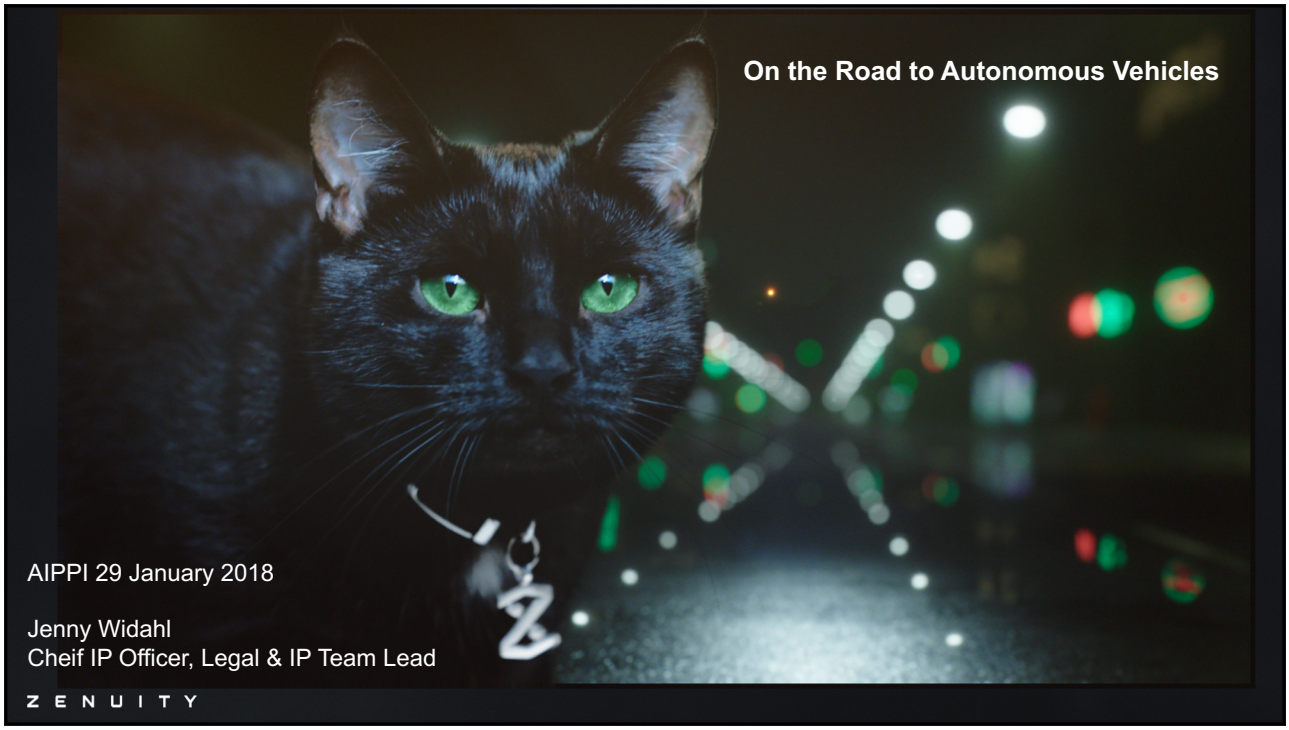
On the Road to Autonomous Vehicles
AIPPI 29 January 2018
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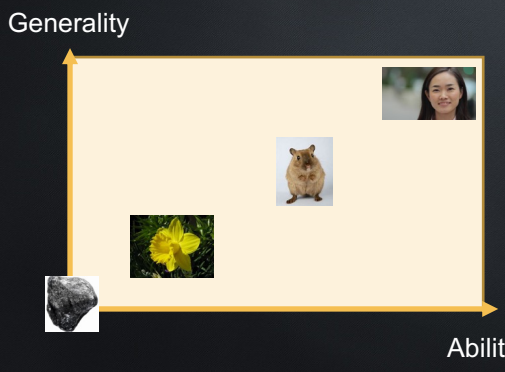
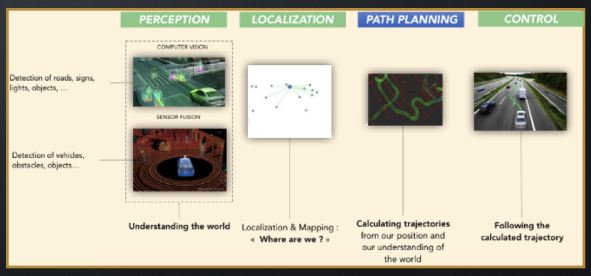
Cheif IP Officer, Legal & IP Team Lead
ZENUITY

What do Zenuity do?
ZENUITY
BRAIN
INTERPRET THE ENVIRONMENT
LOCATE YOURSELF
MAKE A DECISION ON HOW & WHERE TO DRIVE
SENSING
(EYES, EARS etc)
THE ENVIRONMENT
MUSCLES
TO ACT ON
THE ENVIRONMENT
ZENUITY

”We use AI for Autonomous Vehicles”





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SAE J3016™ LEVELS OF DRIVING AUTOMATION

	SAE LEVEL 0	SAE LEVEL 1	SAE LEVEL 2	SAE LEVEL 3	SAE LEVEL 4	SAE LEVEL 5
What does the human in the driver's seat have to do?	**You are driving** whenever these driver support features are engaged – even if your feet are off the pedals and you are not steering			**You are not driving** when these automated driving features are engaged – even if you are seated in "the driver's seat"		
	You must constantly supervise these support features; you must steer, brake or accelerate as needed to maintain safety			When the feature requests, you must drive	These automated driving features will not require you to take over driving	
	These are driver support features			These are automated driving features		
What do these features do?	These features are limited to providing warnings and momentary assistance	These features provide steering **OR** brake/ acceleration support to the driver	These features provide steering **AND** brake/ acceleration support to the driver	These features can drive the vehicle under limited conditions and will not operate unless all required conditions are met		This feature can drive the vehicle under all conditions
Example Features	• automatic emergency braking • blind spot warning • lane departure warning	• lane centering **OR** • adaptive cruise control	• lane centering **AND** • adaptive cruise control at the same time	• traffic jam chauffeur	• local driverless taxi • pedals/ steering wheel may or may not be installed	• same as level 4, but feature can drive everywhere in all conditions

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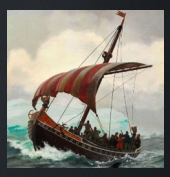
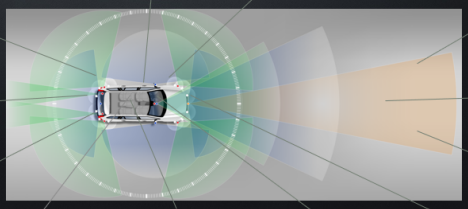
Self-driving vehicles

Easy to demonstrate – challenging to make it real.





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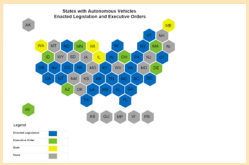
Legally, we are developing towards a moving target

We are developing products that aren't really legal to use anywhere. Yet…

EU	US	CHINA
European vehicle requirements decided by UN ECE (United Nations Economic Commission for Europe). Applies to all countries in Europe. The present requirements in Europe do not allow for any level of autonomy. Two major obstacles: -The Vienna Convention, ("Every driver shall at all -times be able to control his vehicle") -ECE Regulation R79 (Hands on steering wheel) The highest level allowed according to ECE (R79) is level 2. ACSF group (Automated Commanded Steering Function): working on changes to R79. -Will not be able to reach beyond level 2.5 before end of term. -Present proposal dealing with driver initiated lane changes. **-> SLOW PROCESS**	 USA- Hands off level 2 allowed in some states. With no overarching legislation dictating how the driverless rides should be handled, states have picked up the legal slack, creating a **patchwork of regional rules** that vary widely in intention and application.	No national legislation allowing AD. Some cities are issueing test permits for AD or building AD test tracks. On the plus-side, personal data collection is more normalized. **Serial Number / Field / Name of Laws and Regulations / Main Responsible Department** 1 Transportation — **Road Traffic Safety Law** — Ministry of Public Security 2 — Regulations on the Implementation of Road Traffic Safety Law — 3 — Highways Act — Ministry of Communications 4 Quality Inspections — Product Quality Law — General Administration of Quality Supervision 5 Standardization — **Standardization Law** — National Standard Committee 6 — Regulations on the Implementation of the Standardization Law — 7 Surveying and Mapping — **Surveying and Mapping Law** — Ministry of Land and Resources ← 8 — Interim Measures for the Administration of Surveying and Mapping Conducted by Foreign Organizations or Individuals in China — 9 Information — Cyber-Safety Act — Ministry of Industry and Information Technology

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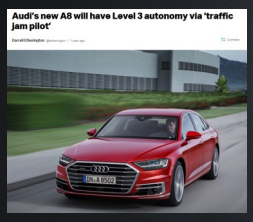
Example–Audi A8 TJP



2017

Germany legalises L3 automated driving technology that allows "eyes-off" the road

Deployment of L3 in Germany would be possible under the new framework, but also provided that systems are compliant with UNECE regulations (e.g. Reg.79 or an exemption is granted) and EDRs (for L3) are fitted for accident reconstruction and claims.

2018

"Audi is concerned about the lack of clear federal regulations for autonomous-driving technology. Without blanket federal standards, Audi believes the existing patchwork of state regulations will make it impossible to sell the same product nationwide."

2019

"Det kan vara bra att veta att Audi AI traffic jam pilot inte finns tillgängligt än. När systemet införs beror på när lagar och regler anpassats till den nya tekniken och bilen testats i respektive land. "

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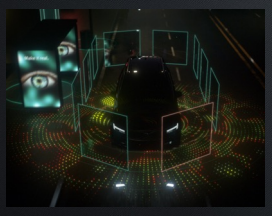
Self-driving vehicles

Practical implications on the way



Data

Trade Secrets

Ethics

Privacy Laws

GDPR

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