

# Legal and regulatory Framework regarding operations of unmanned aerial and vehicular systems :

## Status of AV in Korea

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# Chapter

## Current Status of AV Commercialization Policy in Korea



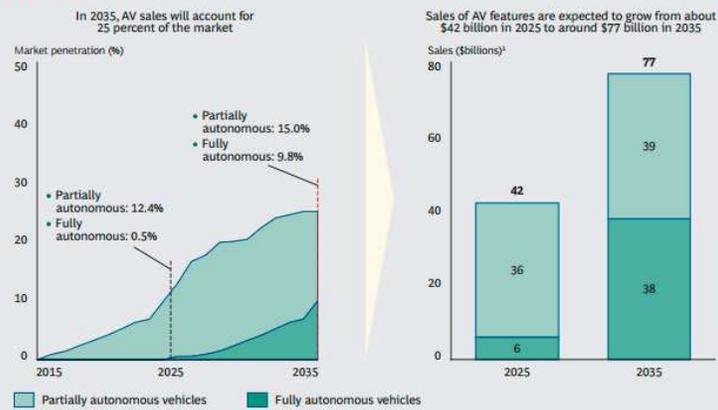
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### Global Trend of AV

#### EXHIBIT 10 | The Global Market for Autonomous Vehicles Should Grow from \$42 Billion to \$77 Billion



Sources: BCG analysis; just-auto.com July 2014 market analysis; LMC Automotive; IHS Global Standards.

<sup>1</sup>Sales of all new vehicles, including those with no autonomous features, are expected to reach 111 million in 2025 and 122 million in 2035.

<http://kk.org/extrapolations/transportation-general-transit-and-cars/>



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## Korea, Not a Leader in AV Market

	Technical Level	Institutional Level
Global Leaders	<ul style="list-style-type: none"> <li>(Benz, Nissan, Google) Level 3 AV Technology</li> </ul> 	<ul style="list-style-type: none"> <li>(USA) '14, Test Driving Approval</li> </ul> 
Korea	<ul style="list-style-type: none"> <li>(Hyundai) Level 2 AV Technology</li> </ul> 	<ul style="list-style-type: none"> <li>(Kor) '15, Test Driving Introduction</li> </ul> 

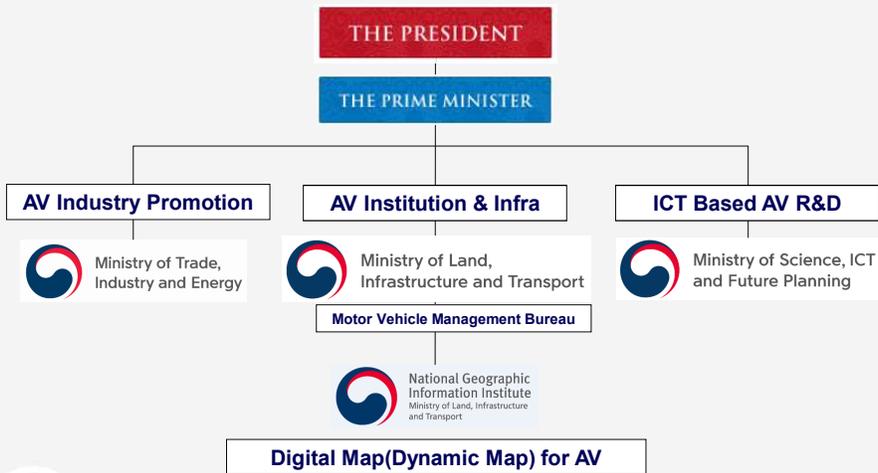


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## Korean Government Organization for AV Supporting Policy



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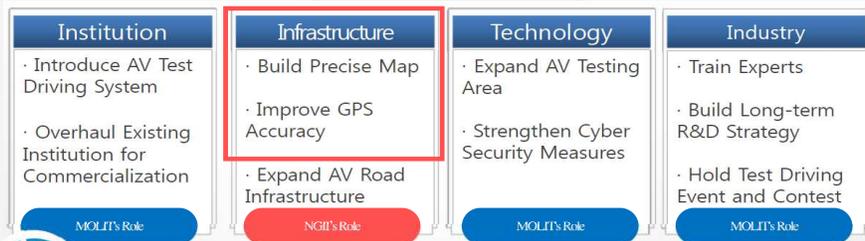
## AV Commercialization Support Policy in Korea

**Vision** AV for Safety Improvement & A New Growth Source

### Goals

(Step 1) Partial Commercialization of Level 3 AV Technology by 2020

(Step 2) Leading the Trend toward Level 4 AV Technology by 2026

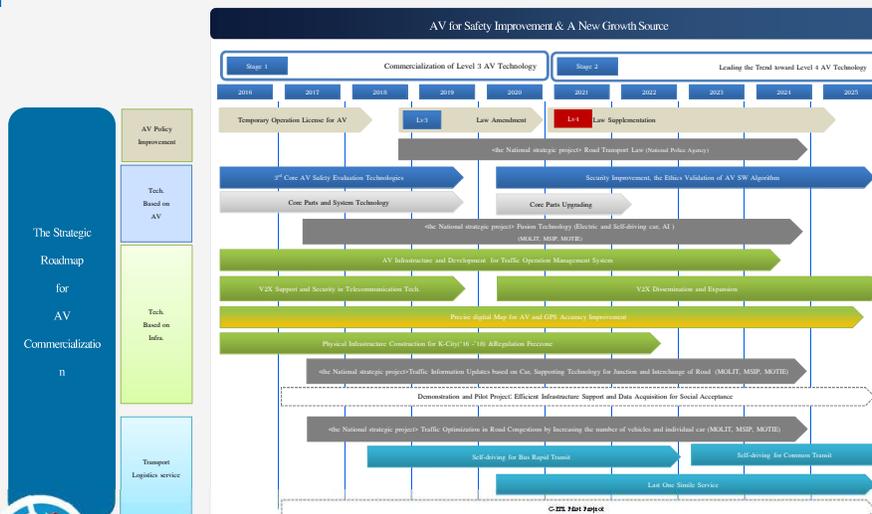


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## AV Commercialization Support Roadmap



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# Chapter

Major Issues for AV Commercialization in Laws & Ethics



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Many Accidents related AV reported

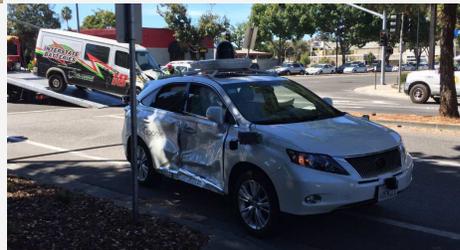


## Tesla Fatal Accident (Autopilot Problem)

<http://gas2.org/2016/07/02/new-details-fatal-tesla-crash-emerge/>

## Google Car Crashed (by man-driving car)

<https://twitter.com/grommet>  
Ron van Zulyen



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## 4 Major AV Promoting Motivation :

### - Safety / Welfare / Economy / Environment

- (1) Safety Regulation... HOW? (ex : Nevada or California)
  - Switching Equipment to able to change manually  
(Disengagement of Autonomous mode)
  - Insurance Duty (more than \$5 million)
  - Duty for recording Self-Driving test results and Submit it to Gov.
  - Driver's License for testing AV or Commercialized AV
- (2) Safety Secure... HOW?
  - Safety problem during the transition period (Man Driven ->ADAS -> AV)
  - Insufficiency of Infrastructure (V2I, V2V, V2X, Dynamic map...)
- (3) Liability... WHO? WHICH? Driver .vs. AV Company / SW .vs. Sensor
  - Can the AV SW algorithm be a Driver in legal terms?
  - In accident case, Whose liability is more heavily? AV Owner or AV Company?
- (4) Privacy & Security
  - Needs of Compromise with Privacy and Security



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## 4 Major AV Promoting Motivation :

### - Safety / Welfare / Economy / Environment

- (1) Public Transportation .vs. AV (Private Car)
  - Welfare for the aged and disabled people
  - Which way is more effective and efficient to Social Welfare?
- Safety / Welfare / Economy / Environment
- (1) Labor Market Change
  - Decrease of traditional Jobs (Taxi, Bus Driver ...)
  - New Sharing Economy Growth (Uber, Car Sharing ...)
- (2) Infrastructure
  - Power Station/V2X Infra/ Telecommunication Tech. (5G)/Dynamic amp
  - New City Plan(Smart City Plan) for AV
- Safety / Welfare / Economy / Environment
- (1) Energy Zero Emission
  - Reduction of fuel consumption & CO2 emission by optimizing traffic flow



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## Effective Counterplan of the Ethical Issues

- (1) **Social Corresponding Strategy 1 : Various Ethical Criterion**  
 - **Communication and Persuasion : Formation of Social Consensus**
- (2) **Social Corresponding Strategy 2 : Joint Response System**  
 - **Establishment of Common Fund for supporting accident victims**
- (3) **Individual Corresponding Strategy : Robotics Ethic Committee**  
 - **Managing and Reviewing the Occasional Robotics Ethic Problem (Manufacturing Company, Operating Company, Authorities ...)**
- (4) **Legal Corresponding Strategy : Revision various Laws and Regulations**  
 - **Clarification of Liability, Insurance Duty, Liability on Criminal/Civil Law ..**  
 - **Revision of Administrative Law and Regulations**



## Revision of related Laws in Korea

Date of legislation	Title	Description
General Legislation	Motor Vehicle Management Act/Enforcement Decree of the Automobile Management Act/Enforcement Rule of the Automobile Management Act/Delegate Administrative Rule	
2015.05.26	Pre-announcement of legislation of revision of rule with regard to the performance and standard of motor vehicle and motor vehicle part	In order to develop AV and support supply, the government approved the installment of autonomous steering system during the temporary period.
2015.08.05	Pre-announcement of legislation of revision of the enforcement decree and enforcement rule of the automobile management act	To support the development of motor vehicle industries, it inclines to improve & compensate loopholes that indicated from the operation system by compensating the temporary operation system of green & advanced future technology vehicle such as AV and micro car.
2015.08.07	Administrative notice of regulation bill concerning the safety operation requirements of AV and test operation	A bill for Revision of the Enforcement Rule of the Automobile Management Act; (Ministry of Land, Infrastructure and Transport Official Notice 2015-965) authorizes a temporary operation license for AV where it inclines to determine the detail requirements and evaluation methods for safety operation of AV.

[http://autonomousvehiclelaws.com/w/index.php/Main\\_Page#Trends](http://autonomousvehiclelaws.com/w/index.php/Main_Page#Trends)



Revision of related Laws in Korea

Date of legislation	Title	Description
2015.10.22	Pre-announcement of legislation of revision of rule with regard to the performance and standard of motor vehicle and motor vehicle part	Enforcement Decree of the Automobile Management Act Temporary Operation Permitted Period of AV Regulation(Bill 7)When Minister of Land, Infrastructure and Transport allows temporary operation of AV for testing and researching purposes, it inclines to prescribe regulations that such period shall not exceed 5 years.
2016.02.04	Enacted the regulation of the safety operation requirements of AV and test operation	Revision of Motor Vehicle Management Act(Act 13486, 2015. 8. 11. Proclaimed, 2016. 2. 12. Enforced) and Enforcement Rule of Automobile Management Act(Decree of Ministry of Land, Infrastructure and Transport 284, 2016. 2. 11 Proclaimed, 2016. 2. 12 Enforced) shall establish detail requirements and confirmation methods for safety operation which are delegated by the Rules.
2016.03.29	Pre-announcement of legislation of revision of rule with regard to the performance and standard of motor vehicle and motor vehicle part	Application of special safety standard for AV(Bill attachment 6.2). In order to develop AV and support supply, it applied the special safety standard on the steering technology among the standard of automotive steering system in relation to temporary operation of AV for testing and researching purposes.

[http://autonomousvehiclelaws.com/w/index.php/Main\\_Page#Trends](http://autonomousvehiclelaws.com/w/index.php/Main_Page#Trends)



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Q&A



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Thank you



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