ACTUALIZATION OF THE INTERNET OF THINGS

APS physics

Actualization of the Internet of Things

April 17-19, 2017 Monterey, CA

High Reliability Imperative for Autonomous Networked Vehicles

Dr. Allen Adler, The Boeing Company

Dr. Azad M. Madni, University of Southern California

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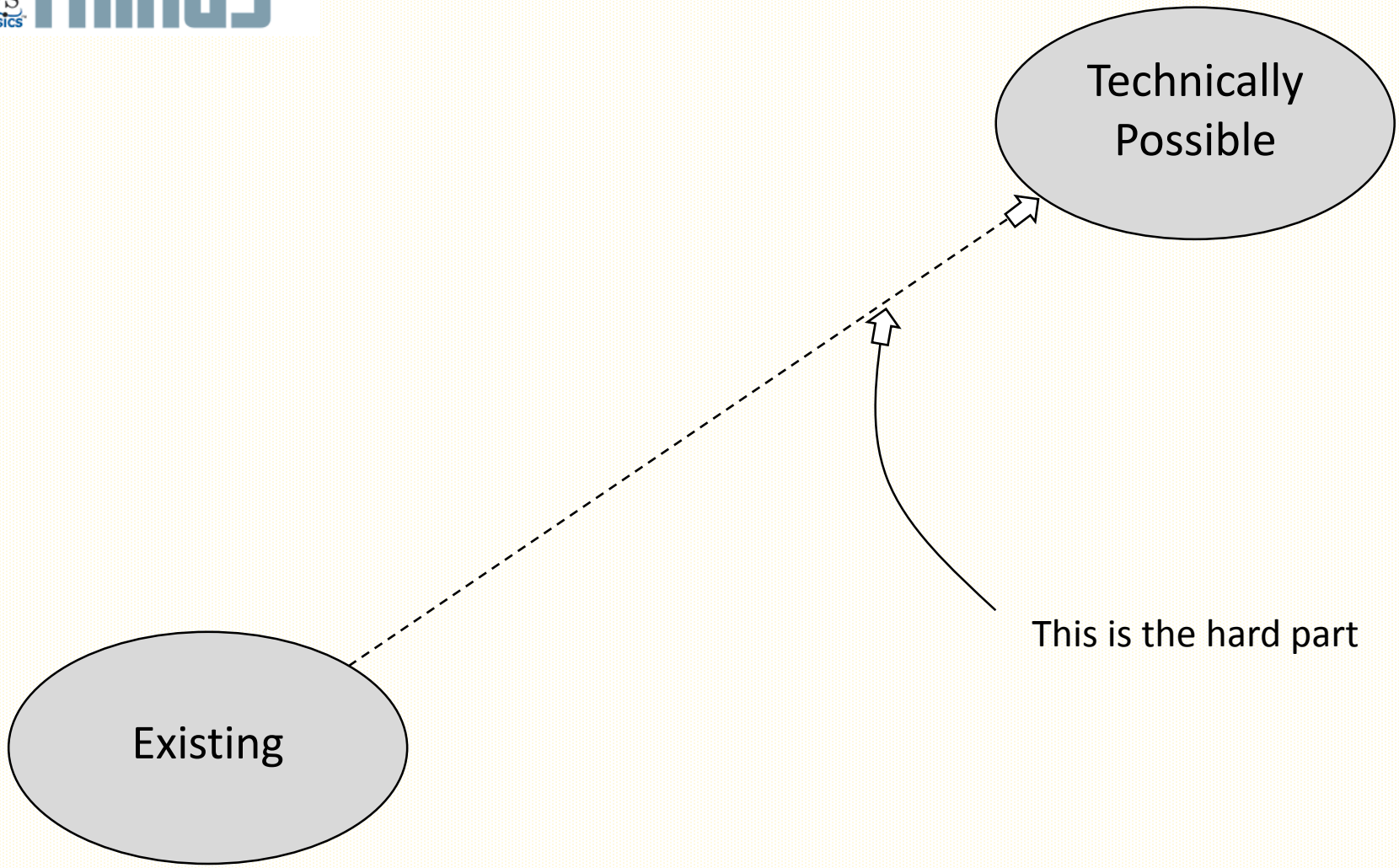
Evolution to a Driverless World



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Some Enabling Technologies

- Sensors
- Computing
- AI
- Systems of Systems Engineering

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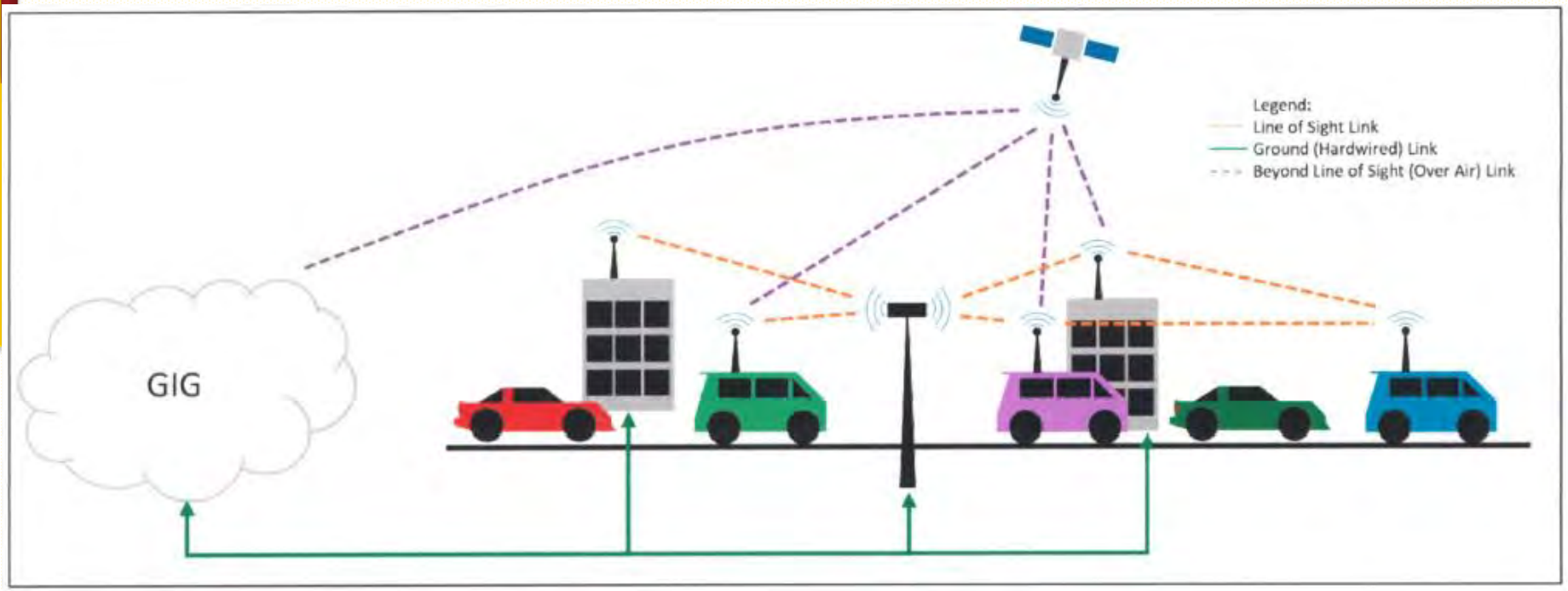
Autonomous Vehicle SoS Network



Source: Madni, A.M. Transdisciplinary Systems Engineering: Exploiting Convergence in a Hyper-Connected World, Springer, 2017, used with author's permission)

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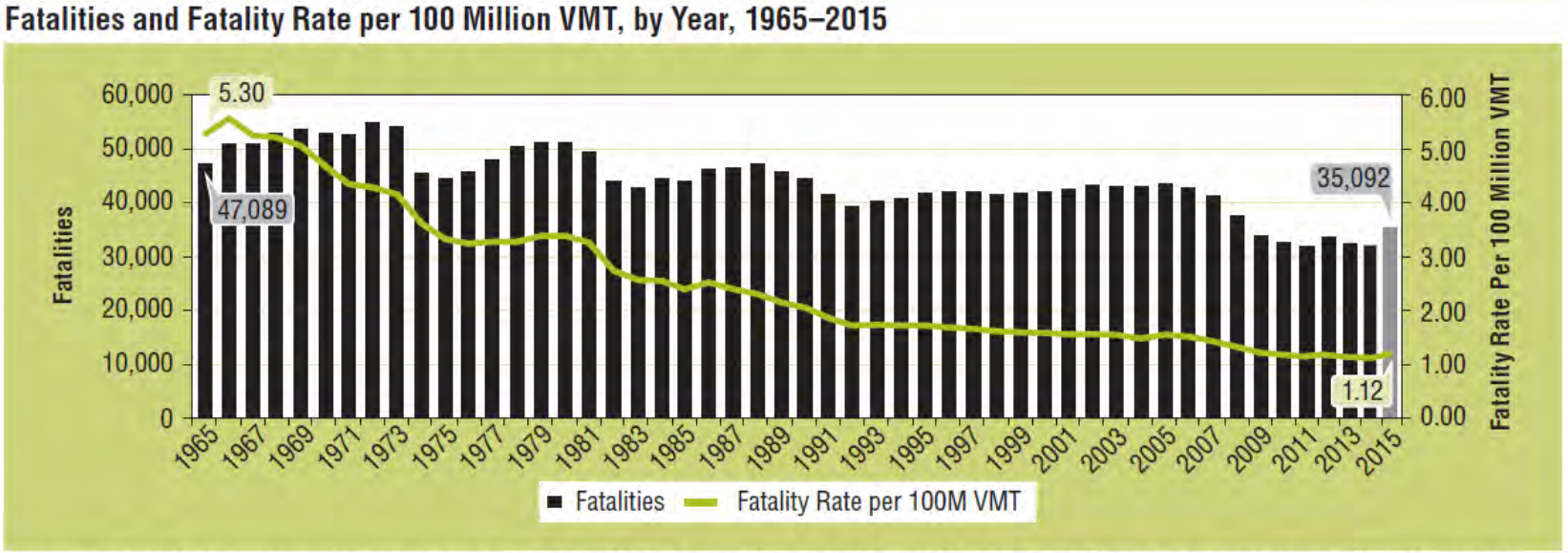
Auto Fatalities Data



Source: National Center for Statistics and Analysis. (2016, August). 2015 Motor Vehicle Crashes Overview. Traffic Safety Facts research note. Report No. DOT HS 812318. Washington, DC: National Highway Traffic Safety Administration

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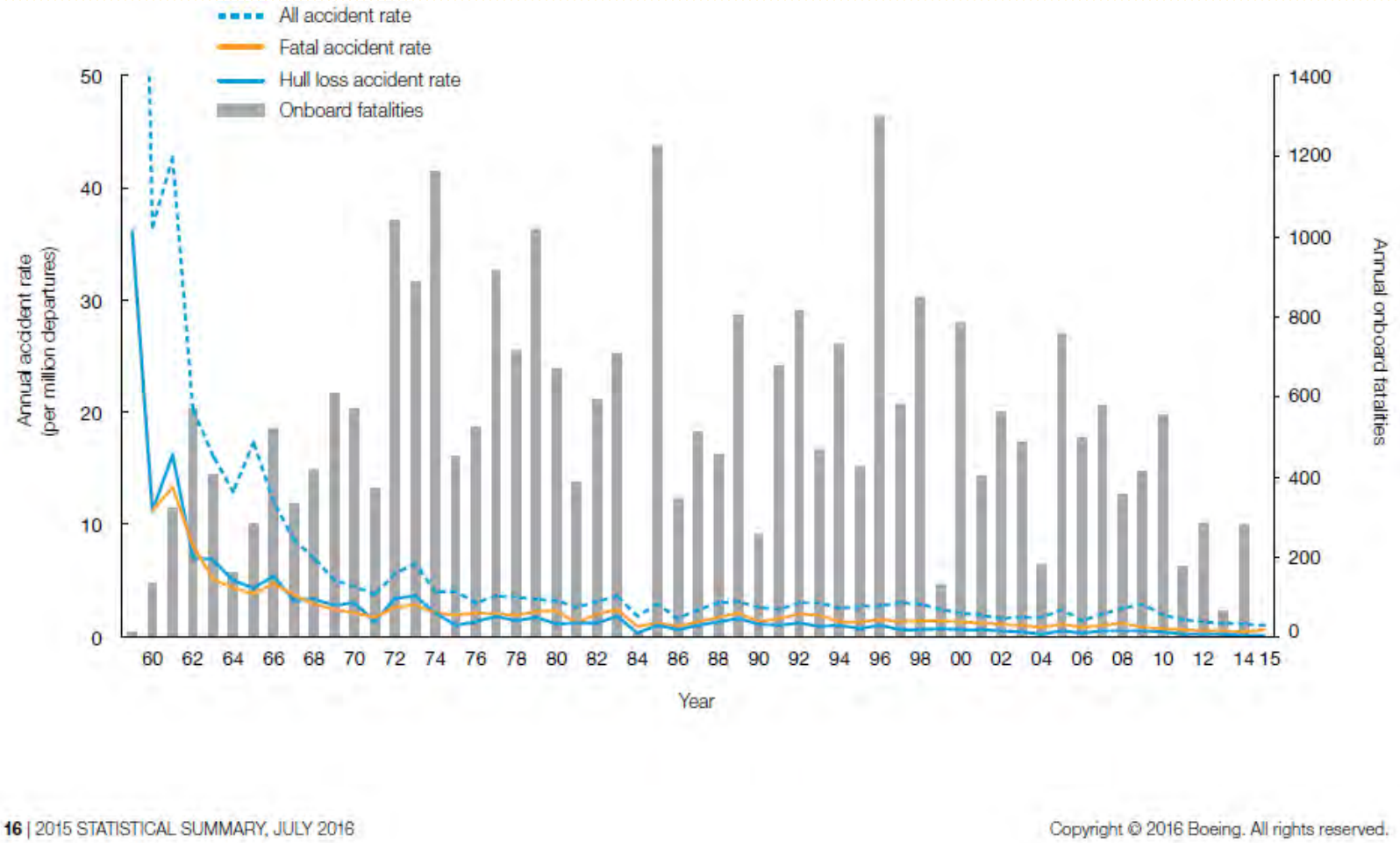
Accident Rates and Onboard Fatalities by Year Worldwide Commercial Jet Fleet | 1959 to 2015



Source: Aviation Safety, Boeing Commercial Airplanes. Statistical Summary of Commercial Jet Airplane Accidents. http://www.boeing.com/news/techissues/pdf/statsum.pdf, July 2016

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Requirement for Safety

- Better than Existing?
- What is Technically Achievable?

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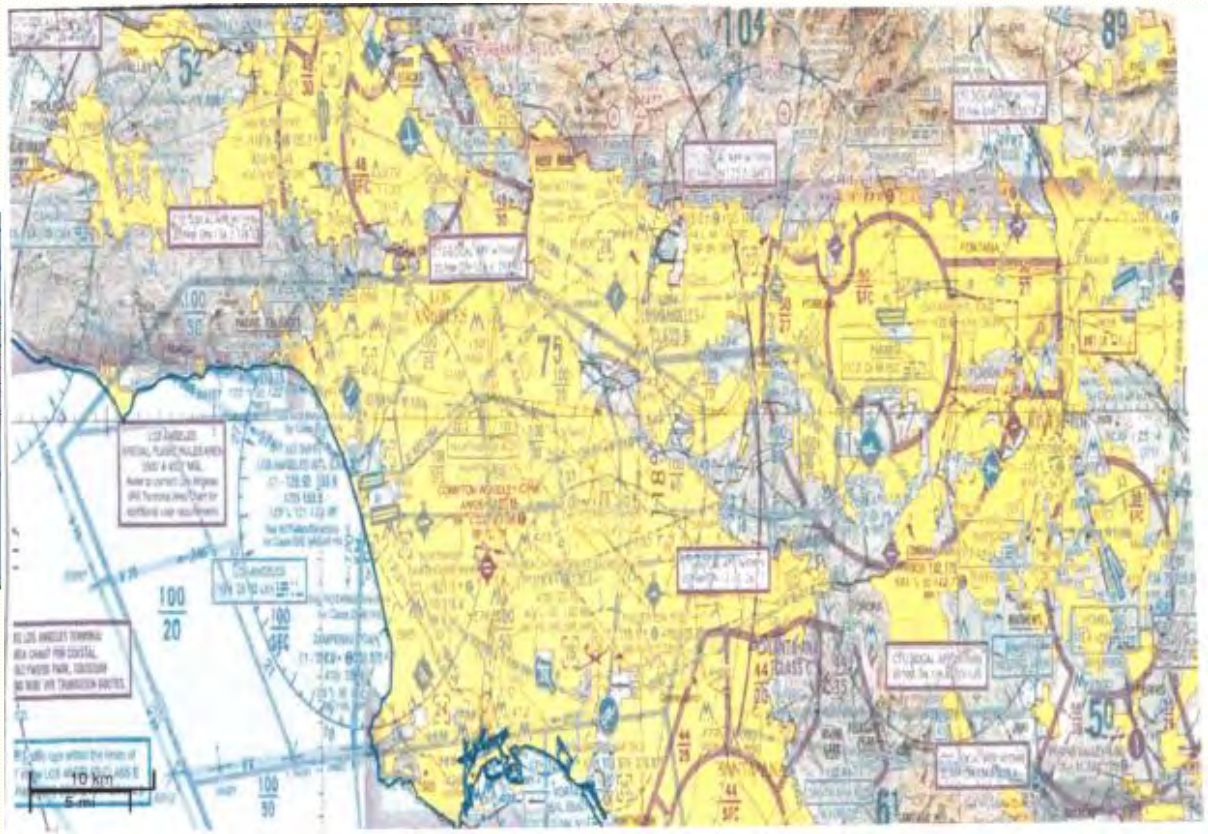
Engineering the Environment

Source: fhwa.dot.gov



Source: aeronav.faa.gov

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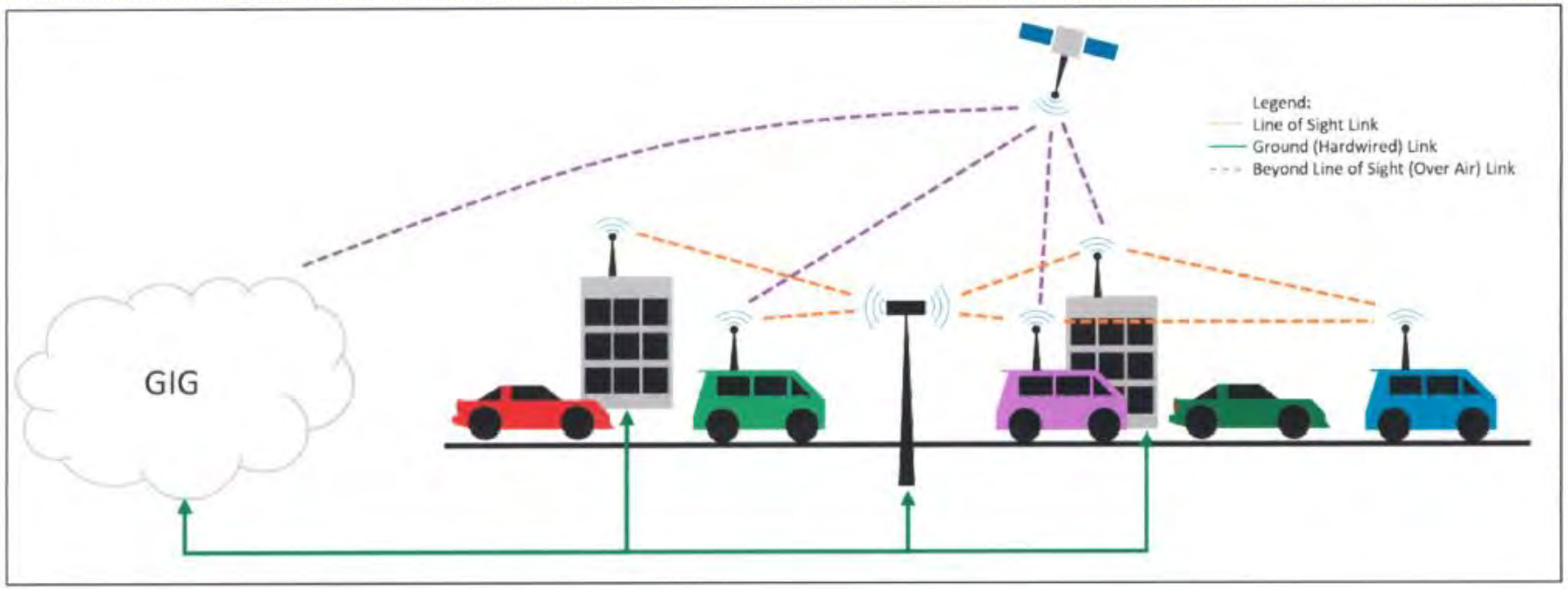
Autonomous Vehicle SoS Network



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