IEEE P802.11
Wireless LANs

|  |
| --- |
| IEEE 802.11 TGaxNGV SG Meeting Minutes Interim May 2018 |
| Date: 2018-05-08 |
| Author(s): |
| Name | Affiliation | Address | Phone | email |
| Hongyuan Zhang | Marvell | 5488 Marvell Ln, Santa Clara, CA |  | hongyuan@marvell.com |
| Tianyu Wu | Samsung | San Jose, CA |  |  |

Abstract

NGV SG meeting minutes for the IEEE 802.11 Interim in Warsaw, May, 2018.

1. **Meeting called to order by Jon Rosdahl (Qualcomm) at 13:30pm 05/08/2018**
	* The agenda is contained in [11-18/0637r3](https://mentor.ieee.org/802.11/dcn/18/11-18-0637-03-0ngv-ngv-sg-may-2018-meeting-agenda.ppt) which is on the server.
	* Patent policies and operating rules reviewed.
	* Appoint Hongyuan Zhang as secretary for this week
	* Submissions confirmed
	* Intend to get 3rd time slot likely at Thursday PM2 or AM1
	* Agreed to have 30min per presentation incl. QA
	* Presentations ordered based on groups
	* If having the 3rd session Thursday, pm2 is preferred over am1 (SP: 19-14)
	* Voting rule reviewed
	* Motion to pass the agenda as in 11-18/637r4: no objection

**1.1**

[**11-18/0933**](https://mentor.ieee.org/802.11/dcn/18/11-18-0933-00-0ngv-high-level-requirements-of-ngv.pptx) **- “High-level requirements of NGV”, Onn Haran (Autotalks)**

**Discussions:**

 If fully backward compatibility, then the interoperability requirement may be satisfied

 Regulatory decisions on channel operation of different services

 Regular 802.11 always backward compatible, the new requirement is different from regular?

 Backward compatibility vs interoperability

 CV2X has similar PHY interoperability issue, e.g. rel14 vs rel16

**1.2**

[**11-18/907r0**](https://mentor.ieee.org/802.11/dcn/18/11-18-0907-00-0ngv-ngv-background-and-some-problems-to-solve.pptx) **NGV Background and some problems to solve - James Lepp (BlackBerry)**

**Discussions:**

 No negotiation, no optional feature.

 Better focus on usage and requirement first before dive into solutions in the SG stage

 11p has 3 mandatory rates and optional 5 rates

 11p safety requires to use 6Mbps

**1.3**

[**11-18/0917**](https://mentor.ieee.org/802.11/dcn/18/11-18-0917-00-0ngv-an-automaker-perspective-on-next-gen-v2x.pptx)**r0 - Thought on NGV working items - John Kenny (Toyota)**

**Discussions:**

 Occupied channel vs greenfield channels? —A: plan to use all the seven 10MHz channels

 CV2X also deployed in 5.9GHz—A: yes, and it is not favored for me

 Adoption landscape? —Answer: DSRC deployed in US, Japan and EU

**1.4 Recess 15:30**

1. **Meeting called to order by Jon Rosdahl (Qualcomm) at 8:00am 05/09/2018**
	* The agenda is in [11-18/0637r5](https://mentor.ieee.org/802.11/dcn/18/11-18-0637-05-0ngv-ngv-sg-may-2018-meeting-agenda.ppt) on the server.

**Vice Chair Election**:

* Candidate Vice chair: Hongyuan Zhang

Support: 32 Oppose: 0 Abstain: 1

**Hongyuan Zhang is elected as vice chair of the NGV SG.**

**2.1**

 [**11-18/0860**](https://mentor.ieee.org/802.11/dcn/18/11-18-0860-00-0ngv-ngv-phy-feasibility-discussions.pptx) **- NGV PHY feasibility, Hongyuan Zhang (Marvell)**

**Discussions:**

Q: v2v Doppler is not same as Doppler here. For car with opposite direction, the path has Doppler spread for 4x speed. We may need to increase the Doppler in the channel model.

A: In this contribution we only show the speed of the car. We can consider higher Doppler in channel model.

Q: STBC is hard to use since it’s hard to force a car to have 2 antennas.

A: Agree. STBC may have low efficiency working with midamble. But if STBC is applied, that means RX is mandate to decode but TX may not need to use it.

Q: At 6dB SNR point 11p throughput is 0, but new design has big throughput difference, what is the reason for the difference?

R: LDPC + 2 antenna.

Q: Is there a reference for 200km/h speed in your slides?

A: The number comes from 11p PAR.

Q: Is any of these PHY candidates interoperable with 11p?

A: No, legacy 11p cannot decode new PHY.

Q: Then it’s not interoperable.

A: But it can understand the signaling part. Use double transmission for BSM channel for interoperability.

**2.2**

 [**11-18/0859**](https://mentor.ieee.org/802.11/dcn/18/11-18-0859-00-0ngv-ngv-sg-par-discussions.pptx) **- NGV PAR Discussions, Hongyuan Zhang (Marvell)**

**Discussions:**

 C: Different place have different channel definition. It’s dangerous to say exclude channel 172 and 178. Because it’s only for US. In EU, channel 180 is the control channel.

 Q: Japan has 10Mhz sub 1GHz, will it include in NGV?

 A: Based on 11p PAR, it’s only 5.9GHz. We may simply continue for same frequency band.

 Q: How to solve scalability in high density case?

 A: We need to further consider the topic.

 C: Suggest to add multiple channel operation into the PAR.

 A: It might be in the scope of the project but PAR will not include all the features.

 Q: I think this is very US centric. We should be careful for it.

 A: There are many regulatory areas and different location may have slightly different rules. Although at first it may look US centric, but in the end the project will comply with different regulatory regions.

 Q: We need to consider high mobility in WiFi?

 A: Agree but may not in this project.

The SPs will run tomorrow after all contributions on PAR discussions.

**2.3**

 [**11-18/09**](https://mentor.ieee.org/802.11/dcn/18/11-18-0859-00-0ngv-ngv-sg-par-discussions.pptx)**19r1 - the-c2c-communiction-consortium, Friedbert Berens (FB Consulting Sarl)**

**Discussions:**

 Q: What about V2X, how is these “other technologies” considered in ER?

 A: In EU, the existing system is 11p. Regulatory is neutral in EU, no preference on any technology but it emphasis the requirement that interoperable with existing system.

 Q: Is the system deployed in EU full comply with 11p?

 A: Yes.

 Q: V2X v14 and v16 use time slots to differentiate versions, what do you think this approach.

 A: Access technology we can consider. But depends on the users (Car manufactures) to test whether it works.

 Q: Interoperability do you mean no PHY/ MAC layer change at all?

 A: It’s generic and technology neutral not related to any layer. To me the only way is to use the same access layer. Otherwise, it’s hard to check and guarantee the success.

 Q: Car to car consortium is also working on 11p extension. Seems contradict with some of the claims in this presentation

 A: More focus on extension to fulfill potential future applications. Possible to work together.

**2.4**

 [**11-18/09**](https://mentor.ieee.org/802.11/dcn/18/11-18-0859-00-0ngv-ngv-sg-par-discussions.pptx)**23r0 - the-c-roads-platform, Alexander (AustriaTech)**

**Discussions:**

Q: Is C-Road a certification organization in EU? Is there any certification in EU?

 A: No C-Road is not a certification group.

 Q: What is interoperability in your opinion?

 A: To me, it’s simple as long as you can get all 4 points on slide 12.

 C: Some comments emphasizing interoperation again.

Chair request the presenter to update to 923r1 and remove all the logos.

PAR and CSD will be discussed for the first hour in the session tomorrow.

Followed by 3 presentations on Channel models.

The presenter fixed the document and [11-18/0923r2](https://mentor.ieee.org/802.11/dcn/18/11-18-0923-02-0ngv-the-c-roads-platform.pptx) is available on the server.

**2.5 Recess at 10:00am**

1. **Meeting called to order by Jon Rosdahl (Qualcomm) at 16:00pm 05/109/2018**
	* Call meeting to order – 4:00pm
	* Reminder on Patent Policy/participation policy
	* The agenda is in [11-18/0637r5](https://mentor.ieee.org/802.11/dcn/18/11-18-0637-05-0ngv-ngv-sg-may-2018-meeting-agenda.ppt) on the server.
	* Discussions on Teleconference
	* Logistics:
2. Hongyuan suggested 1 conference call before July meeting.

SP passed for 1 teleconference.

 Candidate conference call timeslots:

June 13 8pm ET vs June 12 8pm ET

Group prefer June 12.

 June 19 8pm ET vs June 12 8pm ET

 1 votes for June 19, 3 votes for June 12.

Either works: 12 votes

 **Conference call time: June 12 8pm ET**

 b). Avoid overlapping timeslot:

ba: 0

ax: 3

ay: 0

az: 0

Will try to avoid ax meetings.

**3.1 Discussion on initial PAR/CSD drafts ~ 1 hour**

 [**11-18/861**](https://mentor.ieee.org/802.11/dcn/18/11-18-0861-00-0ngv-ieee-802-11-ngv-sg-proposed-par.docx) **- IEEE 802.11 NGV SG Proposed PAR Hongyuan Zhang (Marvell)**

**Discussions:**

 Suggestions :

Better to explicitly list the band instead of citing of IEEE Std 802.11pTM. Trademark TM shall be removed.

 We are only citing one band and focus on North America – It should be a more worldwide focus.

It was noted that an “Urban congested roads” scenario was not a scenario in 802.11p 2010.

Debate on whether it should be “enable backward compatible” or “is backward compatible” or if it should say “is interoperable”

 Agreement that the problem is how to define interoperability.

 Time division based technology can be a solution and may be included in the PAR.

Replace IEEE Std 802.11p™-2010 by something better like IEEE Std 802.11-2016 and then add reference to specific clause

 Change “specifically” to “including” for the NGV BW.

 Remove, from IEEE Std 802.11p™-2010 in the 3rd paragraph.

More discussion on Changing of backward compatible to interoperable is not appropriate or not. This may means that Time division based scheme is not allowed and not new PHY/MAC at all. Suggest to change interoperable back to backward compatible.

 A: Need more discussion.

Discussion on including 5.850-5.925 GHz band within North America. May be misleading that NGV may work on a lot of more bands. EU band is within this North America band. Replace “include” to “in”.

It was noted that the Japan band is 700 MHz

 Then if the group want, can include that separate band.

 More requests to use “backward compatible”.

 Concern that “backward compatible” may mean different things to different people.

 “Reliable” may not be a well-defined word. Find alternative word for it.

For the bands, it’s US focused when defining 11p.

Without interoperability, EU regulatory may not approve it. We do not want it to be US only or US first standard. In last paragraph, suggestion is to add list of other application not supported by 11p.

 We should consider interoperability requirement.

We should add coexistence here. For backward compatible, we can use the term but we shall define the term.

We should not be to locked in by the rule today. We should be solution based. Identify the requirements needed to be met.

**3.2**

 [**11-18/0858**](https://mentor.ieee.org/802.11/dcn/18/11-18-0858-00-0ngv-c2c-channel-model-overview.pptx) **- NGV Channel Model Discussion, Hongyuan Zhang (Marvell)**

**Discussions:**

 C: This model is for fast fading channel. We may also need pass loss/ shadowing models into it.

C: This model has been used for a long time. It’s a good starting point. We can add some additional parameters for corner cases.

C: We should focus on NLOS models. This is the advantage of NGV compare to other technologies such radar etc.

C: There are lots of study and data for channel model from different organizations. We can liaison with them to seek sharing resources/results.

 Q: What is the assumption of the simulation? Same channel or random channel each packet?

 A: Random channel for hundreds of packets.

 Q: On slide 6, why tap 1 is all 0?

A: It’s assumed that the first tap can be compensate by the frequency offset compensation. Only relative Doppler matters.

 Q: What does Half BT stand for?

 A: Terminology from Jakes model.

**3.3**

 [**11-18/821r0**](https://mentor.ieee.org/802.11/dcn/18/11-18-0821-00-0ngv-ngv-channel-models.pptx) **NGV Channel Models - Jianhan Liu (Mediatek)**

**Discussions:**

There are discussions on which model to adopt. Commenter mentioned 3GPP has two V2V models and suggested to use 3GPP V2V urban model for NGV pathloss model.

**3.3**

 [**11-18/0924**](https://mentor.ieee.org/802.11/dcn/18/11-18-0924-00-0ngv-time-variant-non-stationary-v2v-channel-model.pptx)**r1 - Time-variant non-stationary V2V Channel Model - Stephan Sand (German Aerospace Center (DLR))**

**Discussions:**

Q: What is the difference between your model and 3GPP models? How to incorporate your model to NGV?

A: Not only take statistic model. In some scenario more need to consider to tell whether vehicle will collide or not.

**3.4**

**NGV SG adjourned at 5:53 pm.**