IEEE P802.11  
Wireless LANs

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| TGbi Minutes Mixed Mode **Interim Session 13-17 Sep** 2022 | | | | |
| Date: 2022-09-20 | | | | |
| Author(s): | | | | |
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Abstract

This document contains the minutes for the IEEE 802.11bi task group meeting that took place during the IEEE 802 Mixed Mode Interim Session 13-17 September 2022. The on-site location for the meeting was Waikoloa, Hawaii, US. "Local time" refers to local time in Waikoloa, Hawaii, US.

Motion results and counts verified by Chair on Sept. 14 using on-line voter list.

Note: Highlighted text are action items.

Q – proceeds a question

A - proceeds an answer

C - proceeds a comment

Yellow highlight - action point

**Chair: Carol Ansley, Cox Communications**

**Secretary: Amelia Andersdotter, Sky UK**

**Vice-chairs: Jerome Henry, Cisco; Stephen McCann, Huawei**

**Technical editor: Po-Kai Huang, Intel**

**1st slot. Monday 12 September 2022, 16:00 ET.**

Chair calls meeting to order at 16:03 local time.

Agenda slide deck: [11-22-1296r1](https://mentor.ieee.org/802.11/dcn/22/11-22-1296-01-00bi-september-agenda.pptx):

1. Reminder to do attendance. Reminder to register for the session and to not attend the virtual meeting without paying appropriate meeting fees.
2. The chair mentioned the call for essential patents
   1. No one responded to the call for essential patents
3. The chair covered the IEEE copyright and participation rules.
4. **Discussion of agenda 11-22-1296r1 (slide #18)**
   1. Agenda approved by unanimous consent (8 remote participants, 19 in-room).
5. **Administration**
   1. **Motion #18:** Approve the minutes for:

2022 July 802.11 Electronic Plenary: [11-22/1153r0](https://mentor.ieee.org/802.11/dcn/22/11-22-1153-00-00bi-july-mixed-mode-plenary-minutes.docx),

TGbi Teleconferences: [11-22/1371r0](https://mentor.ieee.org/802.11/dcn/22/11-22-1371-00-00bi-teleconference-minutes-11-august-2022.docx) (11 Aug), [11-22/1372r0](https://mentor.ieee.org/802.11/dcn/22/11-22-1372-00-00bi-teleconference-minutes-18-august-2022.docx) (18 Aug), [11-22/1444r0](https://mentor.ieee.org/802.11/dcn/22/11-22-1444-00-00bi-teleconference-minutes-25-august-2022.docx) (25 Aug), [11-22/1478r0](https://mentor.ieee.org/802.11/dcn/22/11-22-1478-00-00bi-teleconference-minutes-1-september-2022.docx) (1 Sept)

Moved: Peter Yee

Seconded: Mark Hamilton

Approved by unanimous consent (8 remote participants, 21 participants on-site)

1. **Technical Presentations**
   1. **BPE Beaconing Protection and Discovery Requirements (**[**11-22/1306r1**](https://mentor.ieee.org/802.11/dcn/22/11-22-1306-01-00bi-bpe-beaconing-and-discovery-requirements.pptx)**),** Jarkko Kneckt (Apple)  
        
      This submission was previously discussed on 11 August 2022. See minutes para. 7.2 in doc. [11-22-1371r0](https://mentor.ieee.org/802.11/dcn/22/11-22-1371-00-00bi-teleconference-minutes-11-august-2022.docx).  
        
      Proposal is to minimize information to maintain associations in beacon frame. Five new re

**Discussion:**

**Q:** On the discovery front you seem to assume that there is a specific AP. Could you specify how you intend for the non-AP STA would discover the ESS in the absence of an SSID? On slide 4, do you assume there is a pre-configured set at APs to which the non-AP STA could connect?  
**A:** We believe that the non-AP STA would discover the ESS one AP at a time. But we're open to discuss mechanisms for this discovery process.  
**Q:** So you are assuming that there is a pre-configured set of APs that could be discovered?  
**A:** Yes. And this way you could also remove an AP from the ESS if one of them is no longer considered secure or reliable.  
**Q:** On slide 13, can't we already do this by using different interfaces? Do we need standardization? This might be a high-layer feature.  
**A:** Sometimes the MAC address is bound to these identifiers.  
**Q:** On slide 4, how often would the random ID be changed here? I have some performance concerns with this.  
**A:** It could be changed every time a beacon is sent, but it's envisaged on minute timescales.  
**Q:** You're encrypting information elements here? But not all the information elements.  
**A:** Yes, we think this might be easier.  
**Q:** How is the AP identity set up?  
**A:** It will be pre-configured for the devices.   
**Q:** So then you will not be able to discover a secure AP without knowing about it in advance?  
**A:** Yes.   
**Q:** But then on slide 11, I don't understand the process. If the AP is already known why do we need this process?  
**A:** It's to enable the BPE STA to learn about the BPE AP before a beacon frame is received.   
**Q:** So the STA could be broadcasting stuff without knowing if there's even an AP around?  
**A:** Yes.  
**C:** That is highly problematic. It's shifting a problem from APs to the STAs.   
**Q:** On slide 12, would a STA that complies with this requirement, they would use a protected frame to request capabilities?  
**A:** The idea is to not reveal too many unnecessary AP parameters.   
**Q:** Could you comment on the backwards compatibility of this approach?   
**A:** Legacy devices can't receive these beacons. You'd need two BSS.  
**C:** But then the contents of this proposal is that an AP sends two sets of beacons - the privacy enhanced beacon and the legacy beacon.  
**C:** The long-term goal is to not have legacy devices in the network, of course, but we need a transitional period. We won't be able to enhance beaconing and discovery operations on legacy AP.   
**Q:** Are you assuming this is only for mobile APs?  
**A:** This is our main use-case. We've discussed the residential use-case as well, but we believe this is discussed in other fora.   
**C:** I think we accept the fact that privacy enhanced BSS will not be backwards compatible.   
**Q:** These beacons will not be a full beacon, right?   
**A:** Yes.  
**Q:** But a full version of the beacon will be sent at some point? If a station goes into power-save mode, how does it know which parameters have changed by the time it got changed?  
**A:** That's why we also propose to include some way of encrypting additional beacon information. The idea is that we don't repeat the information in the clear every once in a while but that they are repeated on request. For the use-case with a mobile AP, we're not looking at networks with many users either.  
  
**Chair** announces queue is empty.

1. **Review of proposed requirements from document** [11-2**1-1848r9**](https://mentor.ieee.org/802.11/dcn/21/11-21-1848-09-00bi-requirements-document.docx)Latest revision from 18 September 2022.   
   1. **Requirement 15.**  
      **Chair:** Two meetings ago, we discussed whether to drop the words "easily" and "some" from requirement 15 before approving it.   
      **C:** I agree with that.  
      **Chair:** We will proceed with a strawpoll.  
        
      **Strawpoll:** Approve requirement 15: 11bi shall define a mechanism for a BPE Client to determine which of the BPE Client’s configured networks a BPE AP belongs to (if any), while providing mitigation against an eavesdropper identifying the ESS of the BPE AP.  
      Y: 10  
      N: 2  
      A: 8  
        
      **Chair:** I will mark requirement 15 as ready to be motioned to be approved.
   2. **Requirement 17.**  
      **C:** I don't see why this requirement is needed. If nobody is associated to the AP, it can do whatever it wants.   
      **C:** Requirement 18 already covers requirement 17, in my view. It is no longer necessary.  
      **C:** To me it's a difference if an AP continuing to operate a number of sequencing numbers and such, and it shutting down and reinstantiating all its information.   
      **Q:** Is it just the BSSID that's changing in requirement 17 or also the MAC address? I was assuming that the MAC address was changing and everything else needed to be reinstantiated too, so none of the old state information kept. But did I misunderstand?  
      **C:** I agree this can already be done and that this requirement may not be necessary.  
      **Q:** If a client is out probing for an AP and then it goes away, what are the implications of that?  
      **Chair:** I'm hearing a consensus for considering requirement 17 to be subsumed under requirement 18. I will record that requirement 17 is not needed.
   3. **Requirement 19.**  
      **C:** I think there are similarities between requirement 12 and requirement 19.  
      **C:** Also with requirement 24.  
      **C:** Then we should keep the more general one, which is requirement 19 in my view.  
      **Chair:** Could people interested in these requirements talk between themselves and see if they're all necessary? I would think at least requirement 19 still needs requirement 12, since there's a different between CPE clients and BPE clients.  
      **C:** I don't think we need so much more talking.  
      **Q:** I don't understand what the DS MAC-address is. It's not over-the-air anyway, right? So what are we protecting?  
      **C:** I think we should remove the term "DS MAC address" because it's creating a lot of confusion.  
      **Chair:** Is the consequence that requirement 19 is not necessary?  
      **A:** Yes.  
      **C:** This would cause us to have to revisit requirement 12 and 24 as well.  
        
      **Chair: we are out of time for this session.**
2. **Recess 18:01 local time.**

**2nd slot. Tuesday 13 September 2022 08:00 local time.**

1. **Meeting called to order at 08:08 local time.**
2. **Reminder of policies and procedures (see para 1-3 above under 1st slot).**
   1. Reminder to do attendance issued, together with reminder to register for meeting.
   2. No response to call for essential patents.
   3. Reminder of policies and procedures.
   4. Copyright policy was presented.
3. **Agenda review (**[**11-22-1296r2**](https://mentor.ieee.org/802.11/dcn/22/11-22-1296-02-00bi-september-agenda.pptx)**, slide #18)**
   1. Agenda approved by unanimous consent (47 participants).
4. **Administrative items**
   1. Review of teleconference cadence. Explore moving to 10AM ET when TGbe schedule becomes less intense.
5. **Review of proposed requirements from document** [11-2**1-1848r10**](https://mentor.ieee.org/802.11/dcn/21/11-21-1848-10-00bi-requirements-document.docx) **Chair:** If requirement 19 is not having a better formulated solution until tomorrow (Wednesday), we'll skip it.  
   1. **Requirement 28.  
        
      C:** I think this is already possible so I don't think it's necessary.  
      **C:** I want to speak in favour of the requirement. We have parallel work in TGbh, I think it's useful for us to keep this and explore solutions for supplying different identifiers for different features down the line.  
      **Q:** Isn't it the case that this only covers MAC addresses and only for ranging and sensing?  
      **A:** If we work on defining a mechanism for split identifiers here, we could extend it at a later time to cover other operations as well.  
      **C:** I also want to speak in favour of this requirement.  
      **Chair:** I'm going to move on to a strawpoll.  
        
      **Strawpoll:** Approve the following requirement for inclusion: 11bi shall define a mechanism for CPE Clients to use separate MAC addresses for ongoing PASN protected sensing measurements versus data transmissions with the same AP.  
      Y: 13  
      N: 5  
      A: 3  
        
      **Chair:** I will mark requirement 28 as ready to be motioned.  
      **C:** We don't have a 75% approval rate for this though.  
      **C:** This is just a strawpoll, not a motion, so we can mark it as ready to be motioned.  
      **Chair:** It's a fairly favourable strawpoll though.
   2. **Requirement 29.**  
      **C:** This is my requirement, I would like to have it withdrawn.  
      **Chair:** I will mark requirement 29 as withdrawn.
   3. **Requirement 31.**   
        
      **C:** I'm in favour of this requirement. Obfuscation of the field structure is an additional mechanism we could be using here, and we can continue to discuss in the solutions phase how to proceed.  
      **C:** I'm a bit concerned because this is part of the control frame. Is a one bit field also really useful to encrypt?   
      **C:** I would suggest to add "tbd" after the MAC header fields parenthesis because we may find other fields.  
      **C:** These bits are tied to the ID so any protective measure has to be done together.   
      **Chair:** Let's do a strawpoll on this requirement.  
      **C:** As a final comment, in technical issues 7 we have issues to be addresses that map against the field parameters listed here.   
        
      **Strawpoll:** Approve the following requirement for inclusion: 11bi shall define a mechanism for CPE Clients and CPE APs to encrypt or obfuscate (TBD) power save related MAC Header fields (PM, EOSP, MD).  
      Y: 10  
      N: 5  
      A: 6  
        
      **C:** These bits are built pretty late in the connection process. So the structure of these headers is dynamic and that gives me some implementation concerns.   
      **Q:** Did it make a difference that the word obfuscation was added?  
      **A:** I guess I would have wanted to see a proposal to demonstrate the feasibility of this proposal.  
      **Chair:** I will not mark it as ready to be motioned yet.
   4. **Requirement 32.  
        
      C:** I want to speak in favour of this requirement. These fields are not protected currently, and information can leak - we have one opportunity to fix this and we should.  
      **C:** I think we need to combine for instance requirement 31 and 32 in the same requirement, and also get some demonstration that they are operationally feasible.   
      **Chair:** Do we have a proposal for a merged requirement?  
      **C:** I can work on such a requirement that would go "CPE clients and CPE APs to obfuscate or encrypt the MAC header bits (tbd)", and we could discuss further down the line which specific bits that would entail.  
      **Chair:** We will poll on this new requirement, that merges 31 and 32.  
        
      **Strawpoll:** Approve the following requirement for inclusion: 11bi shall define a mechanism for CPE Clients and CPE APs to encrypt or obfuscate (TBD) a subset of MAC Header fields (specific fields TBD).  
      Y: 16  
      N: 0  
      A: 4  
        
      **Chair:** We can mark the reworded requirement 31 as ready to be motioned.  
      **C:** I would still like to keep requirement 32, because I think we will otherwise lose this HTC field protection. That sends the wrong message. **Chair:** We can run a strawpoll.  
        
      **Strawpoll:** Approve the following requirement for inclusion: 11bi shall define a mechanism for CPE Clients and CPE APs to encrypt the +HTC field and the HT Control field.  
      Y: 12  
      N: 4  
      A: 6 **Chair:** I will mark requirement 32 as ready to be motioned.
   5. **Requirement 33.**   
      **Chair:** Is this now covered under requirement 31?  
      **C:** I think this is covered under requirement 31. It was originally introduced and I would like to withdraw it.  
      **Chair:** I will mark requirement 33 as withdrawn.
   6. **Requirement 34.  
        
      C:** I would argue it's not possible to encrypt beacons.  
      **C:** I have beacon specific requirements proposed too, and we previously had a list of management frames that could be encrypted.  
      **C:** Would you be ok to rephrase this?  
      **C:** Yes.  
      **C:** It could be preliminarily withdrawn. There are other requirements that cover more specifically the target of this requirement.  
      **Chair:** I will mark requirement 34 as withdrawn for now.
   7. **Requirement 35.  
        
      C:** I would like to request a delay on discussing this requirement. Can we come back to this in the next meeting slot? In presentation 1306r2 we have more succinct requirements covering the same topics presented.  
      **C:** Does this cover also the beacon content?  
      **C:** No, this is only the transmission interval.  
      **Q:** Why would we want to randomize the transmission interval?  
      **A:** Maybe interval is not the good name, what we mean is the transmission time.   
      **Q:** So you want to put TBTT? This would tell you when the next beacon would be on the air.  
      **A:** Yes, the TBTT being randomized is what we're aiming at.  
      **C:** I'd be fine with that text.  
      **Chair:** Does anyone object to marking this as ready to be motioned?  
        
      No one objects.  
        
      **Chair:** I will mark reworded requirement 35 as ready to be motioned.
   8. **Requirement 36.**   
        
      **C:** I would like to have this withdrawn or superceded by later proposed requirements.  
      **Chair:** I will mark requirement 36 as withdrawn.
   9. **Requirement 37.**    
        
      **C:** I would like to have this withdrawn or superceded by later proposed requirements.  
      **Chair:** I will mark requirement 36 as withdrawn.
   10. **Requirement 38.**  
         
       **C:** I want to speak in favour of this requirement.  
       **Chair:** Does anyone have any objections to requirement?  
         
       No one objects.  
         
       **Chair:** I will mark requirement 38 as ready to be motioned.
   11. **Requirement 39.  
         
       Q:** Could we use the CPE language here instead of the BPE language? I think we may have covered this before and it might be more in line with previous discussions.  
       **A:** In requirement 9 and 10 we have the AP STA initiating the change, not the non-AP STA.  
       **Q:** I'm hesitant with the phrase "STA specific schedule" at the very end. Would it be fine to have it removed?  
       **A:** I proposed this requirement and I'm fine to remove those words.  
       **Chair:** Do we have a consensus on marking this requirement as ready to be motioned?  
         
       No objections.  
         
       **Chair:** I will mark requirement 39 as ready to be motioned.
   12. **Requirement 40.  
         
       Q:** I'm not sure for broadcast we need to obfuscate? But otherwise I'm fine. No particular suggestions on the language here.  
       **Chair:** Does anyone object to marking this as ready to be motioned?  
       **Q:** I have a question on receiver address in this requirement? Don't we mean the TA?  
       **A:** Traffic from a TA always reached an RA. We have the full addresses derived, sometimes directly from the IP address, and if we don't obfuscate the RA information can leak.  
         
       No further questions.  
         
       **Chair:** I will mark requirement 40 as ready to be motioned.
   13. **Requirement 41.**  
       **Q:** Do we need to mention which specific MAC address is changed before the scrambler seed is reset?  
       **A:** We can add TA MAC address perhaps, sure.  
       **Q:** Wasn't this already in the .11aq amendment? I'm not against this requirement, though.  
       **A:** For clarity and completion we should keep this. We're also expecting more addressing changes, so we may have additional considerations in our new spec text.  
       **Chair:** Do we have a consensus on marking this requirement as ready to be motioned?  
         
       No objections.  
         
       **Chair:** I will mark requirement 41 as ready to be motioned.
   14. **Requirement 42.**  
         
       **C:** I think this is exactly the same that we just strawpolled. It says BPE here instead of CPE, but otherwise it's exactly the same.  
       **Chair:** Let's leave this for later.
   15. **Requirement 43.**  
         
       **C:** I would like to withdraw this proposed requirement.  
       **Chair:** I will mark requirement 43 as withdrawn.
   16. **Requirement 44.  
         
       C:** I feel this is again just a copy of requirement 30 with BPE instead of CPE. I think we should rather have a phrase which says that CPE can use BPE mechanism or vice versa, and that's better than having separate requirements.  
       **C:** We could re-use the wording from requirement 30 precisely. We already approved requirement 30 so then we deal with implementation issues down the line.  
       **Chair:** Does anyone objects to marking this as ready to be motioned?  
         
       No one objects.  
         
       **Chair:** I will mark reworded requirement 44 as ready to be motioned.
   17. **Requirement 45.**

**C:** We have a similar situation here as in requirement 44.  
**Chair:** Does anyone object to resolving this similarly to requirement 44?  
  
No one objects.  
  
**Chair:** I will mark reworded requirement 45 as ready to be motioned.

* 1. **Requirement 46.**  
       
     **Chair:** The language of this requirement is the same as requirement 32. Should we run a strawpoll or do we mark this as ready to be motioned?  
     **C:** A strawpoll will get the same result.  
     **Chair:** I will mark requirement 46 as ready to be motioned.
  2. **Requirement 47.**  
       
     **Chair:** Requirement 33 which has the same language was withdrawn, because it was subsumed under reworded requirement 45. Does anyone have any objections to withdrawing this requirement?   
       
     No one objections.  
       
     **Chair:** I will mark requirement 47 as withdrawn.
  3. **Requirement 48.**  
     **Q:** I don't fully understand what is happening here?   
     **A:** This is for .1X, to make sure it uses authentication frames rather than association frames.  
     **Q:** But then we need to have a key already established? That's where I'm confused.  
     **A:** The tunnel in this requirement is not this security tunnel.   
     **Q:** You want to carry the PPDUs in authentication frames?  
     **A:** Yes. We could use the word "carry" instead of "tunnelling" if that makes it more clear.  
     **C:** That would make it more clear to me.  
     **Q:** Generally we have RSNI exchange included in the EAPOL frames. So to do this we would have to synchronize which cipher suite we would want to use. How would this be done?  
     **Q:** If I understand correctly this tries to establish keys, and isn't that already covered by requirement 4?  
     **A:** If you want to do .1X you need additional mechanisms beyond the association request/response. The point here is to put the mechanism in an authentication frame instead. We can have an offline discussion on this though.  
     **Chair:** Is there anyone who objects to marking requirement 48 as ready to be motioned?  
       
     No one objects.  
       
     **Chair:** I will mark requirement 48 as ready to be motioned.
  4. **Requirement 49.  
       
     Chair:** Is there anyone who objects to marking requirement 48 as ready to be motioned?  
       
     No one objects.  **Chair:** I will mark requirement 49 as ready to be motioned.

1. **Any other business.**
   1. **Tomorrow's session**Discussion on how to progress.
   2. No other business.
2. **Recess at 09:47 local time.**  
     
   **3rd slot. Wednesday 14 September 2022 10:30 local time.**
3. **Meeting called to order at 10:33 local time.**
4. **Reminder of policies and procedures (see para 1-3 above under 1st slot).**
   1. Reminder to do attendance issued, together with reminder to register for meeting.
   2. No response to call for essential patents.
   3. Reminder of policies and procedures.
   4. Copyright policy was presented.
5. **Agenda review (**[11-22-1296r2](https://mentor.ieee.org/802.11/dcn/22/11-22-1296-02-00bi-september-agenda.pptx)**, slide #18)**No comments on the agenda. Agenda is approved by unaninmous consent.
6. **Review of proposed requirements from document** [11-2**1-1848r12**](https://mentor.ieee.org/802.11/dcn/21/11-21-1848-12-00bi-requirements-document.docx)  
     
   **Chair:** We've had some additional changes to the requirements tracking document since yesterday. We will continue reviewing the requirements.  
   1. **Requirement 50.**  
      **Q:** I understand the concept of a hash, but what is a secure hash?  
      **A:** We can take "secure" out.  
      **Q:** This looks like a solution, rather than a requirement?   
      **A:** We've had presentations on the beaconing mechanism because people were not comfortable on just voting on beacon privacy protections. I think this is a high-level requirement still, since hashes are pretty common mechanisms for identifying stuff.  
      **C:** I think this might be helpful to guide our spec text writing. Also in requirement 51 it seems we have the even more general version here.  
      **C:** The requirement should say that we should have a mechanism to identify the AP and leave that mechanism to be defined.  
      **C:** I agree.  
      **A:** We can agree.  
      **Q:** What is a BPE network? Do we have networks with multiple BPE AP?  
      **A:** We could say, "a BPE AP and/or a network that is associated with that BPE AP." In the English sense of the word "associate" rather than our 802.11 understanding of "associate".  
      **C:** Put "network that includes that BPE AP".  
        
      **Chair:** Is there anyone who objects to marking the reworded requirement 48 as ready to be motioned?  
        
      No one objects.  
        
      **Chair:** I will mark reworded requirement 50 as ready to be motioned. *[see conclusion under para 19.2 above for further rewording of this requirement, sec. Note]*
   2. **Requirement 51.**  
      **C:** We would like to make an addition to this requirement. The new encrypted Beacon frame should allow BPE clients to minimize power consumption.  
      **Q:** Could we clarify that a subset of the fields in the new Beacon frame should be encrypted?  
      **A:** Yes.  
      **Q:** Is the intent of this requirement that we are protecting the privacy of the BPE AP?   
      **A:** Encryption in general comes from the management frame, and it's the correct way of going forward here.   
      **Q:** Is the idea that in the end we have one Beacon with a secure identity mechanism, and then the same Beacon will also contain information that is hidden, or a selection of beacons that have different purposes or can be used differently?  
      **A:** One beacon.  
      **Q:** Do we include DMG Beacon frames and S1G Beacon frames in this endeavour?  
      **A:** We can make it clear later.  
      **Q:** Why do we need all these requirements? I think "secure mechanism" is enough.  
      **Chair:** Does anyone have any objections to adding two new paragraphs in requirement 50?  
        
      No one objects.  
        
      **Chair:** I will add the texts discussed to requirement 50.
   3. **Requirement 51 revamped.  
        
      Q:** Isn't this the same as just requesting a response and not getting it? What is the privacy advantage?  
      **A:** There are some situations where this is justified.  
      **Q:** I don't see why we restrict this to non-encrypted? We should keep the options open.  
      **Q:** Can we use the terminology of a BPE Beacon frame as in the previous requirement 50?  
      **A:** Yes on both questions.  
      **C:** It seems like we're trying to allow a STA to request that a beacon is sent. We should make the requirements reflect that.  
      **Q:** I'm wondering if we can deal with the issues proposed the same way as before *[see 19.2, sec. Note]*?  
      **A:** For the solicitation of a beacon frame I agree, but for the request of MLD parameters I think we need a separate requirement since it's not the same type of parameters.   
      **Chair:** Do we have any objections to marking a reworded requirement 52 as ready to be motioned?

No one objects.  
  
**Chair:** I will mark reworded requirement 51 as ready to be motioned.

* 1. **Requirement 52.  
       
     Chair:** Do we have any objections to marking this requirement as ready to be motioned?  
       
     No one objects.  
       
     **Chair:** I will mark reworded requirement 52 as ready to be motioned.
  2. **Motions to approve requirements.**  
       
     **Chair:** Now we can proceed to formally approve requirements by motion. Should we do this in a block, or should we move them individually?  
     **C:** In a block is sufficient.  
     **C:** Move the uncontentious ones in a block, but we also have notes of which requirements are controversial. Move those individually.  
     **Q:** Would these motions finish the document? I did have a requirement that is not yet in this requirements tracking document.  
       
     **Chair:** The requirement document will be updated to revision 13.  
     **Chair:** I will proceed to make a motion for the non-controversial requirements we have discussed in the past two sessions.
     1. **Motion 19.  
          
        Motion #19:** Approve the following requirements from [21/1848r13](https://mentor.ieee.org/802.11/dcn/21/11-21-1848-13-00bi-requirements-document.docx): 38, 39, 40, 41, 44, 46, 48, 49, 50, 51, 52.  
          
        Moved: Peter Yee  
        Seconded: Jim Petranovich  
        Discussion? None.  
        Vote: Approved by unaninmous consent (14 local participants, 16 online)  
          
        **Chair: I find the motion has passed.**
     2. **Motion 20.**  
          
        **Motion # 20:** Approve the following requirement from 21/1848r13: 15.  
          
        Moved: Jarkko Kneckt  
        Seconded: Stephen McCann  
        Discussion?   
         C: The ESS language is problematic.  
         C: Does this requirement still add something?  
         Chair: It is noted. Is there any objection to rejecting this motion?  
         C: Yes.  
        Vote: 14 Y / 4 N / 3 A (14 local participants, 14 online)  
          
        Final result: 12 Y / 4 N / 3 A (29 present). **Motion passes.**
     3. **Motion 21.**  
          
        **Motion # 21:** Approve the following requirement from 21/1848r13: 28.  
          
        Moved: Jarkko Kneckt  
        Seconded: Amelia Andersdotter  
        Discussion?  
         C: We can already do this. I just want to reiterate that.  
         Chair: We proceed to the vote.  
        Vote: 12 Y / 9 N / 2 A (14 local participants, 14 online)  
          
        Final result: 10 Y / 8 N / 2 A (29 present). **Motion fails.**
     4. **Motion 22.**  
          
        **Motion # 22:** Approve the following requirement from 21/1848r13: 31.  
          
        Moved: Po-Kai Huang  
        Seconded: Duncan Ho  
        Discussion? None.  
        Vote: 22 Y / 0 N / 3 A (14 local participants, 14 online)  
          
        Final result: 17 Y / 0 N / 3 A (32 present). **Motion passes.**
     5. **Motion 23.**  
          
        **Motion # 23:** Approve the following requirement from 21/1848r13: 32.  
          
        Moved: Amelia Andersdotter  
        Seconded: Jarkko Kneckt  
        Discussion? None.  
        Vote: 14 Y / 7 N / 2 A (14 local participants, 14 online)  
          
        Final result: 13 Y / 7 N / 1 A (32 present). **Motion fails.**

1. **Any other business**  
     
   No other business.
2. **Recess at 12:32 local time.   
     
   4th slot. Thursday 15 September 2022 10:30 local time.**
3. **Meeting called to order at 10:33 local time.**Agenda slide deck available in: [11-22-1296r5](https://mentor.ieee.org/802.11/dcn/22/11-22-1296-05-00bi-september-agenda.pptx)
4. **Reminders of meeting procedures.**No response to call essential patents.  
   Copyright slides were presented.
5. **Agenda review (11-22-1296r5, slide #18)**Agenda approved by unaninmous consent (13 in-room participants, 6 remote).
6. **Administrative**
   1. **Teleconferences**  
        
      Our meeting cadence will continue to be once per week, and Chair will monitor the schedule of TGbe to see if we can begin later on Thursdays.
7. **Review of proposed requirements from document** [11-21-1848r14](https://mentor.ieee.org/802.11/dcn/21/11-21-1848-14-00bi-requirements-document.docx)
   1. **Requirement 19.  
        
      Chair:** New text proposal for requirement 19 *[see discussion under para. 7.3 and 13, sec note]*  
      **C:** Why tie this to the MAC address? Say "identifier" instead of "MAC address".  
      **C:** When you associate you also have an association ID, so with the more generic term of identifier you introduce unclarity here.  
      **C:** We don't need to introduce that level of clarity at this point.  
      **C:** Today we do need a MAC address for security associations in RSN and this is something I don't think we want to do.  
      **C:** We can highlight that it's a 48-bit identifier.  
      1. **Motion 24.**  
           
         **Motion #24:** Approve the following requirement from 21/1848r15: 19, 35.  
           
         Moved: Jim Petranovich  
         Seconded: Duncan Ho  
         Discussion? None.  
         Vote: Approved by unaninmous consent.  
           
         **Motion passes.**
   2. **Requirement 42.  
        
      C:** We can postpone further discussion on this.  
      **Chair:** OK.
   3. **Requirement 53.  
        
      Chair:** This requirement is similar to requirement 15, which applies only to BPE clients.  
      **C:** I disagree with this requirement. I also think this requirement introduces geolocation tracking.  
      **C:** I do not think is technically feasible.  
      **C:** We already work on beacon protection to do something like this.  
      **C:** I disagree it's infeasible, but it might be impractical. If the AP is already known.  
      **C:** I think we have at least four ways this can be done for the case of a known AP.  
      **Chair:** Let's do a strawpoll.  
        
      **Strawpoll:** Approve the following requirement: 11bi shall define a mechanism that will allow a non-AP STA to verify the identity of a known AP before association (without exposing its identity).  
      Y: 12  
      N: 4  
      A: 3  
      1. **Motion 25:**  
           
         Motion #25: Approve the following requirement: 11bi shall define a mechanism that will allow a non-AP STA to verify the identity of a known AP before association (without exposing its identity).  
           
         Moved: Jim Petranovich  
         Seconded: Duncan Ho  
         Discussion? None.  
         Vote: Approved with unanimous consent.  
           
         **Motion passes.**
8. **Approve requirements document** [11-21-1848r16](https://mentor.ieee.org/802.11/dcn/21/11-21-1848-16-00bi-requirements-document.docx)  
   1. **Motion 26.**  
        
      **Motion #26:** Approve the Requirements Document, [11-21/1848r16](https://mentor.ieee.org/802.11/dcn/21/11-21-1848-16-00bi-requirements-document.docx).  
        
      Moved: Jim Petranovich  
      Seconded: Po-Kai Huang

Discussion? None.  
Vote: Approved with unanimous consent.  
  
**Motion passes.**

1. **AoB.**  
   1. No AoB.
2. Chair adjourned the meeting at 11:48 local time.