IEEE 802.18

Radio Regulatory-TAG

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| Radio Regulatory Technical Advisory Group Minutes | | | |
| Date: 11-18nov21 | | | |
| Name | Affiliation | Address | Email |
|  |  |  |  |
| Author and Officer presiding: | | | |
| Jay Holcomb,  Chair, RR-TAG | Itron | Liberty Lake, (Spokane) WA | jholcomb@ieee.org |

Co-Vice-chairs are [Stuart Kerry (OK-Brit/Self)](mailto:stuart@ok-brit.com) and [Al Petrick (Skyworks Solutions)](mailto:apetrick@ieee.org)

Abstract

Minutes of the IEEE 802 RR-TAG teleconference

These are the Minutes of the IEEE 802 RR-TAG teleconference Thursday, 11-18nov21

1. Chair presents slide 2, Registration for the Nov 802 electronic plenary session
   1. This meeting is part of the IEEE 802 electronic November plenary session
   2. You must pay the registration fee in order to attend
   3. If you have not already done so, you can register at: [https://cvent.me/4xn8Ql](https://urldefense.com/v3/__https:/cvent.me/4xn8Ql__;!!F7jv3iA!mIj7hYJYj38R6agYT--N_zFo-0q_cZUBHvvk_La3dCCECpGaAxZZLZ_IZg53vVm76Q$)
      1. Late Registration:  **After Friday 11:59 PM UTC November 5, 2021 \* $US 125.00 for all attendees**
   4. If you do not intend to register for this session you must leave this meeting and, if you have logged attendance on IMAT, please email the 802.18 chair or a vice chair to have your attendance cancelled
   5. At conclusion of each of the 802.18 calls, the Webex log and IMAT will be reviewed.
   6. No payment, become dead beat and lose voting rights in all groups, after 60-day grace.
2. Chair calls the meeting to order at 15:02 et
3. Chair presents slides 3 – 8 of 802.18-21/0135r01, the call to order and administrative items
   1. Includes IEEE 802 meeting and participant’s guidelines and requirements.
   2. 2 Nearly voters attended so now at: Voters: 40 (8 on LMSC); Nearly Voters: 1; Aspirant members: 9
4. Chair presents slides 8, the agenda:
   1. Call to Order
      1. Attendance is on IMAT (w/VC & webex checks)
      2. This plenary does count for participation credit. Need 75%.
      3. Remember to mute when not speaking, thanks.
      4. Please request Q in the chat window.
   2. Administrative items
      1. Someone to take some notes, jay and Al
      2. Attendance & monitor chat window, Stuart K
   3. Approve agenda, last minutes & administration
   4. Discussion items
      1. EU Items
      2. Other Regions Items
      3. ITU-R Items
      4. General Discussion Items
   5. Actions required.
      1. Chair start epolls on March’22 plenary
      2. Anything new today
      3. ongoing: WRC-23 AI Viewpoints & Freq. table fill in
   6. AOB
   7. Adjourn
5. Chair presents slides 9 - 12 Administrative – Motions and more
   1. **Motion: To approve the agenda as presented on previous slide**

Moved by: Stuart Kerry (OK-Brit, self)

Seconded by: Vijay Auluck (self)

Discussion? None

Vote: Approved by unanimous consent

* 1. **Motion:** To approve the minutes in document <https://mentor.ieee.org/802.18/dcn/21/18-21-0107-01-0000-minutes-electronic-wireless-interim-16-23sep21-rr-tag-koa.docx> 27-Sep-2021 00:36:52 ET, with editorial privilege for the 802.18 chair.

Moved by: Ben Rolfe (Blind Creek Assoc.)

Seconded by: Jim Lansford (Qualcomm)

Discussion? None

Vote: Approved by unanimous consent

* 1. **Administrative moving forward** 
     1. For **Nov 2021** Plenary – (was Vancouver) – EC call on 07Sep21 approved to be electronic/virtual.
        1. ~~Early Registration:  Until Thursday 11:59 PM UTC October 21, 2021~~ ~~\* $US 50.00 for all attendees~~
        2. ~~Standard Registration:  Until Friday 11:59 PM UTC November 5, 2021 \* $US 75.00 for all attendees~~
        3. Late Registration:  **After Friday 11:59 PM UTC November 5, 2021 \* $US 125.00 for all attendees**
        4. Registration Fees are Non-Transferable and Non-Refundable
        5. **REGISTRATION WEBSITE:**[**https://cvent.me/4xn8Ql**](https://urldefense.com/v3/__https:/cvent.me/4xn8Ql__;!!F7jv3iA!mIj7hYJYj38R6agYT--N_zFo-0q_cZUBHvvk_La3dCCECpGaAxZZLZ_IZg53vVm76Q$)
        6. Meetings will take place between November 5-19, 2021.
        7. The dates and times of specific WG and TAG meetings will be provided by the Working Group Chairs.
        8. Information is available at <https://ieee802.org/802tele_calendar.html>
        9. .18 will meet during our normal weekly times and call-in, Thursday's 11th and 18th Nov21.
        10. On 11th (today): have overlap with 802.15 TG14 and last 30mins of .11az and .11bh,
     2. For **Jan 2022 Electronic** Wireless Interim – (was Panama) - Opening is Friday 14Jan21 10:00et
        1. WCSC Sept. call, the Jan 2022 Wireless Interim will be electronic/virtual.
        2. **Also approved was the $50 / $75 / $125 meeting fee will be required.**
        3. .18 will be our normal weekly times and call-in, Thursday’s 20th and 27th Jan21,
           1. **and the .18 chair declares this an accredited interim and will have voting participation credit.**
     3. For **March 2022** Plenary – Orlando
        1. Decision point will be EC call 07dec21.
        2. Will have two Mentor epolls:
           1. starting Thursday 11nov21 and ending Wednesday 17nov21
           2. back up is webex poll next week, 18nov21.
     4. **Orlando straw poll 1**
        1. description1: data to help IEEE 802 EC on their 07dec call to determine if March 2022 Plenary should be electronic/virtual or face-to-face in Orlando, FL. everyone can vote being a straw poll.
        2. 1. If the 2022 March Plenary Session is held in Orlando, Florida as an in-person only session, will you attend?
           1. Yes/No
* **note: so far, though details may change, the registration cost whether attending in person or online will be the same, and will be similar to costs of in-person sessions before covid.** 
  + 1. **Orlando straw poll 2**
       1. description2: data to help IEEE 802 EC on their 19nov call to determine if the March 2022 Plenary would be a mixed-mode session; face-to-face in Orlando, FL and virtual, how would attend? (note: registration fee/cost is same for in-person or virtual) everyone can vote being a straw poll.
       2. 2. If the 2022 March Plenary Session is held in Orlando, Florida as a mixed-mode session, will you attend:
          1. Attend In-person
          2. Attend Virtually (remotely)
          3. Will not attend plenary
  1. **Teleconferences**
     1. **Motion:** The 802.18 Chair or Chair designee is directed to conduct, as necessary, teleconferences on Thursdays at 15:00 ET (for 55mins) through 19 May 2022
        1. Moved by: Stuart Kerry (Ok-Brit, Self)
        2. Seconded by: Hassan Yaghoobi (Intel)
        3. Discussion? None
        4. Passed by Unanimous Consent
        5. Motion passed, \_23\_ voters with \_32\_attendees

1. Chair presents slides 13 - 14, **EU items to share**
   1. General EU info: [<ojeu>](https://eur-lex.europa.eu/oj/direct-access.html) [<HStds>](https://ec.europa.eu/growth/single-market/european-standards/harmonised-standards/) <https://www.etsi.org/deliver/etsi_en/>
      1. Remember–BRAN documents can be found in 802.11 private area documents (daily refresh)
         1. for reference, ad hoc meetings can make decisions, rapporteur meetings cannot.
   2. **ETSI –** [<BRAN>](https://portal.etsi.org/tb.aspx?tbid=287&SubTB=287) **next call #112 13-17dec21; lots of ad hocs (10) before then. (14 total calls)**
      1. 3 calls since last report:
      2. TS 103 754 – multiple AP/mesh performance measurement, approved a new draft and making good progress
      3. Waiting on the ETSI board decision for ETSI to have collaboration with the Broad Band Forum on sharing information on TS 103 754.
      4. Resolved the comments on TVWS EN 301 598, from the assessment by the EC and the different consultants. Sent to 90-day ENAP (European Normal Approval Procedure), for ETSI member states to comment on the harmonized draft standard.
      5. ad hoc on 2nd 60GHz standard, EN 303 722, Response on 1st ENAP that two countries commented (editorial and technical comments), comments resolved, now to 2nd 90-day ENAP.
      6. VC nominations end tomorrow (12th) and current VCs are standing.
      7. Call next week (16th) on TR 103 721 (Feasibility assessment of applying mitigation techniques to WAS/RLAN to enable coexistence in the 5 725 MHz to 5 850 MHz band). Countries in the EU opening up the band.
      8. FYI: Sounds like updates to the RED being discussed. Activating article 3.3 for IoT devices with security. The plan includes requiring IOT devices to support secure firmware updates remotely to protects privacy, prevents DOS attacks.
      9. **28oct:** BRAN(21)111002r2 and 111036r3 are the keys to knowing which 111x meeting is on which topic. 111j is on both EN 301 893 and EN 303 687. More details in the minutes.
      10. Some comments on TVWS, EC working with multiple consultants, with multiple output from them, this is challenging.
      11. ENAP has ended on EN 303 722, one country with technical comments. should be able to resolve okay. meeting is scheduled to resolve then a 2nd ENAP will be needed.
      12. 6 GHz, EN 303 687, discussions continue on NB FH, still trying to understand the compromise made.
      13. 5 GHz going smoothly. Have heard some question on radars thought not to BRAN at this time. Just need to be aware as some specific companies seem to not be following the rules.
   3. **CEPT–**[**<ECC>**](https://cept.org/ecc/groups/ecc/client/introduction/) **(and more) next call, #58 01-04Mar22**
      1. A request for a WI for an ECC report on Wireless Access Systems including Radio Local Area Networks (WAS/RLAN) in the 6425-7125 MHz band, assigned to WG SE. (Due July 2024)
      2. Target WI SE45-03 is now Jan 2024 for public inquiry, then comments will be processes and handed off to WG-SE.

* 1. **CEPT – ECC** [**<SE45>**](https://cept.org/ecc/groups/ecc/wg-se/se-45/client/introduction/) **next call #15\_\_\_\_\_\_\_\_\_\_\_\_\_**
     1. Anything to share today? not today
     2. **28oct:** Final report moved up to Jan, 2024.
        1. <https://www.cept.org/ecc/groups/ecc/wg-se/se-45/client/meeting-documents/?flid=29448>
        2. Heard two docs,
           1. the (21)008 JRC taken onboard – JRC Ispra Italy campus 40 sq km under JRC control. Hosts European Microwave Signature Laboratory (EMSL), a truncated 20m sphere,
           2. the (21)010 Scenarios ANFR doc gets heavy questioning.
        3. Next meeting January – CBTC rail side needs to get more technical about what exists today into 2024.
  2. **CEPT – ECC** [**<WGFM>**](https://cept.org/ecc/groups/ecc/wg-fm/client/introduction/)  **next meeting #101 07-11Feb22, Tentative, ECO (no virtual)**
     1. Anything to share today? not today
  3. **CEPT – ECC** [**<CG-UWB>**](https://cept.org/ecc/groups/ecc/wg-fm/srdmg/cg-uwb/client/introduction/) **next meeting #1 19Nov21**
     1. Will discuss ECC report 327 (Technical studies for the update of the Ultra Wide Band (UWB) regulatory framework in the band 6.0 GHz to 8.5 GHz), e.g harmonization by early next year.

1. Chair presents slide 15 -16, **Other regions (outside EU-Stds and USA), items to share**
   1. APAC update:
      1. [https://mentor.ieee.org/802.18/dcn/21/18-21-0138-02-0000-apac-update-november-2021.pptx](https://mentor.ieee.org/802.18/dcn/21/18-21-0138-00-0000-apac-update-november-2021.pptx)
         1. Rev 02 has the Korean link updated.
      2. For reference: LIPD is Low Interference Potential Devices class license to allow RLAN equipment to operate at low power levels in the lower part of the 6 GHz band (5925–6425 MHz)
   2. Anything else to share today for other regions? nothing heard
   3. **reminders:**
      1. **Canada - RABC** –has a similar event with the new Spectrum Management Innovation Committee (for members)
         1. November 23 @ 13:00 - 14:30 EST; <https://www.rabc-cccr.ca/event/spectrum-management-innovation-committee/>
      2. **UK -** [**Department for Digital, Culture, Media & Sport**](https://www.gov.uk/government/organisations/department-for-digital-culture-media-sport); **Wireless Infrastructure Strategy: call for evidence**
         1. <https://www.gov.uk/government/consultations/wireless-infrastructure-strategy-call-for-evidence>
         2. In July, [the DCMS Secretary of State commissioned Ofcom to undertake analysis to support the development of the strategy](https://www.gov.uk/government/publications/letters-between-dcms-and-ofcom-on-the-future-of-wireless-networks-infrastructure). This complements Ofcom’s strategic review of the mobile market.
         3. Submissions of evidence should be emailed to [wirelessinfrastructurestrategy@dcms.gov.uk](mailto:wirelessinfrastructurestrategy@dcms.gov.uk) by 25 November 2021.
      3. **UK- OFCOM** - We’re delighted to invite you to an upcoming Ofcom spectrum event: Enabling growth and innovation beyond 5G - the role of spectrum management.
         1. This will be held virtually from 3pm (UTC) on 29 November by techuk.org.
      4. **Brazil – ANATEL** - Public Consultation 46
         1. This public consultation aims to reassess the limits of undesirable emissions from very low power devices operating in the 5,925 MHz to 7,125 MHz band.
         2. The deadline for submission of comments is 30th November 2021. For more information on this public consultation, please refer to this link and is in Portuguese language only.
2. Chair presents slides 17, **ITU-R items to share**
   1. Anything to share?
      1. WP 1A accepted IEEE 802 proposed changes from the light communications liaison.
      2. WP 5A will meet in the next week and our IEEE 802 liaisons will be presented.
   2. **ongoing: WRC-23 agenda items, the list is on the ITU-R website at:** 
      * 1. <https://www.itu.int/en/ITU-R/study-groups/rcpm/Pages/wrc-23-studies.aspx> (updated 26Aug20)
        2. <https://www.itu.int/dms_pub/itu-r/oth/0c/0a/R0C0A00000D0041PDFE.pdf>
      1. <https://mentor.ieee.org/802.18/dcn/20/18-20-0107-01-0000-res-811-wrc-19-wrc-23-agenda-items.docx>
      2. **IEEE 802 viewpoints on WRC-23 agenda items.** 
         1. Doc for viewpoints updated (actions items in notes on this slide in agenda): <https://mentor.ieee.org/802.18/dcn/21/18-21-0039-01-0000-ieee-802-viewpoints-on-wrc-23-agenda-items.pptx>
         2. Soon, will review actions noted at the July Plenary.
      3. Reference:
         1. btw- the initial AIs to consider IEEE 802 viewpoints:
            1. 1.1 -800-4 990 MHz and Resolution 223. Connection w/ITS going there?
            2. 1.2 -300-3 400MHz, 3 600-3 800MHz, 6 425-7 025MHz, 7 025-7 125MHz and 10.0-10.5GHz for International Mobile Telecommunications (IMT) and resolution 245.
            3. 1.5 -470-960 MHz in Region 1-consider possible regulatory actions, Resolution **235.**
            4. 10 **-**recommend to the Council items for inclusion in the agenda for the next WRC
   3. For miscellaneous links for ITU-R, SGs, WPs and calendars, see back up slides in agenda.
3. Chair presents slide 18, **General Discussion Items**
   1. **Wireless Telecommunication Bureau Seeks to Supplement the Record on 70/80/90 GHZ Bands**
      1. FR Document: [2021-23712](https://www.federalregister.gov/documents/2021/11/02/2021-23712/wireless-telecommunication-bureau-seeks-to-supplement-the-record-on-708090-ghz-bands-notice-of?utm_source=federalregister.gov&utm_medium=email&utm_campaign=subscription+mailing+list); Citation: 86 FR 60436; [PDF](https://www.govinfo.gov/content/pkg/FR-2021-11-02/pdf/2021-23712.pdf?utm_source=federalregister.gov&utm_medium=email&utm_campaign=subscription+mailing+list) Pages 60436-60438 *(3 pages);* [Permalink](https://www.federalregister.gov/documents/2021/11/02/2021-23712/wireless-telecommunication-bureau-seeks-to-supplement-the-record-on-708090-ghz-bands-notice-of?utm_source=federalregister.gov&utm_medium=email&utm_campaign=subscription+mailing+list)
      2. Abstract: In this document, the Commission seeks comment to supplement the record in the rulemaking on a Notice of Proposed Rulemaking to address the potential for use of the 71-76 GHz, 81-86 GHz, 92-94 GHz, and the 94.1-95 GHz (70/80/90 GHz) bands to provide broadband internet access to consumers and communities that may otherwise lack robust, consistent connectivity. In particular, the Commission seeks comment on whether High Altitude Platform Stations (HAPS) or other stratospheric- based platform services could be deployed for this purpose in the 70/80/90 GHz bands. The Commission also seeks additional information regarding the potential use of these bands to provide broadband internet access to customers on airplanes and aboard ships, as proposed by Aeronet Global Communications, Inc.
      3. Submit comments on or before December 2, 2021. Submit reply comments on or before January 3, 2022.
         1. Out of 802.18 18nov21-next week.
      4. Proceeding: <https://www.fcc.gov/ecfs/search/filings?proceedings_name=20-133&sort=date_disseminated,DESC>
      5. NPRM: <https://mentor.ieee.org/802.18/dcn/21/18-21-0137-00-0000-fcc-seeks-to-supplement-nprm-record-on-70-80-90-ghz-wtb-20-133.docx>
      6. Was sent to .11, .15 & .18. Any feedback today if we should try something in the next week? no feedback
   2. IEEE 802 comments from last year:
      1. <https://mentor.ieee.org/802.18/dcn/20/18-20-0108-06-0000-comments-ieee802-fcc-nprm-20-133-70-80-90ghz-bands-expand-access.docx>
      2. The NPRM from last year:
         1. <https://mentor.ieee.org/802.18/dcn/20/18-20-0104-02-0000-fcc-proposed-rule-modernizing-and-expanding-access-to-the-70-80-90-ghz-bands.docx>
      3. A members input on NPRM from last year.
         1. <https://mentor.ieee.org/802.18/dcn/20/18-20-0105-01-0000-introduction-to-fcc-20-76-a1-modernizing-and-expanding-access-to-the-70-80-90-ghz-bands.pptx>
4. Chair presents slide 19, **General Discussion Items – ongoing fyi - MSGs 6 GHz**
   1. **1. The WInnforum “6 GHz Committee”, all groups meet every 2 weeks except *Incumbent Information, interference and Test & Certification* - weekly (168 people); some docs:** [**https://6ghz.wirelessinnovation.org/work-group-products**](https://6ghz.wirelessinnovation.org/work-group-products)
      * 1. <https://www.wirelessinnovation.org/6ghz-multistakeholder-committee>
        2. For access to documents from the committee, can request to be an observer from the MSG below.
      1. Org: 2 focus areas:
         1. 1) AFC Functional Specification -WG – includes: Interference-TG, Incumbent Info-TG, security and Protocols 3GPP-TG
         2. 2) AFC Test and Certification-WG
      2. Anything to share today? ran out of time
      3. **21oct:** TR-1014 (IR3) is in internal ballot, being shared with WFA AFC TG
         1. The process of coordination with the different organization has improve and time to approval is quicker.
         2. <https://www.wi-fi.org/file/afc-specification-and-test-plans> (open to all, just need contact info and privacy agreement)
   2. **2. From the FCC R&O, an informal MSG (“Group”) has also been formed. (260+ people)**
      1. <https://groups.wirelessinnovation.org/wg/6MSG/dashboard>.
         1. Work stream 1 - interference protection and resolution (CableLabs, EPRI, Lake Cty, APCO) Meets biweekly, from 28Jan21-10:00 et,
         2. Work stream 2 - correct incumbent data (ULS) (Comsearch, APCO)
         3. Work stream 3 - AFC and how it provides protection, etc. (Charter, Google, UTC)
         4. Overall Co-chairs: NPSTC, UTC, WFA, WISPA.
   3. Anything to share today? ran out of time
   4. **21oct:** MWG WS#3 received briefing on work underway in WFA AFC
      1. <https://syndicated.wifinowglobal.com/resource/wi-fi-alliance-accelerates-wi-fi-6e-development-with-automated-frequency-coordination/>
5. Chair presents slide 20, **General Discussion Items – ongoing fyi - Table of IEEE 802 Stds Frequency Bands**
   1. **Problem statement**
      1. It is difficult for 802 wireless standards developers to quickly and accurately identify all the frequency bands by the family of 802 wireless standards in a regularly maintained database.
      2. The primary application is to simplify identification of potential frequency bands for coexistence assessment.
   2. **Initial Audiences:** 
      1. 1) 802 wireless standards developers
      2. 2) 802.19 wireless coexistence working group
   3. **Ad hoc calls** 
      1. **The spreadsheet is going, always look for latest:**
      2. <https://mentor.ieee.org/802.18/dcn/21/18-21-0036-08-0000-frequency-table-template.xlsx>
   4. **From ad hoc call on 28sept21 call on 26oct21 was cancelled**
      1. Updated most of the 802.15 cells/rows, less UWB ones.
      2. And proposing to swap columns D&E to get the clause numbers for the current standard by the current standards. and clarified what goes in the clause cell.
   5. The activity is entering the phase to fill in the sheet now, so more intense and time consuming.
   6. The **next meeting will be 23nov21.** (call-in in agenda backup slides)
6. Chair presents slide 21, Actions / AOB / Recess
   1. **Actions required:** 
      * Chair start the 2 straw polls on the plenary in March 2022. (if Mentor epoll doesn’t work will be webex polling next week.)
   2. **AOB before recess to next Thursday, 18nov21?**
      1. none heard
   3. Remember, must be registered and to log attendance in **IMAT** (and participation credit available)
   4. **Recessed at 15:56 until next Thursday 18nov21, 15:00et/19:00utc**
7. Attendance

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Voting Attendees:** | |  |  | **11-Nov** |
| 1 | **Au** | Edward (Kwok Shum) | Huawei Technologies Co., Ltd | **x** |
| 2 | **Auluck** | Vijay | Self | **x** |
| 3 | **Berens** | Friedbert | FBConsulting Sarl | **x** |
| 4 | **Boldy** | David | Broadcom Corporation | **x** |
| 5 | **de Vegt** | Rolf | Qualcomm Incorporated | **x** |
| 6 | **Hiertz** | Guido | Ericsson GmbH | **x** |
| 7 | **Holcomb** | Jay | Itron Inc. | **x** |
| 8 | **Ikegami** | Tetsushi | Meiji University | **x** |
| 9 | **Kain** | Carl | USDOT, Noblis, Inc. | **x** |
| 10 | **Kenney** | John | TOYOTA InfoTechnology Center U.S.A. | **x** |
| 11 | **Kerry** | Stuart | OK‐Brit, Self | **x** |
| 12 | **Lansford** | James | Qualcomm Incorporated | **x** |
| 13 | **Levy** | Joseph | InterDigital, Inc. | **x** |
| 14 | **Lynch** | Michael | MJ Lynch & Associates, LLC. | **x** |
| 15 | **Palm** | Stephen | Broadcom Corporation | **x** |
| 16 | **Petrick** | Al | Skyworks Solutions Inc. | **x** |
| 17 | **Pirhonen** | Riku | NXP Semiconductors | **x** |
| 18 | **Robert** | Joerg | TU-Ilmenau/Fraunhofer IIS | **x** |
| 19 | **Rolfe** | Benjamin | Blind Creek Associates | **x** |
| 20 | **Sand** | Stephan | German Aerospace Center (DLR) | **x** |
| 21 | **Sato** | Naotaka | Sony Corporation | **x** |
| 22 | **Sherlock** | Ian | Texas Instruments | **x** |
| 23 | **Stanley** | Dorothy | Hewlett Packard Enterprise | **x** |
| 24 | **Verso** | Billy | Qorvo | **x** |
| 25 | **Wang** | Lei | FutureWei Technologies, Inc. | **x** |
| 26 | **Ward** | Lisa | Rohde & Schwarz | **x** |
| 27 | **Yaghoobi** | Hassan | Intel Corporation | **x** |
| 28 | **Yucek** | Tevfik | Qualcomm Incorporated | **x** |
|  |  |  |  |  |
| **Non-Voting Attendees:** | | |  |  |
| 1 | **Baykas** | Tuncer | Kadir Has University | **x** |
| 2 | **da Silva** | Claudio | Facebook | **x** |
| 3 | **Eitan** | Alecsander | Qualcomm Incorporated | **x** |
| 4 | **Fang** | Yonggang | MediaTek | **x** |
| 5 | **Haasz** | Jodi | IEEE SA | **x** |
| 6 | **Jeffries** | Timothy | FutureWei Technologies, Inc. | **x** |
| 7 | **Kasher** | Assaf | Qualcomm | **x** |
| 8 | **Kürner** | Thomas | TU Braunschweig | **x** |
| 9 | **Scott** | Andy | NCTA | **x** |