A framework for the impact assessment: international cooperation

VRA Webinar on Impact Assessment

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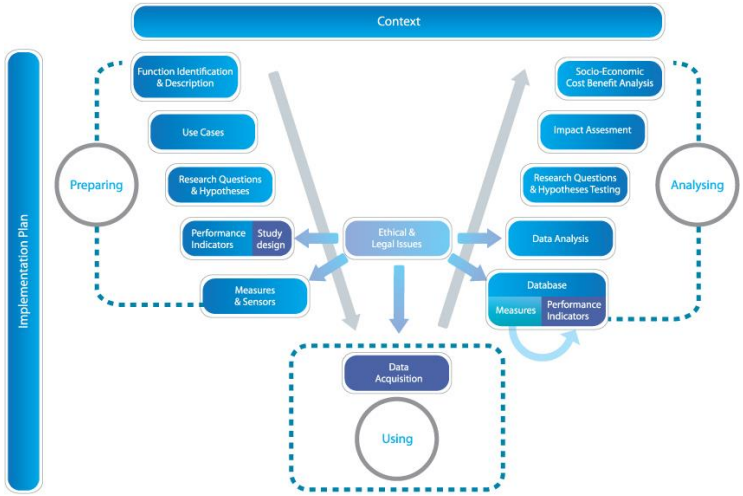
Why to assess the impacts of automated driving?

- We should not implement new concepts just because they are technically feasible → Consequences should be known
- Automated driving will potentially have large impact on our daily lives
- Important to understand these impacts
  - Direct and indirect
  - Intended and unintended
  - In short term and in long term
  - For all levels of automation
  - In mixed traffic
- Are the impacts be in line with our societal goals? Is AD accepted?



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Trilateral Impact Assessment Subgroup for Automation in Road Transportation

- Formed in March 2015
- Objective:
  Harmonization of the high-level evaluation framework for assessing the impact of automation in road transportation
- Leadership
  - Satu Innamaa, VTT, Finland
  - Scott Smith, US DOT, US
  - Nobuyuki Uchida, JARI, Japan
- Currently 37 participants
  - Covering US, Japan and Europe (Finland, Sweden, UK, The Netherlands, France, Greece, Belgium, Italy, Germany)

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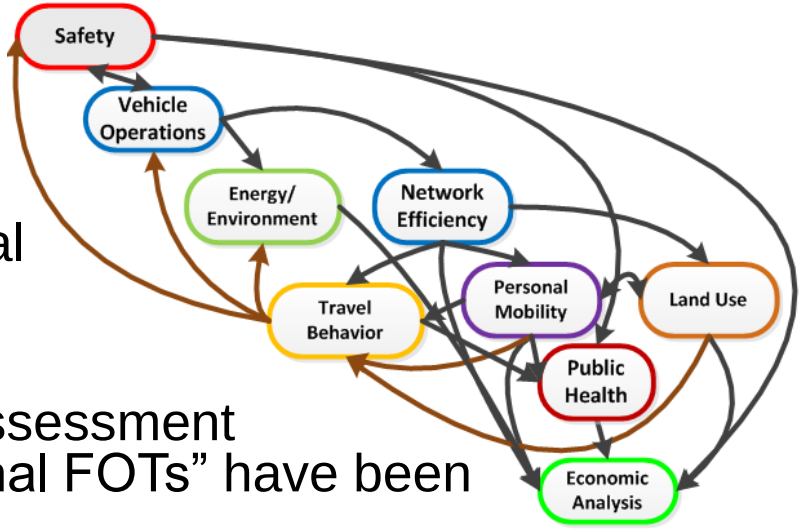
Motivation

- Potential impacts of automation are far reaching and complex
  - High expectations on what connected and automated vehicles shall be able to contribute to several societal goals
- Field tests are expensive
  - The items included in the impact assessment may go well beyond what ”traditional FOTs” have been targeting
- International harmonization
  - Design tests and studies to maximize the insight obtained
  - Enable meta-analysis
  - Can arrange complementary evaluation across the world
  - Make better use of each other’s findings
  - Exchange best practices



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Trilateral impact assessment framework

First priority

- Define which impact areas we recommend to cover
- Define what we mean by each impact area (common vocabulary)
- Define KPIs with which we recommend the impact to be expressed
- Provide recommendation for baseline
- Provide examples of anticipated impact mechanisms

Second priority

- Recommend minimum set of data to be shared for impact assessment studies
- Define time frame that the impact takes to form
  - FOT vs. alternative methods
- To facilitate meta-analysis and comparability of results
  - Define commonly agreed target years
  - Define commonly agreed scenario on automation and penetration rate development

- (Utilize AV Benefits and FESTA frameworks)

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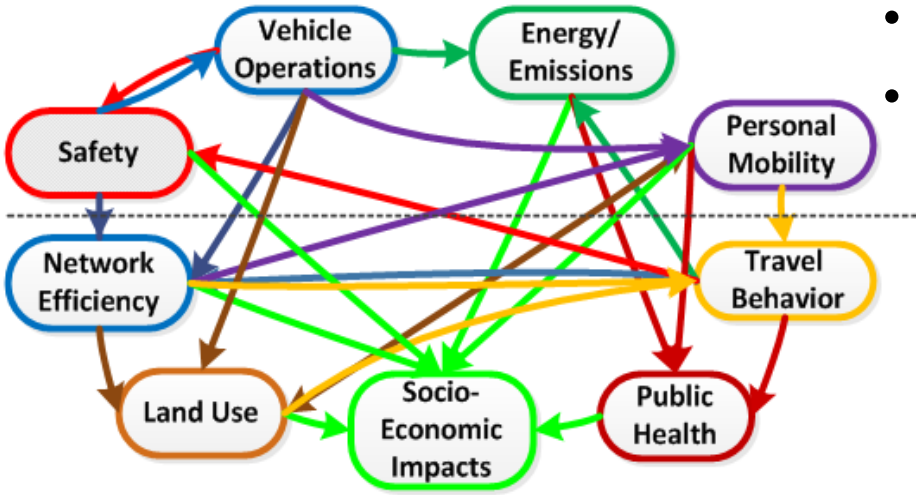
Direct and Indirect Impacts

- Cost
- Infrastructure
- Safety
- Vehicle Operations
- Energy / Emissions
- Personal Mobility:
  Multi-tasking & Accessibility



- Asset Management
  - Lanes and lane widths
  - V2I infrastructure
  - Size and weight
- Network Efficiency
- Travel Behavior
- Public Health
- Land Use
- Socio-Economy

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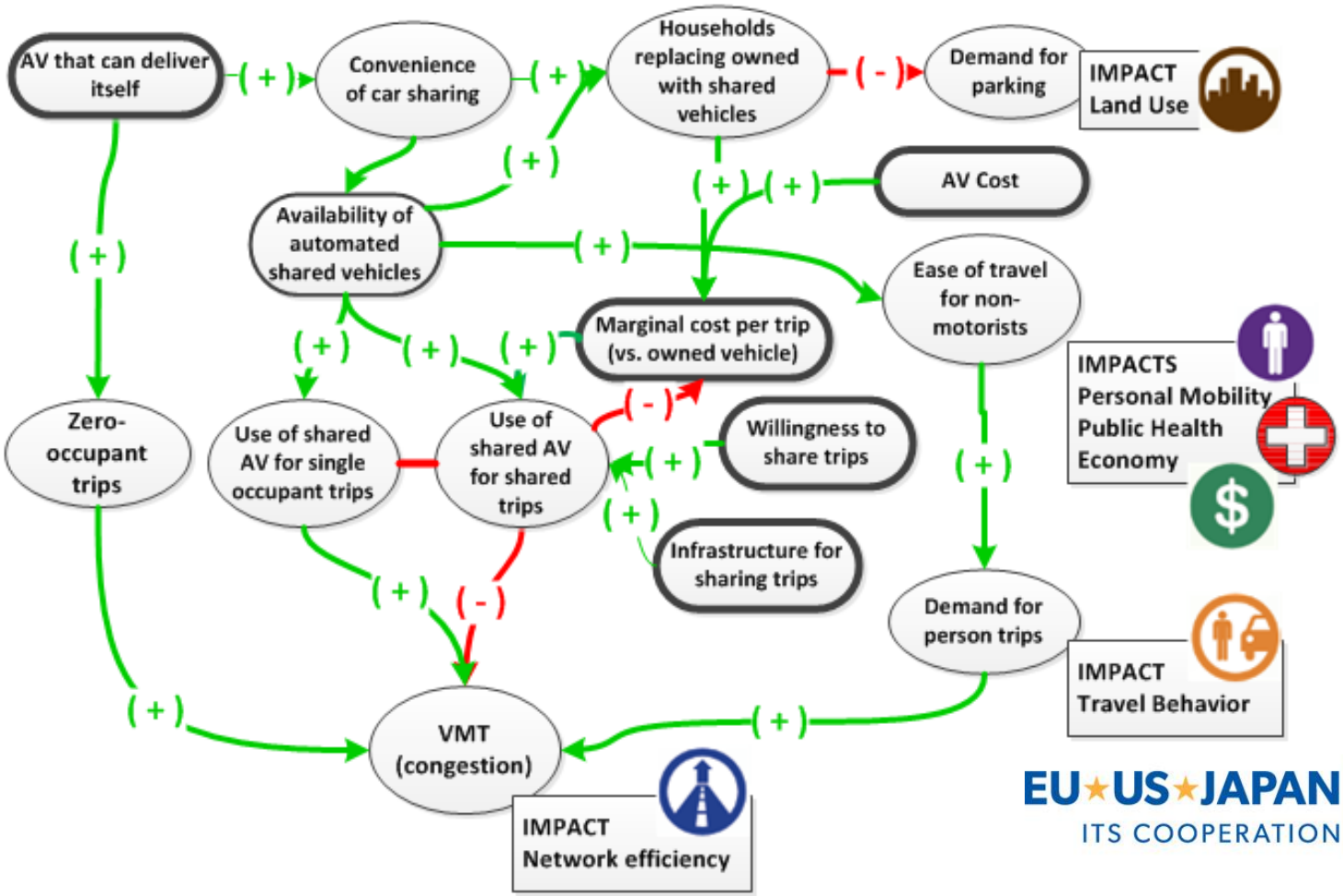
Going from Direct to Indirect Impacts, an Example

AV that can deliver itself to a user



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Impact Assessment Framework Document

- Intended for those making impact assessment, FOT designers and policy makers
- Contents
  - Introduction
  - Recommendations for impact areas
  - Impact mechanisms
  - Recommendations for experimental procedure
  - Recommendations for data sharing
  - Conclusions

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Next steps

- Finalize the framework draft by the Trilateral ART WG meeting in TRB in January
- Collect feedback on definitions made and recommendations given

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