

**TSG RAN WG1#7
Hanover, Germany
August 31-September 4 , 1999**

TSGR1#7(99)b76

**Agenda Item: AH 14
Source: Golden Bridge Technology
Title: E-mail Discussion Summary
Document for: Discussion and Approval**

Areas of AH14 reflector discussion:

1. CPCH proposed texts

Nokia
GBT

Nokia commented that the proposed texts for CPCH should be identical to RACH in terms of AP and CD preambles. GBT agreed and incorporated the corresponding changes.

There were no other comments on the reflector on these proposed texts.

Conclusion: proceed to present the texts to the opening plenary as had been agreed to in the previous ad-hoc 14 meeting.

2. DPCCH Gating proposed texts (summary from Samsung)

Philips
Ericsson
Samsung

Samsung submitted a separate e-mail summary discussion.

Conclusion: Samsung to present this separately.

3. CPCH improvements and other CPCH-related discussions

A. Access Protocol discussions and contributions:

Philips proposed broadcast of status information (maximum available bit rate) on PICH for CPCH. Some discussions with Anite Limited where Philips defended the approach.

GBT-Philips: Status broadcast and idle-AICH (herding, longer delay and monitoring issue)

Some discussions on throughput delay performance and various possible methods

GBT:

“ I think your suggestion is an improvement over Samsung
> and IDC since it is a synthesis of both and it eliminates the extra step in
> Samsung's proposal. Samsung's proposal was a generalization of IDC's proposal,
> but had the advantage of using the negative AICHs so we saved one DL
> Channelization code.
>
> At any rate, we will submit our simulation results, which are protocol level
> simulations which include the impact of collisions, re-transmissions, aborts
> due to downlink errors, etc. to the next meeting. “

Samsung:

“Philips's proposal seems to me an enhancement of Samsung's proposal. By sending the CD-AICH and CA-AICH at the same time. The delay can be reduced, and a code resource for CA-AICH can be saved.”

Conclusion:

Samsung and Philips submitted a joint proposal with CA-AICH. There was no comments from IDC which had proposed a similar scheme.

GBT has proposed the use of idle-AICH and submitted the contribution to the reflector. GBT had suggested use of simulations to compare performance of these various enhancements.

B. On the issue of packet length

Philips:

“The main idea is that the packet length would be needed to help in controlling access to CPCH channels. For example if a CPCH packet has finished (or is known to be finishing in the near future), the channel can be re-allocated. In the current scheme the packet length would presumably be determined by a potentially uncertain blind detection process, and consequently the renewed availability of the channel would only be known some time after the end of the packet”.

“In addition, if format information is included in the header, this would be used by layer 1 in decoding the packet (as a more efficient method than sending TFCI in DPCCH).”

Ericsson

>- Should the header be part of the "DPDCH" or the "DPCCH" (on I or Q)?

>

> - Especially if it is on the DPDCH, is this not a L2 issue, i.e. from the L1 point-of-view we can see it as part of the message?

>

> /Erik

>

Nokia

> If the CPCH is used for example for file uploading lasting several hundred ms, doesn't the ARQ information come on FACH in the downlink direction while the transmission is still on going?

> Perhaps we need to have a look at relevant WG2 specs on this...

>

> Would this be the case should we have the duration values then 1 to N-1 and then value N would mean K bytes OR higher duration with the K bytes expected to be the value when there is not yet feedback (ARQ) coming on FACH.

>

> Best Wishes: Antti Toskala

> Nokia Telecommunications

GBT

“Here are some clarifications and comments to some of the previous e-mails in this thread.

Regarding the ARQ in CPCH, currently the DL-DPCCH associated with CPCH-UL does not carry any ACKs or NAKs. It is rather carried over FACH. The reason has been the fact that DL-DPCCH is uplink demand driven and is not necessarily there when the ARQ response comes back from RLC layer in UTRAN.

Regarding the issue of header and such indication, we have assumed that the stop of the transmission in the UL can be detected by the Base Node PHY within a few slots. So, the resource can be almost immediately re-assigned to another UE based on the demand. I do not think the little idle gap is much of consequence in terms of throughput to warrant inclusion of packet length information in the PHY.

Regarding the usage of CPCH and the range of frame lengths, we think the breakpoints between the RACH - CPCH - DCH should be determined. It makes sense to use RACH for very short packets and a frame length of 1 and low rate perhaps. As far as the transition between CPCH and DCH, it should be a function of the queue depth and should be UTRAN decided (general point). On the other hand, it is a matter of resource usage efficiency arising from usage of packet mode (CPCH) versus circuit mode (DCH). More specifically, we think there is a few hundred ms time requirement for set-up and release for the DCH resource by UTRAN (varies based on the Iur, Iub traffic loading), this means that the assigned Base Node resource will be idling in that time period and unless the packet length is much greater than this idling time, then it does not make sense to use DCH. When the packet length is high enough to make this few hundred (?100-?300) ms irrelevant, then UTRAN should switch the UE from CPCH to RACH. Currently, the only accepted traffic intensity/volume measurement is Queue depth (Bytes), so the UE reports that to UTRAN and UTRAN can transition the UE from RACH/CPCH/DCH. “

Anite Telecoms Limited

“Kourosh,

Re the first paragraph in your reply.

If the data is sent in Acknowledge mode, then does there not have to be a timer to prevent the physical layer being cleared before the ACK/NACK/retransmissions have been completed. Or is the intention to allow the ACK/NACK to be sent on the FACH and the retransmissions to be sent on the next CPCH access.

If the latter is the case then the next CPCH must be set up within the delays allowed by the timers used at the higher protocol layers. Is this likely to be an issue when traffic levels are high ?”

Conclusion: No clear conclusion. Contributions are submitted and the issues will be discussed in the physical meeting.

C. FEC for CPCH

“Dear AH14 experts,

I would like to know the FEC scheme for CPCH and DSCH.

The FEC for CPCH is R=1/2 Convolutional code (the same as RACH)?

The FEC for DSCH is Turbo and Convolutional codes (the same as DCH)?

These should be included in Table 1 "Error correction coding parameters" of TS 25.212.

Best regards,

Takashi MOCHIZUKI”

Conclusion: No discussion took place on the topic due to lack of time. (it is the contributor's impression that FEC for CPCH will be similar to DCH). Further discussions in the physical meeting.

Subj: AH14: Comments on Tdoc A37 (DPCCH gating etc)
Date: 8/2/99 7:44:58 AM Eastern Daylight Time
From: mousley@PRL.RESEARCH.PHILIPS.COM (Tim Mousley)
Sender: 3GPP_TSG_RAN_WG1@LIST.ETSI.FR (3GPP_TSG_RAN_WG1: TSG RAN Working Group 1)
Reply-to: mousley@PRL.RESEARCH.PHILIPS.COM (Tim Mousley)
To: 3GPP_TSG_RAN_WG1@LIST.ETSI.FR

Dear All,

I support the general approach for discontinuous control channels in Tdoc A27. However, some parts of the proposed text for 25.214 could be further clarified before the next WG1 meeting.

Therefore I offer the following comments/questions:

The new title of section 7 reflects only gated transmission. Perhaps a slightly different structure is needed, for example:

7. Discontinuous Transmission

7.1 General

7.2 Gated transmission in DCH/DCH Control Only Substate

etc

7.3 Rapid initialization of DCH

etc

Is TFCI transmission needed on the downlink in gated mode with no DPDCH transmission?

In 7.4 extending the set of diagrams to cover all the possible cases may be helpful.

The first example presented is setting up a DSCH. Perhaps it would be more natural to first describe initialisation of DCH for uplink packet transmission.

In considering initialisation of a DSCH, perhaps some more detail needs to be given on how the UE would initiate a call using a DSCH. Would there also be activity on the uplink DPDCH (not shown in figure 5)?

Is it intended that the resumption of DCH (as shown in Figure 7) would be used in the case of DPCCH gating mode 0? If so, this should be clearly stated.

Regards,

--

Tim Mousley

Subj: Fw: Re: AH14: Proposals for improvements to CPCH
Date: 8/5/99 5:45:00 PM Eastern Daylight Time
From: kzickermann@gbtwireless.com (Karin Zickermann)
To: kpgbt@aol.com

----- Original Message -----

From: (Clement Fisher) <Clement.Fisher@ANITETELECOMS.COM>
To: <3GPP_TSG_RAN_WG1@LIST.ETSI.FR>

Sent: Thursday, August 05, 1999 10:02 AM
Subject: Re: AH14: Proposals for improvements to CPCH

> Tim, thanks for the correction. I think I concentrated too much on
reading
> the 5 page document and did not read the 4 page one thoroughly enough.

>
>
> Regards

>
> Clem Fisher
> Manager, New Technologies
>
> Anite Telecoms Limited Registered in England No. 1721900 Registered
> Office: 353 Buckingham Avenue, Slough, Berkshire, SL1 4PF

>
>
>> -----Original Message-----
>> From: Tim Mousley [mailto:mousley@PRL.RESEARCH.PHILIPS.COM]
>> Sent: 05 August 1999 14:28
>> To: 3GPP_TSG_RAN_WG1@LIST.ETSI.FR
>> Subject: Re: AH14: Proposals for improvements to CPCH

>>
>>
>> Dear Clem,
>>
>> Many thanks for your comments.
>>
>> I added some clarifications below.
>>
>> Please let me know if you have any more questions.

>>
>> Regards,
>>
>> Tim Mousley
>>
>> Philips Research Laboratories
>> Tel: +44 1293 815000
>> Direct: +44 1293 815717
>> Fax: +44 1293 815500
>> Email: mousley@prl.research.philips.com

>>
>>
>> (Clement Fisher) wrote:
>>>
>>> Tim et al
>>>
>>> There seem to be some good ideas in your proposals and I
>> particularly like
>>> the broadcast of CPCH status instead of the mobile having
>> to look at AICH
>>> responses to assess occupancy.
>>> However, I would like to raise a couple of points - please
>> correct me if I
>>> have misunderstood.

>>>
>>> a) Your proposal seems to replace the multiple CPCH per cell
>> with a single
>>> one with a combined capacity, where the current capacity is
>> signalled on the
>>> PICH. Reading the words, only a single Access Preamble
>> (AP) code will be
>>> required. The mobile requested capacity is indicated by a
>> broadcast mapping
>>> of preamble signatures against bit rate. The number of
>> signatures in the
>>> original proposal was only 16 - this does not allow the
>> mobile much random
>>> choice. Is this a correct understanding ?
>>
>> We retain the idea that there will be multiple CPCH's, but
>> the method of
>> assigning the uplink and downlink codes is changed from the original
>> CPCH concept.
>> The intention is to indicate on the downlink the maximum bit
>> rate which
>> a single UE can use on the CPCH (rather than the total capacity
>> available).
>> There would still be a number of access preambles (up to 16). Clearly,
>> collision probability is reduced if there are several access preambles
>> per bit rate, but the system can still operate with only one AP for a
>> given bit rate.
>>
>>> b) In point 2 of your proposal, you say that the preamble
>> signature is mapped
>>> to the DL Channelisation code. This contradicts point 5
>> where the DL
>>> channel code is defined in the CD contention resolution phase.
>>
>> Thanks for spotting this error in point 2! The statement in point 5 is
>> the correct one.
>>
>>> On a more general level, your proposal, like the originals
>> from GBT, still
>>> only allows a single CPCH channel to be allocated per 'CPCH
>> access slot'
>>> even if there is enough capacity in the CPCH for several to
>> be allocated.
>>> (eg Your statement in point 5 of the new proposal says 'the network
>>> acknowledges at most one of the contention resolution preambles').
>>
>> In principle this is a limitation of capacity, but for likely
>> values of
>> parameters such as packet lengths, number of CPCH's, etc does not seem
>> to be a major problem. The practical limiting factor is more likely to
>> be total uplink capacity.
>> In any case additional access/contention resolution channels for CPCH
>> could be provided if necessary.
>>
>>> If all the mobiles are capable of running at very high bit
>> rates, then one

>>> allowed CPCH per access slot is probably adequate. I am
>> not so sure in the
>>> case where for example there are lots of mobiles with say
>> 64k max packet
>>> access capability.
>>
>> I agree that worst case (for access rate) is where most users want to
>> send short packets at the minimum bit rate. Currently we are
>> drafting a
>> document on CPCH performance, where the results indicate,
>> amongst other
>> things, that one CPCH allocation per access slot is likely to be
>> sufficient. This document will be issued soon.
>>
>>> Does anyone else see this as an issue ?
>>>
>>> Regards
>>>
>>> Clem Fisher
>>> Manager, New Technologies
>>>
>>> Anite Telecoms Limited Registered in England No. 1721900
>> Registered
>>> Office: 353 Buckingham Avenue, Slough, Berkshire, SL1 4PF
>>>
>>>> -----Original Message-----
>>>> From: Tim Mousley [mailto:mousley@PRL.RESEARCH.PHILIPS.COM]
>>>> Sent: 04 August 1999 19:26
>>>> To: 3GPP_TSG_RAN_WG1@LIST.ETSI.FR
>>>> Subject: AH14: Proposals for improvements to CPCH
>>>>
>>>>
>>>> Dear All,
>>>>
>>>> The attached draft documents outline some modifications
>> to the CPCH
>>>> scheme to improve performance. They take into account some of
>>>> the ideas
>>>> on code allocation discussed at the last WG1 meeting, and
>> introduce a
>>>> possible method of broadcasting CPCH status.
>>>>
>>>> Comments and feedback are welcome.
>>>>
>>>> Regards,
>>>>
>>>> --
>>>> Tim Mousley
>>>>
>>>> Philips Research Laboratories
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>>>> Direct: +44 1293 815717
>>>> Fax: +44 1293 815500
>>>> Email: mousley@prl.research.philips.com
>>>>
>>>>
>>

Subj: Re: AH14: CPCH packet acknowledgement
Date: 8/9/99 7:00:05 PM Eastern Daylight Time
From: KPGBT@AOL.COM (Kourosh Parsa, Golden Bridge)
Sender: 3GPP_TSG_RAN_WG1@LIST.ETSI.FR (3GPP_TSG_RAN_WG1: TSG RAN Working Group 1)
Reply-to: KPGBT@AOL.COM
To: 3GPP_TSG_RAN_WG1@LIST.ETSI.FR

Hi Tim,

Sorry for a late response. I am catching up with ad-hoc 14 e-mail discussions.

Here are some of my responses to your questions:

<< Dear All,

> In considering the transmission delay of packets sent using the CPCH, I
> found that there is no mention in the current text proposals of how the
> acknowledgement of successful receipt of the message part would be
> indicated. Presumably this would be via FACH (the same as for RACH?).
> Any comments?

Currently, it is assumed to be via FACH. Although, the possibility to propose L1 ACKs is still there.

> This may be relevant when including the effect of re-transmissions of
> corrupted packets on average end-to-end delay.

> A related question is what packet failure rate would be considered
> reasonable for CPCH?

We could assume 1% BER which corresponds to various PER depending on the packet length and the operating environment. Note that the ARQ scheme has an impact on this as well.

> I recall some earlier simulation results for RACH and DCH packet
> transmission where a packet error rate of around 10% was assumed as the
> "operating point" for determination of Eb/No requirements. Would this be
> reasonable for CPCH also?

This is probably a good assumption. However, I am not sure if we want to design a system with a lot of re-transmissions. The determination of the suitable operating point requires some simulations which includes re-transmissions, collisions, aborts, etc.

regards

Kourosh

Regards,

--

Tim Mousley

Philips Research Laboratories
Tel: +44 1293 815000
Direct: +44 1293 815717
Fax: +44 1293 815500
Email: moulisley@prl.research.philips.com >>

Subj: Re: AH14: CPCH delay characteristics
Date: 8/9/99 7:37:43 PM Eastern Daylight Time
From: KPGBT@aol.com (Kourosh Parsa, Golden Bridge)
Sender: 3GPP_TSG_RAN_WG1@LIST.ETSI.FR (3GPP_TSG_RAN_WG1: TSG RAN Working Group 1)
Reply-to: KPGBT@aol.com
To: 3GPP_TSG_RAN_WG1@LIST.ETSI.FR

Hi Tim et al,

Here are soem of my comments:

<< Dear Kourosh el al,

> Considering the delay performance of CPCH, it seems to me that average
> transmission delays will be dominated by the delay in sending the packet
> (i.e. typically a few frames) and the delay in waiting for a CPCH to
> become available (also a few frames, at least for moderate loading).

At high loading, the delay characteristics become very interesting and
protocol dependent.

So, I think there is room for improvement here. We will share our extensive
simulations with WG1 in the Hanover meeting here we see the impact of adding
the idle-AICH to the access.

> The extra delay added by the access process (i.e power ramping and
> collision resolution) will perhaps amount to another frame, and so
> optimizations here may not be a major consideration in improving CPCH.

As I said above the delay at high loading might be higher than quoted by you
here. So, the access protocol design becomes critical. Since most of the
time-critical transactions are performed in the physioical layer, the
additions are still fall in that category and we need to discuss this in WG1,
although it is "radio protocol optimization".

regards

Kourosh

> Do you have any comments on this view?

> Regards,

--

> Tim Moulisley

Philips Research Laboratories
Tel: +44 1293 815000
Direct: +44 1293 815717

Fax: +44 1293 815500
Subj: Re: AH14: Proposals for improvements to CPCH
Date: 8/9/99 8:40:30 PM Eastern Daylight Time
From: KPGBT@aol.com (Kouros Parsa, Golden Bridge)
Sender: 3GPP_TSG_RAN_WG1@LIST.ETSI.FR (3GPP_TSG_RAN_WG1: TSG RAN Working Group 1)
Reply-to: KPGBT@aol.com
To: 3GPP_TSG_RAN_WG1@LIST.ETSI.FR

Hi Tim,

I would like to make some general comments about Philips's two contributions. Regarding the addition of Channel Assign, which seems to be synthesis of Samsung and IDC's approaches, I think we should consider that and actually see the simulation results and see how the throughput delay performance increases. Generally it looks like a good idea, but it is hard to discuss anything without any concrete results.

Regarding the broadcast of the status and indicating what is the highest rate, GBT has some earlier simulations of a scheme like this and we noticed a "herding" phenomenon where UES seem to move in a "herd" going for the highest rate. So, we extended the idea to include a channel selection method in the UE and a recency table. This improved the throughput delay characteristics significantly. But still by adding the idle-AICH, we found that the results improved significantly as compared to the recency table case. So, we had the following cases:

1. Simple case, where the capacity was broadcast every 10-20 ms.
2. recency table case, where the UE monitors the AP-AICH from the node B and constructs a recency table, it also selects the channel based on the rate. The UE does not look at the capacity broadcasts anymore.
3. Random-idle case: In this case, the UE relies on the AP-AICH and idle-AICH to construct a availability table (not recency-no timestamps), and picks the desired rate randomly. This case is yielding the best performance.

Now, if we add the channel assignment to case number three, we might even see further improvement. I think your suggestion is an improvement over Samsung and IDC since it is a synthesis of both and it eliminates the extra step in Samsung's proposal. Samsung's proposal was a generalization of IDC's proposal, but had the advantage of using the negative AICHs so we saved one DL channelization code.

At any rate, we will submit our simulation results which are protocol level simulations which include the impact of collisions, re-transmissions, aborts due to downlink errors, etc. to the next meeting. We hope that we can have it ready by Friday, we are running different cases as described above. Unfortunately, we can not run the cases proposed by other companies for the next meeting since it does require quite a bit of change in the base node. Base node has to basically centrally control the CPCH channels and assign based on availability. My gut feeling is that this will do some good if combined with the idle-AICH method specially when the issue of prioritization comes into play.

Looking forward to a constructive discussion on these issues.

regards

Kourosh Parsa
GBT

> Dear All,

> The attached draft documents outline some modifications
> to the CPCH
> scheme to improve performance. They take into account some of
> the ideas
> on code allocation discussed at the last WG1 meeting, and
> introduce a
> possible method of broadcasting CPCH status.

> Comments and feedback are welcome.

> Regards,

>

> --

> Tim Mousley

>

> Philips Research Laboratories

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> Fax: +44 1293 815500

> Email: mousley@prl.research.philips.com

>

>

Subj: Re: AH14: Proposals for improvements to CPCH

Date: 8/10/99 5:46:34 AM Eastern Daylight Time

From: mousley@PRL.RESEARCH.PHILIPS.COM (Tim Mousley)

Sender: 3GPP_TSG_RAN_WG1@LIST.ETSI.FR (3GPP_TSG_RAN_WG1: TSG RAN Working Group 1)

Reply-to: mousley@PRL.RESEARCH.PHILIPS.COM (Tim Mousley)

To: 3GPP_TSG_RAN_WG1@LIST.ETSI.FR

Dear Kourosh,

Thanks for your comments.

On the idle AICH, I think I missed somewhere a detailed description of what is proposed. But from the discussion there could be some areas of concern here:

One is the duration for which the UE must monitor in order to get an accurate picture of CPCH status. This seems to have a major impact on time needed to deliver a packet.

Another is the amount of downlink transmission required (in terms of signalling rate and power).

On the idea of broadcasting CPCH status (eg every 10ms), you mentioned a potential "herding" effect of UE's trying to use the highest bit rate available. Why is that a problem?

It could be seen as a desirable feature, since every UE can obtain the best possible bit rate (ie lowest delay). If the system becomes heavily

loaded, then the maximum bit rate could be reduced.

I look forward to more discussion.

Regards,

--

Tim Mousley

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Direct: +44 1293 815717

Fax: +44 1293 815500

Email: mousley@prl.research.philips.com

Kourosh Parsa, Golden Bridge wrote:

>

> Hi Tim,

>

> I would like to make some general comments about Philips's two contributions.

> REgarding the addition of Channel Assign, which seems to be synthesis of

> Samsung and IDC's approaches, I think we should consider that and actually see

> the simulation results and see how the throughput delay performance

> increases. Generally it looks like a good idea, but it is hard to discuss

> anything without any concrete results.

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> Regarding the broadcast of the status and indicating what is the highest

> rate, GBT has some earlier simulations of a scheme like this and we noticed

> a "herding" phenomenon where UES seem to move in a "herd" going for the

> highest rate. So, we extended the idea to include a channel selection method

> in the UE and a recency table. This improved the throughput delay

> characteristics significantly. But still by adding the idle-AICH, we found

> that the results improved significantly as compared to the recency table case.

> So, we had the following cases:

>

> 1. Simple case, where the capacity was broadcast every 10-20 ms.

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> constructs a recency table, it also selects the channel based on the rate. The

> UE does not look at the capacity broadcasts anymore.

> 3. Random-idle case: In this case, the UE relies on the AP-AICH and idle-AICH

> to construct a availability table (not recency-no timestamps), and picks the

> desired rate randomly. This case is yielding the best performance.

>

b

> Unfortunately, we can not run the cases proposed by other companies for the

> next meeting since it does require quite a bit of change in the base node.

> Base node has to basically centrally control the CPCH channels and assign

> based on availability. My gut feeling is that this will do some good if

> combined with the idle-AICH method specially when the issue of prioritization

> comes into play.

>

> Looking forward to a constructive discussion on these issues.

>

> regards

>

> Kourosh Parsa
> GBT
>
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>> Tim Mousley
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>>

Subj: Re: AH14: Comments on Tdoc A37 (DPCCH gating etc)
Date: 8/11/99 7:58:08 AM Eastern Daylight Time
From: Fredrik.Ovesjo@ERA-T.ERICSSON.SE (Fredrik Ovesjo)
Sender: 3GPP_TSG_RAN_WG1@LIST.ETSI.FR (3GPP_TSG_RAN_WG1: TSG RAN Working Group 1)
Reply-to: Fredrik.Ovesjo@ERA-T.ERICSSON.SE
To: 3GPP_TSG_RAN_WG1@LIST.ETSI.FR

Dear all,

I agree that the text proposal could be clarified somewhat.

In addition to Tim's comments, I think that the term "power control group" should be replaced with "slot". Power control group is not used anywhere else in our documentation. Moreover, some "reverse links" have crept into the text, those should be "uplink".

Is some information about how to enter/leave the gating mode needed in WG1 documentation, or is that handled completely by WG2 documentation?

Finally, if we can avoid talking about substates in WG1 documentation that is preferable.

I also have a few questions on the DPCCH gating for my understanding (they may have been addressed already in ad hoc 14, in that case I apologise for the repetition):

- That the pilot is transmitted in another slot than the other DPCCH fields, is that to make sure that the pilot is received first of the fields? It would be simpler to just send all DPCCH fields in the same slot, but maybe that gives worse performance.

- What is PDCCH gating during DPDCH transmission? What data is transmitted on the DPDCH in DCH/DCH control only substate? What is the gain by gating the DPCCH when there is DPDCH transmission? I thought the gating mode was only done when there was no data to transmit. Could someone elaborate please?

Thank you / Fredrik

Tim Mouldsley wrote:

>
> Dear All,
>
> I support the general approach for discontinuous control channels in Tdoc
> A27. However, some parts of the proposed text for 25.214 could be
> further clarified before the next WG1 meeting.
>
> Therefore I offer the following comments/questions:
>
> The new title of section 7 reflects only gated transmission. Perhaps a
> slightly different structure is needed, for example:
> 7. Discontinuous Transmission
> 7.1 General
> 7.2 Gated transmission in DCH/DCH Control Only Substate
> etc
> 7.3 Rapid initialization of DCH
> etc
>
> Is TFCI transmission needed on the downlink in gated mode with no DPDCH
> transmission?
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> In 7.4 extending the set of diagrams to cover all the possible cases may
> be helpful.
> The first example presented is setting up a DSCH. Perhaps it would be
> more natural to first describe initialisation of DCH for uplink packet
> transmission.
> In considering initialisation of a DSCH, perhaps some more detail needs
> to be given on how the UE would initiate a call using a DSCH. Would there
> also be activity on the uplink DPDCH (not shown in figure 5)?
>
> Is it intended that the resumption of DCH (as shown in Figure 7) would
> be used in the case of DPCCH gating mode 0? If so, this should be
> clearly stated.
>
> Regards,
>
> --
> Tim Mouldsley
>
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--

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fredrik.ovesjo@era.ericsson.se Fax: +46 8 585 314 80

Sender: "3GPP_TSG_RAN_WG1: TSG RAN Working Group 1" <3GPP_T

Subj: Re: AH14: Proposals for improvements to CPCH
Date: 8/12/99 6:22:03 AM Eastern Daylight Time
From: hcmoon@METRO.TELECOM.SAMSUNG.CO.KR (Hichan, Moon)
Sender: 3GPP_TSG_RAN_WG1@LIST.ETSI.FR (3GPP_TSG_RAN_WG1: TSG RAN Working Group
1)
Reply-to: hcmoon@METRO.TELECOM.SAMSUNG.CO.KR (Hichan, Moon)
To: 3GPP_TSG_RAN_WG1@LIST.ETSI.FR

Dear All,

I'm sorry for the late response. I'd like to make some general comments about Philips's proposal for improvement to CPCH. (Channel Assignment) and suggest other possibility.

But, there is no detailed description about the mapping of signatures for CD-AICH and CA-AICH in Philips's proposal. I'd like give an example of signature mapping.

Assuming 16 CD preamble signature and 16 CPCH's, 512 chip orthogonal codes can be assigned for CD-AICH, CA-AICH. For example, a 256 chip orthogonal code W_i is assigned for the CD & CA-AICH. $[W_i W_i]$ code can be assigned for the CD-AICH and $[W_i -W_i]$ code can be assigned for the CA-AICH. Then the signature length of CD-AICH and CA-AICH will be 8. (since 512 spreading chip codes are used.) With the signature of length 8 and sign (+1/-1) 16 different signals can be sent for CD-AICH and CA-AICH.

(2) But, there may be other possibility of assignment. one possible limitation of current assignment scheme is that only one channel can be assign at one slot. (As Clement Fisher pointed out.) The sign (+1/-1) CD-AICH can be used for assigning up to 2 CPCH's at one slot. If UTRAN assigns first CPCH, it multiplies the CD-AICH by +1 and send the CA-AICH (multiplied by +1). If UTRAN assigns second CPCH at the same time slot, it multiplies the CD-AICH by -1 and send the CA-AICH (multiplied by -1). UE can know which CPCH by receiving the CA-AICH (which the sign of CD-AICH indicates). By this, up to 2 CPCH's can be assigned at one time slot.

I'm looking forward to your comments.
Regards,

Hichan Moon,
Samsung Electronics Co., Korea

At 07:25 PM 99-08-04 +0100, you wrote:

>Dear All,

>

>The attached draft documents outline some modifications to the CPCH
>scheme to improve performance. They take into account some of the ideas
>on code allocation discussed at the last WG1 meeting, and introduce a
>possible method of broadcasting CPCH status.

>

>Comments and feedback are welcome.

>

>Regards,

>

>--

>Tim Mouldsley

>

>Philips Research Laboratories

>Tel: +44 1293 815000

>Direct: +44 1293 815717

>Fax: +44 1293 815500

>Email: mouldsley@prl.research.philips.com

>Attachment Converted: C:\NETSTAR\EUDORA\ATTACHE\Cpchmodx.zip

>

>Attachment Converted: C:\NETSTAR\EUDORA\ATTACHE\cpchstat.zip

>

Subj: Re) AH14, comments on A37

Date: 8/12/99 6:33:32 AM Eastern Daylight Time

From: chang@METRO.TELECOM.SAMSUNG.CO.KR (PARK, Changsoo)

Sender: 3GPP_TSG_RAN_WG1@LIST.ETSI.FR (3GPP_TSG_RAN_WG1: TSG RAN Working Group 1)

Reply-to: chang@METRO.TELECOM.SAMSUNG.CO.KR (PARK, Changsoo)

To: 3GPP_TSG_RAN_WG1@LIST.ETSI.FR

Dear Fredrik, Tim, and all,

Thank you for your comments.

Please see my answers below.

> From: Fredrik Ovesjo <Fredrik.Ovesjo@ERA-T.ERICSSON.SE>

> Organization: Ericsson Radio Systems AB

> Subject: Re: AH14: Comments on Tdoc A37 (DPCCH gating etc)

> To: 3GPP_TSG_RAN_WG1@LIST.ETSI.FR

>

> Dear all,

>

> I agree that the text proposal could be clarified somewhat.

>

> In addition to Tim's comments, I think that the term "power control
> group" should be replaced with "slot". Power control group is not used
> anywhere else in our documentation. Moreover, some "reverse links"
> have crept into the text, those should be "uplink".

>

[SAMSUNG]

I already corrected "power control" to "slot" in the latest

text proposal R1-99a77. Therefore, Power control group is not used anywhere else in our documentation.

Moreover, some "reverse links" have crept into the Motorola text, those should be "uplink".

In the R1-99a77, there were two paragraphs which use "reverse link"

- section 7.2.1 : In order to initialise fast reverse link power control loop, searcher and channel estimator at the Node B, the UE will adhere to the

following:

- section 7.2.1 : The transmission of "reverse" link DPCCH will start at Nslots slots(1 to 15) prior

to the scheduled downlink packet data transmission using DSCH

-> Mr. Nakamura-san will send the revised text proposal of Tdoc A77 to the reflector soon.

> Is some information about how to enter/leave the gating mode needed in > WG1 documentation, or is that handled completely by WG2 documentation?

>

[SAMSUNG]

Since the gating is initiated/terminated by RRC primitives, no more description is required at WG1 document.

> Finally, if we can avoid talking about substates in WG1 documentation > that is preferable.

>

[SAMSUNG]

Gated transmission is operated only in the control only substate.

We recommend that the word about this substate be kept in WG1 document to prevent misunderstanding.

> I also have a few questions on the DPCCH gating for my understanding

> (they may have been addressed already in ad hoc 14, in that case I

> apologise for the repetition):

>

> - That the pilot is transmitted in another slot than the other DPCCH

> fields, is that to make sure that the pilot is received first of the

> fields? It would be simpler to just send all DPCCH fields in the same

> slot, but maybe that gives worse performance.

[SAMSUNG]

As you understand, that is for the performance.

In order to have better performance, we want to keep current structure.

> - What is DPCCH gating during DPDCH transmission?

[SAMSUNG-a]

When there is transmission on the DPDCH, the DPCCH shall be gated on(i.e shall have no gating) for the duration of the active DPDCH frame, as given in table 3, 4 and figure 7,8 in Tdoc R1-99a77.

> What data is transmitted on the DPDCH in DCH/DCH control only substate?

[SAMSUNG]

Control messages are transmitted in control only substate, e.g

- control message for link maintenance, handover, etc.

> What is the gain by gating the DPCCH when there is DPDCH transmission?
> I thought the gating mode was only done when there was no data to transmit.
[SAMSUNG]
Your thought is right. see above comment [SAMSUNG-a].

> Could someone elaborate please?
>
> Thank you / Fredrik
>

> Tim Mouldsley wrote:
>>
>> Dear All,
>>
>> I support the general approach for discontinuous control channels in Tdoc
>> A27. However, some parts of the proposed text for 25.214 could be
>> further clarified before the next WG1 meeting.
[SAMSUNG]
I think Tdoc A37 is right.

>>
>> Therefore I offer the following comments/questions:
>>
>> The new title of section 7 reflects only gated transmission. Perhaps a
>> slightly different structure is needed, for example:
>> 7. Discontinuous Transmission
>> 7.1 General
>> 7.2 Gated transmission in DCH/DCH Control Only Substate
>> etc
>> 7.3 Rapid initialization of DCH
>> etc
[SAMSUNG]
Fortunately, we have almost the same structure with your
suggestion in our new document.
I think the revised text proposal R1-99a77 is in line with this comment.

>>
>> Is TFCI transmission needed on the downlink in gated mode with no DPDCH
>> transmission?
[SAMSUNG]
We do not need to send TFCI on the downlink in gated mode when no DPDCH
transmission because the receiver does not use these TFCI bits in this case.
However, it is better keeping current scheme(i.e sending TFCI bits)
to minimize the discontinuity which result in abrupt changes of RF power.

>>
>> In 7.4 extending the set of diagrams to cover all the possible cases may
>> be helpful.
>> The first example presented is setting up a DSCH. Perhaps it would be
>> more natural to first describe initialisation of DCH for uplink packet
>> transmission.
>> In considering initialisation of a DSCH, perhaps some more detail needs
>> to be given on how the UE would initiate a call using a DSCH. Would there
>> also be activity on the uplink DPDCH (not shown in figure 5)?

>>

[SAMSUNG]

Motorola may answer this question.

>> Is it intended that the resumption of DCH (as shown in Figure 7) would

>> be used in the case of DPCCH gating mode 0? If so, this should be

>> clearly stated.

[SAMSUNG]

I believe that NTT DoCoMo is preparing this and will answer

>>

>> Regards,

>>

>> --

>> Tim Mousley

>>

Any comments are welcomed.

Best regards,

Changsoo PARK

Chang Soo PARK

Email: soo2min@unitel.co.kr

chang@metro.telecom.samsung.co.kr

Tel: +82-342-779-6626

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263, Seohyeon-Dong, Bundang-gu

Sungnam-Si, Kyungki-Do, Korea

463-050 Bundang P.O.Box32

From: "PARK, Changsoo" <chang@METRO.TELECOM.SAMSUNG.CO.KR>

Subject: Re) AH14, comments on A37

Comments: cc: lee2park@samsung.co.kr, woojaa@samsung.co.kr, soo2min@unitel.co.kr

To: 3GPP_TSG_RAN_WG1@LIST.ETSI.FR

Subj: Re: Re) AH14, comments on A37

Date: 8/12/99 8:52:27 AM Eastern Daylight Time

From: Fredrik.Ovesjo@ERA-T.ERICSSON.SE (Fredrik Ovesjo)

Sender: 3GPP_TSG_RAN_WG1@LIST.ETSI.FR (3GPP_TSG_RAN_WG1: TSG RAN Working Group 1)

Reply-to: Fredrik.Ovesjo@ERA-T.ERICSSON.SE

To: 3GPP_TSG_RAN_WG1@LIST.ETSI.FR

Dear Changsoo,

thanks for your explanations. There is still some thing I do not understand, please see comments below.

"PARK, Changsoo" wrote:

>> - What is DPCCH gating during DPDCH transmission?

> [SAMSUNG-a]
> When there is transmission on the DPDCH, the DPCCH shall be gated on (i.e. shall have no gating) for the duration of the active DPDCH frame, as given in table 3, 4 and figure 7,8 in Tdoc R1-99a77.

But in table 3 and 4 you gate the TPC in DL and FBI+TPC in uplink, right? Hence, the DPCCH is not fully on when you transmit the DPDCH.

>> What is the gain by gating the DPCCH when there is DPDCH transmission?
>> I thought the gating mode was only done when there was no data to transmit.
> [SAMSUNG]
> Your thought is right. see above comment [SAMSUNG-a].

It seems that there is some misunderstanding. Shall the entire DPCCH always be transmitted when the DPDCH is transmitted or not?

Regards / Fredrik

--

Fredrik Ovesjö - Radio Access and Antenna Systems Research

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SE-164 80 Stockholm, SWEDEN GSM +46 70 376 22 50
fredrik.ovesjo@era.ericsson.se Fax: +46 8 585 314 80

Subj: Re) AH14, comments on A37
Date: 8/13/99 9:58:36 AM Eastern Daylight Time
From: chang@METRO.TELECOM.SAMSUNG.CO.KR (PARK, Changsoo)
Sender: 3GPP_TSG_RAN_WG1@LIST.ETSI.FR (3GPP_TSG_RAN_WG1: TSG RAN Working Group 1)
Reply-to: chang@METRO.TELECOM.SAMSUNG.CO.KR (PARK, Changsoo)
To: 3GPP_TSG_RAN_WG1@LIST.ETSI.FR

Dear Fredrik,

Thank you for your comments.

Please see my comments below.

At 01:29 99-08-12 +0200, you wrote:

>Dear Changsoo,
>
>thanks for your explanations. There is still some thing I do not understand, please see comments below.
>
>"PARK, Changsoo" wrote:
>> > - What is DPCCH gating during DPDCH transmission?
>> [SAMSUNG-a]
>> When there is transmission on the DPDCH, the DPCCH shall be gated on (i.e. shall have no gating) for the duration of the active DPDCH frame, as given in table 3, 4 and figure 7,8 in Tdoc R1-99a77.
>
>But in table 3 and 4 you gate the TPC in DL and FBI+TPC in uplink, right? Hence, the DPCCH is not fully on when you transmit the DPDCH.
>

>>> > What is the gain by gating the DPCCH when there is DPDCH transmission?
>>> > I thought the gating mode was only done when there was no data to transmit.
>> [SAMSUNG]
>> Your thought is right. see above comment [SAMSUNG-a].
>
>It seems that there is some misunderstanding. Shall the entire DPCCH
>always be transmitted when the DPDCH is transmitted or not?
>
>Regards / Fredrik

[SAMSUNG]
I understand your confusion.
Generally, power control rate is reduced in gating mode.
Receiver cannot change power control rate in real time even when there is a DPDCH transmission.
That's why we draw figures like those in Tdoc A77.
The performance results were reviewed in the adhoc 14.
However, we will change figures to transmit all commands if people want it.
However, it is recommended not to try change power control rate during gating mode in the COS.
I hope this assist you to understand.

Best regards,
Changsoo PARK

Chang Soo PARK
Email: soo2min@unitel.co.kr
chang@metro.telecom.samsung.co.kr
Tel: +82-342-779-6626
Fax: +82-342-779-6699

Subj: Re: Re) AH14, comments on A37
Date: 8/13/99 10:00:19 AM Eastern Daylight Time
From: Fredrik.Ovesjo@ERA-T.ERICSSON.SE (Fredrik Ovesjo)
Sender: 3GPP_TSG_RAN_WG1@LIST.ETSI.FR (3GPP_TSG_RAN_WG1: TSG RAN Working Group 1)
Reply-to: Fredrik.Ovesjo@ERA-T.ERICSSON.SE
To: 3GPP_TSG_RAN_WG1@LIST.ETSI.FR

Changsoo,

I still don't get it.

Suppose you do not have any data to transmit and is gating 1/3 of pilot, TFCI, and TPC. Suddenly data appears, and then you transmit the data on the DPDCH, transmit all pilot and TFCI bits, and only 1/3 of the TPC commands. This is what you propose, right?

Then, why can we assume that during that data burst we only need lower rate on the power control? Has this been evaluated by simulations? If it is ok to have only some of the TPC commands in gated mode during DPDCH transmission, then we could do the same reduction for normal non-gated transmission, right?

Maybe this has been addressed by ad hoc 14: Why can't you change TPC rate in real time during gating mode in COS? I see no obvious problems, but I haven't thought much about it. What was the reasoning for that assumption?

Finally, a new question (sorry): what are the TFCI fields used for in gated mode? Should I understand it so that at gating rate 1/3, it takes 30 ms to receive one TFCI word to be decoded? That would mean that DPDCH can be switched on only every 30 ms, which fits very badly with our assumption that all interleaving periods of transport channels are aligned. For example, a 40 ms interleaved frame could only start at time 0, 40, 80, 120 etc. Allowing starts of interleaving periods at other times would affect the assumptions in other WGs as well I guess.

Regards / Fredrik

"PARK, Changsoo" wrote:

>
> Dear Fredrik,
>
> Thank you for your comments.
>
> Please see my comments below.
>
> At 01:29 ĳÀË 99-08-12 +0200, you wrote:
> >Dear Changsoo,
> >
> >thanks for your explanations. There is still some thing I do not
> >understand, please see comments below.
> >
> >"PARK, Changsoo" wrote:
> >>> - What is DPCCH gating during DPDCH transmission?
> >> [SAMSUNG-a]
> >> When there is transmission on the DPDCH, the DPCCH shall be gated on(i.e
> >> shall have no gating) for the duration of the active DPDCH frame,
> >> as given in table 3, 4 and figure 7,8 in Tdoc R1-99a77.
> >
> >But in table 3 and 4 you gate the TPC in DL and FBI+TPC in uplink,
> >right? Hence, the DPCCH is not fully on when you transmit the DPDCH.
> >
> >>> What is the gain by gating the DPCCH when there is DPDCH transmission?
> >>> I thought the gating mode was only done when there was no data to
> >transmit.
> >> [SAMSUNG]
> >> Your thought is right. see above comment [SAMSUNG-a].
> >
> >It seems that there is some misunderstanding. Shall the entire DPCCH
> >always be transmitted when the DPDCH is transmitted or not?
> >
> >Regards / Fredrik
>
> [SAMSUNG]
> I understand your confusion.
> Generally, power control rate is reduced in gating mode.

> Receiver cannot change power control rate in real time even when there is a
> DPDCH transmission.
> That's why we draw figures like those in Tdoc A77.
> The performance results were reviewed in the adhoc 14.
> However, we will change figures to transmit all commands if people want it.
> However, it is recommended not to try change power control rate during
> gating mode in the COS.
> I hope this assist you to understand.
>
> Best regards,
> Changsoo PARK
>
> -----
> Chang Soo PARK
> Email: soo2min@unitel.co.kr
> chang@metro.telecom.samsung.co.kr
> Tel: +82-342-779-6626
> Fax: +82-342-779-6699
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> 11th Fl.,Samsung Plaza Bldg.
> 263,Seohyeon-Dong, Bundang-gu
> Sungnam-Si,Kyungki-Do,Korea
> 463-050 Bundang P.O.Box32

--

Fredrik Ovesjö - Radio Access and Antenna Systems Research

Ericsson Radio Systems AB Tel: +46 8 404 56 74
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fredrik.ovesjo@era.ericsson.se Fax: +46 8 585 314 80

Subj: AH14: New proposal for CPCH
Date: 8/16/99 2:55:20 AM Eastern Daylight Time
From: leego@LGIC.CO.KR (Y.D. Lee)
Sender: 3GPP_TSG_RAN_WG1@LIST.ETSI.FR (3GPP_TSG_RAN_WG1: TSG RAN Working Group
1)
Reply-to: leego@LGIC.CO.KR (Y.D. Lee)
To: 3GPP_TSG_RAN_WG1@LIST.ETSI.FR

File: LGIC_CPCH_PCP.doc (219648 bytes)
DL Time (31200 bps): < 2 minutes

Dear colleagues,

My name is Young D. Lee. I'm working with LGIC, Korea.
The attached document below outlined a new proposal on Collision
Detection scheme of CPCH

Comments and questions are welcome.

Best regards,

--

Young D. Lee

ATRA (Advanced Technology Research) Team
LG Information & Communications, Ltd.

Phone : +82-343-450-2945
Fax : +82-343-450-2944
E-mail: leego@lgic.co.kr

"Hatred stirs up strife, but love covers all offenses."

Subj: Re: Re) AH14, comments on A37
Date: 8/16/99 4:21:34 AM Eastern Daylight Time
From: Fredrik.Ovesjo@ERA-T.ERICSSON.SE (Fredrik Ovesjo)
Sender: 3GPP_TSG_RAN_WG1@LIST.ETSI.FR (3GPP_TSG_RAN_WG1: TSG RAN Working Group 1)
Reply-to: Fredrik.Ovesjo@ERA-T.ERICSSON.SE
To: 3GPP_TSG_RAN_WG1@LIST.ETSI.FR

Changsoo,

thank you for your explanations. I am sorry that I did not have the possibility to attend the last ad hoc #14 meeting.

I now understand that the TFCI bits have no real TFCI-meaning when there is no DPDCH data to transmit. However, I do not understand what those bits represent. Are they all set to "1" or can they have random values? Is there any reason for transmitting these dummy "TFCI"-bits at all, or could they be removed? Is it to help the blind DTX-detection scheme in some way?

Íf there is some assumption on the contents of the TFCI field during gating with no DPDCH present, that should be covered by the text proposal I think.

Best regards / Fredrik

"PARK, Changsoo" wrote:

>
> Dear Fredrick and WG1 members,
>
> Thanks for your comments.
>
> Please see my comments below.
>
> At 02:45 ĩÀÈÄ 99-08-13 +0200, you wrote:
>>Changsoo,
>>
>>I still don't get it.
>>
>>Suppose you do not have any data to transmit and is gating 1/3 of
>>pilot, TFCI, and TPC. Suddenly data appears, and then you transmit the
>>data on the DPDCH, transmit all pilot and TFCI bits, and only 1/3 of
>>the TPC commands. This is what you propose, right?
>>
> [SAMSUNG]

> Yes, your are correct.
>
>>Then, why can we assume that during that data burst we only need lower
>>rate on the power control? Has this been evaluated by simulations? If
>>it is ok to have only some of the TPC commands in gated mode during
>>DPDCH transmission, then we could do the same reduction for normal
>>non-gated transmission, right?
>>
> [SAMSUNG]
> Yes, there is a certain performance degradation during DPDCH due to
> reduced rate of power control rate. This simulation is one of the basic
> simulation we did in the previous documents,
>
>>Maybe this has be addressed by ad hoc 14: Why can't you change TPC
>>rate in real time during gating mode in COS? I see no obvious
>>problems, but I haven't thought much about it. What was the resoning
>>for that assumption?
>>
> [SAMSUNG]
> For the transmitter side, it is obvious to know a timing of DPDCH
> transmission,
> but for the receiver side, it is not obvious to know when to resume power
> control rate.
> So, it is safe to keep the current power control rate because of this
> asymmetric
> nature of transmitter and receiver.
>
>>Finally, a new question (sorry): what are the TFCI fields used for in
>>gated mode? Should I understand it so that at gating rate 1/3, it
>>takes 30 ms to receive one TFCI word to be decoded? That would mean
>>that DPDCH can be switched on only every 30 ms, which fits very badly
>>with our assumption that all interleaving periods of transport
>>channels are aligned. For example, a 40 ms interleaved frame could
>>only start at time 0, 40, 80, 120 etc. Allowing starts of interleaving
>>periods at other times would affect the assumptions in other WGs as
>>well I guess.
>>
> [SAMSUNG]
> This is one of the area we discussed in the last meeting.
> I am afraid this is going to be a long explanation, so I recommend
> you to review our previous document regarding TFCI.
> Let me give you brief description.
> When there is a DPDCH, TFCI is not gated.
> When there is no DPDCH, TFCI is not needed.
> To do that, we need kind of DPDCH DTX detection method in 10ms interval.
> Therefore, TFCI is transmmited in 10ms interval at all time.
> Unlike power control, message decoding is done in 10ms interval.
>
> I hope this help you to understand.
>
> Any comments are welcomed.
>
> Best regards,
> Changsoo PARK
>
>>Regards / Fredrik

>>
>>"PARK, Changsoo" wrote:
>>>
>>> Dear Fredrik,
>>>
>>> Thank you for your comments.
>>>
>>> Please see my comments below.
>>>
>>> At 01:29 ĀÄ 99-08-12 +0200, you wrote:
>>>>Dear Changsoo,
>>>>
>>>>thanks for your explanations. There is still some thing I do not
>>>>understand, please see comments below.
>>>>
>>>>"PARK, Changsoo" wrote:
>>>>>> - What is DPCCH gating during DPDCH transmission?
>>>>>> [SAMSUNG-a]
>>>>>> When there is transmission on the DPDCH, the DPCCH shall be gated on(i.e
>>>>>> shall have no gating) for the duration of the active DPDCH frame,
>>>>>> as given in table 3, 4 and figure 7,8 in Tdoc R1-99a77.
>>>>>
>>>>>>But in table 3 and 4 you gate the TPC in DL and FBI+TPC in uplink,
>>>>>>right? Hence, the DPCCH is not fully on when you transmit the DPDCH.
>>>>>
>>>>>>> What is the gain by gating the DPCCH when there is DPDCH transmission?
>>>>>>> I thought the gating mode was only done when there was no data to
>>>>>>> transmit.
>>>>>>> [SAMSUNG]
>>>>>>> Your thought is right. see above comment [SAMSUNG-a].
>>>>>>>
>>>>>>>>It seems that there is some misunderstanding. Shall the entire DPCCH
>>>>>>>>always be transmitted when the DPDCH is transmitted or not?
>>>>>>>>
>>>>>>>>>Regards / Fredrik
>>>>>>>>>
>>>>>>>>> [SAMSUNG]
>>>>>>>>> I understand your confusion.
>>>>>>>>> Generally, power control rate is reduced in gating mode.
>>>>>>>>> Receiver cannot change power control rate in real time even when there is a
>>>>>>>>> DPDCH transmission.
>>>>>>>>> That's why we draw figures like those in Tdoc A77.
>>>>>>>>> The performance results were reviewed in the adhoc 14.
>>>>>>>>> However, we will change figures to transmit all commands if people want it.
>>>>>>>>> However, it is recommended not to try change power control rate during
>>>>>>>>> gating mode in the COS.
>>>>>>>>> I hope this assist you to understand.
>>>>>>>>>
>>>>>>>>> Best regards,
>>>>>>>>> Changsoo PARK
>>>>>>>>>
>
> -----
> Chang Soo PARK
> Email: soo2min@unitel.co.kr
> chang@metro.telecom.samsung.co.kr

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> Sungnam-Si, Kyungki-Do, Korea
> 463-050 Bundang P.O.Box32

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Fredrik Ovesjö - Radio Access and Antenna Systems Research

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SE-164 80 Stockholm, SWEDEN GSM +46 70 376 22 50
fredrik.ovesjo@era.ericsson.se Fax: +46 8 585 314 80

Subj: Re: Re) AH14, comments on A37
Date: 8/17/99 12:56:02 AM Eastern Daylight Time
From: chang@METRO.TELECOM.SAMSUNG.CO.KR (PARK, Changsoo)
Sender: 3GPP_TSG_RAN_WG1@LIST.ETSI.FR (3GPP_TSG_RAN_WG1: TSG RAN Working Group
1)
Reply-to: chang@METRO.TELECOM.SAMSUNG.CO.KR (PARK, Changsoo)
To: 3GPP_TSG_RAN_WG1@LIST.ETSI.FR

Dear Fredrick and all,

At 10:17 j.Àü 99-08-16 +0200, you wrote:

>Changsoo,
>
>thank you for your explanations. I am sorry that I did not have the
>possibility to attend the last ad hoc #14 meeting.
>
>I now understand that the TFCI bits have no real TFCI-meaning when
>there is no DPDCH data to transmit. However, I do not understand what
>those bits represent. Are they all set to "1" or can they have random
>values? Is there any reason for transmitting these dummy "TFCI"-bits
>at all, or could they be removed? Is it to help the blind
>DTX-detection scheme in some way?
>
>If there is some assumption on the contents of the TFCI field during
>gating with no DPDCH present, that should be covered by the text
>proposal I think.
>
>Best regards / Fredrik

I'm very happy to see you finally get answers.
And, we will try to incorporate your comments until next meeting.

Thank you.

Best regards,
Changsoo PARK

Chang Soo PARK
Email: soo2min@unitel.co.kr
 chang@metro.telecom.samsung.co.kr

Tel: +82-342-779-6626
Fax: +82-342-779-6699

Subj: LGIC_CPCH
Date: 8/18/99 7:08:24 AM Eastern Daylight Time
From: Kzgbt
To: KPGBT

File: LGIC_CPCH.zip (82447 bytes)
DL Time (31200 bps): < 1 minute

Enclosed is zip file from LGIC on CPCH for WG 1.
Not sure if you have received this yet as it has still unnumbered. Their delegates gave it to us for your review.

Subj: AH14: CPCH proposal
Date: 8/18/99 8:06:57 AM Eastern Daylight Time
From: mousley@PRL.RESEARCH.PHILIPS.COM (Tim Mousley)
Sender: 3GPP_TSG_RAN_WG1@LIST.ETSI.FR (3GPP_TSG_RAN_WG1: TSG RAN Working Group 1)
Reply-to: mousley@PRL.RESEARCH.PHILIPS.COM (Tim Mousley)
To: 3GPP_TSG_RAN_WG1@LIST.ETSI.FR

File: Cpchmodx.zip (32450 bytes)
DL Time (31200 bps): < 1 minute

Dear All,

The attached file is a slightly updated version of the previous Philips proposal for CPCH.
Based on comments received so far, an error has been corrected in point 2 on page 3, and an example of signature mappings for code allocation has been included in an annex.

Regards,

--

Tim Mousley

Philips Research Laboratories
Tel: +44 1293 815000
Direct: +44 1293 815717
Fax: +44 1293 815500
Email: mousley@prl.research.philips.com

Subj: AH14: New proposal for transmission of CPCH stat
Date: 8/18/99 9:36:16 PM Eastern Daylight Time
From: leego@LGIC.CO.KR (Young D. Lee)
Sender: 3GPP_TSG_RAN_WG1@LIST.ETSI.FR (3GPP_TSG_RAN_WG1: TSG RAN Working Group 1)
Reply-to: leego@LGIC.CO.KR (Young D. Lee)
To: 3GPP_TSG_RAN_WG1@LIST.ETSI.FR

File: LGIC_CPCH_CSI.zip (93354 bytes)
DL Time (31200 bps): < 1 minute

Dear colleagues,

The attached document below outlined a new proposal on the transmission of CPCH status information.

Comments and questions are welcome.

Best regards,

--

Young D. Lee

LG Information & Communications, Ltd.

Phone : +82-343-450-2945

Fax : +82-343-450-2944

E-mail: leego@lgic.co.kr

"Hatred stirs up strife, but love covers all offenses."

Subj: Re: AH14: Text Proposals from GBT WG1#6 Resubmitted to WG1#7

Date: 8/19/99 7:53:56 AM Eastern Daylight Time

From: antti.toskala@NOKIA.COM (Toskala Antti)

Sender: 3GPP_TSG_RAN_WG1@LIST.ETSI.FR (3GPP_TSG_RAN_WG1: TSG RAN Working Group 1)

Reply-to: antti.toskala@NOKIA.COM

To: 3GPP_TSG_RAN_WG1@LIST.ETSI.FR

Dear Kourosch and other CPCH fans,

Some comments to the CPCH insertions to 25.211.

The text:

>Add a new Section 5.2.2.2.3 CPCH collision detection resolution >preamble part

>The collision detection resolution preamble part of the CPCH burst

>consists of a signature of length 16 complex symbols $\pm 1(+j)$. Each >preamble symbol is spread with a 256 chip real Orthogonal Gold >code. This Code is different from the RACH/CPCH access preamble >code. There are a total of 16 different signatures, based on an >Orthogonal Gold code set of length 16.

Should be replaced mainly with reference to RACH part as it is already now outdated from the current version of RACH spreading etc.

Then for the 25.213 it was written

>

The access preamble scrambling code generation is done in the same way as for the PRACH with a difference of the initialisation of the x m-sequence....

What was the reason for this difference, perhaps it was discussed but I might have missed that from Ad Hoc 14?

Coming back to insertions in 25.214 later....

Best Wishes: Antti Toskala
Nokia Telecommunications

Subj: AH14: Improvement to CPCH
Date: 8/20/99 6:43:17 AM Eastern Daylight Time
From: mousley@PRL.RESEARCH.PHILIPS.COM (Tim Mousley)
Sender: 3GPP_TSG_RAN_WG1@LIST.ETSI.FR (3GPP_TSG_RAN_WG1: TSG RAN Working Group 1)
Reply-to: mousley@PRL.RESEARCH.PHILIPS.COM (Tim Mousley)
To: 3GPP_TSG_RAN_WG1@LIST.ETSI.FR

File: Cpchedx.zip (7414 bytes)
DL Time (31200 bps): < 1 minute

Dear All,

The attached (draft) document proposes the addition of a header to CPCH packets to include an indication of the packet length. This should give more reliable decoding and also help the infrastructure in scheduling CPCH assignments.

Comments are welcome.

Regards,

--

Tim Mousley

Philips Research Laboratories
Tel: +44 1293 815000
Direct: +44 1293 815717
Fax: +44 1293 815500
Email: mousley@prl.research.philips.com

Subj: Re: AH14: Text Proposals from GBT WG1#6 Resubmitted to WG1#7
Date: 8/20/99 1:18:01 PM Eastern Daylight Time
From: KPGBT@AOL.COM (Kourosh Parsa, Golden Bridge)
Sender: 3GPP_TSG_RAN_WG1@LIST.ETSI.FR (3GPP_TSG_RAN_WG1: TSG RAN Working Group 1)
Reply-to: KPGBT@AOL.COM
To: 3GPP_TSG_RAN_WG1@LIST.ETSI.FR

Hi antti,

Thanks for your comments. I have a clarification and a comment.

>>Add a new Section 5.2.2.2.3 CPCH collision detection resolution >preamble part
>>The collision detection resolution preamble part of the CPCH burst
>>consists of a signature of length 16 complex symbols $\pm 1(+j)$. Each >preamble
>> symbol is spread with a 256 chip real Orthogonal Gold >code. This Code is
>>different from the RACH/CPCH access preamble >code. There are a total of 16
>> different signatures, based on an >Orthogonal Gold code set of length 16.

>Should be replaced mainly with reference to RACH part as it is already now

>outdated from the current version of RACH spreading etc.

agreed, we will change accordingly. This was agreed in AH14, but was an oversight on our part.

> Then for the 25.213 it was written

>

>>The access preamble scrambling code generation is done in the same way as

>>for the PRACH with a difference of the initialisation of the x

>>m-sequence....

>What was the reason for this difference, perhaps it was discussed but I

>might have missed that from Ad Hoc 14?

This was available and we took it. There was no other reason other than availability.

regards

Kourosh

>Coming back to insertions in 25.214 later....

>Best Wishes: Antti Toskala

>Nokia Telecommunications

Subj: AH14: FEC for CPCH, DSCH
Date: 8/23/99 1:39:38 AM Eastern Daylight Time
From: mochizuki@PCCRD.FC.NEC.CO.JP (MOCHIZUKI, Takashi)
Sender: 3GPP_TSG_RAN_WG1@LIST.ETSI.FR (3GPP_TSG_RAN_WG1: TSG RAN Working Group 1)
Reply-to: mochizuki@pccrd.fc.nec.co.jp
To: 3GPP_TSG_RAN_WG1@LIST.ETSI.FR

Dear AH14 experts,

I would like to know the FEC scheme for CPCH and DSCH.

The FEC for CPCH is R=1/2 Convolutional code (the same as RACH)?

The FEC for DSCH is Turbo and Convolutional codes (the same as DCH)?

These should be included in Table 1 "Error correction coding parameters" of TS 25.212.

Best regards,

Takashi MOCHIZUKI
NEC Corp., Personal C&C Development Labs

Subj: Re: AH14: Improvement to CPCH
Date: 8/23/99 6:50:09 AM Eastern Daylight Time
From: mousley@PRL.RESEARCH.PHILIPS.COM (Tim Mousley)
Sender: 3GPP_TSG_RAN_WG1@LIST.ETSI.FR (3GPP_TSG_RAN_WG1: TSG RAN Working Group 1)
Reply-to: mousley@PRL.RESEARCH.PHILIPS.COM (Tim Mousley)
To: 3GPP_TSG_RAN_WG1@LIST.ETSI.FR

Dear Erik,

Good questions!

It seems convenient to put the header information in with the DPDCH. This means that the DPCCH format can be the same for the whole duration of the packet.

In our view at least some of the information in the header is needed by Layer 1, and with minimum delay.

The main idea is that the packet length would be needed to help in controlling access to CPCH channels. For example if a CPCH packet has finished (or is known to be finishing in the near future), the channel can be re-allocated. In the current scheme the packet length would presumably be determined by a potentially uncertain blind detection process, and consequently the renewed availability of the channel would only be known some time after the end of the packet. It seems to be up to WG1 to consider how the packet length might be obtained. Even with CPCH resource management handled in Layer 2, there seems to be some performance aspects (eg transmission delay) relevant to WG1.

I guess if WG1 considers our proposal interesting, a liaison statement would be needed to WG2.

Regards,

--

Tim Moulsley

Philips Research Laboratories
Tel: +44 1293 815000
Direct: +44 1293 815717
Fax: +44 1293 815500
Email: moulsley@prl.research.philips.com

Erik Dahlman wrote:

>
> Tim,
>
> - Should the header be part of the "DPDCH" or the "DPCCH" (on I or Q)?
>
> - Especially if it is on the DPDCH, is this not a L2 issue, i.e. from
> the L1 point-of-view we can see it as part of the message?
>
> /Erik
>
> Tim Moulsley wrote:
>>
>> Dear All,
>>
>> The attached (draft) document proposes the addition of a header to CPCH
>> packets to include an indication of the packet length.

>> This should give more reliable decoding and also help the infrastructure
>> in scheduling CPCH assignments.

>>

>> Comments are welcome.

>>

>> Regards,

>>

>> --

>> Tim Mousley

>>

>> Philips Research Laboratories

>> Tel: +44 1293 815000

>> Direct: +44 1293 815717

>> Fax: +44 1293 815500

>> Email: mousley@prl.research.philips.com

>>

>> -----

>>

>> Name: Cpchedx.zip

>> Cpchedx.zip Type: WinZip File (application/x-unknown-content-type-WinZip)

>> Encoding: base64

>

> --

> -----

> Erik Dahlman, Ph.D.

>

> Expert, CDMA Radio Access

>

> Ericsson Research, Corporate Unit Tel: +46 8 764 13 77

> Ericsson Radio Systems Fax: +46 8 585 314 80

> SE-164 80 STOCKHOLM GSM: +46 70 677 67 05

> Sweden

>

> erik.dahlman@ra-t.ericsson.se

> -----

Subj: Re: AH14: Improvement to CPCH

Date: 8/23/99 9:12:56 AM Eastern Daylight Time

From: antti.toskala@NOKIA.COM (Toskala Antti)

Sender: 3GPP_TSG_RAN_WG1@LIST.ETSI.FR (3GPP_TSG_RAN_WG1: TSG RAN Working Group 1)

Reply-to: antti.toskala@NOKIA.COM

To: 3GPP_TSG_RAN_WG1@LIST.ETSI.FR

Dear Tim and other CPCH fans,

I have few clarifying questions to your proposal.

When starting the transmission, is it already known always when the transmission will end? If there is ARQ operation and transmission last enough long time for the higher layer to give indication whether retransmissions are needed or not. In this case UE does not know exactly when transmission will end.

Shouldn't the error control coding be fixed prior the CPCH

access anyway?

The scheduling function would benefit from this knowledge apparently.

Another comment is that as with CPCH the message part gets more delayed from the successful preamble detection than with RACH due to collision detection, power control preamble and now (perhaps) with this header. Thus it may be wise to reconsider a bit that what is the optimal change point between RACH and CPCH. For example, whether it might make sense to have the possibility to send on RACH packet data for two frames, for example. If I recall the RACH discussions correctly, there was a change point between 1-2 frames, but that did not cover these overheads. (Change point between power-controlled and non-power-controlled operation according to my recollection)

Best Wishes: Antti Toskala
Nokia Telecommunications

>

>

>> -----Original Message-----

>> From: EXT Tim Mousley [mailto:mousley@PRL.RESEARCH.PHILIPS.COM]

>> Sent: Friday, August 20, 1999 12:34 PM

>> To: 3GPP_TSG_RAN_WG1@LIST.ETSI.FR

>> Subject: AH14: Improvement to CPCH

>>

>>

>> Dear All,

>>

>> The attached (draft) document proposes the addition of a

>> header to CPCH

>> packets to include an indication of the packet length.

>> This should give more reliable decoding and also help the

>> infrastructure

>> in scheduling CPCH assignments.

>>

>> Comments are welcome.

>>

>> Regards,

>>

>> --

>> Tim Mousley

>>

>> Philips Research Laboratories

>> Tel: +44 1293 815000

>> Direct: +44 1293 815717

>> Fax: +44 1293 815500

>> Email: mousley@prl.research.philips.com

>>

>

Subj: Re: AH14: Improvement to CPCH

Date: 8/23/99 9:28:59 AM Eastern Daylight Time

From: mousley@PRL.RESEARCH.PHILIPS.COM (Tim Mousley)

Sender: 3GPP_TSG_RAN_WG1@LIST.ETSI.FR (3GPP_TSG_RAN_WG1: TSG RAN Working Group 1)

Reply-to: mousley@PRL.RESEARCH.PHILIPS.COM (Tim Mousley)

To: 3GPP_TSG_RAN_WG1@LIST.ETSI.FR

Dear Antti,

Some response below:-

--

Tim Mousley

Philips Research Laboratories

Tel: +44 1293 815000

Direct: +44 1293 815717

Fax: +44 1293 815500

Email: mousley@prl.research.philips.com

Toskala Antti wrote:

- >
- > Dear Tim and other CPCH fans,
- >
- > I have few clarifying questions to your proposal.
- >
- > When starting the transmission, is it already known always
- > when the transmission will end? If there is ARQ operation and
- > transmission last enough long time for the higher layer to
- > give indication whether retransmissions are needed or not. In
- > this case UE does not know exactly when transmission will end.

In general, the infrastructure does not know the duration of the CPCH transmission in advance.

If the data is interleaved over the whole CPCH packet, I guess an error indication could only be generated at the end (unless there is really major loss of data). As far as I am aware it is not intended that there should be any downlink signalling for ARQ while the CPCH packet is running. Perhaps someone from GBT will comment on that.

Anyway it seems reasonable to assume that the UE does know the length of the packet it is about to send!

- > Shouldn't the error control coding be fixed prior the CPCH
- > access anyway?

Yes. But I am not sure how that is relevant.

- > The scheduling function would benefit from this knowledge apparently.
- >
- > Another comment is that as with CPCH the message part gets
- > more delayed from the successful preamble detection than with
- > RACH due collision detection, power control preamble and now
- > (perhaps) with this header. Thus it may be wise to reconsider
- > a bit that what is the optimal change point between RACH and
- > CPCH. For example whether it might make sense to have

- > possibility to send on RACH packet data for two frames for
- > example. If I recall the RACH discussions correctly there was
- > change point between 1-2 frames but that did not cover these
- > overheads. (Change point between power controlled and
- > non-power controlled operation according to my recollection)

It would require some significant changes to RACH to extend the message part beyond 10ms and add power control, but this would give much shorter end to end delay than CPCH.

- > Best Wishes: Antti Toskala
- > Nokia Telecommunications

>>
>>

>>> -----Original Message-----

>>> From: EXT Tim Moulsley [mailto:moulsley@PRL.RESEARCH.PHILIPS.COM]

>>> Sent: Friday, August 20, 1999 12:34 PM

>>> To: 3GPP_TSG_RAN_WG1@LIST.ETSI.FR

>>> Subject: AH14: Improvement to CPCH

>>>

>>>

>>> Dear All,

>>>

>>> The attached (draft) document proposes the addition of a

>>> header to CPCH

>>> packets to include an indication of the packet length.

>>> This should give more reliable decoding and also help the

>>> infrastructure

>>> in scheduling CPCH assignments.

>>>

>>> Comments are welcome.

>>>

>>> Regards,

>>>

>>> --

>>> Tim Moulsley

>>>

>>> Philips Research Laboratories

>>> Tel: +44 1293 815000

>>> Direct: +44 1293 815717

>>> Fax: +44 1293 815500

>>> Email: moulsley@prl.research.philips.com

>>>

>>

Subj: Re: AH14: Improvement to CPCH

Date: 8/23/99 1:30:52 PM Eastern Daylight Time

From: moulsley@PRL.RESEARCH.PHILIPS.COM (Tim Moulsley)

Sender: 3GPP_TSG_RAN_WG1@LIST.ETSI.FR (3GPP_TSG_RAN_WG1: TSG RAN Working Group 1)

Reply-to: moulsley@PRL.RESEARCH.PHILIPS.COM (Tim Moulsley)

To: 3GPP_TSG_RAN_WG1@LIST.ETSI.FR

Dear Antti,

To continue the discussion....

For long transmission durations (eg of several hundred milliseconds) I would expect it to be better to use a dedicated channel (set up with RACH/FACH/DCH). The acknowledgements would then come on the DCH downlink.

I also expect it would be better to avoid using FACH for large numbers of ACKs, since it does not have power control.

I did find an indication in some L2 documentation on CPCH that NAKs could be sent on the CPCCH-DL while the UE was still transmitting CPCH packet in the uplink.

Perhaps we needs some clarification from GBT on this point.

Regards,

--

Tim Mousley

Philips Research Laboratories
Tel: +44 1293 815000
Direct: +44 1293 815717
Fax: +44 1293 815500
Email: mousley@prl.research.philips.com

antti.toskala@nokia.com wrote:

>
> Dear Tim, Thanks for you clarifications.
>
> For the RACH I was not proposing power control or anything like that,
> suggesting only that could the RACH message (with packet data) last for
> example up to 20 ms instead of 10 ms.
>
> If the CPCH is used for example for file uploading lasting several
> hundred ms, doesn't the ARQ information come on FACH in the downlink
> direction while the transmission is still on going?
> Perhaps we need to have a look at relevant WG2 specs on this...
>
> Would this be the case should we have the duration values then
> 1 to N-1 and then value N would mean K bytes OR higher duration with the K
> bytes expected to be the value when there is not yet feedback (ARQ) coming
> on FACH.
>
> Best Wishes: Antti Toskala
> Nokia Telecommunications
>
>> -----Original Message-----
>> From: EXT Tim Mousley [mailto:mousley@PRL.RESEARCH.PHILIPS.COM]
>> Sent: Monday, August 23, 1999 3:25 PM
>> To: 3GPP_TSG_RAN_WG1@LIST.ETSI.FR
>> Subject: Re: AH14: Improvement to CPCH
>>
>>
>> Dear Antti,
>>

>> Some response below:-
>>
>> --
>> Tim Mousley
>>
>> Philips Research Laboratories
>> Tel: +44 1293 815000
>> Direct: +44 1293 815717
>> Fax: +44 1293 815500
>> Email: mousley@prl.research.philips.com
>>
>>
>> Toskala Antti wrote:
>>>
>>> Dear Tim and other CPCH fans,
>>>
>>> I have few clarifying questions to your proposal.
>>>
>>> When starting the transmission, is it already known always
>>> when the transmission will end? If there is ARQ operation and
>>> transmission last enough long time for the higher layer to
>>> give indication whether retransmissions are needed or not. In
>>> this case UE does not know exactly when transmission will end.
>>
>> In general, the infrastructure does not know the duration of the CPCH
>> transmission in advance.
>>
>> If the data is interleaved over the whole CPCH packet, I
>> guess an error
>> indication could only be generated at the end (unless there is really
>> major loss of data). As far as I am aware it is not intended
>> that there
>> should be any downlink signalling for ARQ while the CPCH packet is
>> running. Perhaps someone from GBT will comment on that.
>>
>> Anyway it seems reasonable to assume that the UE does know the
>> length of
>> the packet it is about to send!
>>
>>> Shouldn't the error control coding be fixed prior the CPCH
>>> access anyway?
>>
>> Yes. But I am not sure how that is relevant.
>>
>>> The scheduling function would benefit from this knowledge
>> apparently.
>>>
>>> Another comment is that as with CPCH the message part gets
>>> more delayed from the successful preamble detection than with
>>> RACH due to collision detection, power control preamble and now
>>> (perhaps) with this header. Thus it may be wise to reconsider
>>> a bit that what is the optimal change point between RACH and
>>> CPCH. For example whether it might make sense to have
>>> possibility to send on RACH packet data for two frames for
>>> example. If I recall the RACH discussions correctly there was
>>> change point between 1-2 frames but that did not cover these

>>> overheads. (Change point between power controlled and
>>> non-power controlled operation according to my recollection)
>>
>> It would require some significant changes to RACH to extend
>> the message
>> part beyond 10ms and add power control, but this would give
>> much shorter
>> end to end delay than CPCH.

>>
>>> Best Wishes: Antti Toskala
>>> Nokia Telecommunications

>>>>
>>>>
>>>>> -----Original Message-----
>>>>> From: EXT Tim Mousley
>> [mailto:mousley@PRL.RESEARCH.PHILIPS.COM]
>>>>> Sent:
>> Friday, August 20, 1999 12:34 PM
>>>>> To: 3GPP_TSG_RAN_WG1@LIST.ETSI.FR
>>>>> Subject: AH14: Improvement to CPCH

>>>>>
>>>>>
>>>>> Dear All,
>>>>>
>>>>> The attached (draft) document proposes the addition of a
>>>>> header to CPCH
>>>>> packets to include an indication of the packet length.
>>>>> This should give more reliable decoding and also help the
>>>>> infrastructure
>>>>> in scheduling CPCH assignments.

>>>>>
>>>>> Comments are welcome.
>>>>>
>>>>> Regards,
>>>>>
>>>>> --
>>>>> Tim Mousley
>>>>>
>>>>> Philips Research Laboratories
>>>>> Tel: +44 1293 815000
>>>>> Direct: +44 1293 815717
>>>>> Fax: +44 1293 815500
>>>>> Email: mousley@prl.research.philips.com
>>>>>
>>>>
>>

-----Subj: Re: AH14: Improvement to CPCH
Date: 8/24/99 7:26:00 AM Eastern Daylight Time
From: KPGBT@AOL.COM (Kourosh Parsa, Golden Bridge)
Sender: 3GPP_TSG_RAN_WG1@LIST.ETSI.FR (3GPP_TSG_RAN_WG1: TSG RAN Working Group
1)
Reply-to: KPGBT@AOL.COM
To: 3GPP_TSG_RAN_WG1@LIST.ETSI.FR

Hi Tim,

Here are some clarifications and comments to some of the previous e-mails in this thread.

Regarding the ARQ in CPCH, currently the DL-DPCCH associated with CPCH-UL does not carry any ACKs or NAKs. It is rather carried over FACH. The reason has been the fact that DL-DPCCH is uplink demand driven and is not necessarily there when the ARQ response comes back from RLC layer in UTRAN.

Regarding the issue of header and such indication, we have assumed that the stop of the transmission in the UL can be detected by the Base Node PHY within a few slots. So, the resource can be almost immediately re-assigned to another UE based on the demand. I do not think the little idle gap is much of consequence in terms of throughput to warrant inclusion of packet length information in the PHY.

Regarding the usage of CPCH and the range of frame lengths, we think the breakpoints between the RACH - CPCH - DCH should be determined. It makes sense to use RACH for very short packets and a frame length of 1 and low rate perhaps. As far as the transition between CPCH and DCH, it should be a function of the queue depth and should be UTRAN decided (general point). On the other hand, it is a matter of resource usage efficiency arising from usage of packet mode (CPCH) versus circuit mode (DCH). More specifically, we think there is a few hundred ms time requirement for set-up and release for the DCH resource by UTRAN (varies based on the Iur, Iub traffic loading), this means that the assigned Base Node resource will be idling in that time period and unless the packet length is much greater than this idling time, then it does not make sense to use DCH. When the packet length is high enough to make this few hundred (?100-?300) ms irrelevant, then UTRAN should switch the UE from CPCH to RACH. Currently, the only accepted traffic intensity/volume measurement is Queue depth (Bytes), so the UE reports that to UTRAN and UTRAN can transition the UE from RACH/CPCH/DCH.

Best Regards

Kourosh Parsa
Golden bridge Technology
USA
732-728-9627 (tel)

Subj: Re: AH14: Improvement to CPCH
Date: 8/26/99 4:36:38 AM Eastern Daylight Time
From: Clement.Fisher@ANITETELECOMS.COM (Fisher, Clement)
Sender: 3GPP_TSG_RAN_WG1@LIST.ETSI.FR (3GPP_TSG_RAN_WG1: TSG RAN Working Group 1)
Reply-to: Clement.Fisher@ANITETELECOMS.COM (Fisher, Clement)
To: 3GPP_TSG_RAN_WG1@LIST.ETSI.FR

Kourosh,
Re the first paragraph in your reply.

If the data is sent in Acknowledge mode, then does there not have to be a timer to prevent the physical layer being cleared before the ACK/NACK/retransmissions have been completed. Or is the intention to allow the ACK/NACK to be sent on the FACH and the retransmissions to be sent on the next CPCH access.

If the latter is the case then the next CPCH must be set up within the delays allowed by the timers used at the higher protocol layers. Is this

likely to be an issue when traffic levels are high ?

Regards

Clem Fisher
Manager, New Technologies

Anite Telecoms Limited Registered in England No. 1721900 Registered
Office: 353 Buckingham Avenue, Slough, Berkshire, SL1 4PF