

**3GPP TSG RAN Meeting #70**  
**Sitges, Spain, December 7 - 10, 2015**

**RP-151881**

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**Agenda Item: 14.1.1**

# Motivation for new WI on LTE-based V2V

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# Background and Motivation (1)

- LTE-V2X activities in China:
  - National key project “Standardization and prototyping for LTE-V wireless transmission technology (2016-2017)” was released by MIIT, China [1]
  - “Shanghai Intelligent Connected Vehicle Pilot Area” was approved by MIIT, China [2]. Initial plan was disclosed by Shanghai International Automobile City [3]:
    - Phase 1 (present-2016.6): 40 connected vehicles (802.11p and LTE-V2X)
    - Phase 2 (2016.7-2017.12): 400 connected vehicles (802.11p and LTE-V2X)
    - Phase 3 (2018.1-2019.12): 1000 connected vehicles (LTE-V2X)

# Background and Motivation (2)

- RAN

- In RAN#68, a study item on LTE-based V2X Services was approved in RP-151109. In this study PC5-based V2V has been given highest priority until RAN#70. The motivation for prioritizing V2V until RAN#70 is to start a V2V work item in December 2015, as proposed in RP-151082.
- In RAN1#83, the part of PC5-based V2V was completed with conclusion: It is feasible to support V2V services based on LTE PC5 interface with necessary enhancements

- SA

- SA1: V2X SI 100% completed with TR 22.885 100% completed; V2X WI started with TS 10% completed
- SA2/SA3: V2X Study item approved in S2-153532 and S3-152465.

# Proposed WI Objectives

- Core part:
  - To specify enhancement to sidelink physical layer structure necessary for V2V services [RAN1]
  - To specify enhancement to sidelink synchronization procedure necessary for V2V services [RAN1, RAN2]
  - To specify necessary sidelink resource allocation enhancement option(s) for V2V services [RAN1, RAN2]
  - To specify necessary radio protocols and RRC signaling [RAN2]
  - To specify UE Tx and Rx RF requirement covering operations at up to 6 GHz carrier [RAN4]
  - To specify RRM core requirement [RAN4]
- Performance part:
  - To specify demodulation requirements and RRM performance for the UE [RAN4]

# Proposed WI Timeline

- WI of V2V service based on sidelink to be started from RAN#70
- Core part to be finished by RAN#73
- Performance part to be finished by RAN#75

# References

- [1] <http://www.miit.gov.cn/n11293472/n11293832/n12843926/n13917072/16688014.html>
- [2] <http://www.miit.gov.cn/n11293472/n11295142/n11299299/16745681.html>
- [3] "Release of the General Scheme of Intelligent and Connected Vehicle (Shanghai) Demonstration Zone", Shanghai international automobile city, 2015 SAE-China Congress & Exhibition, October 2015.