



Regulatory standard setting for emerging technologies – the case of autonomous vehicles in Sweden and Norway

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Background

- Experimental activities on autonomous vehicles in actual traffic situations are ongoing
- A number of countries have introduced, or are considering introducing rules for such activities
- However, the legal conditions for autonomous vehicles vary between countries
- “Pre-definition phase”





Objective

- This paper introduces a regulatory governance perspective on autonomous vehicles
- How are new regulatory standards being shaped for emerging technologies in the transport sector?
 - autonomous vehicles in Sweden and Norway.





Contribution to existing studies

- Studies have focus on how central aspects should be regulated (the driver, safety, data security, insurance among others)
“Prescriptive studies”
- This paper fosters new insight to the pre-conditions that is affecting the regulation as well as the regulatory process itself
- It introduces a theoretical perspective on regulatory standard setting to the transport literature in general





Contribution - the regulation debate

- Regulation - outdated, poorly framed, too prescriptive
- The regulators - too responsive to short term political demands
- Growing amount of regulatory agencies – often organized autonomous from political involvement – “de-politicalized state”





The regulatory governance perspective

Regulation is a deliberate process of decision-making

- Agenda setting and problem formulation → followed by a series of incremental decisions and subsequent adjustments → regulatory implementation
- The decisions often involve a network of actors





Type of regulation - regulatory invention

Tabel 1: Modes of Regulation

	High level of obligation imposed by regulator or implementing actor/authority	Low level of obligation imposed by regulator or implementing actor/authority
High level of discretion for implementing actor/authority	New instruments: economic, communicative, framework regulation	Open method of coordination (OMC)
Low level of discretion for implementing actor/authority	Regulatory standards; substantive, procedural	Self-regulation in the shadow of the state

Source: Knill, Lenshow in Jordana and Levi-Faur (2004, p. 220)





Regulatory design

Table 2. Regulatory modes and regulatory design

	Regulatory standards	New instruments	Self-regulation	Open method of coordination OMC
Adjustment flexibility	Low	Low	High	High
Capture problem	High	Low ²	High	Low ³
Context responsiveness	Low	High	Low	High
Predictability of outcomes	High	Low	High	Low

Source: Knill, Lenshow in Jordana and Levi-Faur (2004, p. 231). The author have made minor changes to the table.





Method

- Comparative study – Sweden and Norway
- Document analysis (public documents, news papers, internet documents, notes/protocols)
- Over all regulatory process + some cases in each country





Result and discussion



The standard setting process

- The preparation work for a new regulation was much more extensive in Sweden
- Responsibilities
 - Norwegian Public Roads Administration (NO)
 - Special investigator (SWE)
- A more political driven agenda-setting phase in Norway



Shaping the regulation - International work

- Global definitions
- UN conventions
- European Union

United Nations Treaty Collection

Overview Depository Registration & Publication Resources Training Treaty Events

Depository

Status of Treaties

Depository Notifications

Certified True Copies

Photos of Treaty Ceremonies

Model Instruments

Titles of Treaties

League of Nations Treaties

Status of treaties (1959-2009)

Automated Subscription Services

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CHAPTER XI

STATUS AS AT : 23-08-2019 05:01:11 EDT

CHAPTER XI

TRANSPORT AND COMMUNICATIONS

B. Road Traffic

19. Convention on Road Traffic

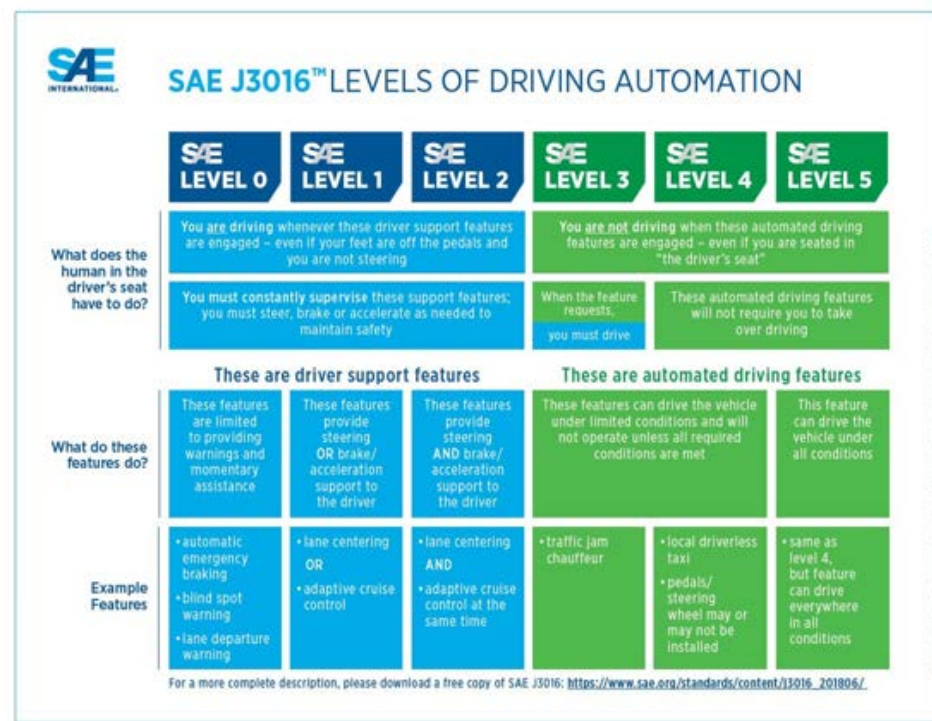
Vienna, 8 November 1968

Entry into force : 21 May 1977, in accordance with article 47(1).

Registration : 21 May 1977, No. 15705

Status : Signatories : 36. Parties : 79

Text : Certified true copy



Source: SEA (2019)



The regulation

- Norway have adopted a new legislation that allows experiments with self-driving vehicles on public roads
- Sweden have an ordinance, but no legislation in place





Regulating autonomous vehicles

- The regulatory body restricts the self-driving experiments, based on the technology in hand (adjustment flexibility)
- Sweden - research intense organizations and the automobile industry have a central role in pushing the regulatory adjustments forward
- Despite a legislation in place, there have been little interest of experiments with self-driving vehicles in Norway





Key arguments and discussion

- Globalized regulatory standard setting process – clear tendencies of policy diffusion
- The problem framing and agenda setting phase is driven by external factors (Norway)/actors (Sweden)





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Key arguments and discussion

- Strong public control (regulating agencies),
 - but adjustments within the regulatory framework are driven by non-political actors (real experiments)
- The experiments should be seen as part of the regulatory governance process





Thank you!

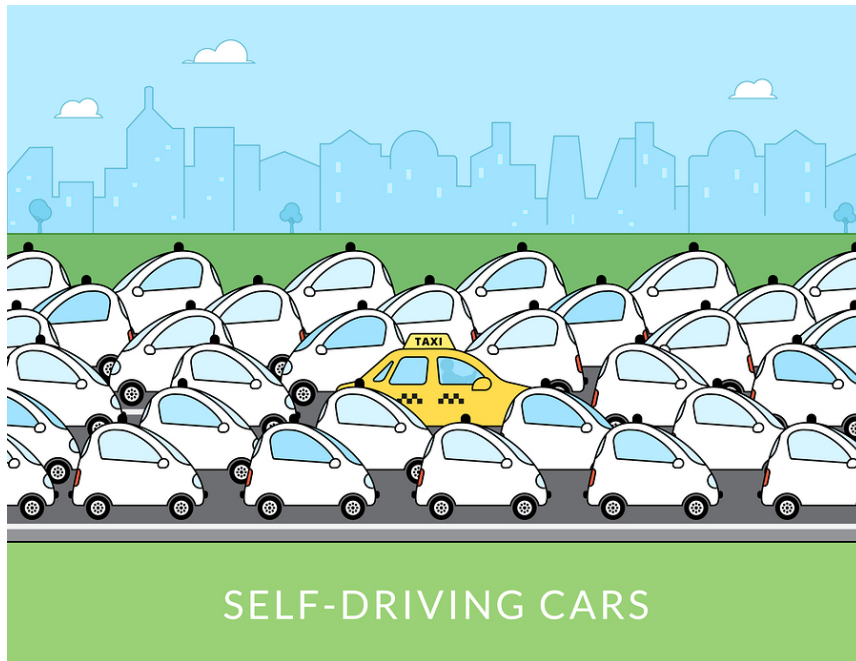
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Future?



Regulatory measurements may prevent such development

Gradual introduction – possibility to set limits and steer the development

Source:

<https://www.claimsjournal.com/news/national/2016/05/17/270839.htm>





Central paragraphs

“**Driver**” means any person who drives a vehicle, including cycles, or guides draught, pack or saddle animals or herds or flocks on the road, or who is in actual physical control of the same...” (UN, 1950, p. Art. 4, Geneve Convention)“Every **vehicle** or combination of vehicles proceeding as a unit **shall have a driver**” (UN, 1950, p. Art. 8.1). “**Drivers** shall at all times **be able to control their vehicles** or guide their animals...” (UN, 1950, p. Art 8.5).

“every moving vehicle or combination of **vehicles shall have a driver**” (UN, 1969, p. Art. 8.1) and “every driver shall possess the **necessary physical and mental ability** and be in a fit physical and mental condition **to drive**” (UN, 1969, p. Art. 8.3, Vienna Convention).

“**Vehicle systems** which influence the way vehicles are driven and are not in conformity with the aforementioned conditions of construction, fitting and utilization, shall be **deemed to be in conformity ... when such systems can be overridden or switched off by the driver**” (UN, 1969, p. Art. 8.5b).

