IEEE P802.11
Wireless LANs

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| IEEE 802.11 NGV SGMeeting Minutes Plenary July 2018 |
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Abstract

NGV SG meeting minutes for the IEEE 802 LMSC Plenary Session in San Diego, July, 2018.

Revision 1: Update following feedback

Revision 2: Update w.r.t. date and document number (errata).

**1. Meeting slot #1, Tuesday PM1**

**1.1 Formalities**

* + The Chair calls the meeting to order at 13:33, 10/07/2018 (dd/mm/yyyy). Vice-chair Hongyuan Zhang (Marvell).
	+ Amelia Andersdotter (Article19) was appointed Secretary. No objections.
	+ Patent policies and operating rules reviewed
	No patent claims were recorded that were relevant to the activities of this committee.
	+ Agenda 11-18/1047r2 was presented. Chair explains priority will be given in the first meeting slot to presentations aimed at improving the PAR and CSD. PAR will be discussed in 2nd meeting slot. Agenda is approved. [Latest amended version of the agenda at meeting closed: 11-18/1047r5]

**1.2 Motion on Approval of NGV SG Minutes (May meeting and June teleconferences)**

* Approved by consensus.

**1.3 Timeline discussion.**

* The point is made that the timeline made be too ambitious. It will be difficult to get the Task Group formed before March 2019. Timeline is revised.

**1.4 11-18/1221, Location use cases for NGV, Friedbert Berens (Fbconsulting)**

Document: https://mentor.ieee.org/802.11/dcn/18/11-18-1221-00-0ngv-location-use-cases-for-ngv.pptx

Discussion:

The geolocation accuracy may cover a radius around a device, or a radius around an individual or entity carrying a device. This can be specified. Another challenge is that not everyone will possess a wireless communication device. Infrastructure-less geolocation will have to be looked at, as current methods for geolocation rely on sending packages back and forth between clients and infrastructure. BSS Association may then be required, but technologies that do not require BSS association for geolocation already exist and are deployed today.

**1.5** **11-18/1281r0, NGV Use Cases & Requirements, Onn Haran (Autotalks)**

Document: https://mentor.ieee.org/802.11/dcn/18/11-18-1281-00-0ngv-ngv-use-cases-requirements.pptx

Discussion

Messages being sent periodically is not the same as messages being transmitted with some intermittent intervals, since a period is fixed. It was discussed whether if the BSM is completely backwards compatible, it could imply having two different PHY: one for 11p and one for NGV, or whether it means only MAC features. A number of questions related to the meaning of backwards compatibility. In relation to sensor-sharing and 10MHz band, an ongoing ETSI study was mentioned, and multi-hop communication with routing to different channels was also stated to be supported by ETSI today.

**1.5.1 Straw poll**

Do you agree to accept the use-cases slides (6-11) of document 11-18/1281r0 as the baseline for use-case document?

Discussion:

"Baseline" means that the document can be further edited at a later time, and that it will only serve as a starting point for future discussions and editing.

Yes: 41, No: 1, Abstain: 24

**1.5.2 Motion**

Move to adopt the use cases slides (6-11) in 11-18/1281r0 as the baseline of use case document.

Moved: Hongyuan Zhang (Marvell)

Seconded: Qinghua Li (Intel)

Discussion:

There was some lack of clarity about definitions used in the document, which were cleared up.

Yes: 36 , No: 4 , Abstain: 38

Motion passes.

**1.6 11-18/1186, Interoperable NGV PHY Improvements, Michael Fisher (NXP)**

Document: https://mentor.ieee.org/802.11/dcn/18/11-18-1186-00-0ngv-interoperable-ngv-phy-improvements.pptx

Discussion:

It is a functionally reasonable idea to consider having a SIFS inserted between repetitions, rather than repeating the same bits with no gaps. Legacy devices will not be able to decode bits that have no gaps between them. Using older waveforms and striving for too much backwards compatibility risks hamstringing the projects embarked upon by this group. IEEE1609 supports both unicast and multicast. 11p did not mandate 10Hz channels and this project should also maintain flexibility. Some discussion on repeated messages and error detection.

**1.7 Recess 15:27**

**2. Meeting Slot #2 Wednesday AM1**

**2.1 The Chair calls the meeting to order at 08:01**

**2.2 Formalities**

* Timeline discussions. Discussion on a revised timeline, and a proposal for a faster opportunity to get to Task Group status. NESCOM can bring up a PAR and CSD for approval in December, because of a rule that allows things to be forwarded to NESCOM early if a document is tabled by the EC at latest October 14 2018. The Chair will look into this.
* The Chair announces the keeping of the timeline targetting January 2018 for NESCOM approval.

**2.3 11-18/1187, mmW for V2X use cases, Hiroyuki Motozuka (Panasonic)**

Document: https://mentor.ieee.org/802.11/dcn/18/11-18-1187-03-0ngv-mmw-for-v2x-use-cases.pptx

Discussion:

The group is being informed that in Europe and ITU-R, channel 4 is being considered for prioritization. New regulations may enter into effect by mid-2019. Projects considering train infrastructures could be invited to join group deliberations. The auto industry is also interested in mmWave, especially given its strong preference for interoperability with 5.9GHz. Some discussion on whether both PHY and MAC changes are needed for mmWave use cases, or whether it's sufficient with MAC changes. A few comments indicate that 5.9Ghz support is mandatory but mmWave could be optional.

**2.3.1 Strawpoll.**

Do you agree to include the 60Ghz band, as defined by 11ad/11ay in the scope of NGV? Scope is limited to non-PHY changes to 11ad/11ay.

Discussion:

Some discussion on the wording of the strawpoll. A strawpoll is a question from the presenter to the group, and each member of the group should approach the question as such.

Results:

Yes: 31, No: 25, Abstain: 21

**2.4 11-18/1217r1, Some (Measured) Characteristics of V2V Channels, Leif Wilhelmsson (Ericsson)**

Document: https://mentor.ieee.org/802.11/dcn/18/11-18-1217-02-0ngv-some-measured-characteristics-of-v2v-channels.pptx

Discussion:

Several participants call attention to the usefulness of the presentation. One comment suggests that simulations may be more pessimistic than field experiments, and proposes the group take into account field experiments as well. The presenter requests a strawpoll on channel model development.

**2.4.1 Strawpoll**

Since the vehicular channel cannot be assumed to be wide sense stationary, are we willing to in addition to a tap delay line approach also define a geometry based stochastic channel model (with some typical geometries for urban intersections, highways etc)?

Results:

Yes: 10, No: 2, Abstain: 54

**2.5 Discussion on PAR: 11-18/0861, IEEE 802.11 NGV SG Proposed PAR, Bo Sun (Chair)**

Document: https://mentor.ieee.org/802.11/dcn/18/11-18-0861-05-0ngv-ieee-802-11-ngv-sg-proposed-par.docx [latest version] See other versions: https://mentor.ieee.org/802.11/documents?is\_dcn=861&is\_group=0ngv

Discussion:

The Group removes perceived duplications in the proposed PAR, and organizes the references section.

Initial information that communications outside the context of the BSS (OCB), are now introduced in the PAR following discussions under point 1.4 in Meeting Slot #1. Discussion follows on whether to mention OCB explicitly or not, and whether keeping OCB within the scope for the proposed amendment will provide opportunities that may not otherwise be there.

mmWave is left out due to the current lack of consensus on its introduction under point 2.3.1 in Meeting Slot #1. It is discussed that regulatory requirements in some parts of the world may preclude other than amendment 11p operations in the 5.9GHz band.

It is discussed whether the requirement for enhancing throughput by at least 2 times means higher throughput at shorter range, or higher throughput at ranges already supported.

There is more discussion on terminology. The meaning of backwards compatibility and interoperability. It is proposed that the FCC definition of interoperability may be used.

**2.6 Recess at 10:00**

**3. Meeting Slot #3 Thursday AM1**

**3.1 The Chair calls the meeting to order at 08:02**

**3.2 11-18/1307, terminology discussion, Onn Haran (Autotalks)**

Document: https://mentor.ieee.org/802.11/dcn/18/11-18-1307-01-0ngv-terminology-discussion.pptx

Discussion:

There is a request for clarification that transmit mode transmissions will be done by the MAC-level based on PHY statements. There was a discussion on whether compatibility should mean that NGV frames can be decoded by 11p STA, whether 11p frames can be decoded by NGV STA. NGV STA are proposed to have two modes: one for supporting 11p and one for supporting NGV.

**3.2.1 Strawpoll**

Do you agree to adopt the terminology on slide #2 of document 11-18/1307 in ongoing discussions?

Discussion:

It is raised that the PAR does not normally go into the level of detail proposed by document 11-18/1307, but that such detail may be suitable in the CSD.

Results:

Y: 26, N: 2, A: 20

**3.3 11-18/0861r4, IEEE 802.11 NGV SG Proposed PAR, Bo Sun (ZTE)**

Document: https://mentor.ieee.org/802.11/dcn/18/11-18-0861-05-0ngv-ieee-802-11-ngv-sg-proposed-par.docx [latest version] See other versions: https://mentor.ieee.org/802.11/documents?is\_dcn=861&is\_group=0ngv

Discussion:

OCB is defined as "outside the context of a BSS". In the 11p amendment is it required that devices have the MIB variable dot11OCBActivated equals true. Any device that fulfills these conditions will be able to transmit outside of BSS.

**3.3.1 Motion**

Move to adopt document 11-18/0861r5 as the PAR for WG approval?

Moved: Hongyuan Zhang (Marvell)

Second: Jianhan Liu (Mediatek)

Discussion:

It is mentioned that the Group will be a need to present the PAR as a motion in front of the WG. Such a motion could allow for editorial formatting. There is a request to discuss further the CSD as well.

Results:

Y: 28, N: 5, A: 18

Motion passes.

**3.4 11-18/0862r0 IEEE 802.11 NGV SG Proposed CSD, Hongyuan Zhang (Marvell)**

Document: https://mentor.ieee.org/802.11/dcn/18/11-18-0862-00-0ngv-ieee-802-11-ngv-sg-proposed-csd.docx

Discussion:

There was no substantial discussion on this document at this time.

**3.5 Liaison discussion. 11-18/1303r0, Liaison requesting feedback on NGV usage scenarios, Bahar Sadeghi (Intel)**

Document: https://mentor.ieee.org/802.11/dcn/18/11-18-1303-02-0ngv-liaison-requesting-feedback-on-ngv-usage-scenarios.docx

Discussion:

It is questioned whether requesting responses by September is feasible, given vacation periods, and also whether the liaison statement should be sent before the CSD is approved. Some additional recipients are proposed.

**3.5.1 Motion**

Move to adopt document 11-18/1303r1 as the content of a liaison document forward to WG for approval and grant WG Chair the editorial privilege

-- SG Chair to update the use case baseline document as referred in 11-18/1303r1.

Moved by: Michael Fischer (NXP)

Seconded: James Lepp (Blackberry)

Motion is passed unanimously.

**3.6 11-18/1214, backward compatible PHY feasibility, Onn Haran (Autotalks)**

Document: https://mentor.ieee.org/802.11/dcn/18/11-18-1214-00-0ngv-backward-compatible-phy-feasibility.pptx

Discussion:

It is asked how failures will be dealt with, and how unfairness based on position can be avoided, and whether use of air correction, rather than detection, may create a risk that an NGV device passes on a fail package even though it wasn't corrected well. There are multiple concern that shortening SIFS after the parity-bytes will force a rewrite of the DCF definition. Altering DCF is ruled out by the Group. Objection that current SIFS intervals for 10MHz are unnecessarily long and should be shortened for efficiency. It's mentioned that that these intervals were already there, and that 11p didn't choose between 32mu-s or 16mu-s, but simply used what was there. The issue is discussed whether DIFS could be shortened instead. Also it is brought up that in practice EDCA use is much more common than DCF use in OCB types of communication.

**3.7 Teleconference plan**

No objection to July 31 and August 21 for teleconferences.

Discussion on the proposed hours for the meeting. It is decided that the conversation will resume when there are proposals listing the hours in many different time-zones.

**3.8 Recess 10:03**

**4. Meeting Slot #4, Thursday PM2**

**4.1 The Chairman calls the meeting to order at 16:00, Thursday PM #2**

Chairman reminds everyone to review the patent rules and logistical information. No one raises any patent concerns.

**4.2 Liaison document progress update**

The level of exactitude required in a document intended for stakeholders who are not part of the Group, and may not intend to become part of the Group, is discussed. The picture in 11-18/1323r0 slide 5 is discussed.

**4.3 Teleconference plans**

The proposed dates are July 31 and August 21.

Chair presents three options for teleconference timings that are each presented in Eastern, Pacific time, Beijing time, and Central European Time. See full presentation of time options in document 11-18/1047r5, slide 26.

**4.3.1 Strawpoll (by optional preferential voting)**

Which of the following meetings times are preferable?

A: 18:00-20:00 ET: 11

B: 10:00-12:00 ET: 25

C: 01:00-03:00 ET: 7

It is mentioned that dates are easier to change than times. The Chair finds that Time proposal B (10:00-12:00 ET) is the most convenient choice for the most amount of people. The Chair will request teleconferences for July 31 and August 31 at 10:00-12:00 ET.

**4.4 11-18/1216r2 Vehicular-to-Pedestrian Channel Models, Stephan Sand (German Aerospace Center (DLR))**

Document: https://mentor.ieee.org/802.11/dcn/18/11-18-1216-02-0ngv-vehicular-to-pedestrian-channel-models.pptx

Discussion:

Question on which bandwidths were considered in the tests, and which speeds were considered. Answer: results are all narrow-band evaluation and 70kmh. Generalizations are available. It's proposed to gather all the channel models and evaluate specific parameters and channel models step by step.

**4.5 11-18/1249r1, NGV MAC discussion, Liwen Chu (Marvell)**

Document: https://mentor.ieee.org/802.11/dcn/18/11-18-1249-01-0ngv-ngv-mac-discussion.pptx

Discussion:

How can it be avoided that an NGV capable device which reverts to 11p device mode, tricks another NGV capable device that it's a 11p device, even though the other NGV device should treat the NGV device in 11p mode as an NGV device?

The MPDU structure is discussed: is it necessary to introduce in NGV, even though it wasn't in 11p? They are used in 11az and 11ax but are they necessary in NGV. Concerns about unnecessary overhead due to the MPDU delimiter, unless multiple MPDUs are aggregated in the same PHY header. More discussion necessary.

**4.6 11-18/1250, NGV Ranging discussion, Liwen (Marvell)**

Document: https://mentor.ieee.org/802.11/dcn/18/11-18-1250-00-0ngv-ngv-ranging-discussion.pptx

Discussion:

What kinds of security are offered? There is encryption of measurement feedback report and encryption of the NDP. It's pointed out that reducing the set-up phase is even more interesting than security. Skipping negotiation phase reduces need for three-exchanges. A default mode without negotiations is proposed. Too many TXOP at 250kmh are unfeasible. A proposal to discuss different scenarios.

**4.7 11-18/1255, NGV Target Use case frame sizes, James Lepp (BlackBerry)**

Document: https://mentor.ieee.org/802.11/dcn/18/11-18-1255-00-0ngv-ngv-target-use-case-frame-sizes.pptx

Discussion:

It is mentioned that a typical size of CAMs may be around 450 bytes, and that ranges today can be about 1km or even 1.4 km. Whether the Group wants longer range at 6mbps needs to be discussed. For NLOS conditions buildings and traffic lights may reduce range below 300m but a truck, for instance, does not. Trains are mentioned as a use-case where much longer ranges may be necessary.

**4.8 Next steps and timelines**

Reaffirmation of planned teleconference schedule (10:00-12:00 ET on July 31 and August 21). The Chair will request four meeting slots at the Waikaloa Interim Session.

Chair calls for more submissions to assist in the completion of PAR and CSD in September. Chair announces life-cycle extension for the group in September.

No other business recorded.

**4.9 Adjourned at 17:30**