IEEE P802.11
Wireless LANs

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| IEEE 802.11 NGV SGMeeting Minutes , 802 LMCS Plenary Meeting in Bangkok, Thailand, 12-16 November 2018. |
| Date: 2018-11-19 |
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Abstract

NGV SG meeting minutes for the 802 LMCS Plenary Meeting in Bangkok, Thailand, 12-16 November 2018.

**1. Meeting slot #1 (Monday AM1)**

**1.1 Meeting called to order on 08:05, 12 November 2018.**

**1.2 Formalities**

* + Chair is Bo Sun (ZTE). Vice-chair is Hongyuan Zhang (Marvell). Secretary is Amelia Andersdotter (Article19).
	+ Patent policies and operating rules reviewed
	No patent claims were recorded that were relevant to the activities of this committee.
	+ Information to the group: scheduled teleconferences in previous inter-meeting period were cancelled.
	+ Agenda presented and approved (see 802.11-18/1731r4).
	+ Minutes from September 2018 meeting were approved. (801.11/1680r2)
* Timeline review. No discussion.

**1.3 Liaison Statements**

**1.3.1** The SG has received two liaison statements, CAR2CAR consortium, 2018-10 Liaison from CAR 2 CAR Consortium re: NGV Use Cases and Requirements, 802.11-18/1754r1 and 2018-10-Liaison reply from ETSI ITS re: NGV use cases and requirements, 802.11-18/1771r1

**1.3.2** A third liaison statement from Wi-Fi Alliance will be uploaded on mentor later in the week.

**1.3.3** A draft response to the ETSI liaison document is uploaded to mentor (802.11-18/1950r0). It will be considered later in the week.

**1.4 Presentation: Railway use cases for NGV, Stephen Sand (German Aerospace Center (DLR)), 802.11-18/1541r4**

See https://mentor.ieee.org/802.11/dcn/18/11-18-1541-04-0ngv-railway-use-cases-for-ngv.pptx

**1.4.1** The speeds foreseen by presented use-cases are higher than what is listed in the PAR. Directed antennas and appropriate channel modeling could be used to get higher speeds in spite of the lower requirements in the PAR.

**1.4.2** Use case 1 could instead use regular 802.11, since it is inside the train, but synergies could appear between use case 1 and use case 2. Requirements on hand-offs for use case 3 are not included in the presentation.

**1.4.3** Use cases concern OCB transmission without association, but IPv6 association may be required. Authentication could be left to the higher layers and IPv6 stack development, looking at p2p using OCB mode is underway. OCB has handover and reliability advantages if you can live with broadcast mode.

**1.4.4** Discussion on the difference between system level measurements of reliability versus access layer reliability, and the relevancy of SIL2/3/4 requirements.

**1.4.6** Request that requirements be phrased in terms of minimum levels (higher than 200kmh or less than 100ms) instead of maximum levels (up to 400kmh and up to 100ms latency).

**1.5 Presentation: Error correction message, Onn Haran (Autotalks), 802.11-18/1927r0**

**1.5.1** Concern raised that adding a single byte to assure FCS failure addresses the problem raised in previous session, but introduces a fairness problem.

**1.5.2** Since 11p is based on 11a it doesn't have burst mode. Integration of burst mode will cause an interoperability problem. Concerns about backwards compatibility with the solutions proposed.

**1.6 Presentation: NGV Aspects Of Multi Channel Operation, Onn Haran (AutoTalks), 802.11-18/1928r0**

See https://mentor.ieee.org/802.11/dcn/18/11-18-1928-00-0ngv-ngv-aspects-of-multi-channel-operation.pptx

**1.6.1** Call for more coordination with IEEE 1609.4.

**1.6.2** Proposes the use standard receiver under stated assumptions with multichannel operation on upper levels. Lower layer solutions are welcome because they assist the upper layers.

**1.7 Presentation: Work breakdown for P802.11bd, James Lepp (Blackberry), 802.11/1945r0**

See https://mentor.ieee.org/802.11/dcn/18/11-18-1945-00-0ngv-work-breakdown-for-p802-11bd.pptx

**1.7.1** Comment that proposed breakdown patterns 1 and 2 will be much closer aligned than 3 and 4.

**1.7.2** 60GHz is optional in the PAR, and the breakdown may require work on two separate PHY. Question on OCB relationship to TGaz amendment work. Concern that individual participants will have difficulties splitting their time between NGV and EHT TIG and other emerging issues.

**1.7.3** Observation that NGV stakeholders form a different liaison landscape, with a call for stronger liaison activities than usual (called out specifically: SAE, ETSI ITS, IEEE, Wifi Alliance).

**1.8 Tuesday evening will address PAR comments from the EC. Recess at 09:59.**

**2. Meeting slot #2 (Tuesday evening)**

**2.1** Meeting called to order at 19:32.

* Reminder to record attendance.
* Reminder of meeting policies and patent policy.

**2.2 Discussion of NGV SG Response to Comments per 802.11bd PAR/CSD, 802.11-18/2025r0**

**2.2.1** The Study Group had received four comments on the PAR. They were all accepted, in part or in full.

**# Motion 2**

Move to approve the response to comments per P802.11bd PAR&CSD as in 11-18/2025r1

Moved by: Amelia Andersdotter

Seconded: Michael Fischer

Result: 34Y/0N/0A

Motion passes.

**# Motion 3**

Believing that the PAR contained in the document referenced below meets IEEE-SA guidelines, request that the PAR contained in https://mentor.ieee.org/802.11/dcn/18/11-18-0861-09-0ngv-ieee-802-11-ngv-sg-proposed-par.docx be posted to the IEEE 802 Executive Committee (EC) agenda and EC approval to submit to NesCom.

Moved: Qinghua Li

Seconded: Rui Yang

Result: 35Y/0N/2A

Motion passes.

**2.3 Recess at 20:21.**

**3. Meeting slot #3 (Wednesday AM1)**

**3.1** Meeting called to order at 08:00.

* Reminder of meeting policies and patent policy.
* Revisiting agenda.

**3.2 Presentation: V2X Reed-Solomon Simulation Model, Ioannis Sarris (u-blox), 802.11-18/1956r0**

See https://mentor.ieee.org/802.11/dcn/18/11-18-1956-00-0ngv-v2x-reed-solomon-simulation-model.pptx

**3.3 Presentation: simulation-of-LTE-V-and-WAVE, Nan Li (ZTE), 802.11-18/1964r0**

See https://mentor.ieee.org/802.11/dcn/18/11-18-1964-00-0ngv-simulation-of-lte-v-and-wave.pptx

**3.3.1** Discussion on whether the results will guide the way that the group chooses design criteria.

**3.3.2** Calls for additional simulations taking into account congestion and interference parameters, and clarification on MCS used for the LTE simulation. Concern that assuming pure .11a receiver skews the results. Questions on resource reservation in LTE, and if differences between LTE and .11 parameter names needs more attention in future.

**3.3.3** Simulation appears not to cater for the safety scenario where two vehicles broadcasting on the same channel would be blind to each other. Most packets transmitted in the DSRC scenario do not need to be received. The ones that do matter much. Simulations may take that into account.

**3.3.4** The simulation covers more than link-layer transmissions, and goes to a full system level simulation. Model scenarios could be developed to match real situations.

**3.4 Presentation: Use Cases for NGV using High Data Rate, Hiroyuki Motozuka (Panasonic), 802.11-18/1977r3**

See https://mentor.ieee.org/802.11/dcn/18/11-18-1977-03-0ngv-use-cases-for-ngv-using-high-data-rate.pptx

**3.4.1** Questions on the utility of offloading traffic to NGV rather than using regular 802.11 technology or LTE.

**3.4.2** In other fora, a similar suggestion is being called see-through view, where the lead-truck in a platoon forwards its view of the world to the other vehicles. This would not use 6GHz band but perhaps mmWave.

**3.4.3** Question on feasibility study or link-budget study for mmWave case. Concerns about the risk of overhead when tracking cars at high velocities.

**3.5 Presentation: Consideration of Common Doppler in C2C Channel, Sudhir Srinivasa (Marvell), 802.11-18/1994r2**

See https://mentor.ieee.org/802.11/dcn/18/11-18-1994-02-0ngv-consideration-of-common-doppler-in-c2c-channel.pptx

**3.5.1** Objection that Doppler shift has to be added to CFO at transmitter, which is typically already part of the simulation. If adding a Doppler shift, parameter should not be added to the channel but to the CFO.

**3.5.2** What receiver implementation is assessed can impact where Doppler should be accounted for. The precise Common Doppler will be discussed. Each receiver may need different ones.

**3.6 Presentation: Railway use cases for NGV, Stephen Sand (German Aerospace Center (DLR)), 802.11-18/1541r5**

See https://mentor.ieee.org/802.11/dcn/18/11-18-1541-05-0ngv-railway-use-cases-for-ngv.pptx

**3.6.1** The first use-case could also be a use-case for mmWave. Single- or multi-channel operation is an open question. 100Mbit is a tough requirement for 10MHz channel.

**3.6.2** Question on explicitly pointing towards the number of antennas envisaged.

# Strawpoll 1: Do you agree to adopt the "Onboard Train" use case on slide 14 as one of the NGV use cases?

Y/N/A: 10/8/15

# Strawpoll 2: Do you agree to adopt the "Train-to-Train" use case on slide 21 as one of the NGV use cases?

Y/N/A: 21/2/7

# Strawpoll 3: Do you agree to adopt the "Train-to-Trackside" use case on slide 24 as one of the NGV use cases?

Y/N/A: 12/4/14

# Strawpoll 4: Do you agree to adopt the "Vehicle-to-Train" use case on slide 26 as one of the NGV use cases?

Y/N/A: 24/0/10

**3.6.4** Motion is postponed until next session.

**3.7** Recess at 10:01**.**

**4. Meeting slot #4 (Thursday AM1).**

**4.1** Meeting called to order 08:00.

**4.2 Presentation: Draft Replies LS from 802.11 to ETSI TC ITS and CAR2CAR Consortium, Joseph Levy (InterDigital), 802.11-18/1950r1, 802.11-18/1952r1**

See https://mentor.ieee.org/802.11/dcn/18/11-18-1950-01-0ngv-draft-reply-ls-from-802-11-to-etsi-tc-its.docx and https://mentor.ieee.org/802.11/dcn/18/11-18-1952-01-0ngv-draft-reply-ls-from-802-11-to-car-2-car-consortium.docx

**4.2.1** Comments to ETSI TC ITS reply will be incorporated in the response to LS from CAR2CAR Consortium to 802.11 too.

**4.3 Teleconference planning**

**4.3.1** It is agreed to request the time December 11, 2018, 10:00-11:59 ET.

**4.4 Presentation: Railway use cases for NGV, Stephen Sand (German Aerospace Center (DLR)), 802.11-18/1541r5**

**4.4.1** Picking up from 3.6.4 (above)

**# Motion 4**

Move to adopt "Train-to-Train" use case on slide 21 and "Vehicle-to-Train" use-case on slide 26 in document 11-18/1541r5 as NGV use.

Moved: Stephan Sand

Second: Malik Khan

Result: 22Y/1N/8A

Motion passes.

**4.5 Presentation: ETSI Cooperative Awareness Message (CAM) generation rules, Friedbert Berens, 802.11-18/1951r0**

See https://mentor.ieee.org/802.11/dcn/18/11-18-1951-00-0ngv-etsi-cooperative-awareness-message-cam-generation-rules.pptx

**4.6 Presentation: Use Cases for NGV using High Data Rate, Hiroyuki Motozuka (Panasonic), 802.11-18/1977r4**

See https://mentor.ieee.org/802.11/dcn/18/11-18-1977-04-0ngv-use-cases-for-ngv-using-high-data-rate.pptx

**4.6.1** The Traffic Off-loading use case is demonstrated at 40kmh and distance of 100m that >1Gbps works.

**4.6.2** Concern that since the 60GHz transmission case needs a lot of antennas, LTE is the typical, and already much used, technology used for maps and other information. The use-cases may require new radios to be introduced in the car.

**4.6.3** Observation ETSI TC ITS is looking at the 60GHz band as well. IEEE 1609 might need to be changed if NGV concludes its work. Coordination with 1609 is necessary. More details are needed for the use-cases to extrapolate requirements on the final standard.

# Strawpoll 5: Do you agree to adopt the “Traffic Offloading to 60 GHz band” use case on slide 4 as one of NGV use cases?

Y/N/A: 14/12/22

# Strawpoll 6: Do you agree to adopt the “Rich Sensor Sharing” use case on slide 6 as one of NGV use cases?

Y/N/A: 22/7/13

**# Motion 5**

Move to adopt the "Rich Sensor Sharing" use case on slide 6 in document 11-18/1977r4 as one of NGV use cases.

Moved: Hiroyuki Motozuka

Seconded: Bahareh Sadeghi

Discussion: Uncertainty about technical feasibility. Many sensors are low data rate, and the need for high data capacity is unclear.

60GHz transmission is interesting from the perspective of interoperability. Data from a sensor may be aggregated over the course of a day, or it will be a video sensor, in which data rate needs are higher.

Results: 20Y/8N/12A

Motion fails.

**4.7 Presentation: Draft Replies LS from 802.11 to ETSI TC ITS and CAR2CAR Consortium, Joseph Levy (InterDigital), 802.11-18/1950r1, 802.11-18/1952r1**

**4.7.1** Picking up from 4.2.2 (above)

**# Motion 6**

Approve the liaison statement in 11/18/1950r2 from IEEE 802.11 to ETSI TC ITS and copied to IEEE 802 EC, Wi-Fi Alliance, ETSI ERM TG37, Car 2 Car Communication Consortium, IEEE 1609 WG, IEEE-SA, IEEE-SA Board of Governors, IEEE 802 LMSC, providing the 802.11 response to ETSI TC ITS to their LS and the information they have provided in 11-18/1771r0, granting the WG chair editorial license.

Moved: Joseph Levy

Seconded: Michael Fischer

Results: 37Y/0N/1A

Motion passes.

**# Motion 7**

Approve the liaison statement in 11/18/1952r2 from IEEE 802.11 to Car 2 Car Communications Consortium and copied to IEEE 802 EC, Wi-Fi Alliance, ETSI ERM TG37, ETSI TC ITS, IEEE 1609 WG, IEEE-SA, IEEE-SA Board of Governors, IEEE 802 LMSC, providing the 802.11 response to Car 2 Car Communications Consortium to their LS and the information they have provided in 11-18/1764r0, granting the WG chair editorial license.

Moved: Joseph Levy

Seconded: Michael Fischer

Results: 31Y/0N/0A

Motion passes.

**4.8 Presentation: 2018-11-Liaison reply from WFA re: NGV use cases and requirements and a draft response, Joseph Levy (InterDigital), 802.11-18/1843r0 and 802.11-18/2044r0**

LS from WFA: https://mentor.ieee.org/802.11/dcn/18/11-18-1843-00-0000-2018-11-liaison-reply-from-wfa-re-ngv-use-cases-and-requirements.docx

Draft response: https://mentor.ieee.org/802.11/dcn/18/11-18-2044-00-0ngv-draft-reply-ls-from-802-11-to-wfa.docx

**4.8.1** Comment from audience that the questions in the LS from WFA are meant to be addressed over time, over the course of the task group, and do not need to be given a final response in a liaison reply generated at this time.

**4.9** No other business. Meeting is adjourned at 10:00.