Enabling Technologies

Summary of Meeting Agenda:

- Explore a wide range of technologies needed to establish automated vehicles.
    1. Position, Localization and Mapping
    2. Algorithms, deep learning techniques, sensor fusion, guidance and control.
    3. Hybrid communications
    4. Sensing and perception
    5. Technologies for data ownership and privacy
- Gain an understanding of how these technologies will need to work together to address needs of the applications, with recognition of data ownership, regulatory and standardization perspectives.
- Realize the potential shortfalls in these technologies, ranging from pure technical capabilities through the conformance to the perspectives listed above.

Organizers:

- Jim Misener, Director, Technical Standards, Qualcomm Technologies Inc
- Cristofer Englund, Research Manager, Viktoria Swedish ICT
- John Estrada, CEO eTrans Systems
- Juhani Jaaskelainen, Consultant
- Frank Serna, Principal Director, Strategic Initiatives, Draper Laboratory
- Surya Satyavolu, CEO, Sirab Technologies
- Sudharson Sundararajan, Lead Technologist, Booz Allen Hamilton

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Summary of Key Findings/Lessons Learned from Breakout Discussion

- Opportunities for Synergy
  - Maps, positioning and the infrastructure: crowdsourcing (of course), road features (inserting more infrastructure for localization)
  - Hybrid communications for difficult use cases (collaborative driving, long and short range)
    - Collaborative perception, localization
    - Use of mobile edge computing
- Perspectives of Deep Learning
  - Enables use of low cost sensors
  - Can leverage tremendous computational resources (Watson)
- Data ownership and privacy are essential engineering and policy considerations

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Primary Recommended Action Item: Need bigger room and/or comfy floors. Need better HVAC.

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Recommended Action Items:

- Record ‘snapshot’ of contemporary research directions and emerging results
- Future: To do a better job, we need to:
  - Do a deeper dive (two days?)
  - Explore and catalog synergisms between enabling technologies