IEEE P802.11
Wireless LANs

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| WLAN Sensing SG – July 2020 Plenary Meeting Minutes |
| Date: 2020-07-16 |
| Author(s): |
| Name | Affiliation | Address | Phone | email |
| Claudio da Silva | Intel |  |  | claudio.da.silva@intel.com |
| Tony Xiao Han | Huawei Technologies Co., Ltd |  |  | tony.hanxiao@huawei.com |

Abstract

This document contains the meeting minutes of the two IEEE 802.11 Study Group on WLAN Sensing (SENS SG) sessions held in the July 2020 plenary meeting.

**Teleconference on July 14th, 2020**

1. The IEEE 802.11 SENS SG teleconference was called to order at 10:02am ET by the Chair (Tony Xiao Han, Huawei).
	1. Attendance log can be found in Appendix 1.
2. The agenda for the meeting can be found in IEEE 802.11-20/0996r2.
3. Guidelines on “Meeting Protocol, Attendance, Voting & Document Status” (slide 4) were reviewed. No items noted.
4. Patent policy guidelines (slides 6-9) were reviewed. No items noted.
5. Guidelines on the IEEE Codes of Ethics & Conduct, "individual process," and "fair & equitable consideration" (slides 10-12) were reviewed. Required notices (slide 13) were also reviewed. No items noted.
6. The proposed agenda (slide 15) was reviewed and approved without objection.
7. Motion “Move to approve SENS SG minutes of meetings and teleconferences from January 2020 meeting to today:

January F2F meeting: <https://mentor.ieee.org/802.11/dcn/20/11-20-0165-01-SENS-wlan-sensing-sg-january-2020-interim-meeting-minutes.docx>

Teleconferences Feb-March: [https://mentor.ieee.org/802.11/dcn/20/11-20-0510-02-SENS-wlan-sensing-sg-february-and-march-2020-teleconference-meeting-minutes.docx](https://mentor.ieee.org/802.11/dcn/20/11-20-0510-01-SENS-wlan-sensing-sg-february-and-march-2020-teleconference-meeting-minutes.docx)

Teleconferences April-May: [https://mentor.ieee.org/802.11/dcn/20/11-20-0821-02-SENS-wlan-sensing-sg-april-and-may-2020-teleconference-meeting-minutes.docx](https://mentor.ieee.org/802.11/dcn/20/11-20-0821-01-SENS-wlan-sensing-sg-april-and-may-2020-teleconference-meeting-minutes.docx)

Teleconferences Jun-July: [https://mentor.ieee.org/802.11/dcn/20/11-20-1033-00-SENS-wlan-sensing-sg-june-and-july-2020-teleconference-meeting-minutes.docx](https://mentor.ieee.org/802.11/dcn/20/11-20-0821-02-SENS-wlan-sensing-sg-april-and-may-2020-teleconference-meeting-minutes.docx)”

Move: Claudio da Silva (Intel)

Second: Edward Au (Huawei)

Discussion: No discussion.

Result: Approved with unanimous consent.

1. Chair reviewed the call for contributions (slide 16), SENS SG timeline (slides 17 and 18), and future teleconference times (slide 19) slides.
2. Discussion of the SENS SG PAR and CSD by Claudio da Silva (Intel).
	1. Presenter presented to the group a new revision of the PAR, 19/2103r11, which incorporates the changes proposed in 20/0989r1.
	2. Presenter presented to the group that a new revision of the CSD, 20/0042r6, which reflects changes made to the PAR (19/2103r11).
	3. The following straw poll was conducted: “Should the proposed PAR found in 19/2103r11 be accepted as the SENS SG PAR?” Results: Yes: 66, No: 1, Abstain: 22.
	4. The following straw poll was conducted: “Should the proposed CSD found in 20/0042r6 be accepted as the SENS SG CSD?” Results: Yes: 63, No: 0, Abstain: 25.
3. Motion “Believing that the PAR contained in the document referenced below meets IEEE-SA guidelines, Request that the PAR contained in 19/2103r11 be posted to the IEEE 802 Executive Committee (EC) agenda for WG 802 preview and EC approval to submit to NesCom.”

Move: Claudio da Silva (Intel)

Second: Solomon Trainin (Qualcomm)

Discussion: No discussion.

Result: Yes: 69; No 0; Abstain 15.

1. Motion “Believing that the CSD contained in the document referenced below meets IEEE 802 guidelines, Request that the CSD contained in 20/0042r6 be posted to the IEEE 802 Executive Committee (EC) agenda for WG 802 preview and EC approval.”

Move: Claudio da Silva (Intel)

Second: Solomon Trainin (Qualcomm)

Discussion: No discussion.

Result: Yes: 70; No 0; Abstain 14.

1. Presentation of “Discussion of channel model for WLAN sensing,” doc. IEEE 11-20/0906r0, by Meihong Zhang (Huawei).
	1. Technical discussion on the need for the development of channel models for WLAN sensing, the scope of the potential work, and the identification of how the models will be used.
2. Presentation of “Discussion on WLAN sensing evaluation methodology,” doc. IEEE 11-20/0907r1, by Rui Du (Huawei).
	1. Technical discussion on the need for the development of an evaluation methodology for WLAN sensing, the scope of the potential work, and the identification of how the methodology will be used.
3. Meeting adjourned at 12:01pm ET.

**Teleconference on July 15th, 2020**

1. The IEEE 802.11 SENS SG teleconference was called to order at 10:00am ET by the Chair (Tony Xiao Han, Huawei).
	1. Attendance log can be found in Appendix 2.

2. The agenda for the meeting can be found in IEEE 802.11-20/0996r4.

3. Guidelines on “Meeting Protocol, Attendance, Voting & Document Status” (slide 4) were reviewed. No items noted.

4. Patent policy guidelines (slides 6-9) were reviewed. No items noted.

5. Guidelines on the IEEE Codes of Ethics & Conduct, "individual process," and "fair & equitable consideration" (slides 10-12) were reviewed. Required notices (slide 13) were also reviewed. No items noted.

6. The proposed agenda (slide 16) was reviewed and approved without objection.

1. Chair reviewed the call for contributions (slide 17), SENS SG timeline (slides 18 and 19), and future teleconference times (slide 20) slides.

8. Presentation by Assaf Kasher (Qualcomm) of “Introduction to usage models document”, Doc. IEEE 11-20/0937r0, and “Usage model document,” Doc. IEEE 11-20/0936r0.

* 1. Discussion on different aspects, such as some of the metrics in the proposal, and on the need for the development of usage models for WLAN sensing.
	2. Presenter indicated intention of running a SP in a few weeks. Members are encouraged to contribute to the development of the document (via email, for example).

9. Presentation of “Usage model terminology for WLAN sensing” by Yingxiang Sun (Huawei), Doc. IEEE 11-20/0905r2.

1. Presenter went over changes made to the document, compared to 20/0905r1, and addressed questions/comments from its last presentation to the group.

10. Presentation of “Wireless Broadband Alliance sensing activities” by Chris Beg (Cognitive Systems, WBA), Doc. IEEE 11-20/0896r0.

1. Presenter discussed various aspects of a testplan being developed by WBA of home monitoring WLAN sensing. Discussion of KPIs included in the testplan.
2. Meeting adjourned at 12:01pm ET.

**Appendix 1: Attendance log for the July 14th, 2020 teleconference**

The list below was recorded from IMAT and may be incomplete.

|  |  |
| --- | --- |
| AbidRabbu, Shaima' | Istanbul Medipol University; Vestel |
| Agrawal, abhishek | ON Semiconductor |
| Ahn, Woojin | Korea Railroad Research Institute (KRRI) |
| AKHTAR, NADEEM | Arista Networks, Inc. |
| Allegue Martinez, Michel | Aerial Technologies Inc |
| Anwyl, Gary | Ralink Technology, Corp. |
| Au, Kwok Shum | Huawei Technologies Co.,  Ltd |
| Au, Oscar | Origin Wireless |
| Awater, Geert | Qualcomm Incorporated |
| Aygul, Mehmet | Istanbul Medipol University; Vestel |
| Bajko, Gabor | MediaTek Inc. |
| Batra, Anuj | Apple, Inc. |
| Baykas, Tuncer | Vestel |
| Beg, Chris | Cognitive Systems Corp. |
| Berger, Christian | NXP Semiconductors |
| Bredewoud, Albert | Broadcom Corporation |
| Calcev, George | Huawei R&D USA |
| Carney, William | Sony Corporation |
| Cavalcanti, Dave | Intel Corporation |
| Cepni, Gurkan | Apple, Inc. |
| CHAN, YEE | Facebook |
| Chen, Cheng | Intel Corporation |
| Chen, Evelyn | Ericsson AB |
| Chen, Na | MaxLinear Corp |
| Cheng, Paul | MediaTek Inc. |
| Cheng, Xilin | NXP Semiconductors |
| Chitrakar, Rojan | Panasonic Asia Pacific Pte Ltd. |
| Cho, Hangyu | LG ELECTRONICS |
| Choi, Jinsoo | LG ELECTRONICS |
| CHUN, JINYOUNG | LG ELECTRONICS |
| Ciochina, Dana | Sony Corporation |
| Cordeiro, Carlos | Intel Corporation |
| Costa, D.Nelson | Peraso Technologies Incorporated |
| Dash, Debashis | Apple |
| da Silva, Claudio | Intel Corporation |
| de Vegt, Rolf | Qualcomm Incorporated |
| Dong, Xiandong | Xiaomi Inc. |
| Du, Rui | Huawei Technologies Co., Ltd |
| Eitan, Alecsander | Qualcomm Incorporated |
| Fang, Yonggang | ZTE TX Inc |
| feng, Shuling | MediaTek Inc. |
| Ganwani, Vijay | NXP Semiconductors |
| Garg, Lalit | Broadcom Corporation |
| Grandhe, Niranjan | NXP Semiconductors |
| Grigat, Michael | Deutsche Telekom AG |
| Guntupalli, Lakshmikanth | Ericsson AB |
| Hall, Robert | Johnson Controls Inc |
| HAN, CHONG | pureLiFi |
| Han, Jonghun | SAMSUNG |
| HAN, Xiao | Huawei Technologies Co. Ltd |
| Han, Zhiqiang | ZTE Corporation |
| Handte, Thomas | Sony Corporation |
| Hansen, Christopher | Covariant Corporation |
| Haskou, Abdullah | InterDigital, Inc. |
| Hu, Chunyu | Facebook |
| Huang, Lei | Panasonic Asia Pacific Pte Ltd. |
| Jang, Insun | LG ELECTRONICS |
| Jeffries, Timothy | Huawei R&D USA |
| JUNG, MYUNG CHEUL | Pantech Inc. |
| Kadampot, Ishaque Ashar | Qualcomm Incorporated |
| Kamel, Mahmoud | InterDigital, Inc. |
| KANG, Kyu-Min | Electronics and Telecommunications Research Institute (ETRI) |
| Kasher, Assaf | Qualcomm Incorporated |
| Khorov, Evgeny | IITP RAS |
| Khude, Nilesh | NXP Semiconductors |
| Kim, Jeongki | LG ELECTRONICS |
| Kim, Myeong-Jin | SAMSUNG |
| kim, namyeong | LG ELECTRONICS |
| Kim, Sang Gook | LG ELECTRONICS |
| Kim, Sanghyun | WILUS Inc. |
| Ko, Geonjung | WILUS Institute |
| Koc, Onur | Onur Koc Vestel |
| Kumar, Manish | Marvell Semiconductor, Inc. |
| Kureev, Aleksey | IITP RAS |
| Kwak, Jin-Sam | WILUS Inc. |
| Kwon, Young Hoon | NXP Semiconductors |
| Le Houerou, Brice | Canon Research Centre France |
| Levitsky, Ilya | IITP RAS |
| Li, Qinghua | Intel Corporation |
| Liang, dandan | Huawei Technologies Co. Ltd |
| LIU, CHENCHEN | Huawei Technologies Co. Ltd |
| Liu, Yong | Apple, Inc. |
| Lv, kaiying | MediaTek Inc. |
| Ma, Li | MediaTek Inc. |
| Mehrnoush, Morteza | Facebook |
| Memisoglu, Ebubekir | IMU, VESTEL |
| Merlin, Simone | Qualcomm Incorporated |
| Mohanty, Bibhu | Qualcomm Incorporated |
| Montreuil, Leo | Broadcom Corporation |
| Murti, Wisnu | SeoulTech |
| Nagai, Yukimasa | Mitsubishi Electric Corporation |
| Nikolich, Paul | self employed/various |
| Pare, Thomas | MediaTek Inc. |
| Parekh, Jatin | Arista Networks, Inc. |
| Park, Eunsung | LG ELECTRONICS |
| Park, Minyoung | Intel |
| Patwardhan, Gaurav | Hewlett Packard Enterprise |
| Petry, Brian | Broadcom Corporation |
| Pettersson, Charlie | Ericsson AB |
| Pirhonen, Riku | Self Employed |
| Pushkarna, Rajat | Panasonic Asia Pacific Pte Ltd. |
| QIU, WEI | Huawei Technologies Co., Ltd |
| Rafique, Saira | Istanbul Medipol University, Vestel |
| Raissinia, Alireza | Qualcomm Incorporated |
| Rantala, Enrico-Henrik | Nokia |
| Robert, Joerg | University of Erlangen-Nuremberg |
| Rosdahl, Jon | Qualcomm Technologies, Inc. |
| Roy, Sayak | NXP Semiconductors |
| Ryan, Stuart | Blu Wireless Technology Ltd. |
| Sakoda, Kazuyuki | Sony Corporation |
| Salem, Mohamed | Huawei Technologies Co., Ltd |
| Sato, Naotaka | Sony Corporation |
| Scott, Andy | NCTA |
| Sedin, Jonas | Ericsson AB |
| Serafimovski, Nikola | pureLiFi |
| Sethi, Ankit | NXP Semiconductors |
| Sherlock, Ian | Texas Instruments Incorporated |
| Smith, Graham | SR Technologies |
| Solaija, Muhammad Sohaib | Istanbul Medipol University; Vestel |
| Son, Ju-Hyung | WILUS Inc. |
| Song, Taewon | LG ELECTRONICS |
| Startsev, Ivan | IITP |
| Stavridis, Athanasios | Ericsson AB |
| Strauch, Paul | Qualcomm Incorporated |
| Sumi, Takenori | Mitsubishi Electric Corporation |
| Sun, Yingxiang | Huawei Technologies Co., Ltd |
| Tan, Danny | Huawei Technologies Co.,  Ltd |
| Teran, Jesus Gutierrez | IHP GmbH |
| Torab Jahromi, Payam | Facebook |
| Trainin, Solomon | Qualcomm Incorporated |
| Turkmen, Halise | Vestel |
| Varshney, Prabodh | Nokia |
| Verenzuela, Daniel | Sony Corporation |
| Verma, Lochan | Apple Inc. |
| Wang, Chao Chun | MediaTek Inc. |
| Wang, Hao | Self |
| Wang, Pu | Mitsubishi Electric Research Labs (MERL) |
| Wang, Yi-Hsiu | Zeku |
| Want, Roy | Google |
| Winser, Paul | Blu Wireless |
| Xin, Yan | Huawei Technologies Co. Ltd |
| Xue, Qi | Qualcomm Incorporated |
| Xue, Ruifeng | Cisco Systems, Inc. |
| YANG, RUI | InterDigital, Inc. |
| Yang, Steve TS | MediaTek Inc. |
| Yang, Xun | Huawei Technologies Co. Ltd |
| Yano, Kazuto | Advanced Telecommunications Research Institute International (ATR) |
| Yee, James | MediaTek Inc. |
| Yong, Su Khiong | Apple, Inc. |
| Yu, Heejung | Korea University |
| Yu, Jian | Huawei Technologies Co. Ltd |
| Zeng, Ruochen | NXP Semiconductors |
| ZHANG, JIAYIN | Huawei Technologies Co. Ltd |
| Zhang, Meihong | Huawei Technologies Co., Ltd |
| Zheng, Xiayu | NXP Semiconductors |
| Zhou, Yifan | Huawei Technologies Co., Ltd |

**Appendix 2: Attendance log for the July 15th, 2020 teleconference**

The list below was recorded from IMAT and may be incomplete.

|  |  |
| --- | --- |
| Agrawal, Sandeep | C-DOT/Centre for Development of Telematics |
| Allegue Martinez, Michel | Aerial Technologies Inc |
| An, Song-Haur | INDEPENDENT |
| Ansley, Carol | CommScope |
| Anwyl, Gary | MediaTek Inc. |
| Arrington, Arthur | Air Network Solutions |
| Au, Kwok Shum | Huawei Technologies Co.,  Ltd |
| Au, Oscar | Origin Wireless |
| Auluck, Vijay | Self |
| Awater, Geert | Qualcomm Incorporated |
| Aygul, Mehmet | Vestal Company, Istanbul Medipol University;  |
| Bajko, Gabor | MediaTek Inc. |
| Batra, Anuj | Apple Inc. |
| Baykas, Tuncer | Istanbul Medipol University |
| Beg, Chris | Cognitive Systems Corp. |
| Berens, Friedbert | FBConsulting Sarl |
| Berger, Christian | NXP Semiconductors |
| Berner, Stephan | PureLiFi |
| Cepni, Gurkan | Apple Inc. |
| Cheng, Xilin | NXP Semiconductors |
| Cho, Hangyu | LG ELECTRONICS |
| Choi, Jinsoo | LG ELECTRONICS |
| Cordeiro, Carlos | Intel Corporation |
| Costa, D.Nelson | Peraso Technologies Incorporated |
| Dash, Debashis | Apple Inc. |
| da Silva, Claudio | Intel Corporation |
| Ding, Yanyi | Panasonic corporation |
| DOAN, DUNG | Qualcomm Incorporated |
| Du, Rui | Huawei Technologies Co., Ltd |
| Eitan, Alecsander | Qualcomm Incorporated |
| EMMELMANN, MARC | Self Employed / Koden-TI / Fraunhofer FOKUS |
| feng, Shuling | MediaTek Inc. |
| Fletcher, Paul | Samsung Cambridge Solution Center |
| Furuichi, Sho | Sony Corporation |
| Ganwani, Vijay | NXP Semiconductors |
| Grigat, Michael | Deutsche Telekom AG |
| Hall, Robert | Johnson Controls Inc |
| HAN, Xiao | Huawei Technologies Co. Ltd |
| Haskou, Abdullah | InterDigital, Inc. |
| Hsiao, Ching-Wen | MediaTek Inc. |
| Hurtarte, Jeorge | Teradyne, Inc. |
| Ikegami, Tetsushi | Meiji University |
| Jeffries, Timothy | Futurewei Technologies |
| Jeon, Eunsung | SAMSUNG ELECTRONICS |
| Kadampot, Ishaque Ashar | Qualcomm Incorporated |
| Kain, Carl | Noblis, Inc. |
| Kamel, Mahmoud | InterDigital, Inc. |
| Kasher, Assaf | Qualcomm Incorporated |
| Kenney, John | TOYOTA InfoTechnology Center U.S.A. |
| Kerry, Stuart | OK-Brit |
| Kim, Sang Gook | LG ELECTRONICS |
| Kitazawa, Shoichi | Muroran IT |
| Koc, Onur | Onur Koc Vestel |
| Kureev, Aleksey | IITP RAS |
| Lansford, James | Qualcomm Incorporated |
| Lee, Hyeong Ho | Netvision Telecom Inc. |
| Lee, Nancy | Signify |
| Li, Qinghua | Intel Corporation |
| Li, Yanchun | Huawei Technologies Co. Ltd |
| Lim, Dong Guk | LG ELECTRONICS |
| Lopez, Miguel | Ericsson AB |
| Ma, Li | MediaTek Inc. |
| Mano, Hiroshi | Koden Techno Info K.K. |
| Mehrnoush, Morteza | Facebook |
| Merlin, Simone | Qualcomm Incorporated |
| Morioka, Hitoshi | SRC Software |
| Motozuka, Hiroyuki | Panasonic Corporation |
| Nagai, Yukimasa | Mitsubishi Electric Corporation |
| Nakano, Hiroki | CAHI Corporation |
| Nikolich, Paul | self employed/various |
| noh, yujin | Newracom Inc. |
| Okada, Hiraku | Nagoya University |
| Oyama, Satoshi | Association of Radio Industries and Businesses (ARIB) |
| Pare, Thomas | MediaTek Inc. |
| PESIN, ANTHONY | InterDigital, Inc. |
| Pirhonen, Riku | Self |
| Pushkarna, Rajat | Panasonic Asia Pacific Pte Ltd. |
| Rafique, Saira | Istanbul Medipol University, Vestel |
| Rantala, Enrico-Henrik | Nokia |
| Robert, Joerg | University of Erlangen-Nuremberg |
| Ryan, Mike | Ford Motor Company |
| Ryan, Stuart | Blu Wireless Technology Ltd. |
| Sadeghi, Bahareh | Intel Corporation |
| Sakamoto, Takenori | Panasonic Corporation |
| Sambasivan, Sam | AT&T |
| Sand, Stephan | German Aerospace Center (DLR) |
| Sato, Naotaka | Sony Corporation |
| Schelstraete, Sigurd | Quantenna Communications, Inc. |
| Serafimovski, Nikola | pureLiFi |
| Sherlock, Ian | Texas Instruments Incorporated |
| Singh, Gurdev | SAMSUNG ELECTRONICS |
| Sosack, Robert | Molex Incorporated |
| Stavridis, Athanasios | Ericsson AB |
| Strauch, Paul | Qualcomm Incorporated |
| SU, HONGJIA | Huawei Technologies Co.,  Ltd |
| Sumi, Takenori | Mitsubishi Electric Corporation |
| Sun, Bo | ZTE Corporation |
| Sun, Yingxiang | Huawei Technologies Co. Ltd |
| Takai, Mineo | Space-Time Engineering |
| Tan, Danny | Huawei Technologies Co., Ltd |
| Teran, Jesus Gutierrez | IHP GmbH |
| Tian, Bin | Qualcomm Incorporated |
| Tian, Tao | Unisoc Comm. |
| Trainin, Solomon | Qualcomm Incorporated |
| Turkmen, Halise | Vestal Company, Istanbul Medipol University;  |
| Varshney, Prabodh | Nokia |
| Vermani, Sameer | Qualcomm Incorporated |
| Wang, Pu | Mitsubishi Electric Research Labs (MERL) |
| Wang, Yi-Hsiu | Zeku |
| Want, Roy | Google |
| Wilhelmsson, Leif | Ericsson AB |
| Winser, Paul | Blu Wireless |
| Xue, Qi | Qualcomm Incorporated |
| YAGHOOBI, HASSAN | Intel Corporation |
| YANG, RUI | InterDigital, Inc. |
| Yang, Xun | Huawei Technologies Co. Ltd |
| YARKAN, SERHAN | Istanbul Commerce University |
| ZEGRAR, Salah Eddine | Vestel; Istanbul Medipol University |
| Zeng, Ruochen | NXP Semiconductors |
| Zhang, Hongyuan | Marvell Semiconductor, Inc. |
| Zhang, Meihong | Huawei Technologies Co., Ltd |
| Zheng, Xiayu | NXP Semiconductors |