



**EUROPEAN
CONGRESS**
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Clean, resilient and
connected mobility.

The Norwegian METR project – digitising traffic rules and regulations

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SIS 3 - Digitising Traffic Regulation Orders: learning from Europe



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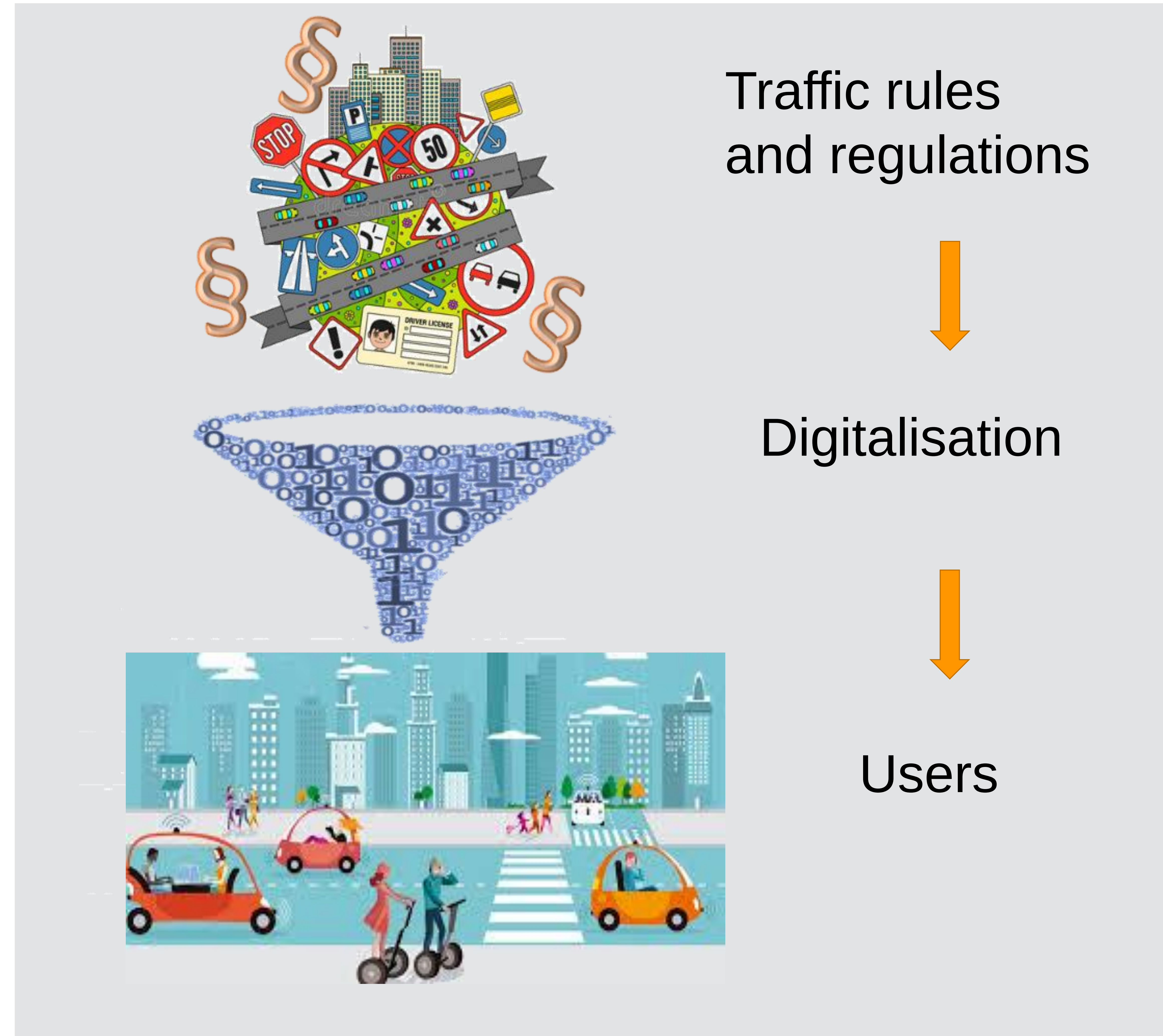


What is METR?

To prepare for a future transport system where automated vehicles can manoeuvre safely on the roads we need:

- *Traffic rules and traffic regulations that **machines can understand and trust***

METR = Management of Electronic Traffic Regulations



The METR main processes

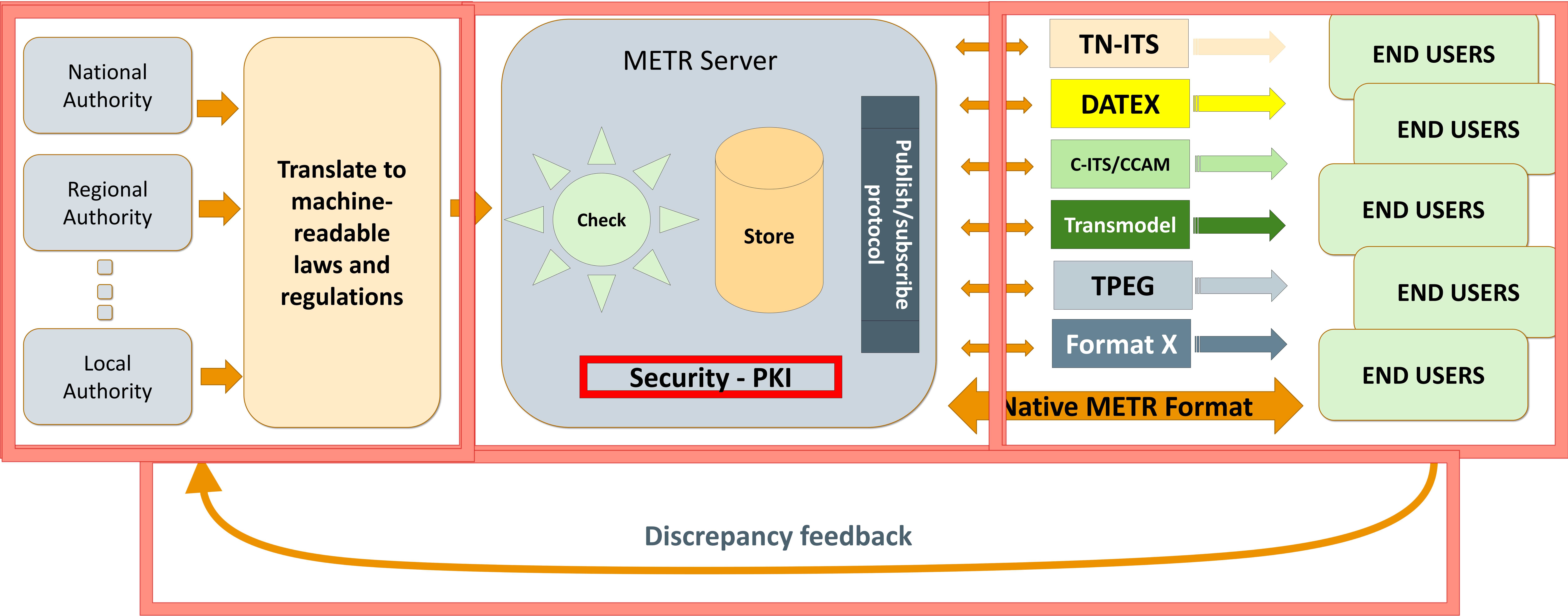
Preparation and adoption

Translation

Validation

Dissemination

Use



NPRA Corporate Strategy



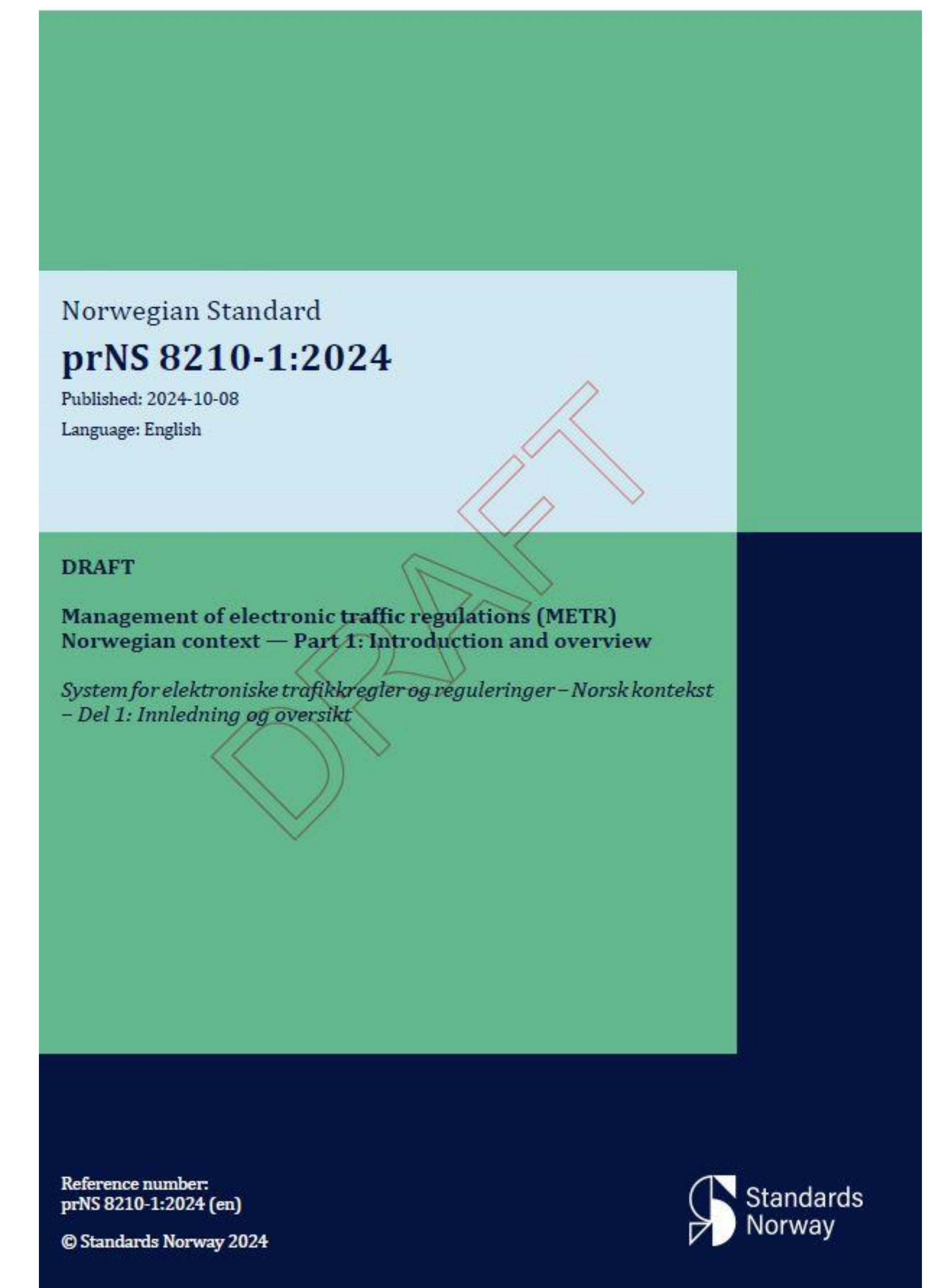
The Norwegian METR project 2022-28

Main goal:

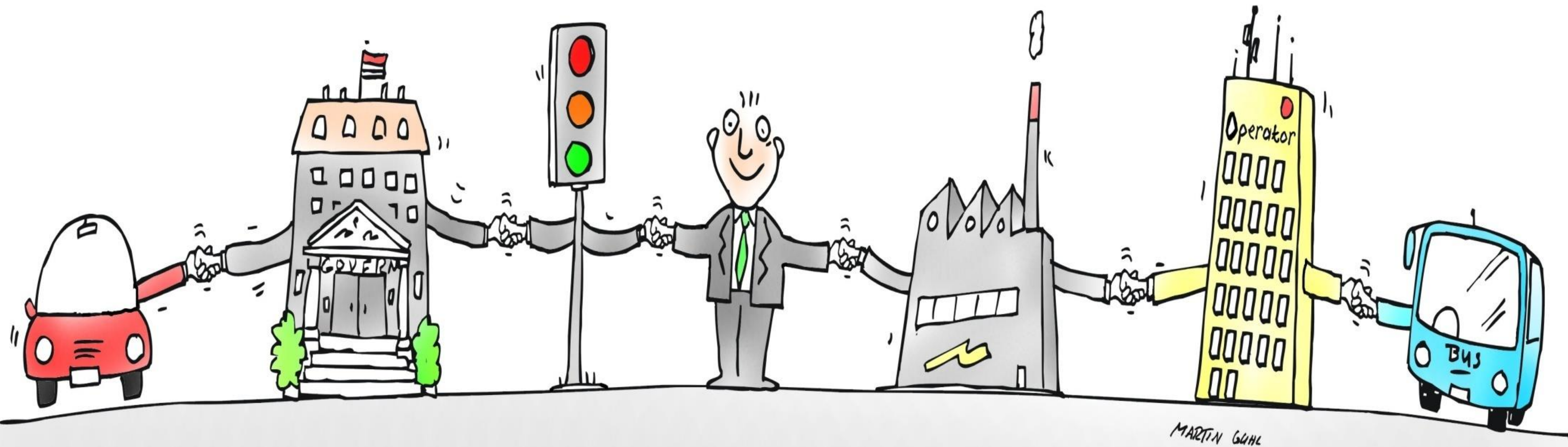
- Description and implementation plan for a METR concept covering the public road network in Norway, harmonised with EC regulations and international standardisation.
- The concept comprises a trusted value network; from authorities to end users and the implementation of a METR operations and management organisation

Focus areas:

- Traffic Regulation Orders => from analogue to digital
 - *dialogue with municipalities, counties and cities has started*
- Dynamic Traffic Regulations
 - *TMCs, Datex II, integration of PKI (Pilot)*
- ISO / CEN Standardisation & international harmonisation
 - *Ongoing work on ISO 24315*
 - *Starting work on CEN cross-border interoperability standards*
 - *Official Norwegian METR standard based on ISO*



... to be continued by Knut Evensen!



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Split of responsibilities: Global – Regional - National

Global level

Requirements

- ISO standards define reference architecture, terminology, high level system requirements
- **The first four CEN/ISO METR standards are available.**
- **The rest are at various level of drafting, see next slide**

European level

Interoperability

- European interoperability standards specifying data model, protocols and security
- Regulations needed to assure cross-border operations at required service level.
- **This work is supported by NAPCORE X - WG 4.5 METR**

National level

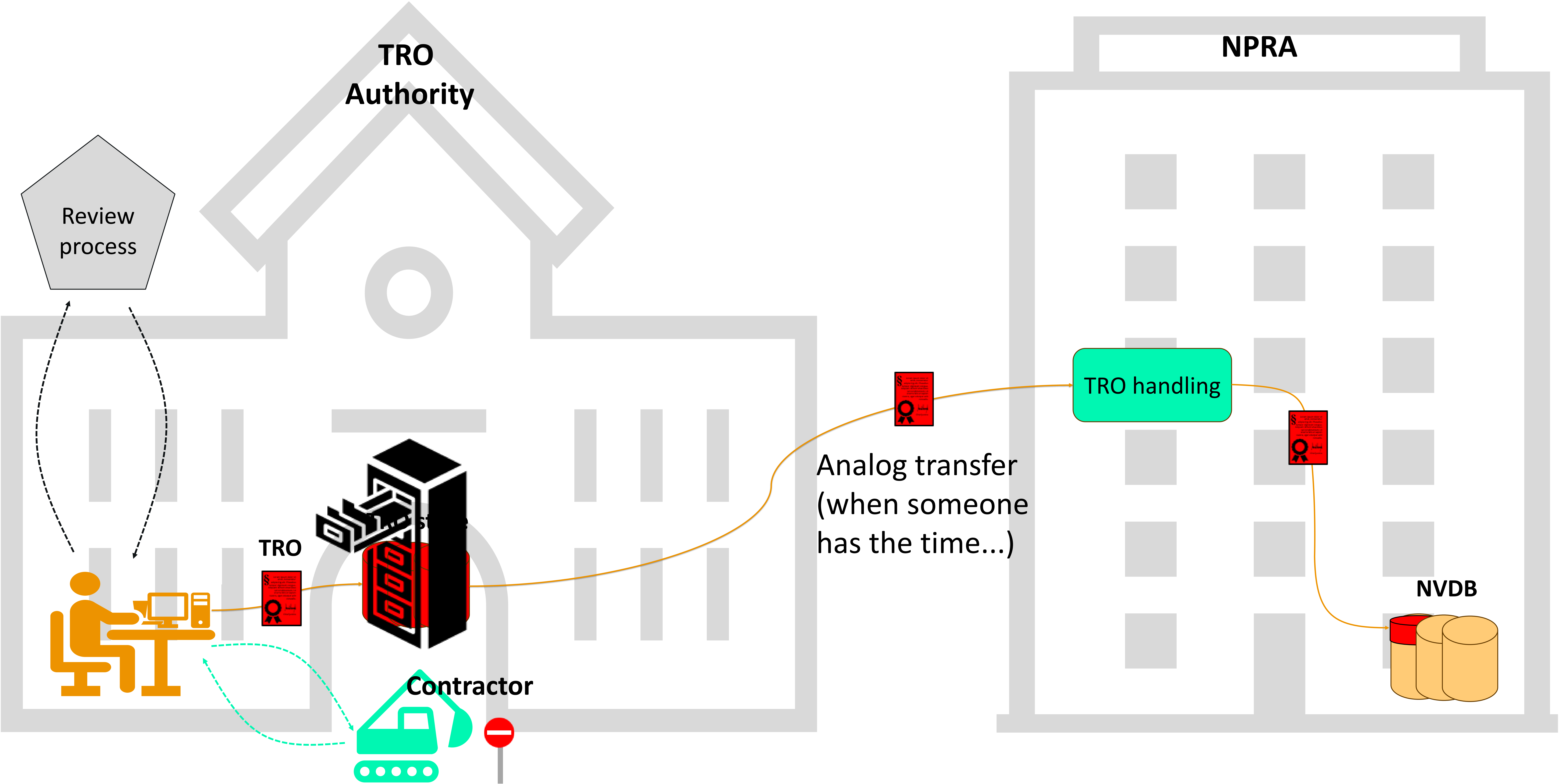
Deployment

- National reference standards for terminology, role/actor models, operations, governance etc
- **Translating and adapting the global and European requirements must be done at national level.**
- **Operation and governance must be politically decided and funded.**
- **Binding to national laws and regulations**

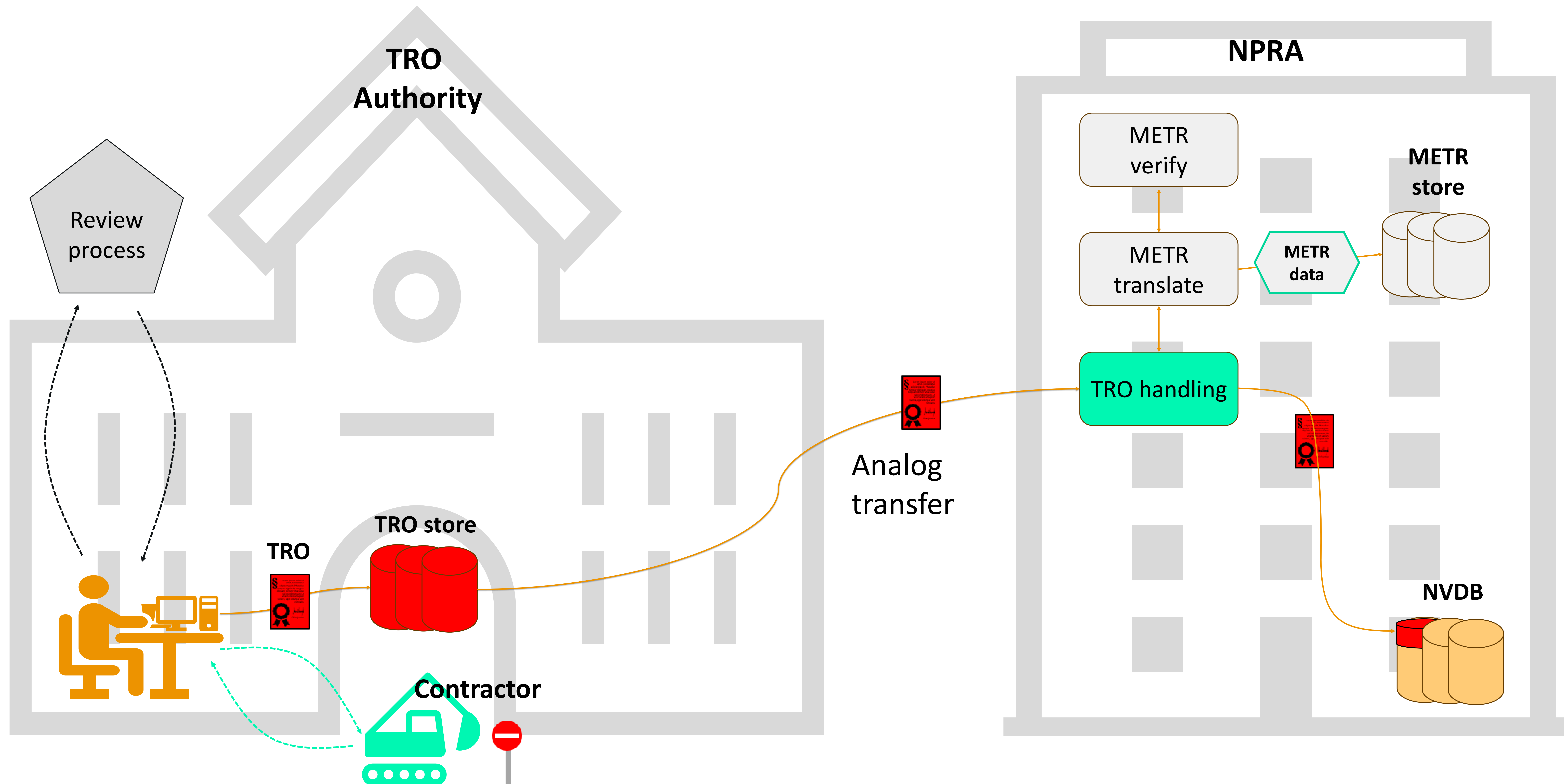
METR ISO standards overview

Reference	Name	Status
24315-1	METR Vocabulary	Published
24315-2	METR Concept of Operations (ConOps)	Under vote as Technical Report
24315-3	METR System of systems requirements (SoSR)	Under vote
24315-4	METR System-level requirements (old part 4-7)	WG19 draft review
24315(-x)	METR Data Requirements	Under development
24315(-x)	METR Maps and Location	Under development (early days)
24315(-x)	METR Cybersecurity	Under development
24315(-x)	Traffic regulation orders (TROs)	Internal draft
23708	ITS-Station requirements (ITS-SU)	WG18 draft review
Other METR Parts under consideration in WG19		
	Cross-border operation (vehicle)	Future
	Misbehavior reporting	Future

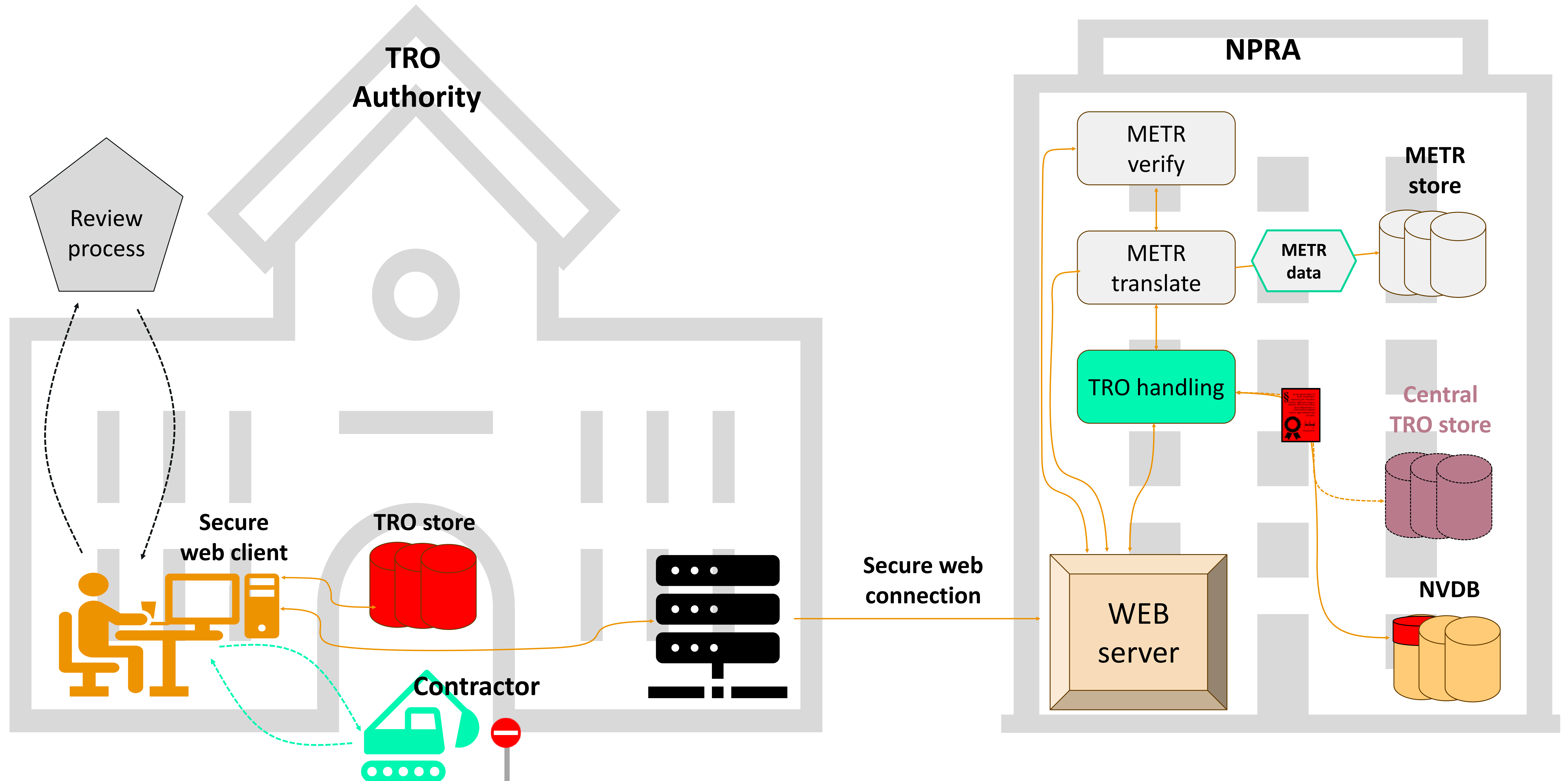
Model 0 – TRO handling as today



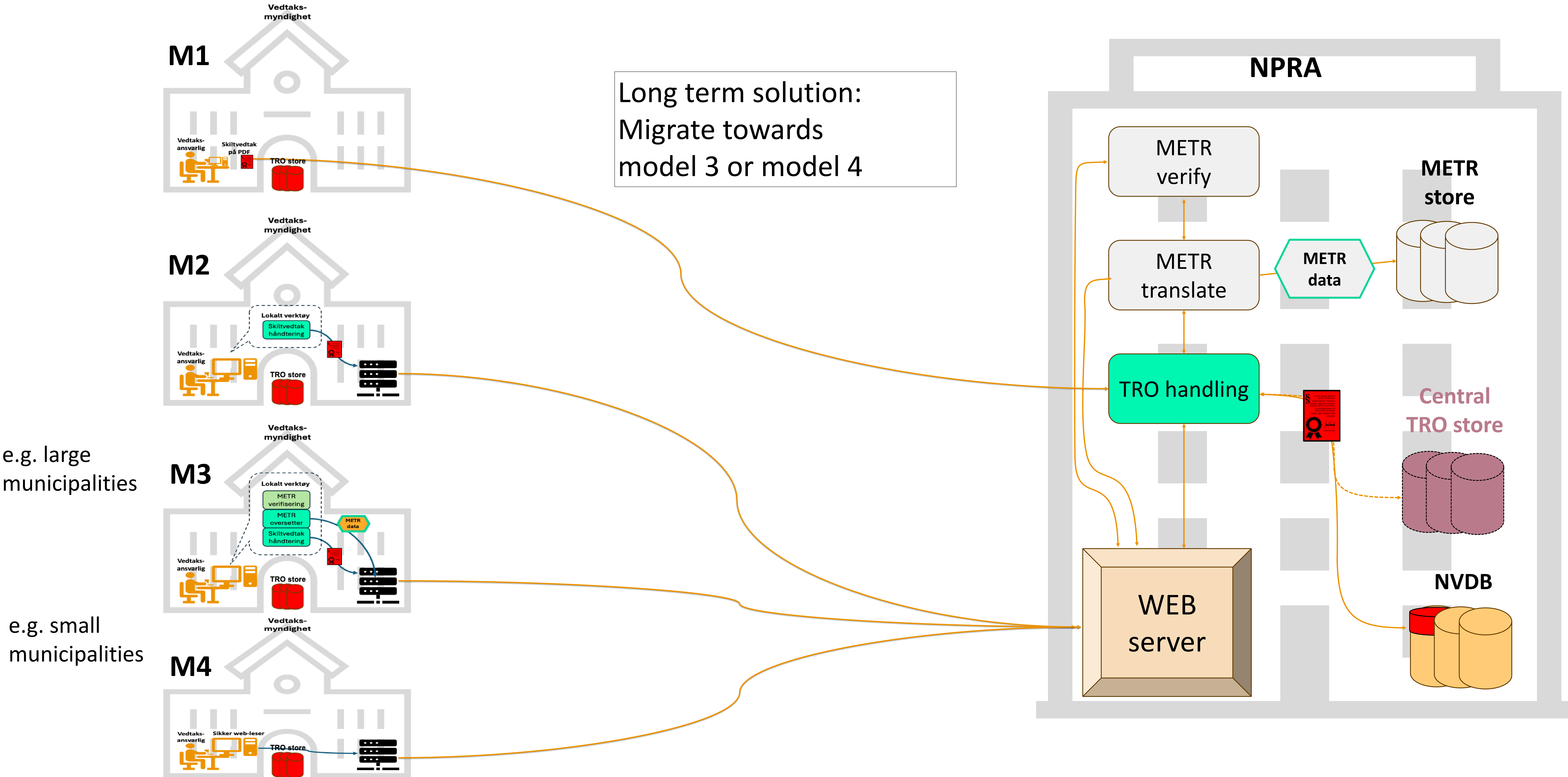
Model 1 – TRO handling as today, adding central METR functions



Model 4 – Web tool to generate TRO and METR data



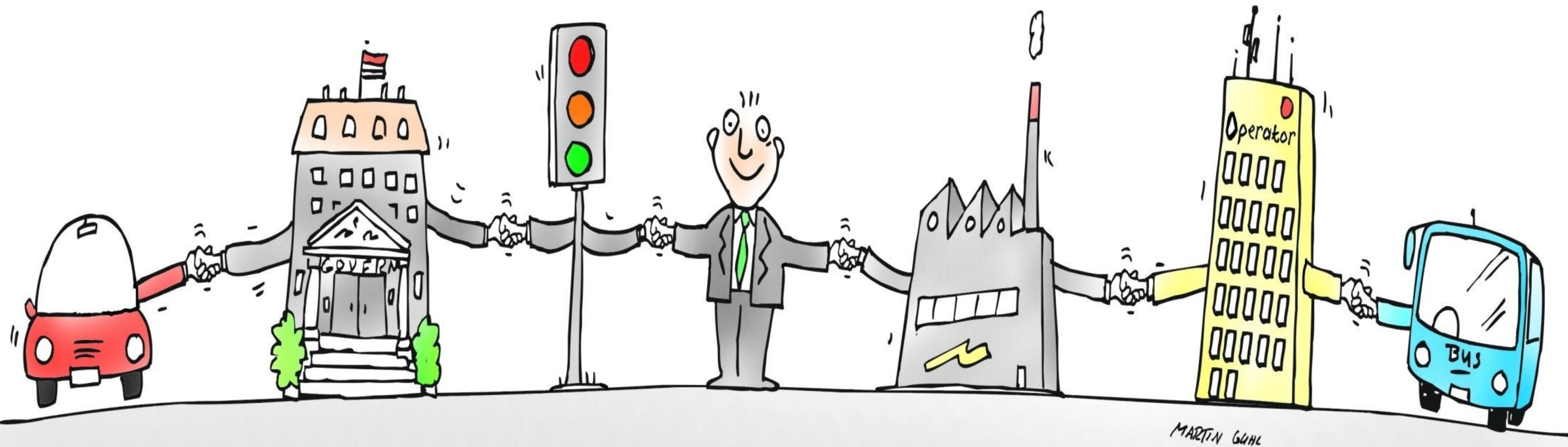
Several choices of local system with common central system



Conclusion

- Digitising the national Traffic Regulation Order system is hard
- Several countries are in the starting phase, with our UK colleagues in front
- We believe this task is very similar for all countries
- Good news: participating in METR will:
 - Combine competence and manpower – these are scarce resources!
 - Add structure to the task - CEN/ISO standards have a lot of good advice
 - Enable cross-border interoperability – will not happen by itself
- As a result: **the digitising process will be faster and less costly**

Thank you for your attention!



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