Norm Engineering Conference 2026

Towards a meta-model for norms

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Towards a meta-model for norms

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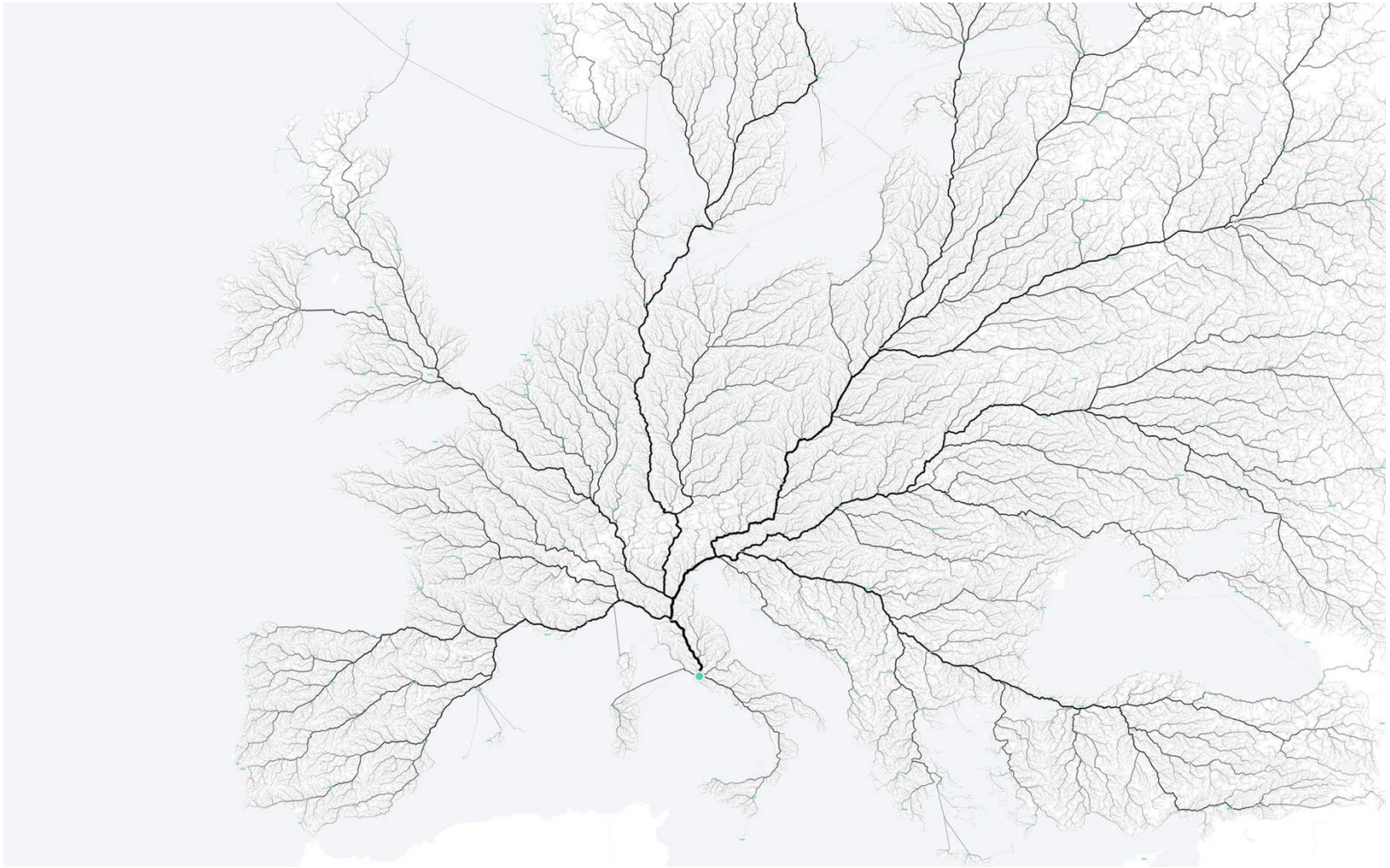
2nd Norm Engineering Conference

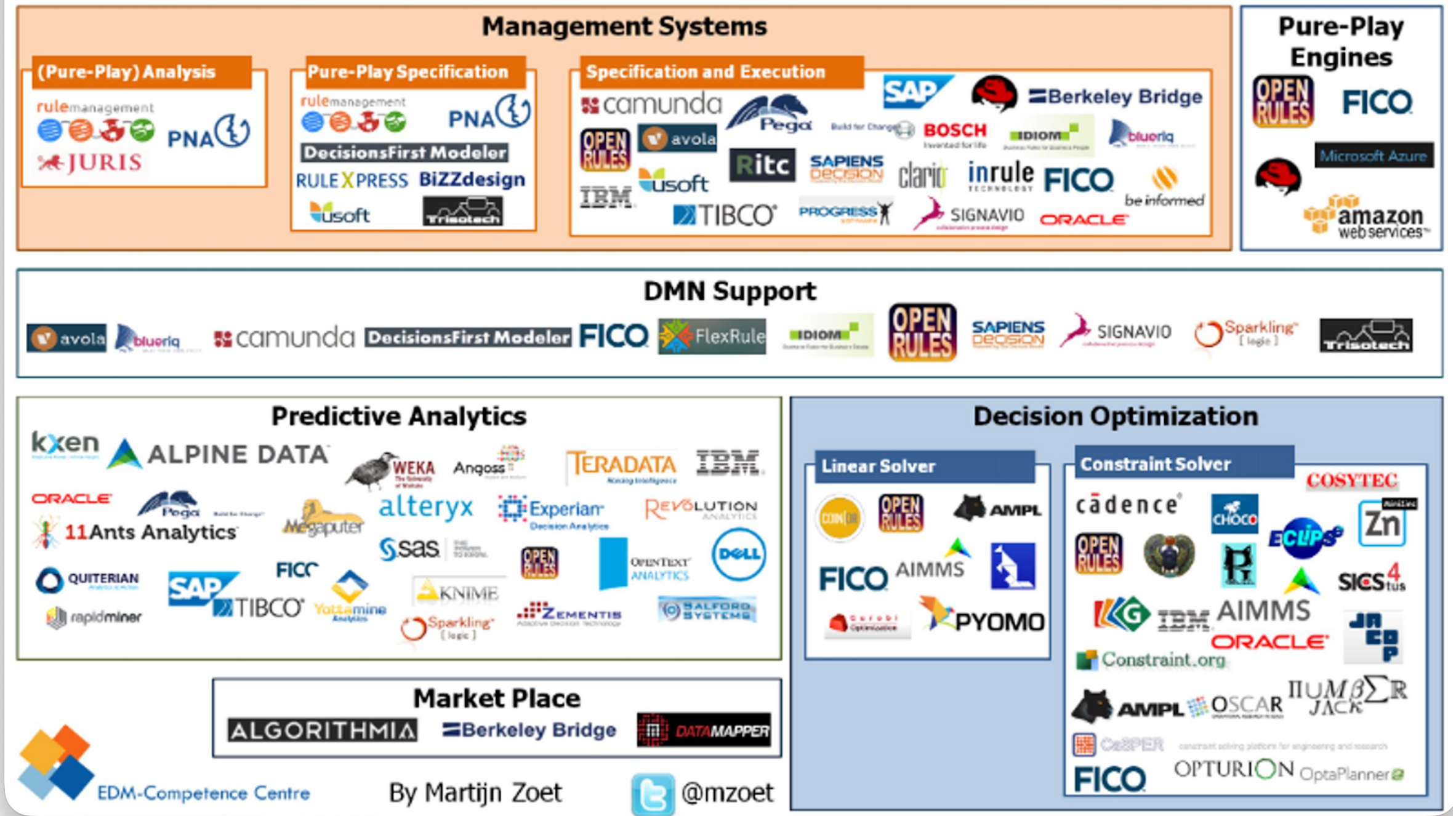
The Hague, 12 March 2026

All roads lead to Rome

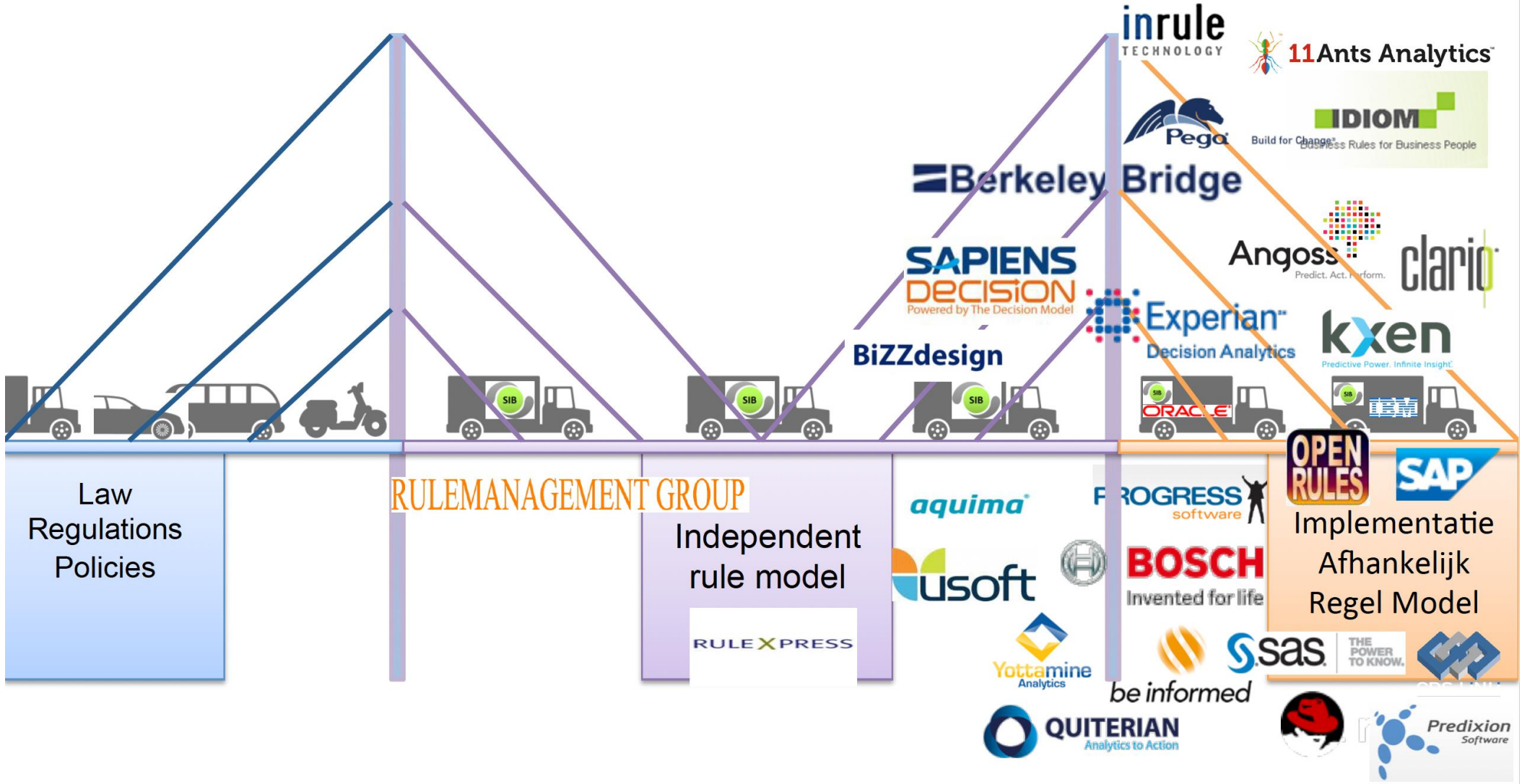


Source: https://www.welingelichtekringen.nl/cultuur/prachtige-kaart-alle-wegen-leiden-inderdaad-naar-rome

Business Rules Management and Decision Management Technology Landscape



Tool Overview



Bron: Martijn Zoet, 2013

The fundamental concepts of (legal) norms and rules

Four types of beneficial rights

1. Claim (What others must do for me)*
2. Liberty (What I may do for myself)
3. Power (What I can do against others)
4. Immunity (What others can not do against me)

John Salmond. 1902. Jurisprudence: or the theory of the law. (p. 238)

* ‘Right in the strict and proper sense’.

Beneficial rights only exist in relations

1. Claim-Duty — No claim without a duty
2. Liberty–No claim — A liberty is the absence of a duty
3. Power-Liability — If I use my power to act, that results in someone holding a liability.
4. Immunity-Disability — An immunity trumps a power, (it is the absence of a power)

John Salmond. 1902. Jurisprudence: or the theory of the law. (p. 238)

Fundamental legal relations

1. Claim-Duty

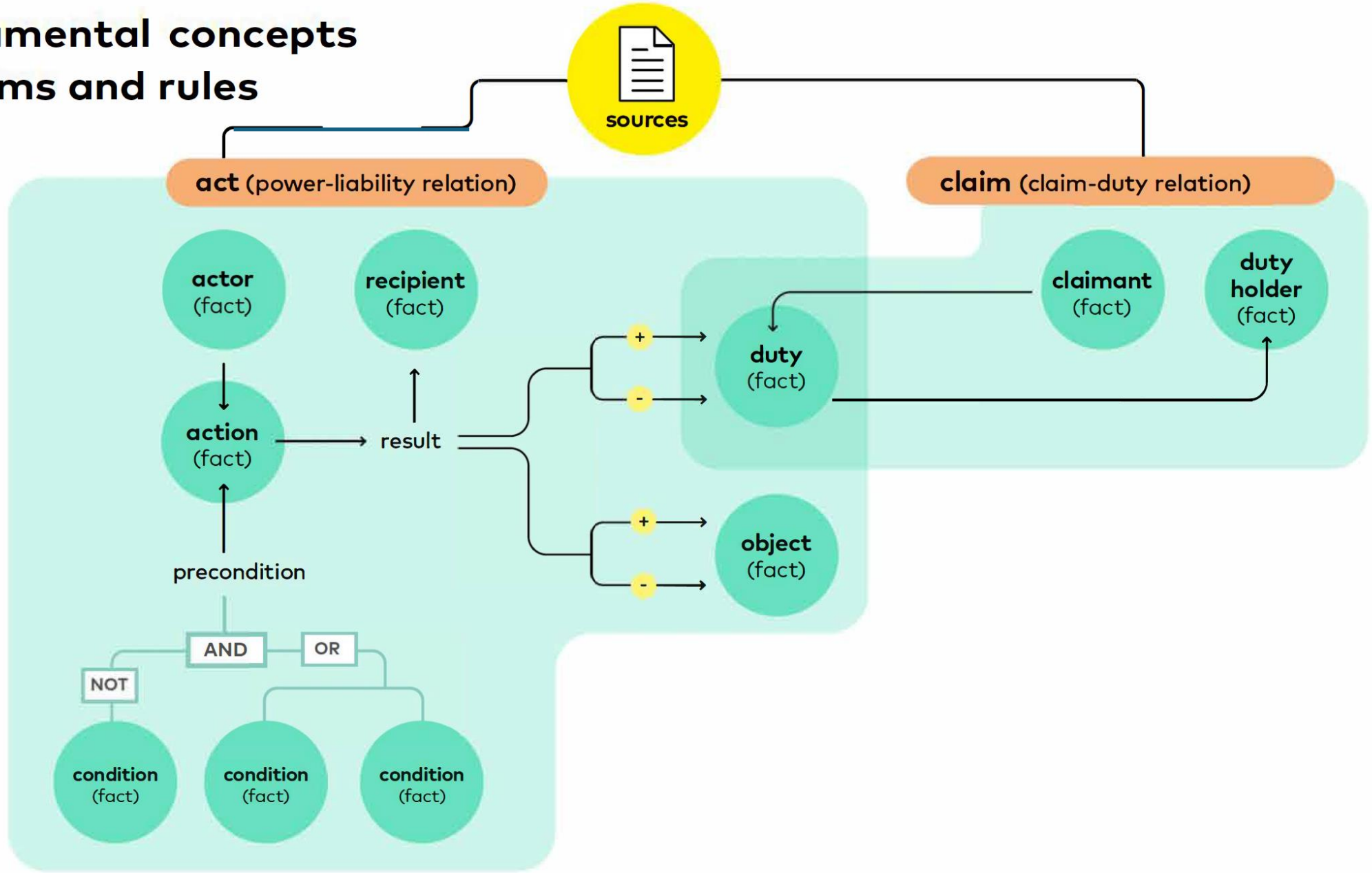
   Liberty–No claim (the absence of a duty)

2. Power-Liability

   Immunity-Disability (the absence of a power)

Albert Kocourek. 1930. An introduction to the science of law. (p. 252-255)

Fundamental concepts of norms and rules



human decisions
(using discretionary authority)

decision support system
requires an agent to make a decision

policy making

laws and regulations
(natural language)

rules
(semi-formal)

code
(formal)

code execution

automated calculation
logical or numerical derivation,
deterministic reasoning,
large-scale application possible

automated execution
(derivation functions)

Using Rules as Code for …

policy making

policy making

impact assessments

drafting legislations

making specifications for computer systems

making machine-readable law

implementation of legislation

improving consistency and accuracy

increasing transparency

calculating taxes and benefits

public service delivery

giving guidance and information

improving efficiency

eligibility assessment

enabling better (public) services

lodging objections

evaluating legislation

evaluation of policies and legislation

compliance checking

dispute resolution

enforcement

An incomplete overview of current solutions for working with norms and rules

OpenFisca

RegelSpraak

Catala

FLINT

Law Analysis
(legal analysis scheme)

RuleSpeak®

DPCL

eFLINT

Agile Law Making

SDL

ODRL

Reactive RuleML

Defeasible logic

RuleML

Value-based reasoning

Applicable rules
(STTR)

Legal RuleML

Agile Law Execution

DEMO

LKIF-core

Rulemapping

BeInformed

AKN4EU

Blueriq

Rulecube

LEOS

Blawx

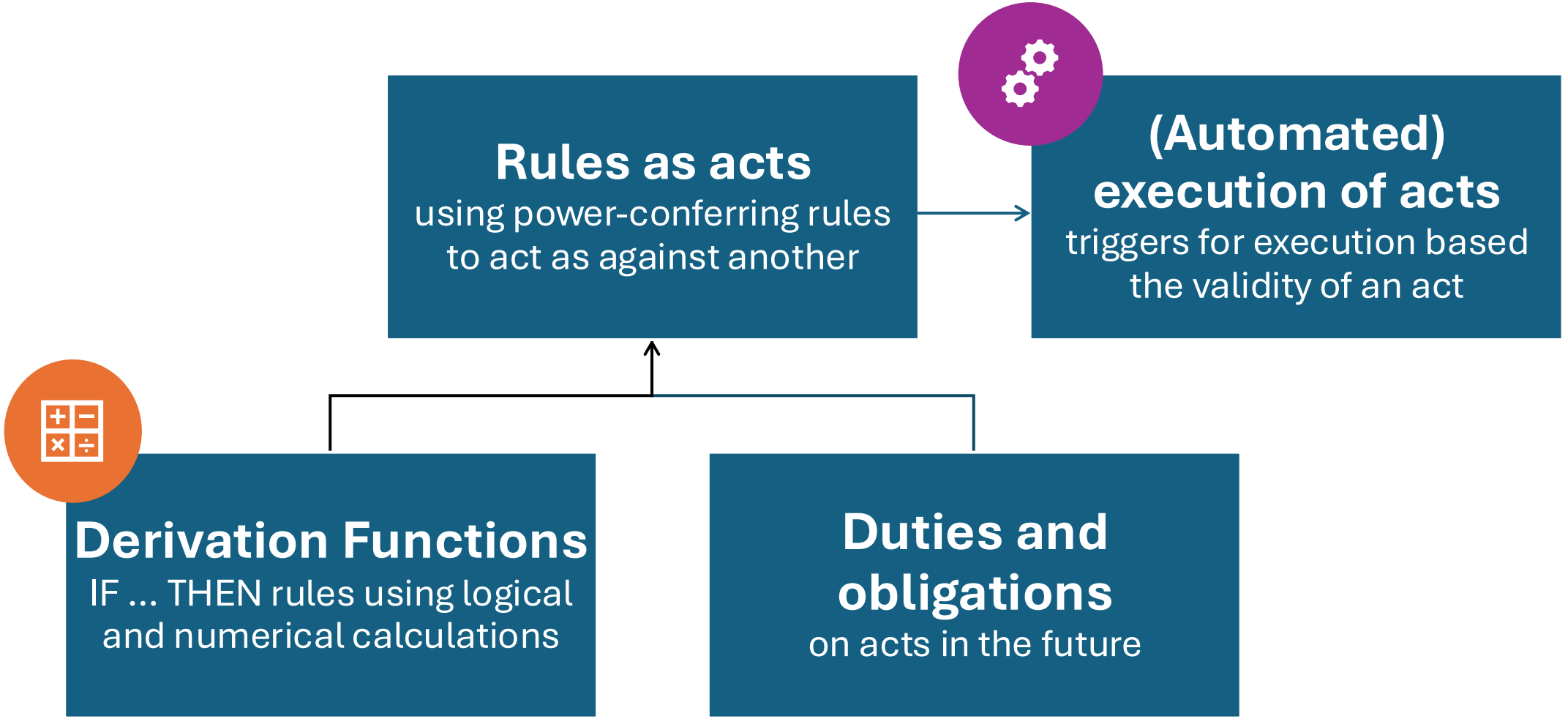
ECLI

ELI

Rule Management Method

Inventarization: standards, tools & methods

Types of rules



Rules as acts

Proposed name	Concept of a meta model for norms	Legal analysis scheme (JAS)	FLINT (Act)	OpenFisca	Reactive RuleML	Legal RuleML
actor	norm subject	legal subject (actor)	actor	impliciet	agent	actor, authority
receiving agent	related norm subject	legal subject (applicant or patient)	recipient	entity		counterparty
action		action (implicit, part of legal act)	action		do	action (related to deontic modalities)
power (competence)	power	power	the act is the representation of a power-liability relation			
object	norm object	legal object	object			

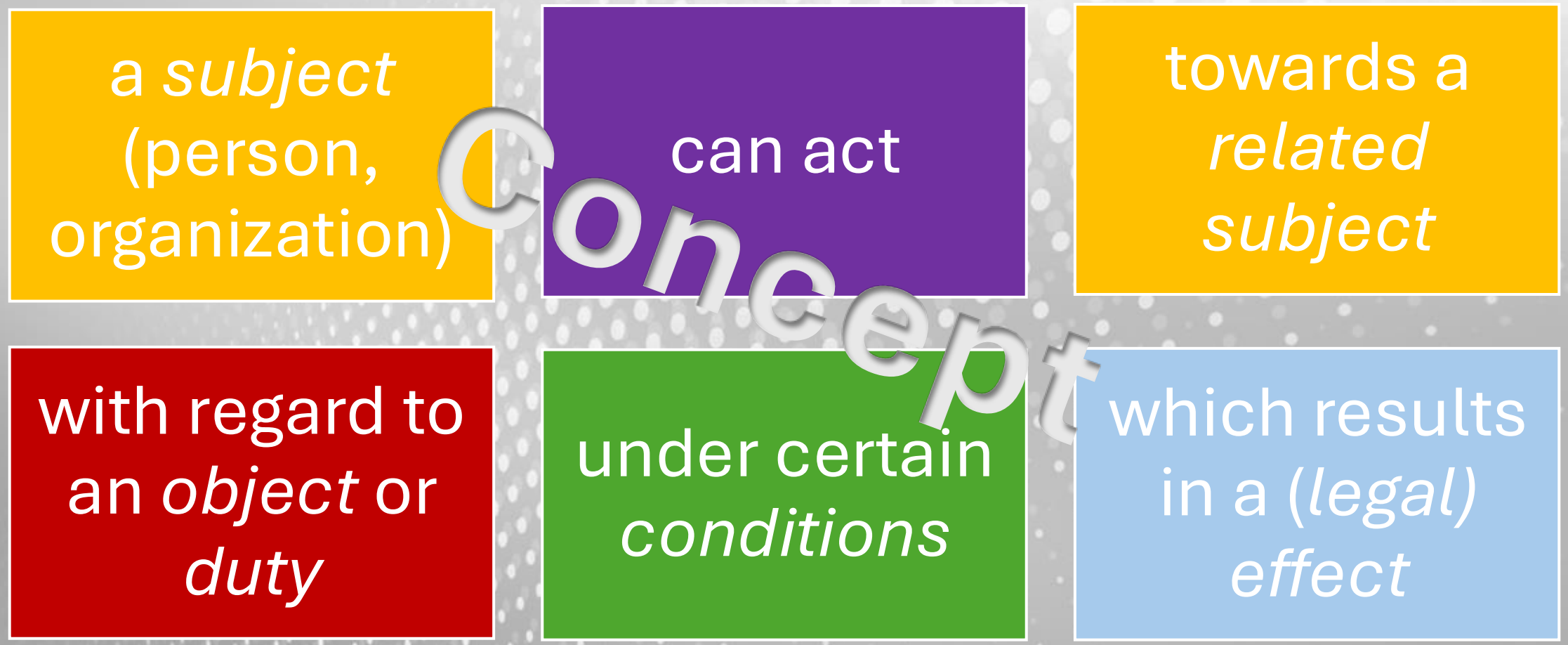
Derivation functions (IF … THEN)

Proposed name	Legal analysis scheme (JAS)	FLINT	OpenFisca	DMN	RegelSpraak (DTA)	Applicable Rules (STTR)	RuleML
(pre)condition(s)	conditions, operators, parameters (value) en variables (value)	conditions and operators	input variables, parameters, formulas, periods	decision tables (input columns)	IF conditions, operators, parameters and variable	input rules, interaction rules (?)	variables, individuals, expressions, (logical) operators (atoms or complex expressions)
evidence		evidence (to proof condition of a valid action are met)				data rule layer	data
result	legal consequence	result (of a valid action) (creating or termininating objects or duties)	output variables, parameters, formulas, periods	decision tables (output columns)	THEN result	decision	THEN effect of the rule

Duties and obligations

Proposed name	Legal analysis scheme (JAS)	FLINT	OpenFisca	DMN	RegelSpraak (DTA)
(pre)condition(s)	conditions, operators, parameters(value) en variables(value)	conditions and operators	input variables, parameters, formulas, periods	decision tables (input columns)	IF conditions, operators, parameters and variable
evidence		evidence (to proof condition of a valid action are met)			
result	legal consequence	result (of a valid action) (creating or termininating objects or duties)	output variables, parameters, formulas, periods	decision tables (output columns)	THEN result
Proposed name	Legal analysis scheme (JAS)	FLINT	OpenFisca	DMN	RegelSpraak (DTA)
(pre)condition(s)	conditions, operators, parameters(value) en variables(value)	conditions and operators	input variables, parameters, formulas, periods	decision tables (input columns)	IF conditions, operators, parameters and variable

A sketch for a Meta Model for Norms and Rules



Why a metamodel for norms?

- A semantic model is currently missing for rules
- Better understanding of the system of rules and norms
- Support of the application of analysis methods
- Fundament for more interoperability of methods

From law to execution

Evaluation

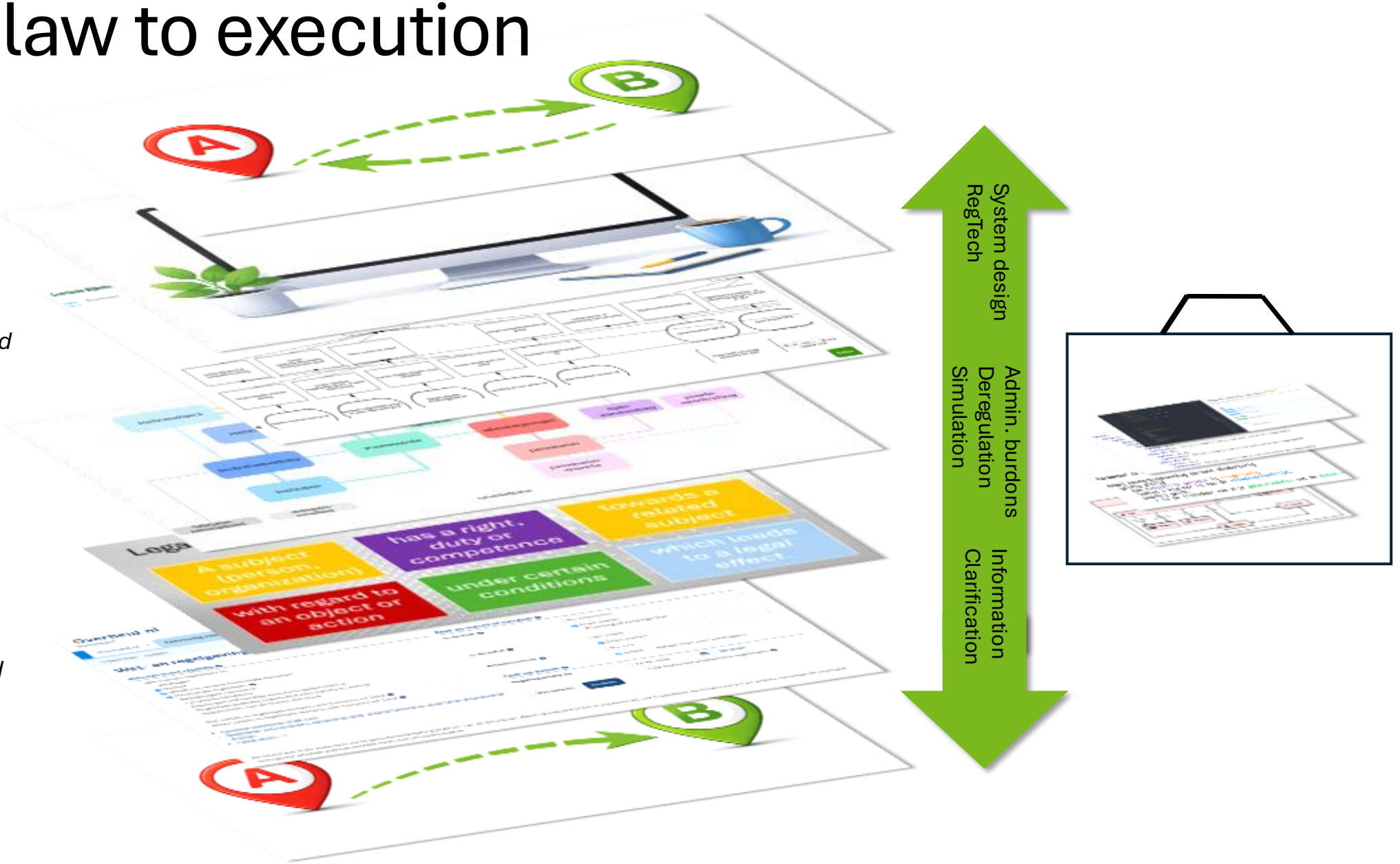
Execution

Specification and formalisation

Analysis and explicitation

Regulations and policymaking

Task orientation



System design
RegTech
Admin. burdons
Deregulation
Simulation
Information
Clarification