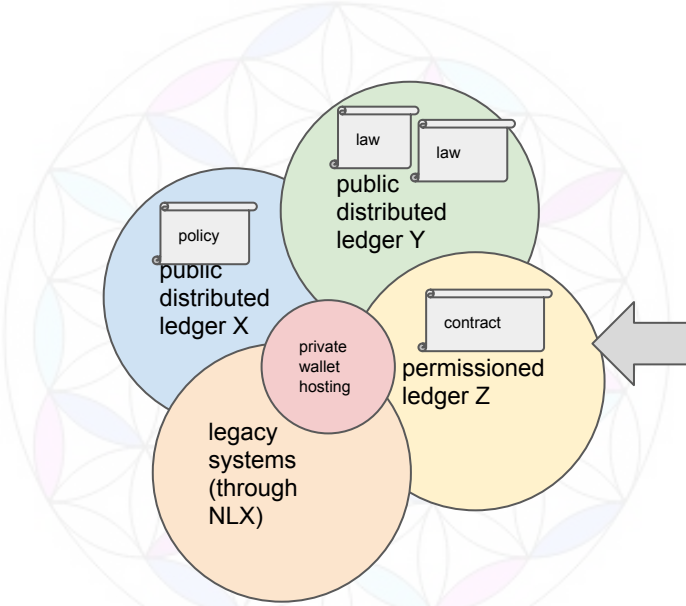


GFI with discipl T+10



Discipl : open linked verifiable claims platform stores laws and regulations (including contracts) and all (anonymous) facts about needs fulfillment out of which real time settlement can be inferred. This requires settlement history to be stored on the platform also. Discipl also contains privately shared information for settlements in permissioned ledgers

Compliance by design in Discipl (discipl.eu)



open hybrid set of verifiable claim storage platforms

private verifiable claim wallet

Any Edge Device Of Anyone
(phones, computers, hosted services)

software using discipl open source software libraries:

- help expressing needs and match services attending to them
- can closely follow processes defined within published FLINT models of law, policies and contracts in relation to attending to needs and let actors act accordingly / appropriately even in case of bad actors
- help proving facts for criteria compliance
- give access to efficient conflict engagement processes towards solutions that work for all as long as any actor is not willing to agree with others
- give insight into anonymous transparent statistics

...
discipl-law-reg (FLINT)
discipl-abundance-svc
discipl-core
discipl-core-ledger Y

Compliance By Design : De Lerarenbeurs

wetten.nl

flint modellen gepubliceerd op DLT platform:

Awb

Kaderwet OCW

BWBR0039319 Wet De Lerarenbeurs

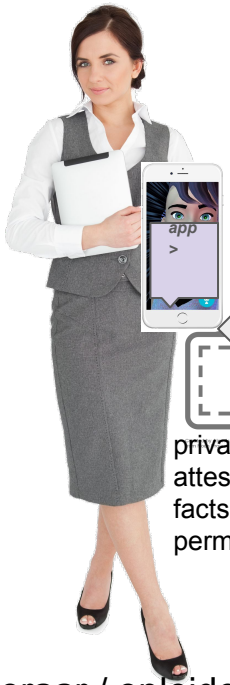
uitvoeringsbeleid

Contracts (begroting)

Minfin collaboratie met departementen en uitvoeringsorganisaties:

collaboration canvas
contract management
audit / control

conflict engagement via uitvoeringsorganisatie



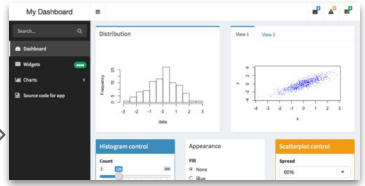
“I need education”
“I attend to education”
“I attend to pencil needs“

private opslag
attestaties betreft
facts / toegang
permissioned opslag

onweerlegbare opslag
verifiable claims
op hybride geheel
van publieke en permissioned
opslag platforms

Abundance services voor attestaties betreft facts

bronregistraties

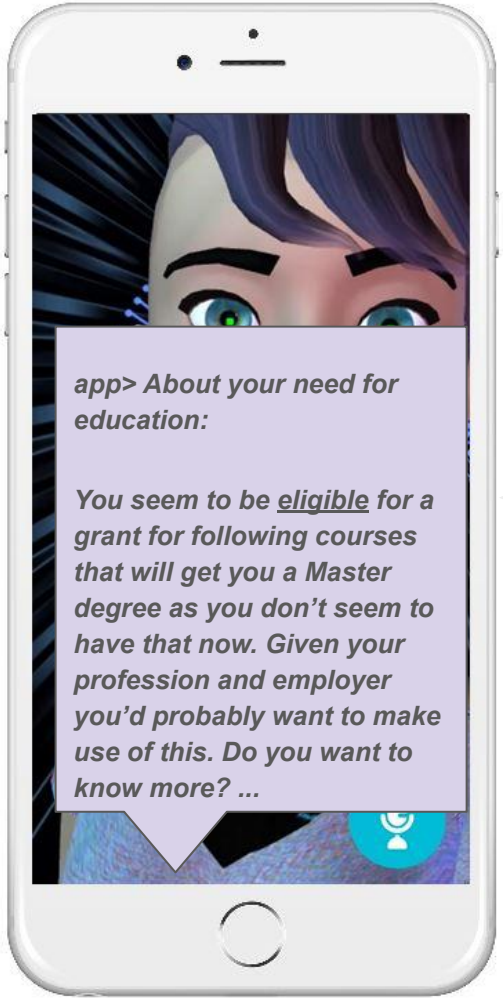


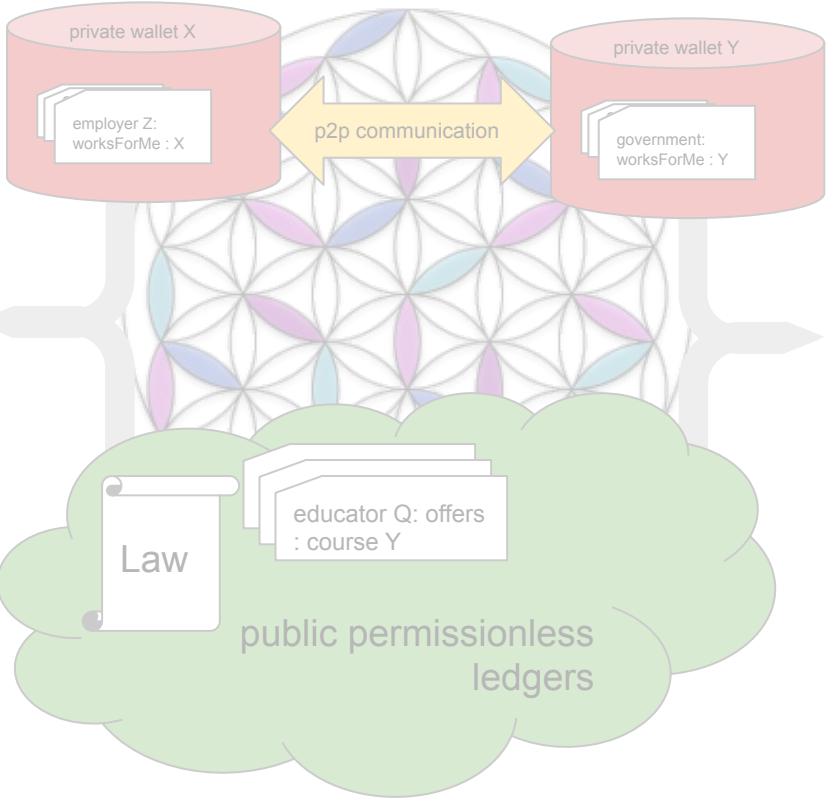
open data analyse

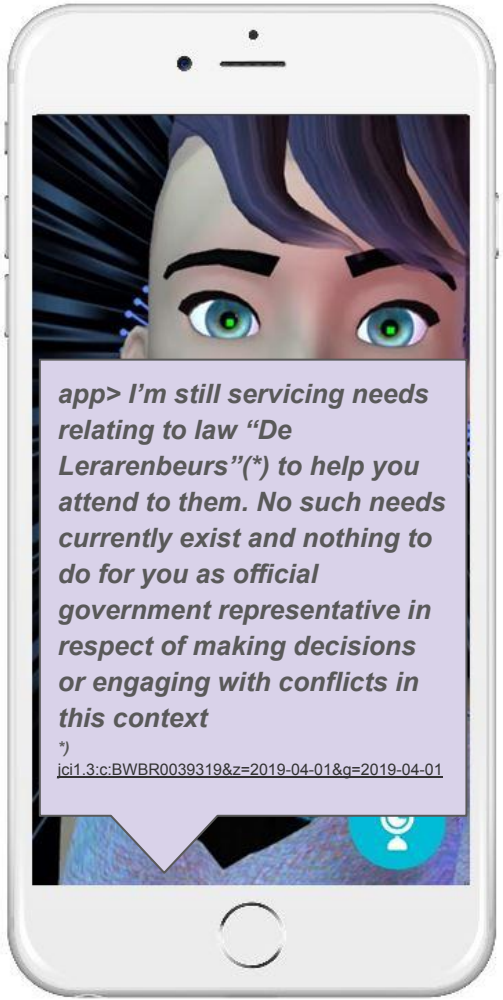
leraar / opleider / middelen verstrekker etc.

computing at the edge

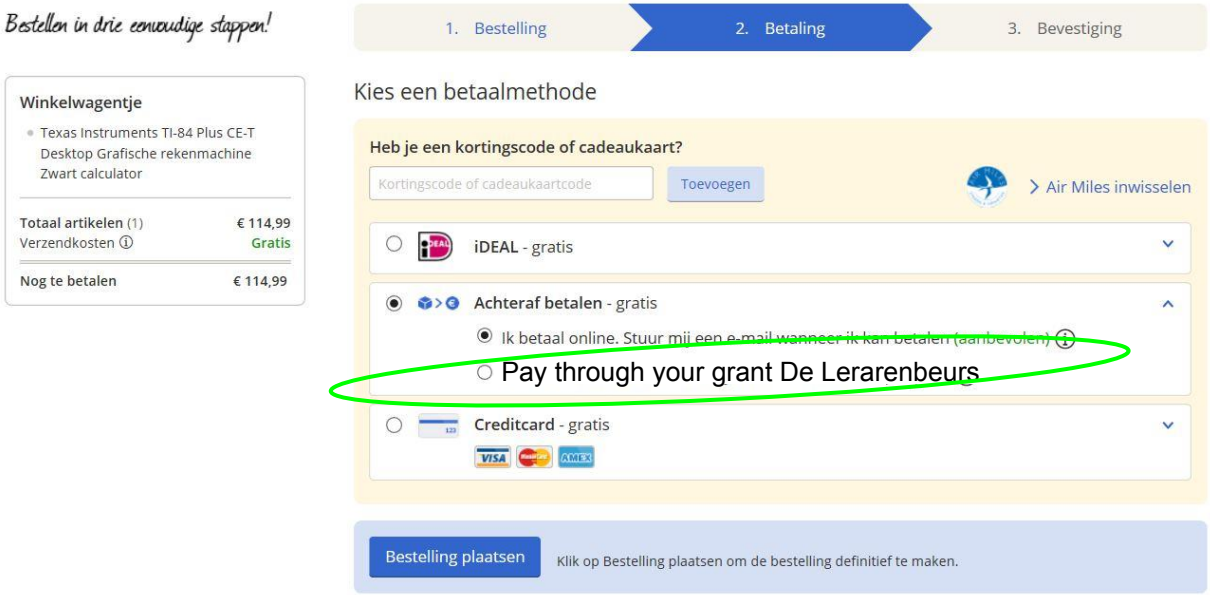
Near future


app> About your need for education:
You seem to be eligible for a grant for following courses that will get you a Master degree as you don't seem to have that now. Given your profession and employer you'd probably want to make use of this. Do you want to know more? ...


private wallet X
employer Z: worksForMe : X
p2p communication
private wallet Y
government: worksForMe : Y
Law
educator Q: offers : course Y
public permissionless ledgers


app> I'm still servicing needs relating to law "De Lerarenbeurs"(*) to help you attend to them. No such needs currently exist and nothing to do for you as official government representative in respect of making decisions or engaging with conflicts in this context
*) jci1.3:c:BWBR0039319&z=2019-04-01&g=2019-04-01

Deep integration possibilities



Virtual society

We introduce the Digital Twin to be able to develop solutions for society more efficiently. The Digital Twin is a digital replica of a living or non-living physical entity. By bridging the physical and the virtual world, data is seamlessly transferred, allowing the virtual entity to co-exist with the physical entity.

This concept take us far beyond the limitation of interpretation of statistical data on which we regularly make decisions within the current system. By means of Discrete event simulation (DES) we can test the many interactions between probabilities in the system far beyond the statistics. Where we now remain stuck in solving problems within the many technical silos, we can now integrally solve complex problems across the organizational boundaries through simulations.

Digitale identiteit
(Simulatie) Levensloop

Discipl, Society Architecture & NORA

Why these principles ? What problem do they solve? What conflicting needs do they solve?

How do current principles relate to already established solutions (constitutional law, EU law, SDG’s, NORA, Discipl)? But how do all those relate to real needs?

How do current principles relate to needs and what could be a better system that continuously finds and helps apply solutions for conflicts in them?

How to get principles (as solutions) continuously implied and applied by design from established solutions that get maintained through an agile conflict resolution system?

discipl

<<What do you need?>>

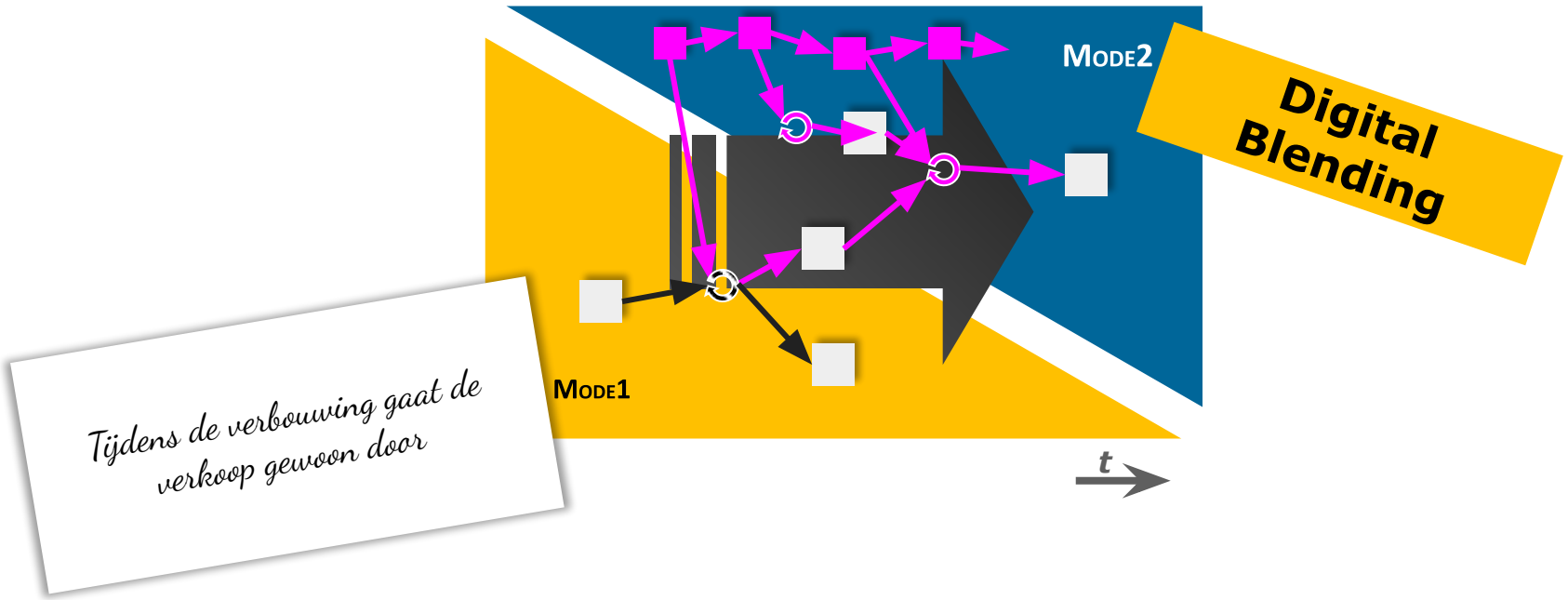
submit

Convergent Facilitation

1. Identify all different kinds of non controversial needs anonymously, especially those kept silent. **These are your principles**, make them visible to all.
2. Find solutions for specific conflicting needs, that adhere to ALL principles and every stakeholder is willing to accept.
3. If it can not seem to be found: some of the non controversial needs did not yet surfaced, known to all stakeholders: start over
4. If time is too limited, shift into finding a temporary solution to make time

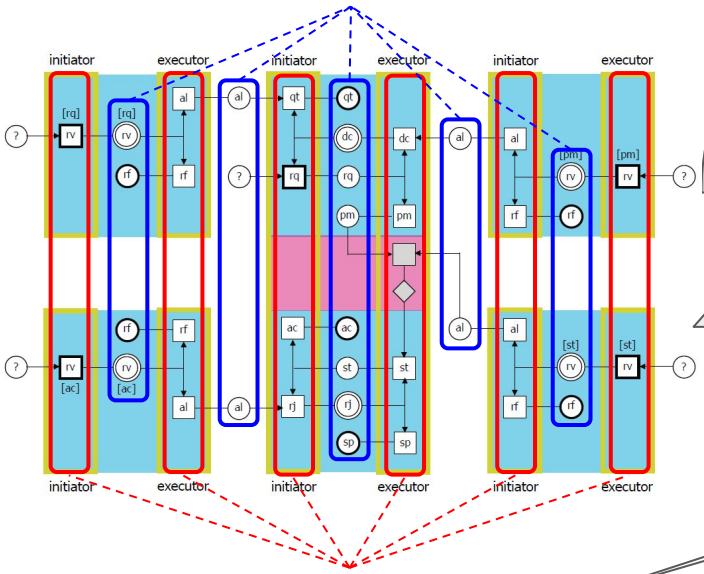
Requires good facilitation skills to make this effective

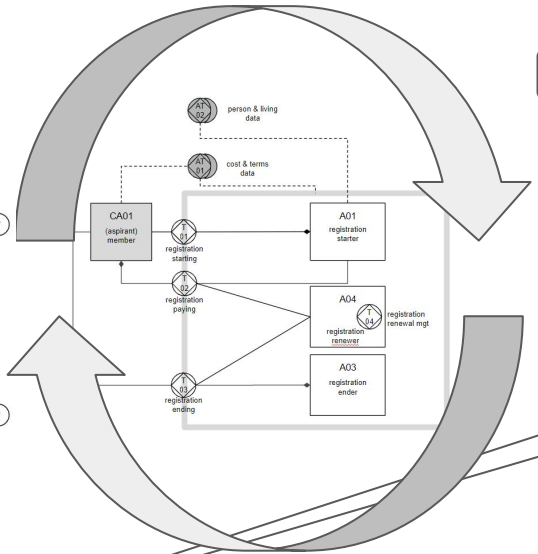
Transitie innovatie en realisatie



Implying API's from DEMO model (a stepping stone)

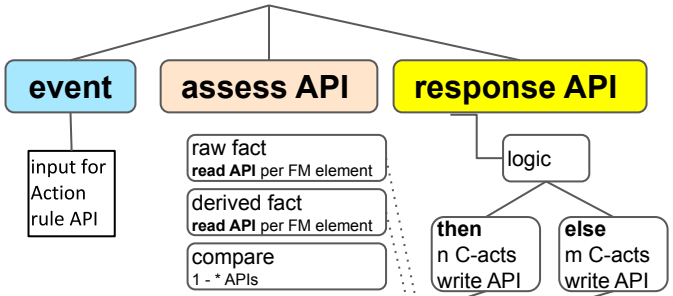
Operational cycle API, based on action rules
E.g. "Show actionable C-facts for this actor role"

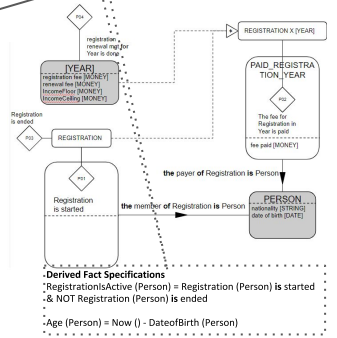




Write API: 1 per type of C-act

Action rule API





Read API: 1 per fact
(original and derived)

Discipl, Society Architecture in relation to...

- **API** : in the end, business logic specific API's designed by hand will vanish, but focus on API's is a stepping stone towards a distributed collaborative information platform based on verifiable claims in general.

  => An answer to API request (through NLX) can be signed and held as attestation in a SSI wallet.

  => This transitions to attests based on other attestations locally provided by end users

  This is our API strategy

- **Privacy, RoG, IRMA, Discipl** : Self Sovereignty in holding data, privacy by design guided by agile law. And in a same way as other aspects (like also inclusion, UX, trust, ethics, non-bias ...)

On Trust, Privacy, Bias, Ethics, Identity, Inclusion, UX...

You can not deal with these topics separately, they are all highly interconnected!

Needs are not things that you want, but why you want things, a why a child could have

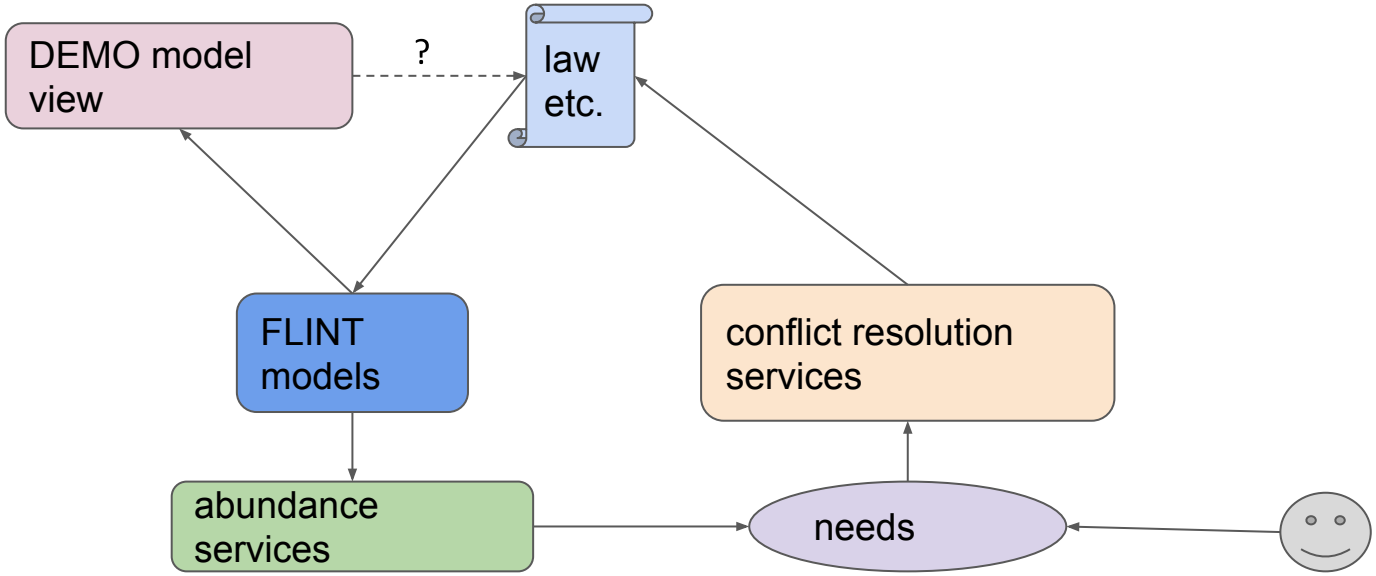
Trust can not be induced through control. People need to have to experience they and their needs matter and are attended too unconditionally and timely. Babies die when they don’t have that. And we still need this once grown up.

People are not inherently bad.

We see societies as groups of people that can collaborate non violently
always open and available for true dialogue between people and facilitate this.
True dialogue requires a willingness to be changed by it.

Soll: Abundance services guided by ‘law’ through FLINT

When need focussed:



Next up: self-owning wind farms. And, self-owning power grids. This is a nice one to think about because we can inject incentives to be carbon-neutral. This is all possible with today's technology.

NATURE 2.0

Discipl Principles

- Attend to all the Needs
- Nonviolent Collaboration
- Open Free Knowledge
- Anonymous Transparency
- Virtual Society
- Sustainable Nature 2.0

Starting 2020 : Discipl Innovation Hubs

- @The Hague Tech (with Digicampus)
- @Dutch Innovation Factory (with Haagse Hogeschool and Wigo4IT)
- …

and anyone can start one!

Discipl Toolkit:

- Discipl Society Architecture
- Discipl Solution Stack
- Discipl Quadruple Innovation Hub

REGIE OP GEGEVENS
Zelf gegevens delen, veilig en betrouwbaar!

NATURE 2.0

Dutch Blockchain Coalition
connect and create

NGL

VNG Realisatie

DIGICAMPUS