Autonomous Vehicles: a 5G use case discussion

# Learning objectives:

* Understand principles of Autonomous Vehicles (AVs) using 5G
* Identify data privacy and ethical issue surrounding Autonomous vehicles
* Evaluate and analyze principles presented via a classroom discussion

# Answer the following reflection questions:

1. What are the safety aspects to be considered for vehicle platooning or advanced driving (Section 3.1, pg 5) and remote driving in V2X (Section 1.2.4., pg 5 and 3.1, pg 11)? According to you, do AVs increase or decrease the risk of accidents? How could companies safely develop such technologies?
2. Ethical decision making: are AVs capable of making right decisions, i.e., make a fair judgement particularly before a collision? What legal and ethical framework would you consider for building Avs? (Section 4.3, pg 16)
3. Are you concerned about privacy of data collected from cars by AI technology, i.e., how safe do you feel with your data collected, stored and transmitted across the Internet? Would you be more concerned if it was much more personal information such as bank or health or social media data? (Section 4.2, pg 16)
4. How can the AV companies collect data ethically? What ethical implications do you see with data being collected?
5. What do you envision the future of AV to be?
6. Discuss what features 5G technology brings into support (and advance) the AVs. (Section 3.2, pg 12)

**Discussion Steps (to be held in class):**

This discussion is meant to get you to think deeper about privacy and ethical issues surrounding technology, while giving you more time to process compared to synchronous discussions. You will:

1. Form a group of 4 or 5 and to discuss questions posed.
2. Participate in class discussion based on the groups you are assigned to. Read/watch the provided material to assist with the disucssion.
3. You are welcome to respond to or pose questions to other groups responses.

# Read the first article listed below (you are welcome to read the entire article!):

* The Role of 5G Technologies in a Smart City: The Case for Intelligent Transportation System (section 3 and 4): <https://www.mdpi.com/2071-1050/13/9/5188>
* Thinking Through the Ethics of New Tech…Before There’s a Problem: <https://hbr.org/2021/11/thinking-through-the-ethics-of-new-techbefore-theres-a-problem>
* A Deeper Look at Autonomous Vehicle Ethics: An Integrative Ethical Decision-Making Framework to Explain Moral Pluralism: <https://www.frontiersin.org/articles/10.3389/frobt.2021.632394/full>