**IEEE P802.11
Wireless LANs**

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| **TGaq Meeting Minutes – September 2014 (Athens)** |
| Date: 2014-9-20 |
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Abstract

This document comprises the Minutes for the Task Group aq (TGaq) meeting (3 sessions – Monday (PM1), Tuesday (AM2), Tuesday (PM1), Wednesday (PM1), Thursday (AM2) held in September 2014 in Athens, Greece.

**Chair: Stephen McCann (BlackBerry)
Vice Chair: Yunsong Yang (Huawei Technologies)**

**Technical Editor: Dan Gal (Alcatel-Lucent)**

**Secretary: Dapeng Liu (CMCC)**

**Monday, September 15th, 2014, 13:30 to 15:30 (PM1)**

**Call to order**

Meeting called to order on Monday, September 15th, 2014 by TGaq Chair, Stephen McCann, at 13:30.

**Agenda**

The chair showed the week’s agenda (11-14/1031r1).

Presentations in the agenda:

The chair asked for comments for the agenda:

The chair updated the agenda (11-14/1031r2)

**The agenda 11-14-1031r2 was approved.**

**IEEE patent policy**

The chair reviewed the IEEE patent policy and read thoroughly the call for Potentially Essential Patents. No such claims were made.

**Approval of previous meeting minutes**

The chair requested the approval of the July 2014 Plenary meeting minutes [doc: 11-14-0992r0].

The meeting minutes were approved by unanimous consent.

**The Chair presents the July 2014 closing report.**

4 presentations were discussed in July 2014 meeting. 1 Editor comments presentations. Scheduled teleconference and canceled later on.

**Documentation Re-cap**

Draft 0.01. The goal of this week is to get a stable draft of 0.02 and start comments collection.

Chair: Dan, as technical editor, do you have any editorial comments?

Dan Gal (Alcatel-Lucent): The road map of the draft.

Chair: We have a timeline. How about update that?

Santosh Abraham (Qualcomm): It seems to be a huge gap between the initial letter ballot and re-circulation letter ballot, near a year. Is this by design or?

Chair: Not particularly, we did discussed that in January this year. The thing at that time were we would probably need a lot of work after initial ballot. That is why we have ten months but I agree that seems to be a long time. Nothing special in that. we will revise timeline by Thursday, we can adjust that.

 Dan Gal (Alcatel-Lucent): If you look at schedule, form sponsor ballot from September 2015, everything is ready for sponsor ballot at September 2015. We do one year of the versions of working group letter ballot until it is ready for the sponsor ballot.

Chair: Yes, that should be last re-circulation.

Santosh Abraham (Qualcomm): Then that you mean you start working group letter ballot then ten months to resolve comments?

Chair: Yes.

**Presentation by Pingfang (Huawei) on “PADP Req/Resp using different SIHes” (11-14-1242r0)**

Ping Fang (Huawei) presents the document. Propose to use different SIH for PADP request and PADP response.

Dan Gal (Alcatel-Lucent): Just indicate service availability?

Ping Fang: Yes.

Dan Gal (Alcatel-Lucent): What do you mean by collision?

Ping Fang (Huawei): 2 services have the same hash ID.

Santosh Abraham (Qualcomm): 6 Octs has been used in other cases, like MAC address. Give me a use case give me a reason. What do you mean by privacy better?

Ping Fang (Huawei): It will reduce the collision. If you can use 2 different service hash of request/response.

SK(Apple): Agree Santosh. If you want to do privacy, you need to do random. Using a different SIH for request and response does not help with privacy. Regarding the collision, I am not sure it can help.

Yunsong Yang(Huawei): If we use the ideal cryptographically hash function here. The first and second should be totally un-correlated. The chance for the both hash simultaneously match the total probability is product of the two. If the first hash is false match, if that false math happens again it is product of the two. The requesting stations’s false probably is significantly reduced.

Santosh Abraham (Qualcomm): It is not only the name of the service. Let take some examples, printer service and coffee shop advertisement service. If this happens to match the same for some reason, you need to additional parameters.

Yunsong Yang(Huawei): You mean you do only service name match. You have additional parameter.

Santosh Abraham (Qualcomm): In general, every service has additional parameters. Service name match is not going to be the only thing. Service hash name is not the only criteria.

Yunsong Yang(Huawei): Two printer services, end user can name it totally different, but the parameter could be the same, for example, from the same vendor. So the parameters sometimes do not help to distinguish two different services. If you have a unique service name, that definite help you.

Santosh Abraham (Qualcomm): You can distinguish by service hash? I doubt that. If you are talking about in a domain, you have very private service name, it is different thing. If you talking about service names.

Ping Fang (Huawei): If you take a look at MAC address, it is well organized. Service name is not well organized. Service in smart phones, service name is quite similar. Collision is possible.

SK(Apple): If you look at my contribution that I will upload soon, I do not agree with Santosh’s opinion. Service name usually based on up to 63 octs. Anyone can freely used to name your service. Typically, if you look at for example, there is a RFC, they actually has a registration of a specific service name. you can use that to verify that your service name is indeed unique. But you cannot assume that the other party application can have a very similar naming. OS will ensure that the service name is not quite similar. I do not think we need to worry much about the service name is not unique, they are actually unique in general. But if there is an information included as part of service name. that for example if you include service instance name that completely up to the user to configure it. Let’s say, you and I have a printer, maybe you want to configure yours as ‘ping printer’ and I configure mine as ‘SK printer’. That is another part that we can differentiate for the user when they receive specific form of service. Your printer is different from my printer even though we have the same service name. There is additional information for example, service instance name that actually allow to differentiate from each other. So I would say that when you use a service name basically to differentiate the different services, you can have additional information embedded in it to differentiate from each other and those are service specific information. So that I think in 11aq we do not to worry about.

Cheol (ETRI): we should not limit the creativeness of the implementers. For example, developer can use SSID as service category name or wildcard. They can respond multiple services that are available in the network include the AP.

Ping Fang (Huawei): You prefer to broadcast very general service name?

Cheol (ETRI): I’d like a kind of wildcard mechanism that can answer with multiple SSIDs.

Yunsong Yang(Huawei): Have a follow up question for SK. You mentioned service instance name. Is it additional attribute, is that right?

SK(Apple): That is service specific information, should not in 11aq. Use to differentiate within the same service. If I ask for printer, I found two printers; I want to know which one I’d like to connect to. Service instance name is that for example let’s say there is a room abc and another room dbe, I know which room I want to connect. I know which room is close to me. That provide a good information for the use to determine which service they want to use but that is the service specific information embedded in the service name.

Yunsong Yang(Huawei): Your conclusion is that service name is not necessarily be unique?

SK(Apple): The service name in general are unique. If you look that the RFC, they have a specific service registration that provide you a name unique among the database. You can do not stop third party developer to take some strange name maybe could be same as other developer currently developing but from the developer or OS perspective, they will have a mechanism to make sure that not use the same service name , for example, app store, they have their own way to identify their own service among others. There is no in general worry about a service name conflict with others.

Yunsong Yang(Huawei): I think ping tries to address the issue that you have finite service hash, he try to reduce the probability of collision within minimal complexity. You can almost have the benefit for free.

Dan Gal (Alcatel-Lucent): In my understanding of the general purpose of 11aq, we have the challenge of convey the information of existing protocols to the user in a pre-association state. That is all challenges we have. Other problems, duplicate service etc, that is service discovery protocol will take care of them. In the architecture, this a proxy entity service as directory, that the AP know that a service is available and translated by aq protocol to some kind of new advertisement protocol. I am listening to the solutions, I have the sense that we are plan to create new problems that the existing solutions never solve them. My assumption is that we do not change the existing protocols. My assumption is still right?

Chair: Dan, I think what you say are is correct. I think we are trying to do two things. One is to encapsulate high layer protocols like UPNP. What we are debating is the second that is discovery service without upper-layer protocol. Quick indication whether a service is available.

Dan Gal (Alcatel-Lucent): How we can use it?

Chair: It is not a protocol. It would be a shortcut for application. You can have a high layer protocol. You can retrieve identifier for access point which identifies services.

Dan Gal (Alcatel-Lucent): How does the access point interact with service?

Chair: It is not necessary the access point, it is the proxy entity. Two different approaches going on here in aq.

Dan Gal (Alcatel-Lucent): The second class of service discovery is not in the draft. In annex?

Chair: we can put that in annex?

Cheol (ETRI): we are not inventing new protocols. We could use service hash IDs to do service discovery. That is the reason why we are talking about service IDs.We are not inviting new IDs. We do not one to one relations. Some vendors could has their own name scheme include service category.

Chair: The identifier issues has brought two years ago. We have the trade of what is the length of the identifier against how many services we want to identify. You can have a variable length identifier. The AP need to negotiate what is the length of the identifier. The simplest solution is that we have a fix length of identifier. If we agree on that, we need to determine what come out with the identifier. We are not creating new protocols we may create a new class identifiers. This is what the debate is about.

Dan Gal (Alcatel-Lucent): A question about fix vs variable. Why variable is not desirable as fixed?

Chair: If you have a viable length of identifier, then which agency and entity defines those identifiers? It should be a well know identifier for the STA and AP.

Dan Gal (Alcatel-Lucent): IEEE 802 numbering?

Chair: We do not want to create .11 identifiers. We want to try to use existing ones.

Dan Gal (Alcatel-Lucent): Existing ones come from where?

Chair: From the up-layer protocols

Chair: Ping, what do you want to do next step?

Ping Fang (Huawei): Try to discuss offline.

Chair: Are you going try to do that within week? Do you want to update your presentation in Thursday?

Chair: We still have 40 minutes to do.

Dan Gal (Alcatel-Lucent): Last meeting, a presentation seems interesting, a new face, is there any follow up?

Cheol (ETRI): You mean bloom filter?

SK(Apple): Bloom filter proposal provides hint for whether a service in a network is available.

Chair: Bloom filter provides mechanism to compress the number of service identifiers. In 11aq, it is variation of a thing. It is not completely novel solution. I can’t see what is completely new.

Dan Gal (Alcatel-Lucent): Where is this proposal sits in agenda?

Chair: The bloom filter will be presented by SK tomorrow.

SK(Apple):Base on straw poll last meeting, I bring it back for this meeting.

Chair: Any new proposal wants to bring today?

NO.

Chair: Cheol and Dapeng do you want to bring your presentation to today?

NO.

Dan Gal (Alcatel-Lucent): What is the discussion with ai?

Chair: Tomorrow we prepare a joint meeting with TGai. But I would like to say at this point is ai has a thing called CAG number. Basically, it is a way of access point caching ANQP responses. If you have an access point not doing much in ai. You do not have update of ANQP response for last three days. ANQP message is not changed because the number is not changed. It stores an integer in access point say this is my current ANQP cache number version like 39. If the STA goes back to access point and find that it is still 39, the response of ANQP from last time and this time will be the same. There is no point for me to query for new information. 11ai has provides a shortcut way that you can quick determine whether any of the information is changed. A few people said to me, this is probably the mechanism that we can use for service discovery. You can get a number from the access point that says the service that I have is exactly the same as last week. That is a very quick summary what is the about. The question is that should ai standardize this and should aq assist ai and enhance it a little bit. That is roughly what we are going to discuss with ai. Yungsong have prepared some slides for discussion.

Yunsong Yang(Huawei): If we have time, I can quickly update my contribution.

Chair: We are going to have two minutes recess for Yungsong.

**Presentation by Yungsong (Huawei) on “Extending CAG Number Concept” (11-14-1253r0)**

Propose of the new CAG number IE format. Text changes needed in 11ai Amendment. Common text serving both for ANQP and PADP.

SK(Apple): You mentioned CAG is used for service update indicator. Update means service information changes or service availability change? What exactly change will trigger CAG changes?

Yunsong Yang(Huawei): Based on the current style in ai, if anything within the PADP element, if the content of PADP element change, it will cause CAG number to increase. If we use the same notion here, if the service that described by the PADP element, if you find the content of PADP element changes, then it will cause the CAG number changes.

SK(Apple): By looking in to the CAG number changes, the receiver only know there is some change but the receiver does not know what is changed.

Yunsong Yang(Huawei): Exactly. I think the benefit comes from another way, that the CAG number does not change, you know you do not have to do a query.

SK(Apple): OK, I am not sure whether that fit in to the overall use cases that 11aq. If the changes only be yes there is something changes, go and ask more information. Let’s say for example, certain service reach to certain number of user, this is a CAG changes, the user see there is some changes but the access point basically tell the access point no longer accept new user, that will trigger the STA to send more information. Actually it does not require the STA that using the service to query again. How can we handle that specific case in that scenario?

Yunsong Yang(Huawei): You are questioning whether the availability should be part of that?

SK(Apple): I am not questing, just thinking that there are other cases we are not think of, here is just one example and I think the group should think about it.

Yunsong Yang(Huawei): Sure, we need to have case by case study to make sure the solution help solve the aq use case. In certain case, if nothing changes we can reduce the un-necessary query.

Dan Gal (Alcatel-Lucent): Is the CAG broadcast?

Yunsong Yang(Huawei): It can be broadcast and it can be unicast. The STA can query that number.

Dan Gal (Alcatel-Lucent): Second question if it is broadcast, the STA can see the CAG number in pre-association state?

Yunsong Yang(Huawei): It is in the beacon.

Dan Gal (Alcatel-Lucent): What is the advantage of modifying CAG instead of defining our own?

Yunsong Yang(Huawei): This basically make a single IE can serve for multiple protocols. At least in previous meeting we heard from various companies some of them are chipset vendors, they want to process one IE instead of multiple IEs.

Dan Gal (Alcatel-Lucent): Do we want to use the information carrier for additional information for the device that does not read aq?

Yunsong Yang(Huawei): The two mechanisms are very similar in the nature, if we can use one single IE. The CAG number needs to tied up with advertisement protocol number. In the IE you can have one number for ANQP and another number for PADP. As a receiver, you have to understand the CAG number, you also need to match the advertisement protocol number before you make decision. The number becomes advertisement protocol dependent. Currently CAT number by default is only for ANQP.

Dan Gal (Alcatel-Lucent): So you take the information that for ai define also for the aq and adding information only aq can use. That is the intend?

Dan Gal (Alcatel-Lucent): what is the advantage for ai?

Chair: There is no specific benefit for ai to do this. It just some members in aq mentioned to me this seems to be neat idea.

Joesph(Interdigital): Confuse with the process what we are trying to do here. Typically, when the time is ai is done or nearly done. In aq we modifying ai text. The timing right now I am not sure who could be done first. You cannot modify something that origin there.

Chair: I totally agree with you. That is way this is the proposal to work together for a single solution. The original idea is let ai do it and aq can build upon it. This is really a proposal to work together.

Joesph(Interdigital): Hearing that, understanding that, it is not very clear for me when reading the text.

Yunsong Yang(Huawei): Any suggestion for what is the best procedure for ai?

Joesph(Interdigital): Second bullet should be along the line that this mechanism we see it using in existing ai to do this functionality but we need to expand it. How do we make sure this happens given the time issues, how we would do that we make offers but we would like to build that way somehow we build together. How would we do that? That is really the question we ask, right?

Yunsong Yang(Huawei): In my understanding, the reason why we have a joint meeting with ai this week is that to discuss this topic and I would say that if the joint meeting can consider that this two task group can make commitment to say in a very high level we are going to have a harmonized approach then the individuals in the task group can work on the text to their domain. Go for their individual process.

Joesph(Interdigital): The background information is not there to help the ai member to understand why we are trying to do this. Things will be smoothly if we provide that background.

Chair: We are going to go through this in detail tomorrow.

Dan Gal (Alcatel-Lucent): I suspect push back because you expect them to change the terminology. People hate this. My suggestion is let’s just ask a place holder for me. So close of the timeline we can wait when they finished we can then change them.

Cheol (ETRI): The name is long. Consider a better name.

Chair recess the meeting at 15:27.

**Tuesday, September 16th, 2014, 10:30 to 12:30 (AM2)**

**Presentation by SK Yong (Apple) on “Pre-association service discovery protocol” (11-14-1237r0)**

Ping Fang (Huawei): This is r0 or r1?

SK(Apple): Should be r1, have not uploaded yet.

SK(Apple): The proposal is based on PADP. First information element, provide two options. Depending on how many number of services need to support.

Santosh Abraham (Qualcomm): Why do you need the number of services?

SK(Apple): The number of services will define your bloom filter size. The bloom filter, you will require, firstly, how many numbers of services you actually want to support which is basically how many element you can put as part of bloom filter. That is we need the number of services which is the number of elements.

Santosh Abraham (Qualcomm): From the element ID and the length filed, I will know the length of M bits of services.

You have element ID length. I know a hash function and hash function, you do not need the number of services? What is the different

SK(Apple): You do need it, by having the number of services. The receiver can know the probability of false error. The receiver can make decision based on the probability of false error whether they want to query more. If they knows that the services is in, it may have probability not in. but if they know it is not in, it definitely not in.

Santosh Abraham (Qualcomm): What is the difference between 99% and 50%?

SK(Apple): That is implementation choice.

Yunsong Yang(Huawei): A clarification question. The general notion here is if the bitmap shows the service might be there, then the requesting station can do the query. If it shows the service is not there, the station do not do the query at all. Is that correct?

SK(Apple): Yes.

Santosh Abraham (Qualcomm): Unless bloom filter tell me not there I have to query even the 90% or 50%.

Yunsong Yang(Huawei): Do you have a text describe how receiving station derive the value?

SK(Apple): I think I put that as part of my presentation.

Yunsong Yang(Huawei): Should aq specify that? The algorithm how to drive M?

SK(Apple): Yes, I think you would need to specify somewhere. I do not know whether the behavior the receiving station should be included in the specification.

Chair: It might be an example in the Annex.

Ping Fang (Huawei): The number of hash functions. It could be one?

SK(Apple): That will depend on false error.

Ping Fang (Huawei): What kind of situation you need the bloom filter information and the service hash at the same time?

SK(Apple): There is a case for example, let’s say, in a specific deployment we can see that some services are very common. You can put it as part of service hash which you will have a high probability that the receiver will know that there is a high probability that service is there. The bloom filter can only provide you some hints.

Ping Fang (Huawei): Why we need the service hash if we have the bit map. Still do not know why you need the two.

SK(Apple): If a STA only have one service. Set bloom filter to zero, you do not use it. You will see definitely more services.

Ping Fang (Huawei): If you have bloom filter, the service hash is not necessary.

SK(Apple): You say you do not need service hash? Do you think bloom filter is necessary or service hash is necessary in the beacon?

Ping Fang (Huawei): It depends on the use cases.

SK(Apple): It depends on specific deployment cases. Airport example, if everyone query a common service. Every one fire up query, what will happen? Let say for example location.

Cheol (ETRI): You can find a lot of open AP, it does not provide internet access. Just beacon for one or two services it can be enough.

Chair: It sounds that we are debating two alternative here, the constrain is the capacity of the engineering of the system. So this debate could going for hours. We can debate that offline.

Yunsong Yang(Huawei): This is a regular IE, the length should be 1 oct.

SK(Apple): maybe it is a typo.

Santosh Abraham (Qualcomm): What is the advertisement ID?

SK(Apple): Let’s say within the AP, they are two same services being offered by the AP. How would we differentiate that?

Chair: The advertisement ID, already defined 802.11-2012.

Emly(Intel): You did not include service hash? Sometimes it may not one to one match. I will think about that. Service hash element, service hint also have service hash, is that the same service hash?

SK(Apple): We may not need this one. If the group do not think it is needed here, that is fine.

Emly(Intel): The element format, what is the info ID?

SK(Apple): Same as ANQP element.

Chair: We need to clarify. Do need more explanation.

Emly(Intel): I put my editor hat on. In the element you have sub-element. Seems you have an element in element and in element.

Chair: I agree with you. That needs to be clarified.

Yunsong Yang(Huawei): The whole thing should be PADP element. The tile of figure should be PADP element.

Chair: Are you going to do a straw poll or a motion?

SK(Apple): Not this time.

Emly(Intel): The draft of the text is not clear to me what is the original text, what is the change of original text.

SK(Apple): This draft is not asked to incorporate into draft 0.01. That is why I do not make straw poll or motion. I just want to proposal something based on the presentation and to see whether it make sense to everyone before I make the final change to the draft. This is different to what we have in current draft.

Yunsong Yang(Huawei): You propose to replace the mechanism already in the draft?

SK(Apple): That is my interpretation would be.

Chair: What is the timeline moving forward?

SK(Apple): I will try to address comments. What things we can do harmonization.

**Presentation by Lei Wang (Marvell) on “Service Identifiers and Bloom filter” (11-14-1262r0)**

Presented by Lei Wang on behalf of Paul A. Lambert (Marvell)

Dan Gal (Alcatel-Lucent): Is this an educational material or proposal?

Lei Wang (Marvell): This is a proposal.

SK(Apple): He has a proposal, how to generate the hash function.

**Presentation by Yunsong (Huawei) on “Extending CAG Number Concept” (11-14-1253r1)**

Yunsong Yang(Huawei): Update the slides based on yesterday’s feedback.

Santosh Abraham (Qualcomm): You are changing the terminology?

Yunsong Yang(Huawei): Yes, just change the acronym. CAG was called “common advertisement group” and now it is called “common ANQP group”. This would minimize the change of terminology.

Dan Gal (Alcatel-Lucent):

Chair: When you finished, Yungsong, I have an architecture diagram of the way this database arranged and those protocol, I will show you that and may also show in 11ai because people are so confused about ANQP, GAS and other protocols, like RLQP and what we are trying to do here. There is a clear separation and reason for this. But it seems has lost in history some times. ANQP is the default advertisement protocol and many people forgot that there are many other advertisement protocols.

Santosh Abraham (Qualcomm): If ANQP is not enough. If that is the case, why you overload CAT? Let it do the mc.

Jon(CSR): Put everything in amendment is not a good idea.

Cheol (ETRI): In the point of 11ai, the acronym is good. What does the acronym mean in the point of this group?

Yunsong Yang(Huawei): In ai it called common ANQP group. We call it common advertisement protocols group. I want to drop the “protocols” and keep acronym to minimize the text change. Even you look at common ANQP group it is not very well self explained either.

Santosh Abraham (Qualcomm): We should not create confusion when not have to.

Yunsong Yang(Huawei): The key change required in 11ai text is to revise the sub-clause text to add a new CAG number IE. This single IE can support both ANQP and PADP. That is the key change, the other is terminology. I have a word document to show the text proposal.

Santosh Abraham (Qualcomm): Is there a effort to merge the two groups? This is trying to make amendment to 11ai, would that mean that 11ai push out waiting for this amendment finished?

Chair: No.

Yunsong Yang(Huawei): That is why I divide the text into text common for ANQP and PADP, text specific to ANQP and text specific to PADP.

Jon(CSR): utilizing the term for multiple algorithms, that is not actually overload of the term, it is clarifying what the term is. Submitting to mc is quite often to clarify that the terms actually do multiple things. We change some of them much but it is harder when you wait to do that in mc because of the deployment and the default historical use of that cause people confusion to change the name. When present this in 11ai, probably some of this concerns would be addressed.

Chair: I think what we are doing is kind sort of color widget.

Dan Gal (Alcatel-Lucent): Five bits reserved in 11ai. This is extend, not changes.

Santosh Abraham (Qualcomm): we should reduce confusion as much as possible.

Chair: I understand that 11ai is under political pressure to move forward. I do think this could cause a lot of confusion in ai. My attitude as aq chair is if you look at all the debate is causing a lot of confusion. My attitude is we tried to walk away from it and we will do the normal the straight forward process. ai does this work and aq extend does that. But I think this opportunity is simple change. And basically what we are doing is to ask 11ai to do a favor because ai does not need to do anything but if you want to this work, it will help aq. I am completely aware of the pressure under 11ai and very aware the confusion it can cause.

Dan Gal (Alcatel-Lucent): We need those five bits.

Chair showed the architecture diagram from 11u.

Yunsong Yang(Huawei): Walk through the text changes. (1266r0)

Santosh Abraham (Qualcomm): You submit a comment to 11ai?

Yunsong Yang(Huawei): There are two ways we can do this. If ai agree the change is simple, they can accept it.

Santosh Abraham (Qualcomm): The problem with that it will open a door that every one request simple change.

Chair: Is that a final agreement in ai that you will only answer comments to progress?

Santosh Abraham (Qualcomm): My understanding is yes.

Chair: On the normal circumstances anyone with a submission can comment to a technical meeting as long as the chairman is happy for that presentation to be presented it is not necessarily to answer comments. I just want to make sure that 11ai is not preventing people for doing that.

Santosh Abraham (Qualcomm): This looks like resolution of comments. I guess the response the ai group is to submit it to letter ballot as comments resolution?

Yunsong Yang(Huawei): Go through the document of 1268r0.

Dan Gal (Alcatel-Lucent): Question about process, does 11 allows one amendment to amend another amendment? Or it only allows amending published standards?

Jon(CSR): The 11aq draft should consider not only ai, it also should consider all the amendment that ahead of 11ai. Coordination work is needed between different groups.

Cheol (ETRI): Last paragraph, it talked about increasing numbers, it is better to leave it just number.

Yunsong Yang(Huawei): The number tend do not change quick often. It could be very stable. The defining of the CAG depends on the server. This is just the simple rule of how you change the number.

Cheol (ETRI): We should allow decrease the number.

Yunsong Yang(Huawei): 11ai use increasing number.

Chair: I think you need interoperable mechanism.

Chair: Can you go back to the motion?

Yunsong Yang(Huawei): The plan is that in joint session, motion 1, in the conceptual level, whether ai and aq can agree.

Dan Gal (Alcatel-Lucent): What is the implied action for the motion? Reserve the five bits derived from the motion? If motion 2 is rejected, only motion 1 passed, what is the action?

Yunsong Yang(Huawei):The motion passes means the ai and aq are committed to consider revision of the text based on their own revisions.

Andrew (Cisco): Confuse of the motion. Who will move the motion?

Yunsong Yang(Huawei): The joint meeting of the two groups.

Andrew (Cisco): Straw poll is better?

Jon(CSR): When you want to get a direction, straw poll is better. Motion means you have a concrete idea.

Chair: There are several options. We can have several motions. Let us have a straw poll, if majority of the feeling is to make a change. Perhaps we can craft a motion in the joint meeting and then we will run with that.

Mike Montemurro(BlackBerry): You do not need to motion 2, just need to do motion 3.

Yunsong Yang(Huawei): People may have concerns about text at this level, I want to do layer by layer.

Chair: Everyone in this room happy with the motion text?

Santosh Abraham (Qualcomm): Do not believe this is useful effort.

The chair recesses the meeting at 14:24.

**Tuesday, September 16th, 2014, 13:30 to 15:30 (PM1)**

Joint session with 11aq.

Agenda: 1031r3.

Chair: Not coming to ai to say ai, you have to do this because aq want you to do that. We are not coming to here to pass the motions to force ai to accept aq idea. If majority member of ai against this idea, aq will withdraw. Does anyone have question?

Chair: Before Yungsong start his presentation, I’d like to present 11u architecture (doc 1031r3).

Chair presents the 11u architecture (1031r3).

**Presentation by Yungsong Yang (Huawei) on “Extending CAG number concept” (11-14-1253r2)**

Marc Emmelmann: Is this the prefer way from the aq membership?

Chair: I cannot answer that because we do not have a straw poll. There is no objection.

Jarkko(Nokia): Why not ANQP also serves as the service discovery?

Chair: That is one way you can do it. But in 11aq, we decide that we want to define separate protocol for that.

Mike Montemurro(BlackBerry): Even we 11aq adopted ANQP, you do not want to tie network discovery configuration and service discovery configuration.

Marc Emmelmann: The scope that defining in ai draft is only define by bits 000 to 010?

Yunsong Yang(Huawei): Yes, this is about asking to reserve the higher bits.

Yunsong Yang presents the proposed text changes. (Doc: 1266r0)

Chair: Do you have straw poll?

Yunsong Yang(Huawei): Yes.

**Straw poll: Do you support the notion of extending the current 11ai CAG Number such that the CAG Number is advertisement protocol dependent and supports at least ANQP and PADP?**

**Yes: 9**

**No: 0**

**Abstain: 4**

Dan Gal (Alcatel-Lucent): Question about the process. We know that 11aq member support it, but we do not the position of 11ai.

Chair: This is a joint meeting and every one can vote at wish.

Hiroshi Mano: The intend of straw poll is to see people’s idea about this.

Cheol (ETRI): I’d like to hear the opinion from ai that who is abstain.

Jarkko(Nokia): Two documents show here that are quite new document. For me, this level of detail is quite high. I am not very convinced that why cannot use ANQP.

Jouni(Qualcomm): I like to see a unified solution.

SK(Apple): I think the during the meeting earlier, we did had discussion why not use ANQP.

Hiroshi Mano: We can allocate 20 minutes in 11ai Thursday meeting. You can present your idea there again.

Chair: Yunsong, would you like to go to 11ai meeting on Thursday?

Hiroshi Mano: Steven can submit the proposal as a comments based on draft 3.0 version.

Yunsong Yang(Huawei): For the Thusday meeting, just re-present? Does not need to submit as 11ai document?

Hiroshi Mano: Yes, no additional works. Just give the 11ai member a second chance to look at the proposal.

Chair: If there is no other question, I’d like to recess the 11aq part of the meeting.

**Wednesday, September 17th, 2014, 8:30 to 10:30 (AM1)**

Chair: Agenda is 1031r4. Does anyone have objection to approve the agenda?

None.

**Presentation by Cheol (ETRI) on “TGaq-PADP(Pre-Association Discovery Protocol)” (11-14-0443r4)**

Dan Gal (Alcatel-Lucent): I do not see the text highlight the changing.

Cheol (ETRI): I do not highlight all the changing in the presentation.

Yunsong Yang(Huawei): In page 2, you have PADP version number. New extension requires new PADP version number. You need to define new IE. Not sure backward compatible. Never happlen to any other IE that we have. Second question is the CAG version number, is this going to replace the CAG?

Cheol (ETRI): Yes.

Yunsong Yang(Huawei):If ai agrees what we propose to them, that CAG number will support PADP as well. So that will duplicate what you have here.

Yunsong Yang(Huawei): I like the idea of mode. I like that you change the terminology. As a task group we should discuss how many mode we have. How we indicate them. Do we allow AP support two mode simultaneously?

Cheol (ETRI): At least we need to support two modes.

Yunsong Yang(Huawei): PADP sub-element should be PADP-element. We did not define sub-element. We should keep that term.

Cheol (ETRI): PADP ID should be in ANQP. Do you think it is possible?

Yunsong Yang(Huawei): Follow the same structure of RLQP, we do not overlap with ANQP and RLQP. If you see the convention of ANQP and RLQP, you will know what I mean.

Cheol (ETRI): I’d like to discuss with you offline.

Yunsong Yang(Huawei): In ANQP protocol, you can put multiple element in a single query or response. We can do the same.

Dan Gal (Alcatel-Lucent): Suggestion to be more productive, if you hear comments, you can change it online. Close the loop of comments and changes.

Santosh Abraham (Qualcomm): Figure 8.4.0.4. Do you need the number of SIDs?

Dan Gal (Alcatel-Lucent): page 2, PADP version, what is it?

Yunsong Yang(Huawei): We never put a protocol version number in information element before.

Yunsong Yang(Huawei): You have broadcast window? PADP generate by proxy, not control by the AP. Not even see by the AP. It must be proxy generate the window. AP only sees the GAS frame. Hard for AP to put higher priority in the AP the queue. What the accuracy of this window?

Emly(Intel): Question to chair, what is the process of comments resolution.

Chair: Draft 0.01 version is not approved. It is still in very early stage. As chair, I would like to see a document by the end of this week and start comments collections.

SK(Apple): There will be a draft 0.02 this week?

Chair: Yes. That is the plan.

SK(Apple): Base on what?

Chair: The group had provide editor new material.

SK(Apple): Question to the value of draft 0.02. I’d rather to take more meeting and more offline discussion.

Mike Montemurro(BlackBerry): Instead of speculate whether it is useful, we can use draft 0.02 to figure out where we are.

Dan Gal (Alcatel-Lucent): Draft 0.01 is that we had an agreed architecture. Now we have alternate solution. If we have more than one solution we need to selection. Choel’s can be merged. SK require different process. Nothing in the rule can stop anyone to provide new document?

Chair: We need the process of merging different proposal. Yes, even in the ballot stage, you can still provide new document.

**Presentation by Dapeng Liu (CMCC) on “Service Discovery Using JSON for 802.11aq” (11-14-1204r0)**

Dapeng Liu(CMCC): I can show the word version and then take questions.

**Presentation by Dapeng Liu (CMCC) on “Service Discovery Using JSON for 802.11aq” (11-14-1205r0)**

Santosh Abraham (Qualcomm): Which table should JSON be added, PADP identifiers or Upper layer protocol mappings?

Chair: Same question as Santosh. We have two tables. Why do you make suggestion to make extension in PADP identifiers table?

Dapeng Liu(CMCC): I have consider that when I prepare this proposal. I think this proposal should be generic.

Dan Gal (Alcatel-Lucent): Who are communicating with JSON, which one is the receiver?

Dapeng Liu (CMCC): STA and proxy.

Mike Montemurro(BlackBerry): The device itself need to support JSON.

Chair: Since you have JSON format application in device, do you need a JSON specific frame in 11aq?

Emly(Intel): The table should be ULP ID or PADP ID?

Yunsong Yang(Huawei): This should not be an identifier, this should be a mode. It indicates which PAD mode it talking about.

Emly(Intel): So that should be PADP ID？

Chair：Right.

SK(Apple): I have a fundamental question, do we really want to translate all the higher layer protocols? This is not specific to JSON this applies to all the ULP here.

Yunsong Yang(Huawei): I want say that in notion that 11aq should support JSON, that is one upper-layer protocol, the more upper layer protocol we support, the better we can make ourselves useful to other standard protocols. But I guess I heard a lot of people say what make JSON stand out from the other upper layer protocols.

Dapeng Liu (CMCC): In my understanding, JSON can convey variable content information.

Yunsong Yang(Huawei): So you are talking about certain attribute may change, right? That is all be true for UPLP, Bonjour etc? What makes JSON need a specific transport mechanism compared with other upper layer protocols?

Dapeng Liu (CMCC): Not should whether we should treat this as a specific transport mechanism. It could be alternative encoding mechanism.

Yunsong Yang(Huawei): If you want an alternative encoding mechanism do you want that principle also apply to other upper layer protocols?

Dapeng Liu (CMCC): I think that is not necessary.

Yunsong Yang(Huawei): OK, then we can open for discussion. My suggestion is why not put this JSON format in the bigger table.

Dapeng Liu (CMCC): Will consider that. This time I do not want to run a motion, since I did not attend July meeting and may miss some progress here. Would like to get feedback.

Mike Montemurro (BlackBerry): JSON is not an upper layer protocol.

Ping Fang (Huawei): Question about the table not to Dapeng’s proposal, it should be PADP ID?

Yungsong (Huawei): Yes, it was a mistake in current draft.

Dan Gal (Alcatel-Lucent): Do you know JSON has been used in any service discovery protocols?

Dapeng Liu (CMCC): JSON is widely used in Web. Not sure any application for service discovery protocol.

Yungsong (Huawei): What is the meaning of ULP ID equals zero? It is already in the draft, I just forgot why it was there.

**Presentation by Dapeng Liu (CMCC) on “Service Discovery Using JSON for 802.11aq” (11-14-1206r0)**

Dapeng Liu (CMCC): Propose to add service type “VoIP” in the service bitmap.

Chair: Any objection to incorporate this into current draft?

Yungsong (Huawei): Question about the notion of the bits. Usually when we say a bit we just put a number there as the length of that field. If you really want to indicate position of the bit, you should say bit 1, bit 0 and so on. If you put a number 5 there, usually it means the length of this field is 5 bits.

Mike Montemurro (BlackBerry): What is the specific of VoIP?

Dapeng Liu (CMCC): VoIP is a indicate service, you do not name voice call as multimedia interactive service.

SK(Apple): I have a more fundamental question whether we need this service type here.

Chair: Will work with Dapeng to prepare some text to explain entry of service type.

**Thursday September 18th, 2014, 10:30 to 12:30 (AM2)**

Chair: Agenda 1031r5.

**Presentation by Rober Slater(Motorola Mobility) on “IMS Service Discovery Over PADP” (11-14-1293r0)**

Santosh Abraham (Qualcomm): How many operators support SIMPLE?

Rober Slater (Motorola Mobility): Europe, north America.

Yungsong (Huawei): OMA specifies service id string. Can you elaborate more how they generate that?

Rober Slater(Motorola Mobility): thy only define strings for different services.

Cheol (ETRI): If this different from query request?

Rober Slater (Motorola Mobility): For SIMPLE present, SIP transaction based protocol. Not only based on query also based on notifications.

Cheol (ETRI): You will have more than one notification message.

Rober Slater (Motorola Mobility): Hijack message for pre-association message.

Cheol (ETRI): Before subscribing, you need authentication. You remove authentication, just provide simple query.

Yungsong (Huawei): Is this query/response based approach?

Rober Slater(Motorola Mobility): If you asking more information that is query/response approach.

Chair: AQ Annex example text? Straw poll anyone think is it ok?

**Yes: 8**

**No: 0**

**Presentation by Stephen McCann (Blackberry) on “Simplification of service identifiers” (11-14-1277r0)**

Stephen handles chairmanship to vice chair Yungsong Yang.

Cheol (ETRI): In the case of AP broadcast two modes simultaneously, hash and encapsulation, how does the STA know which one?

Stephen McCann (Blackberry): Mode number will include in the request/response message. The AP and the STA knows.

Yungsong (Huawei):We need to be careful here. Each of the request/request in a dynamic fashion. That means we need to mandate STA support two modes. Another possibility is that in this table can add an entry whether the STA can support both.

Santosh Abraham (Qualcomm): It is feasible approach.

Chair: I’d like to know whether this is a reasonable update of draft 0.01?

Cheol (ETRI): Do you want to include JSON in the motion? Do not want to include.

Yungsong Yang (Huawei): Draft a motion.

**Request the TGaq editor to incorporate document 11-14-1277r1 in the current TGaq draft, removing the “JSON” entry in Table 8-402aq.**

Jouni (Qualcomm): Four hours rule.

Stephen McCann (Blackberry): We had a motion in May to adopt draft 0.01.

Jouni (Qualcomm): What is the difference of the two versions?

Stephen McCann (Blackberry): Update based on discussion.

Ping Fang (Huawei): Can you go back to the document? Table 8-401, the mode is not accurate enough.

Yungsong Yang(Huawei): If you look at the text, you have request PADP element using HASH and response PADP element using HASH. In terms of element format, these descriptions are there. In the general section, there should be a description says AP support that mode.

Jouni (Qualcomm): Add a PAP Mode in the value?

Yungsong Yang(Huawei): The title can tell that.

Cheol (ETRI): Change PAD Mode to description.

Dan Gal (Alcatel-Lucent): want to use term mode. Mode is description not numbers.

Stephen McCann (Blackberry): I withdraw my motion. I really do not understand what you want. In this process of 11aq I really do not think we need to go to that detail.

Yungsong Yang(Huawei): I can show existing specification. Element ID is not called Element ID value. I think it is very clear which mode is talking about.

Stephen McCann (Blackberry): I think that is the end of my presentation.

Yungsong Yang(Huawei): I want to make sure the members here are comfortable with the content of the material here.

Stephen McCann (Blackberry): What am trying to do here is to moving forward.

SK (Apple): You say moving forward, you mean generation draft 0.02?

Stephen McCann (Blackberry): I will stop my presentation and not run the motion at this time.

Yungsong Yang(Huawei): I handle the chairmanship to Stephen.

Chair: We need to discuss how we can progress. I’d like Cheol and Ping gives me feedback on document 1277r1.

Jouni (Qualcomm): You will change the proposal now and run the motion?

Chair: Yes, I will do the change live. The process is OK.

Dan Gal (Alcatel-Lucent): When will do you this?

Chair: I am trying to do now.

Adrian Stephens (Intel): If material been presented in the task group and members have reviewed the material, the chair can make the decision whether the material is complicate enough that need four hours.

Chair: I will handle chairmanship to Yungsong.

Stephen McCann (Blackberry): I am going to present 1277r2 again.

Santosh Abraham (Qualcomm): I header r1 and footer of the document still says r0.

Marc Emmelmann: May I suggest to upload to r3?

Jouni (Qualcomm): There is no r2 on the server.

Stephen McCann (Blackberry): May I invite Cheol and Ping to assist me to edit mode.

Cheol (ETRI): Change PAD mode desertion. PAD mode ID.

Marc Emmelmann: PAD Mode description, PAD mode field, not sure consistent or not?

Stephen McCann (Blackberry): No more comments. Is that OK for me to save this as r2?

Yungsong Yang(Huawei): Any discussion about motion?

**Motion: Request the TGaq editor to incorporate document 11-14-1277r2 in the current TGaq draft.**

**Yes: 8**

**No: 0**

**Abstain: 6**

**Motion passes.**

Yungsong Yang (Huawei): I will handle chairmanship back to Stephen.

Chair: Any comment to how to move forward.

Dan Gal (Alcatel-Lucent): Need to change 1277r1 to 1277r2.

Chair: Any object to add 1277r2 in the agenda?

Chair: Question raised in joint session with 11ai. How about put together a ANQP/PADP presentation for Nov meeting. I can present here in aq and to present it in ai.

Dan Gal (Alcatel-Lucent): Need to upgrade the sub-bullet to bullet of the agenda?

Chair: Can we just leave it, is that OK?

Jouni (Qualcomm): Ai should be not the same as what aq needs to do.

Chair: What I am going to do is make a presentation, present in aq in Nov meeting.

Yunsong Yang (Huawei): We have two editorial changes, should we incorporate that?

Chair: There are some editorial changes that we discussed in July. Editor can incorporate that.

Chair: Will talk with Marc about the presentation to coordinate the time. Any more comments?

Yunsong Yang (Huawei): Show existing ANQP draft convention. Drat P802.11Revm-0.3.2. shows the conventions about the element/sub-element.

Chair: Any more discussion on the draft and numbering.

Chair: The aq timeline. Initial working group letter ballot? I think we should move to March 2015.

Dan Gal (Alcatel-Lucent): I heard comments early this week. Last re -circulation?

Chair: Teleconference. 7th October 10:00 ET.

SK (Apple): change to 12:00 ET noon ET for 1 hour

Chair: Nov meeting, 4 slots, room for 30.

Marc Emmelmann: Do you need a design team meeting CAG number.

Chair: I will submit a comment, have a joint Ad hoc meeting, to go through the comments resolution.

Yunsong Yang (Huawei): Do we need to start comments collection.

Chair: Dan will prepare d 0.02, do we want to start a comment collection on this draft.

Chair: Anyone object if I start a call for comments on the draft 0.02?

Jouni: Do we need a motion to start comments collection?

Adrian Stephens (Intel): No.

Yunsong Yang (Huawei): I have a request to editor. Also put RTF version on the member area? Hard for members to revise PDF version.

Dan Gal (Alcatel-Lucent): Why RTF not word? Can do both.

Chair: Anyone wants to learn how to use the tool of comment ballot. Please send me email.

Chair adjourned the meeting at 12:07