J pre-draft WG Review v0.2

C/ 00	SC	Р	L	# 173	C/ 00	SC 8.1.2.3.3	P 186	L 11	# 144		
HU, Wende	ong	STMicroelect	ronics		Pirat, Patri	ck	France Telecom				
Comment Enhan BS cor efficier	<i>Type</i> TR ce BS to BS Corn ntrol connections ncy, and security	Comment Status D nmunications by using conne). Logical inter-BS control co benefits to inter-BS commun	ection based ov nnection meth- nications.	er-the-air approach (inter- od provides reliability,	Comment Type T Comment Status X Table 230 : The figures should be updated with the parameters under discussion in 802. SuggestedRemedy						
Suggestea Add th 22-06-	<i>Remedy</i> e text to the draf 0228-00-0000_S	t from the following documer cheduling_Connection_Base	it: ed_Inter_BS_cc	ommunications.doc.	Proposed	Response	Response Status O				
Proposed	Response	Response Status W			<i>CI</i> 00 Pirat, Patri	SC 8.2 ick	P 187 France Telecom	L 9	# 141		
C/ 00 HU, Wendo Comment	SC ong Type TR	P STMicroelect Comment Status X	L ronics	# 174	<i>Comment</i> Table docun	<i>Type</i> E 231: Spreading fa nent (optional?).	Comment Status X actor and Transformation matrix	are not defin	ed at this stage of the		
Enhan Simult	ce spectrum sen aneous Sensing	sing performance and WRAI and Data Transmissions.	N system perfor	mance by using	Suggested Remo	<i>IRemedy</i> ve Spreading and	I Transform matrix columns from	n the table.			
Suggested Include Data T	<i>Remedy</i> e the text to the c ransmissions"" c	traft standard from the docur contributed by STMicroelectro	nent on ""Simul onics.	taneous Sensing and	Proposed	Response	Response Status O				
Proposed	Response	Response Status O			C/ 00 Pirat, Patri	SC 8.4 ick	<i>P</i> France Telecom	L	# 143		
<i>Cl</i> 00 HU, Wende	SC	<i>P</i> STMicroelect	L	# 175	Comment The va update	<i>Type</i> ER alues of the numb ed to fit the OFDM	Comment Status X er of sub-channels, size of the s IA parameters.	sub-channels	, pilots should be		
Comment Enhan Contro	<i>Type</i> TR ce BS to BS Cor Il messages for c	Comment Status X nmunications by using conne connection based over-the-ai	ection based ov r methods are r	er-the-air approach. ieeded.	The sa Suggestee	ame for the location	on of the pilots.				
Suggested	Remedy				Draft t	his section withou	it figures and specify the values	of the parme	eters when agreed.		
Include submit	e the text of the r ted to January 2	elated contribution (from STI 007 London meeting.	Vicro and Huaw	vei) to the draft standard:	Proposed	Response	Response Status O				
Proposed I	Response	Response Status 0									

C/ 00 SC 8.4

C/ 00 Pirat Patric	SC 8.4.1.1	P 194 France Telecom	L	# 145	<i>Cl</i> 00 Pirat Patri	SC 8.5.3	P 201 France Telecom	L	# 150		
Comment T Equation SubCa Suggested	Type T on 7 is confusing. rrier(n,k) is negat Remedy	Comment Status X What is ""SubCarrier(n,k)""?. N ive. How are indexed the sub-c	When k<27 th carriers?	ne value of	Comment Type TR Comment Status X Bit interleaving is an operation that is related to frequency interleaving (sub-channel allocation). The mechanism proposed in this section is similar to the 802.16'one but 80' system uses a different sub-channel allocation mechanism.						
Give ai Proposed F	n example with th Response	Response Status O	ecific sub-cha	nnei.	<i>Suggested</i> To be chann	<i>IRemedy</i> investigated by el allocation.	the ""OFDMA parameters"" workir	ng group a	and harmonized with sub-		
<i>CI</i> 00 Pirat, Patric	SC 8.4.1.2 :k	P 195 France Telecom	L 15	# 149	Proposed	Response	Response Status O				
Comment T Equation	<i>Type</i> TR on 2 is missing.	Comment Status X			<i>Cl</i> 00 Pirat, Patri	SC 8.6.1.1 ck	<i>P</i> France Telecom	L	# 147		
Suggested Proposed F	Remedy Response	Response Status O			Comment Table OFDM Suagested	<i>Type</i> T 235: It seems fr I symbol (see m <i>Remedy</i>	Comment Status X rom this table that a block is the co by remark on subclause 8.5.3)	ntent of o	ne subchannel in one		
<i>Cl</i> 00 Pirat, Patric	SC 8.5.3 :k	P 201 France Telecom	L	# 151	Provid Proposed	le a definition of <i>Response</i>	f a ""block"". Response Status O				
Comment T The pa What is symbol	<i>Type</i> TR rameter NCBPB s an encoded blo ?	Comment Status X (number of coded bits per enco ck? Is it related to the capacity	oded block) is of a sub-chai	not clearly defined.	<i>CI</i> 00 Pirat, Patri	SC 8.6.1.1 ck	P 201 France Telecom	L 24	# 152		
Suggested Define Proposed I	Remedy NCBPB. Response	Response Status O			Is ther Suggested	e only one way Remedy	of doing the Gray-coded constellation	tion mapp	ing? I suspect not.		
					Proposed	Response	Response Status O	туре.			

C/ 00 SC 8.6.1.1

C/ 00 SC 8.9.1.3 Pirat, Patrick	P 203 France Telecor	L n	# 148	C/ 03 Chouinar	SC 3 d, Gerald	P 3 Communic	L 10 ations Rese	# 2	
Comment Type T This section is misleadii under conditions (1K FF specified here.	Comment Status X ng. This table was presented a -T, 1/4 guard interval, upstrea	as the experim m on 1 subcar	nental results of an uplink rier) far from the system	Commen Corre Suggeste 3.6 D	t Type ER ection and improved Remedy	Comment Status X rement to definitions.	on from the BS to a	CPE	
SuggestedRemedy Cancel this section. Proposed Response	Response Status O			3.9 D burst divisi	ownstream map length and sub- on multiplex (OF	(DS-MAP): A MAC message channel usage allocations for DM) of the downstream.	ge from the BS that or the CPEs in the	t defines burst start orthogonal frequer	t time, ncy
C/ 00 SC Nil	P Nil	L O	# 61	3.10 which	Frame: Comprise n BS and CPEs o	ed of one Downstream (DS) communicate with each othe) and one Upstreai er.	m (US) Subframes,	, by
Comment Type TR	Comment Status X	Dess Station	O	3.12 the M	MAC PDU: The s IAC header, the	smallest unit of transmission payload, and Cyclic Redund	n/reception by the dancy Check (CRC	MAC. It is comprise C).	ed of
(IEEE802.22-06/0111r1 methodology. SuggestedRemedy), there is no MAC manageme	ent message c	lesign to support the	3.13 or mo inforr initial	Security associations of its CPEs slimation includes to the second secon	tion (SA): The set of securit hare in order to support sec raffic encryption keys (TEK	ty information a ba cure communicatio s) and cipher block	se station (BS) and ns. This shared c chaining (CBC)	1 one
Four MAC management Switch Response, Base are designed to facilitate	t messages, namely Base Sta Station Switch Report, and B e the reliable Inter-BS commu	tion Switch Re ase Station S nication.	equest, Base Station witch Acknowledgement,	3.14 (BS)	Security association and a CPE that u	tion identifier (SAID): An ide	entifier shared betw y association (SA).	ween the base statio	ion
Proposed Response	Response Status O			3.15 of 80 chan	Self-Coexistence 2.22, this means nel.	: Coexistence between wir coexistence of multiple over	eless systems of th erlapping 802.22 c	he same type. In the ells using the same	ie case e TV
C/ 02 SC 2 Chouinard, Gerald	P 2 Communication	L 9 ns Rese	# 1	3.16	Subframe: Form	ed by a number of bursts to	be sent in the sar	ne transmission dire	rection.
Comment Type E Line 9: Document numb	Comment Status X			3.17 prear (SCH	Superframe: Gro mbles for synchro I).	up of 16 frames signalled b nization and channel traini	by the transmission ng and the Superfi	n from the BS of rame Control Heade	ler
Line 12: refer to the late SuggestedRemedy Line 9: 22-05-0007-46-(est revision 0001_RAN_Requirements.doc	:		3.19 a OF Code	Orthogonal frequ DMA data stream e (UIUC), that rem	ency division multiple acce n using PHY parameters, de nain constant for the duration	ss (OFDMA) burst etermined by the L on of the burst.	t: A contiguous port Jpstream Interval U	tion of Jsage
Line 12: Delete r12 Proposed Response	Response Status 0			3.20 OFDI Code	Orthogonal frequ M data stream us e (DIUC), that ren	ency division multiplexing (ing PHY parameters, deter nain constant for the duration	OFDM) burst: A co mined by the Dow on of the burst.	ontiguous portion of Instream Interval Us	f a sage
				3.22 comn	TV channel: Refe	ers to a specific physical T∖ ards (see ITU-R Recomme	/ Channel as defin ndation xxx).	ed by TV broadcas	st
				3.23	Upstream: The d	irection of the transmission	from a CPE to the	e BS.	
				3.24	Upstream chann	el descriptor (UCD): A med	ium access contro	I message that des	scribes

 TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general
 C/ 03
 Page 3 of 49

 COMMENT STATUS: D/dispatched A/accepted R/rejected RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn
 C/ 03
 Page 3 of 49

 SORT ORDER:
 Clause, Subclause, page, line
 SC 3
 1/15/2007 4:05:51

IEEE P802.22

IEEE P802.22 WRAN pre-draft WG Review v0.2 comments

the PHY characteristics of an upstream channel. C/ 06 SC 6 P 6 / 10 3.25 Upstream interval usage code (UIUC): An interval usage code specific to an upstream. Chouinard, Gerald Communications Rese See also: interval usage code. Comment Type Comment Status X ER Indicate TV band incumbents. 3.26 Upstream map (US-MAP): A MAC message from the BS that defines burst start time, burst length and sub-channel usage allocations in the orthogonal frequency division multiple Change TDM and TDMA for OFDM and OFDMA. access (OFDMA) upstream subframe for the CPEs to access the network. Proposed Response Response Status 0 SuggestedRemedy Line 10: ""and protection of TV bands incumbent services, as well as for self-coexistence."" Line 12: ""CMAC regulates downstream medium access by OFDM [frequency and time SC 4 P 4 C/ 04 / 13 # 3 division multiplex], while the upstream is managed by using a DAMA OFDMA [frequency Chouinard. Gerald Communications Rese and time division multiple access] system."" Comment Type ER Comment Status X Proposed Response Response Status 0 AAS relates to an optional feature to be discussed later. Missing acronyms. P 6 C/ 06 SC 6.1 / 18 # 5 SuggestedRemedy Chouinard, Gerald Communications Rese Delete AAS from the list for the time being. Comment Type ER Comment Status X Change TDM and TDMA into OFDM and OFDMA. Add DCD and UCD. Proposed Response Response Status 0 Change user for CPE. SuggestedRemedy Line 18: ""downstream direction (from BS to CPEs) is regulated by OFDM and typically SC 5 P 6 L 1 C/ 05 # 108 broadcast, while CPEs will listen only to those messages addressed to them. The upstream Cordeiro, Carlos Philips direction (from CPEs to BS) is shared by CPEs on a demand basis, according to a DAMA OFDMA scheme. Depending on the class of service utilized, the CPE may be issued Comment Status X Comment Type TR continuing rights to transmit, or the right to transmit may be granted by the BS after receipt Do we need this? of a request from the CPE."" SuggestedRemedy Proposed Response Response Status 0 Discuss within the WG the need or not for a convergence sublayer, and write/remove this section accordingly.

Proposed Response

Response Status 0

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general COMMENT STATUS: D/dispatched A/accepted R/rejected RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn SORT ORDER: Clause, Subclause, page, line

C/ 06 SC 6.1.1	P 7	L 21	# 6	C/ 06	SC 6.10	P 102	L 30	# 55		
Chouinard, Gerald	Communicat	ions Rese		Chang, Soo-	Young	Huawei Tech	nologies			
Comment Type ER Channel bonding and a first draft. See Annexe	Comment Status X aggregation are to be discus	sed later and sho	ould not appear in the	Comment Ty It is mea and cod	/pe TR ningful to intr ing scheme, s	Comment Status X oduce HARQ to IEEE 802.22 a since it provides an efficient wa	according to its e ay to improve sys	existing frame structure stem error performance.		
SuggestedRemedy Line 21: The unique ar so its capacity can be comprised of one or m Manager (SM). This is	nd distinctive characteristic o expanded over time, as the r ore PHY/MAC air interface r supported by the architectur	f this architecture need arises. Hen nodule and a new e as shown in Fig	e is that it is scalable and ce, it is can be v entity called Spectrum gure 1.	 However, unlike 802.16, the HARQ for 802.22 should be able to provide robust link performance in the presence of interference due to the 802.22 operations. SuggestedRemedy On the top of conventional HARQ design, we propose adaptive frequency interleaver (bas on soft HARQ) on the retransmission packets such that frequency diversity can be explored. 						
Proposed Response	Response Status O			while maintaining simple chase-combining at the receiver. Refer to 22-07-x 0000_Huawei_HARQ_Adaptive_Freq_Spreading_Updated which will be pure meeting document area for details.						
Cl 06 SC 6.1.1 Chouinard, Gerald	P 7 Communicat	L 34 ions Rese	# 7	Proposed R	esponse	Response Status O				
Comment Type ER Channel bonding and a first draft See Appexe	Comment Status X aggregation are to be discus	sed later and sho	ould not appear in the	C/ 06 Chang, Soo-	SC 6.11 Young	P 102 Huawei Tech	<i>L</i> nologies	# 56		
SuggestedRemedy Line 24: ""The SM has advantage of multiple of and allowing the system for an effective multiple Proposed Response	ws the system to take C (and also of the PHY) er words, the SM allows	This comment relates to the current downstream CSIT collection mechanism at the base station for efficient cross-layer scheduling. It is a mandatory requirement in WRAN to maintain QoS requirement (e.g. average delay) for various service flows (namely UGS, rtl nrtPS, BE). In order to maintain delay performance while at the same time, exploit cross-layer multiuser diversity gain, it is important for the BS to have both the downstream CSIT (channel state information) as well as QSI (queue state information) for efficient scheduling (delay-sensitive cross-layer scheduling). However, there is no existing mechanism described in the draft on how the WRAN BS can collect the downstream CSIT from all actions.								
C/ 06 SC 6.1.1 Chouinard, Gerald	P 8 Communicat	L 8 ions Rese	# 8	terms of assigned	signaling / fe d to the CPE)	edback overhead because the from all active CPE are requir	CSI of all subch	nannels (even those not ross-layer scheduling.		
Comment Type ER	Comment Status X			SuggestedR	emedy					
Channel bonding and a first draft. See Annexe SuggestedRemedy A simplified version of	aggregation are to be discus s. Figure 2 should be included	sed later and sho	ould not appear in the erring to channel	We propose a low-overhead polling / event-driven downstream CSIT collection mechanis to enable delay-sensitive cross-layer scheduling of various service flows at the base stati with small feedback overhead. Refer to 22-07-xxxx-00-0000_Huawei_event-driven_DS_CSIT_collection which will be posted in the Jan. meeting document area for dotails						
bonding and aggregation bonding.	on. This figure should be tra	insferred to the a	nnex on channel	Proposed R	esponse	Response Status O				
The title of the figure sl Proper frequency sepa	hould read: Figure 2 - Illust ration is enforced in order to	ative diagram of protect incumbe	spectrum allocations. nt services.							
Proposed Response	Response Status O									

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general COMMENT STATUS: D/dispatched A/accepted R/rejected RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn SORT ORDER: Clause, Subclause, page, line

C/ 06	SC 6.11.1	P 103	L 36	# 186	CI	06	SC	6.15	P 115 L 40 # 97			
HU, Wendo	ng	SIMicroelectroni	CS		Co	deiro, C	arlos		Philips			
Comment T	ype TR	Comment Status X			Со	nment	Гуре	TR	Comment Status X			
Traffice coexiste	constaints of Clence.	BP is not sufficiently an efficient	and fair meth	od of WRAN systems		There a is incor	are a n mplete	umber o	of subclauses in this section that have not been included. This section			
SuggestedF	Remedy				Su	ggested	Remed	dy				
Conside token re	er other coexiste enting protocol th	nce methods sucha as on-dema nat address fairness and efficien	and spectrum icy issues for	contention and credit ""interference free""		Use the subclar	e 802.1 uses.	16 spec a	as a starting point and update this section with all the needed			
schedul	ing and coexiste	ence.			Pro	posed H	Respor	nse	Response Status O			
Proposed R	esponse	Response Status O										
					CI	06	SC	6.15	P 115 L 41 # 68			
C/ 06	SC 6.13.1	<i>P</i> 109	L 6	# 106	Ch	ang, Soo	o-Youn	ng	Huawei Technologies			
Cordeiro, Ca	arlos	Philips			Co	nment	Гуре	TR	Comment Status X			
Comment T	ype TR	Comment Status X				Before	a CPE	E can be	e served by a BS, it needs to enter the network and negotiate its			
Current no deta	ly, the spec is or ils or support for	nly defined for TDD (e.g., frame, [.] FDD.	control mess	ages, etc.). There are		capabi exchar	lities w nges be	rith the B etween th	BS. This may involve many tasks (e.g., sensing channels) and frame the CPE and the BS. This whole procedure is hereby referred to as			
SuggestedF	Remedy					networ	k entry	and initi	tialization. More importantly, during this procedure the CPE needs to			
WG nee be done	eds to decide whe	nether FDD is going to be suppo ate this duplexing scheme. If no	rted or not. If t, we need to	so, much work has to clean up the text.		harmful interference with incumbents. In other words, the network entry and initialization procedure has to be designed to be what is hereby referred to as incumbent safe, which						
Proposed R	esponse	Response Status O		•		essent	ially me	eans tha	at incumbent system protection shall be guaranteed.			
,	,				Su	gested	Remed	dy				
C/ 06	SC 6.13.5.1	P 111	L 27	# 30		More d 0000_H	etails a Iuawe	and relat	ated solutions can be referred to ""22-06-0126-01- ork_Entry_and_Initialization"".			
Chouinard,	Gerald	Communications	Rese		Pro	posed H	Respor	nse	Response Status O			
Comment T	vpe TR	Comment Status X										
Section	still need furthe	r system work.										
Suggested	Remedy	-			Cl	06	SC	6.15	P 116 L 9 # 188			
Update	text with the late	est findings from the discussions	5.		HU	, Wendo	ong		STMicroelectronics			
Proposed P	lesnonse				Со	mment	Гуре	TR	Comment Status X			
Toposed N	esponse					Figure Region	20 and of eith	d the ass her BS of	sociated text have no consideration with respect to the Keep-out or CPE to the DTV protection contour.			
					Su	ggested	Remed	dy				
						Modify BS and	Figure CPEs	e 20 and s to the D	the associated text with consideration of the Keep-out Region of both DTV protection contour.			
					Pro	posed I	Respor	nse	Response Status O			

C/ 06 SC 6.4	15 P 116 STMicro	<i>L</i> 22 belectronics	# 187	Cl 06 SC 6.15 Caldwell, Winston	<i>P</i> 118 Fox	L	# 264				
Comment Type I SCH is designed single channel of	ER Comment Status X d for the optional channel bond case.	ling, hence not appr	opriate for the mandatory	Comment Type TR Comment Status X A section detailing the Authorize CPE block referred to in Figure 23 should be added.							
SuggestedRemedy Specify that sup channel operation	er frame control header (SCH) ons.	is optional or re-des	signed SCH for single	Add section. Proposed Response Response Status							
Proposed Response	e Response Status O)									
C/ 06 SC 6.4	15 <i>P</i> 118	3 L	# 267	C/ 06 SC 6.15. Chang, Soo-Young	1 P 117 Huawei Te	L 10 echnologies	# <u>57</u>				
Comment Type A section needs SuggestedRemedy Add section.	Fox TR Comment Status X to be added detailing the Set i	up Connections bloc	k referred to in Figure 23.	This comment relat may cause severe 1. The BS can onl since the CPEs car to the function requ seconds, while the	tes to the BS initialization proc interference to the incumbent y select the operating channe not report their sensing result irement version 48, the chanr permitted channel move time	edure. The curre users due to the I based on the se ts to the BS befor hel entry time for is 2 seconds. In o	nt initialization procedure following drawbacks. Insing result of its own re initialization. As referred a CPE is within 10 other words, in the worst				
Proposed Response	e Response Status O)		 case the BS should wait for 10 seconds before receiving channel measurement reports from its CPEs, however, the maximum tolerance time for interfering incumbent users is 2 seconds. Therefore, before the CPEs are able to report, the incumbent users may be interfered illegally. Hidden incumbent problem. The CPEs harmfully interfered by the incumbent users may not be able to enter the network. Even when the initialization is finished, the CPEs that are harmfully interfered by the incumbent users may not be able to synchronize with the BS. 							
Cl 06 SC 6. Caldwell, Winston Comment Type	15 P 118 Fox TR Comment Status X	3 L	# 265								
A section should 23.	d be added detailing the Perfor	m Key Exchange blo	ock referred to in Figure	SuggestedRemedy							
SuggestedRemedy Add section. Proposed Response	e Response Status O)		The BS increases t the initialization pro found, it increases on and so forth. Re which will be poste	the power gradually in the initi- bocedure in a small region with the power and operates the in ifer to 22-07-xxxx-00-0000-Hu d in the Jan, meeting docume	alization procedu small power. If no itialization proceo awei_Incumbent nt area for details	re. In particular, it starts > incumbent users are dure in a larger region, so _Protecting_Initialization S.				
				Proposed Response	Response Status O						
C/ 06 SC 6.4 Caldwell, Winston	15 <i>P</i> 118 Fox	3 L	# 266								
Comment Type A section needs 23.	TR Comment Status X to be added detailing the Perfe	orm Registration blo	ck referred to in Figure								
SuggestedRemedy Add section.											
Proposed Response	Response Status O)									

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general COMMENT STATUS: D/dispatched A/accepted R/rejected RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn SORT ORDER: Clause, Subclause, page, line

IEEE P802.22

IEEE P802.22 WRAN pre-draft WG Review v0.2 comments

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C/ 06	SC 6.15.3	P 119	/ 6	# 189	C/ 06 SC 6.15.3
HU, Wendong		STMicroelect	ironics	103	Cordeiro, Carlos
Comment T Using " indicate bonding SuggestedF Modify	<i>ype</i> TR "shall"", the text of in the SCH, b g feature is used Remedy the text to elimit	Comment Status X ""the CPE shall perform sen out also in all other affected c d as mandatory.	ising not only in t hannels"" implies of Channel bondi	he set of channels s optional channel ng.	Comment Type TR Correct sentence SuggestedRemedy Change from ""incu Proposed Response
Proposed R	Response	Response Status 0	/ 6	# 100	<i>Cl</i> 06 SC 6.15.5 Chouinard, Gerald
HU, Wendo	ng	STMicroelect	tronics	# 190	Comment Type ER
Comment T The FR range ir access procedu N+-15, SuggestedF	D requires that which it is to o information fror ure specifies the where N is the Remedy	""The first time a CPE is turn perate to identify the present in the WRAN networks access a CPE shall start with search working channel of the target	ied on, it MUST s ce of incumbent o sible in the area. shing for SCH, an t BS.	start by sweeping the RF operations, as well as to "" However, the Ind then scan channels of	SuggestedRemedy Delete following not 2. For multichanne upstream channel b Proposed Response
Modify	the CPE initializ	ation procedure to satisfy the	e FRD.		, ,
Proposed R	Response	Response Status O			C/ 06 SC 6.15.5 Chu, Liwen
C/ 06 Cordeiro, C	SC 6.15.3 arlos	P 119 Philips	L 6	# 110	Comment Type T Here the draft says
Comment T Sentend	<i>ype</i> TR ce needs to be	Comment Status X corrected			Management CIDs multichannel suppo channel before mov primary manageme
Replace in-band	SuggestedRemedy Clarify it.				
Proposed R	Proposed Response				

C/ 06 Cordeiro,	SC 6 Carlos	6.15.3	P ´ Philip	1 9 s	L 8	# 111	
Comment Corre	<i>Type</i> ct senter	TR nce	Comment Status	X			
Suggeste	dRemedy	/ "incumbo	nt anaration"" to ""in	band i	ncumbont oporatio	n ""	
Proposed	Respon	se	Response Status	0		"1	
Cl 06 Chouinard	SC (I, Gerald	6.15.5.1	P · Comr	I 25 nunicat	L 16 tions Rese	# 31	
Comment Matte	<i>Type</i> rs related	ER d to chanr	Comment Status	X e repoi	rted for later.		
Suggester Delete	dRemedy e followin or multich	/ ig note 2: nannel sup	oport, the CPE shall	attemp	t initial ranging on	every suitable	
Proposed	Respon	se	Response Status	0			
C/ 06 Chu, Liwe	SC 6	6.15.5.1	P ' STMi	1 25 croelec	L 45	# 134	
Comment Here Mana multic chanr prima	<i>Type</i> the draft gement (hannel s lel before ry manag	T says that CIDs assig upport, th e moving to gement C	Comment Status ""Within the RNG-R gned to this CPE"". e CPE shall attemp to the next available IDs in each channel	X SP mean n page initial downs of mult	ssage shall be the 126, line 16, the d ranging on every si tream channel"". D riple channel suppo	Basic and Primary rafrt says that ""For uitable upstream loes BS allocate bas ort?	sic,
Suggester Clarify	dRemedy / it.	/					

C/ 06 SC 6.15.5.1

33

Cl 06 Cordeiro,	SC 6.20 Carlos	P 134 Philips	L 4	# 98	C/ 06 SC Chouinard, Gera
Commen There	<i>t Type</i> TR e are a number of	Comment Status X subclauses missing in this se	ection.		Comment Type It should be
Suggeste Use t	edRemedy he 802.16 spec a l Response	s a starting point and update	this section with a	all the required text.	The in-band measureme outside the
				// <u></u>	SuggestedRem Line 20: 6.2
HU. Wen	30 6.21 dona	P 142 STMicroelecti	L 25	# 191	Line 21:
CBP overla coexi	would be question apping 802.22 ce sting 802.22 cell. adRemedy	nable to be claimed as an effi lls. CBP also could not provid	example if a refers to the through N+t operation in incumbents		
Need	I more debate and should not be sta	d proof-of-concept on CBP as	the baseline self-	-coexistence method.	sensing will
Proposed	l Response	Response Status O			Line 30: ""It is import have a diffe measureme
C/ 06 Chouinar	SC 6.21.1 d, Gerald	P 143 Communication	L 11 ons Rese	# 32	than in-char respect to ir
<i>Commen</i> Chan	<i>t Type</i> ER ige MAC manage	Comment Status X ment ""frames"" by MAC man	agement ""messa	ages""	Proposed Resp
Suggeste Line	edRemedy 11: ""pool of MAC	C management messages,"	n		C/ 06 SC HU, Wendong
Proposed	l Response	Response Status O			Comment Type Should ""t<=
					SuggestedRem Should it be
					Proposed Resp

SC 6.21.1.1 P 143 L 20 erald Communications Rese

Comment Status X

be clear that the measurements discussed are for sensing.

and and out-of-band terms should read in-channel and off-channel since it means ments made inside the TV channel being used and outside and not inside and ne TV bands.

emedy

ER

6.21.1.1 Sensing Measurements Classification

ements can be of types: in-channel and off-channel. In-band measurements refer se when the stations sense the same channels used for normal cell operation. For if a BS uses channel N to communication with its CPEs, in-channel measurement the incumbent sensing activity which is performed in those channels (e.g., N-t I+t, where, say, t ú 1), where sensing will be directly affected by the 802.22 in channel N. Similarly, out-of-band measurements refer to the case when the t sensing activity is carried out in those channels other than N-t through N+t where vill not be affected by the 802.22 operation in channel N.""

ortant to note, however, that in-channel and ooff-channel sensing measurements fferent meaning when used in the context of CBP measurements. For beacon ments, all channels other than channel N are classified as being off-channel rather nannel since operation in these channels is not prohibited, as it is the case with o incumbent protection.""

sponse Response Status 0

CL 06	50	6 21 1 1	D	1/13	/ 25	# 102
HU, Wendong			, STMi	croelect	tronics	# 192
Comment Shoul	<i>Type</i> d ""t<=1	TR I"" be a typ	Comment Status	x		
Suggestee Shoul	dRemed d it be "	dy "t>=1""?				
Proposed	Respor	nse	Response Status	0		

IEEE P802.22		IEEE F	9802.22 WRAN pre-d	raft WG Revie	ew v0.2 com	J pre-draft WG Review v0				
C/ 06 SC 6.21.1. Chouinard, Gerald	2 P 143 Communicatio	L 36 ons Rese	# 34	<i>CI</i> 06 HU, Wendo	SC 6.21.1.3 ng	P 145 STMicroelectr	L 12 ronics	# 193		
Comment Type ER It should be clear that	Comment Status X at the measurements discussed	are for sensing.		Comment Type TR Comment Status X Only TV services and Part 74 services are considered as incumbent. How about other type of licensed services in the TV bands, such as public safety services?						
Line 36: 6.21.1.2 Se Page 144, line 9: ""E the periodicity at whi	nsing Measurements Managem ach single measurement reques ch the BS""	ent st specifies seve	ral parameters such as	SuggestedRemedy Shall include all other types of licensed services in the TV bands worldwise, such as publi safety.						
Line 13: ""BLM-REP Page 145, line 5: ""(Proposed Response	message which contains measu either with incumbents or for self	urement results (f-coexistence).	of what""	<i>CI</i> 06 Chouinard,	SC 6.21.1.3 Gerald	P 145 Communicatio	L 13 ons Rese	# 35		
C/ 06 SC 6.21.1. Chouinard, Gerald	2.1.2 P 158 Communicatio	L 4 ons Rese	# 42	Comment 7 This se should separat	<i>ype</i> ER ction mentions also mention th e RF sensing c	Comment Status X the periodic incumbent sensir at it can be done for off-chanr thain is used) and refer to a se	ng being done du nel while the syst ection where it wi	rring quiet periods. It tem is in operation (if a ill be explained.		
Comment Type TR Looking at this parag while sensing for a c there is one and the	Comment Status X graph, is it possible that the CPE oexistence beacon? If there is BSs are synchronized, there is	e may not lose sy no CBP beacon, no reason.	rnch with its own BS there is no reason. If	SuggestedRemedy Add the following sentences at the end of the paragraph: ""Off-channel sensing can also be done without the need for quiet periods (if a sepa sensing chain is used). This is explained in section zzz.""						
Page 158, line 33: P	acket scheduling based on CBF	will help in the o	case of the upstream	Proposed R	Response	Response Status O				

but not for downstream. Is it possible that upstream coexistence would be aproblem while downstream coexistence is not? If no, upstream scheduling would not help.

SuggestedRemedy

Line 4: Clarify the need for loss of synchronization.

Page 158, line 33: Clarify the need for upstream scheduling only.

Proposed Response Response Status 0

C/ 06 SC 6.21.1.3

J pre-draft WG Review v0.2

C/ 06 SC 6.21.1.4.1 P 146 L 7 # 36 Chouinard, Gerald Communications Rese Image: Communication of the second	C/ 06 SC 6.21.1.4.1 P 146 L 7 # 196 HU, Wendong STMicroelectronics STMic						
Comment Type TR Comment Status X Title of section is unclear.	Comment Type TR Comment Status X It's not clear how the BS acknowledge the measurement reports sent by a CPE?						
For off-channel sensing, the quiet periods may not be necessary. The UCS slot will need to contain sufficient symbols to allow channel response capture.	SuggestedRemedy Need further specifications.						
SuggestedRemedy	Proposed Response Response Status O						
Change title for: 6.21.1.4.1 Notification Phase for Sensing During Quiet Period	C/ 06 SC 6.21.1.4.1 P 147 L 12 # 195 HU, Wendong STMicroelectronics STMicroelectronics						
""CPEs that are allocated upstream bandwidth shall use it to send to the BS a report on its overall measurement outcome (e.g., incumbent detected or not, and in which channel). If sensing off-channel, the quiet period may not be necessary. The way""	Comment Type TR Comment Status X It is not convincing that how these two type of UCS notification windows could improve the reliability and performance of the system. Vector						
Page 147,line 6: "" particular CPE or schedule UCS notification slots. This UCS slot shall contain 7 symbols to allow the pilot carriers to fully quantify the transmission channel response."" <i>Proposed Response</i> Response Status O	SuggestedRemedy Need elaborations. Remove or revise this scheme if needed. Proposed Response Response Status O						
C/ 06 SC 6.21.1.4.1 P 146 L 7 # 194 HU, Wendong STMicroelectronics	C/ 06 SC 6.21.1.4.2 P 147 L 22 # 37 Chouinard, Gerald Communications Rese Communications Rese <t< td=""></t<>						
Comment Type TR Comment Status X If the quiet time is long enough, e.g. close to 20ms, and the subsequent frames are devoted for measurement report, the overall service interruption time could be longer than 20ms which is not acceptable for VoIP or other timing sensitive applications. So a dedicated quiet period notification phase with frames immediately follows the quiet period shall not be mandated, and more flexible reporting scheme shall be allowed.	Comment Type TR Comment Status X Title of section is unclear. Clarify sentence. SuggestedRemedy 6.21.1.4.2 Notification Phase for Sensing During Normal System Operation						
SuggestedRemedy A dedicated quiet period notification phase with frames immediately follows the quiet period shall not be mandated, and more flexible reporting scheme shall be allowed.	Line 30: ""During this phase, the BS should allocate the UCS notification slots only for the specific purpose of incumbent notification given the lower expected demand.						

Proposed Response Response Status **0**

Proposed Response Response Status **O**

C/ 06 SC 6.21.1.4.2

J pre-draft WG Review v0.2

CI 06	SC 6.21.1.4.2	P 147	L 23	# 199	C/ 06	SC 6.21.1.4.2.2	P 148	L 15	# 200
HU, Wendor	ng	STMicroelectror	nics		HU, Wend	ong	STMicroelectro	onics	
Comment Ty	vpe TR	Comment Status X			Comment	Type TR	Comment Status X		
If the the	e quiet period no	tification phase ends when the	e BS has acqui	red a reliable picture of	How r	eliable is it to use UC	CS slot for reporting in the c	congestive repo	rting situation?
being re	ported (if such s	situation happens, it means the	picture is NO	reliable enough).	Suggestee	dRemedy			
SuggestedR	Remedy			2 /	Pleas	e elaborate.			
Please e occur giv standard	explain how to d ven a reliable re dized as mandat	efine ""reliability"" in this conte porting result. The reporting m ory feature.	xt and why urg ethod shall be	ent situation would still revised or not be	Proposed	Response	Response Status O		
Proposed Re	esponse	Response Status O			<i>CI</i> 06 HU, Wenc	SC 6.21.1.4.2.2.	2 P 148 STMicroelectro	L 35 onics	# 201
C/ 06	SC 6.21.1.4.2	1 P 147 STMicroelectror	L 43	# 197	Comment Why s	<i>Type</i> TR hould CDMA UCS n	Comment Status X otification be supported?		
Commont T		Commont Status V			Suggestee	dRemedy			
It's not c context?	clear why only "" What if the ""ar	a small amount of sensitive tra mount of sensitive traffic"" is no	ffic (e.g. voice) ot ""small""?	"" is considered in this	Need Proposed	elaborations or the C Response	CDMA UCS notification can Response Status 0	be eliminated.	
SuggestedR	Remedy								
The spe The star subclaus	cified scheme is ndard shall have se.	not robust and shall not be st a much more robust solution	andarded as a than what is sp	mandatory feature. ecified in this	<i>CI</i> 06 HU, Wenc	SC 6.21.1.5	P 149 STMicroelectro	L 9 onics	# 202
Proposed Re	esponse	Response Status O			Comment Incum	<i>Type</i> TR bent Detection Reco	Comment Status X	ex.	
C/ 06	SC 6.21.1.4.2	1 <i>P</i> 148	12	# 198	Suggestee	dRemedy			
HU, Wendor	ng	STMicroelectror	nics		It shal	I be modified toward	a simplified scheme or sha	all not be manda	ated.
Comment Ty	vpe TR	Comment Status X			Proposed	Response I	Response Status O		
How car report re	n the BS disregated by the B	rd an urgent measurement rep S? This would be dangerous!!	port from a CPI	E if this is the only	C/ 06	SC 6.21.1.5	P 151	L 1	# 38
SuggestedR	Remedy				Chouinarc	, Gerald	Communication	ns Rese	
The BS only rep mandate	shall never disre ort from CPEs. ⁻ ory feature.	egard an urgent measurement The reporting method shall be	report from a (revised or not	CPE even if this is the be standardized as	<i>Comment</i> Error	<i>Type</i> ER n Figure 42. A Yes	Comment Status X node in the middle of the di	iagram become	s No.
Proposed Re	esponse	Response Status O			Suggestee Corre	dRemedy ction to the diagram.			
					Proposed	Response I	Response Status O		

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general COMMENT STATUS: D/dispatched A/accepted R/rejected RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn SORT ORDER: Clause, Subclause, page, line

J pre-draft WG Review v0.2

<i>CI</i> 06 HU, Wendo	SC 6.21.1.5.1	P 152 STMicroelectro	L 3	# 203	<i>CI</i> 06 HU, Wendo	SC 6.21.1.6	P 155 STMicroelectro	L 2 onics	# 204
Comment The se idea ho	Type TR ection is not consist ow these two diffe	Comment Status X stent with the spec in 6.21.1. erent approaches can be mer	5. The procedu ged.	res are too complex. No	Comment 7 Dynam in this s	<i>Type</i> TR ic Frequency Hoj subclause.	Comment Status X oping (DFH) is a control meth	od of DFS hen	ce it should be included
Suggested Shall c manda	Remedy consider simple bu ited.	ut effective recovery schemes	s. These proced	lures shall not be	Suggested Consid	Remedy er adding DFH.			
Proposed I	Response	Response Status 0			Proposed F	Response	Response Status O		
C/ 06	SC 6.21.1.5.1	P 152	L 3	# 107	<i>CI</i> 06 HU, Wendo	SC 6.21.1.7	P 155 STMicroelectro	L 8 onics	# 205
Contento, C Comment	<i>Type</i> TR integration.	Comment Status X			Comment T This se 802.22	<i>Type</i> TR ection, ""class B C	Comment Status X CPE for the protection of part	74 services"", i	s out of the scope of
Suggested Integra	Remedy ate this section wit	th the previous one. Ask the	MAC team to u	ndertake this task.	Suggested Remov	Remedy ve this section from	m 802.22 standard.		
Proposed I	Response	Response Status O			Proposed F	Response	Response Status O		
<i>Cl</i> 06 Chouinard,	SC 6.21.1.5.1 Gerald	P 152 Communicatio	L 14 ns Rese	# 39	<i>Cl</i> 06 HU, Wendo	SC 6.21.2	P 155 STMicroelectro	L 10	# 245
Comment Modify from th Suggested	<i>Type</i> TR this section to de the standard. <i>Remedy</i>	Comment Status X escribe sensing process for T	DD. FDD optio	n should be removed	Comment T For IEE betwee (offeren situatio	Type TR EE 802.22 WRAN on one contention r) should different on.	Comment Status X I self coexistence, inter base source BS (requestor) and n tiate and integrate mechanism	stations on der nultiple content ns considering	nand channel contention ion destination BSs intra and inter operators
Line 14 - Case - Case - Case	4: 0: When IU is de 1: When IU is de 2: When IU is de	tected by both BS and CPE tected by BS tected by CPE			Suggested Include Adaptiv submitt	Remedy the text of the fo ve On Demand C ted to January 20	Ilowing contribution to the dra hannel Contention for IEEE 8 07 London meeting (Doc: IEE	aft standard: ""I 02.22 WRAN \$ EE 802.22-07/0	nter Base Stations Self Coexistence"" xxx)
Page 1	153, line 4: Delete	paragraphs and modify table	es to deal with	IDD.	Proposed F	Response	Response Status O		

Proposed Response Response Status **0**

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general COMMENT STATUS: D/dispatched A/accepted R/rejected RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn SORT ORDER: Clause, Subclause, page, line

01.00		_	D /				01.00				D ("	I.
	SC 6.21.	2	P 155 STMicroelectr	L 10	# 246			SC 6	6.21.2		P 155	L 22	# 206	
no, wen		0	STIVIICIOElecti	Unics				-		•		tionics		
Commen	t lype TR	Cor	nment Status X				Comment	iype	TR	Comment	Status X			
For II offrer	BS and multi	VRAN self c iple renter B	Ss should differentiate	e and integrate i	el renting between on mechanisms consider	e ing	It is no approp	riate se	elf-coexis	t the CBP and stence amongs	inter-BS comr at collocated 80	nunication can a	address sufficiently the	
intra	and inter oper	rators situat	ion (Suggested	Remed	'y					
Suggeste	edRemedy						These	two sch	neme sha	all not be stand	dardized as ma	andatory feature	s. These two schemes	;
Inclu Adap 2007	de the text of otive Channel London meet	the following Renting for ting.	g contribution to the dr IEEE 802.22 WRAN S	aft standard: ""I Self Coexistence	nter Base Stations "" submitted to Janua	ary	shall be carefully verified and proven. If needed, they shall be modified or integrate more effective schemes (such as spectrum contention, logical control connections, order to address the self-coexistence requirements.						fied or integrated with rol connections, etc.) in	n
Proposed	d Response	Resp	oonse Status O				Proposed I	Respon	se	Response	Status O			
CL 06	SC 6 21	2	P 155	/ 11	# 66									
Chang S	00-Young	2	7 155 Huawai Tachr		# 00									
o	· -													
Contr after (as s coexi	rary to other II the specificati pecified in its istence protoc	EEE 802 sta ion essentia Requiremer cols and algo	andards where self-coe Ily is finalized, the IEE nts Document) and ma prithms as part of the i	existence issues E 802.22 takes andates that the nitial standard o	are only considered the proactive approace MAC shall include se conception and definiti	ch elf- ion.								
Suggeste	edRemedy													
Some BS_S	e algorithms a Synchronizatio	are introduce on"".	ed in ""22-06-0124-01-	0000_Huawei_I	nter-									
Proposed	d Response	Resp	oonse Status O											
C/ 06	SC 6.21.	2	P 155	L 17	# 40									
Chouinar	d, Gerald		Communicatio	ons Rese										
Commen Use o	<i>t Type</i> TR of directional	<i>Cor</i> TX/RX anter	nment Status X	plementation de	pendent.									
Suggeste	dRemedy													
Line at all	17: ""Even if o overcome (se	directional a ee Figure 54	ntennas are used at th	ne CPEs, self-co	existence issues are	not								

Proposed Response Response Status **0**

C/ 06	SC 6.21.2	P 176	L 13	# 64	
Chang, Soo-	Young	Huawei Technol	ogies		

Comment Type TR Comment Status X

The IEEE 802.22 takes the proactive approach (as specified in its Requirements Document) and mandates that the MAC shall include self-coexistence protocols and algorithms as part of the initial standard conception and definition. WRAN system utilizes cognitive radio technologies to identify vacant frequency bands to communicate. Therefore when many CPEs need to make use of confined frequency resources, it makes WRAN system cell be overloaded. To reduce this cell load, the BS needs to move some CPEs in this overlapping area to another neighbor cell. Thus before load balancing, it is needed that BSs can provide the functions to CPEs in the overlapping area to synchronize and to co-exist.

When multiple CPEs are located inside overlapping area of multiple BSs, they need to notify S-BS on whether they can be served by other BSs. This procedure will be performed in two stages: initial ranging stage and normal operation stage. At initial ranging stage, CPEs may send BS Id which covers the CPE to S-BS. At normal operation, CPEs shall send this information to S-BS aperiodically. S-BS and CPEs shall save this data information in memory and update it periodically.

When there are new CPEs which are trying to access a network, if their bandwidth allocation requests exceed this cell bandwidth limit, S-BS shall redirect CPEs in overlapping area to other collocated cells. Firstly S-BS needs to judge how many CPEs can be served by other BSs through collocated BSs load information. Then S-BS shall negotiate with C-BS. S-BS sends Load Shunt Request (LS-REQ) to C-BS. This request includes number of load and number of subcarriers. After C-BS receives this request, a response message will be fed back to S-BS.

SuggestedRemedy

Proposed Solution

1. CPE's candidate BS Notification

CPE can notify S-BS of a list of BSs which can be candidate BSs serving this CPE's in initial ranging stage and normal operation stage.

BS ID notification message is sent to S-BS by a CPE within overlapping area, which can notify S-BS of how many BSs can serve it. S-BS and CPE need to store this data information and update it.

In initial ranging stage, after CPE finishes synchronization, ranging, negotiation, authorization and registration, CPE will send BS ID notification message to S-BS in optional initialization steps to inform S-BS of how many C-BS can serve the CPE and C-BS ID.

In normal operation stage, C-BS can adjust its coverage area to avoid interfering incumbent users by changing the number of CPEs covered within overlapping area. Hence in normal operation CPE also sends this message to S-BS aperiodically so that S-BS can update data information.

2. Load balance negotiation

When S-BS is overloaded, it needs to send LS-REQ message to C-BS through bridge CPEs in the overlapping area, which includes the numbers of shunt CPEs, number of subcarriers

and slots which need to be borrowed. After C-BS receives this message from S-BS, it shall calculate the number of its own vacant channels. Then it selects channels from the set of vacant channels according to S-BS's request and sends IDs of these channels to S-BS. Then it sends LS-RSP message to S-BS through bridge CPEs in the overlapping area. After S-BS receives feedback information from C-BS, it sorts all the information from other cells in ascending order. If the numbers of CPE shunt are smaller than the largest number of vacant channels, S-BS selects a cell with the largest number of vacant channels, S-BS selects a target cell according to the numbers of vacant channels, from highest to lowest. Then S-BS will redirect CPE within overlapping area to target C-BS.

S-BS sends LSReq message to C-BS through inter-BS communication mechanism to request CPE belonging to S-BS to access network of C-BS.

C-BS sends LSRsp message to S-BS through inter-BS communication mechanism to identify whether C-BS can share load with CPE belonging to S-BS.

3. CPE Redirect

After S-BS receives LS-response and finishes choosing a target cell, it shall start redirection procedure. S-BS shall communicate with C-BS through shunt CPEs to finish this procedure, which is named inter-cell communication. To address the reliable inter-cell communication, a novel inter-cell communication scheme where reliable communication can be guaranteed is introduced. The inter-cell communication proposal can reference to STM proposal ""22-06-0111-02-0000_STM-MOT-ConnectionBased-InterBS-Comm"".

After these CPEs finish redirection procedure, they will release their channels used before redirecting and pause connection with S-BS until load balance process of S-BS is completed. This procedure solves overload problem of S-BS. Also, when some of the numbers of shunt CPEs are bigger than the largest number of vacant channels, the same procedure can be applied. The only difference is that S-BS needs to communicate with multiple cells synchronously.

4. Conclusions

(1) S-BS can compare load status of its own cell with other C-BS and select a target cell flexibly. While solving overload, this proposed solution can achieve the purpose of utilizing frequency resource more efficiently.

(2) Before switching CPEs, S-BS will keep serve with shunt CPEs, which will not interrupt CPEs service and can assure CPEs service continuity and QoS.

(3) Extra cost does not need to be increased and S-BS can directly utilize CPEs in overlapping area to finish synchronization and signaling alternation.

Refer to 22-06-0126-01-0000_Huawei_Network_Entry_and_Initialization for details.

Proposed Response Response Status **O**

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general COMMENT STATUS: D/dispatched A/accepted R/rejected RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn SORT ORDER: Clause, Subclause, page, line

C/ 06 SC 6.21.2.1	P 156 L 7 # 213	C/ 06	SC	6.21.2.1	P 156	L 7	# 207			
HU, Wendong	STMicroelectronics	HU, Wer	idong		STMicroelectron	ics				
Comment Type TR	Comment Status X	Commer	nt Type	TR	Comment Status X					
The spec defines a tim listen to the medium fo	e where the CPEs shall not perform any transmission but simply r CBP packets and, possibly, BS SCH beacons. This is achieved	d by and	not convir unsatisfa	ncing CBP ctory effici	shall be a mandatory coexiste ency.	nce feature	e itself due to its limitations			
synchronized BSs.	nadule a time window for all because to be transmitted. Again	Suggest	SuggestedRemedy							
reliable? Efficient? Hov	v about the transmission delay?	Inteç	rate CBP	with Logi	cal control connection (connec	tion based	inter BS communication			
SugaestedRemedv	·	meth	nod) for er	nhanceme	ent.					
Address the questions. (inter-BS control conne	Enhance the scheme by integrating with Logical Control Conne	ction Proposed	d Respon	ise	Response Status O					
Proposed Response	Response Status O	C/ 06	SC	6 21 2 1	P 156	17	# 220			
		HU. Wer	Idona	0.21.2.1	STMicroelectron	lics	11 220			
	D 156 / 7 # 004	Comme	t Type	тр	Comment Status V					
HI Wendong	STMicroelectronics	Reg	arding CB	RP-						
		Bear	coning du	ring coexi	stence time window?					
Comment Type IR	Comment Status X	lt ma	akes sens	e but it co	uld be very likely to have collis	ons.				
Require static BW alloc	cations for CPEs, meaning BW allocation for CPEs shall not be	Doe	s not look	feasible t	period? because of synchronized quiet i	periods and	d interference to sensing.			
changed for consecutiv	e a number of frames.	etc.					3,			
Another issue is that it	requires guard band in the coexistence window due to propagati	ion								
uelay.		Suggest	edRemed	ly						
SuggestedRemedy		Addr	ess the is	ssue. Enha	ance CBP with logical control c	onnection (inter-BS control			
Address the issues. Er	hance CBP with logical control connection (inter-BS control	Conr	iections).							
connections).		Propose	d Respon	ise	Response Status O					
Proposed Response	Response Status O									
		C/ 06	SC	6.21.2.1	P 156	L 7	# 219			
		HU, Wer	idong		STMicroelectron	ics				
C/ U6 SC 6.21.2.1	P 150 L 7 # 215	Commer	nt Type	TR	Comment Status X					
	STMICIOElectronics	Reg	arding CB	BP:						
Comment Type TR	Comment Status X	Bear	coning du	ring norm	al operations? Issues include ir	iterference	s to other cells and			
I raffic contraint of CBF BS to CPEs in a certair	² requires that Downstream/upstream bandwidth allocations made of frame shall not change for a number of consecutive frames	Je by unkr	iown IXt	ime make	it difficulty to receive CBP pac	kets.				
Question: This requirer	nents bring in undesirable limitations. Can we do better job prov	iding Suggest	edRemed	ly						
flexibility?		Addr	ess the is ections).	ssues. Enl	nance CBP with logical control	connection	(inter-BS control			
SuggestedRemedy		Propose	d Respon	se	Response Status 0					
Address the issue and	question. Enhance CBP with spectrum contention algo for flexib	ility.								
Proposed Response	Response Status O									
. ,	· -									

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general COMMENT STATUS: D/dispatched A/accepted R/rejected RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn SORT ORDER: Clause, Subclause, page, line

C/ 06 SC 6.21.2.1	P 156 L 7 # 218	C/ 06 SC 6.21.2.1 P 156 L 9 # 208
Comment Type TR Regarding CBP: How multi-channel inter efficiency issue can be SuggestedRemedy Address the issues. En connections). Proposed Response	Comment Status X r-BS communications are facilitated? More serious reliability and raised. hance CBP with logical control connection (inter-BS control <i>Response Status</i> O	Comment Type TR Comment Status X Consider the following text - ""The CBP is a best-effort protocol based on coexistence beacon transmissions."" It follows the best-effort model, successful reception of coexistence beacons is not guaranteed. Reliability and Efficiency are big issues for addressing a variety of coexistence requirements. SuggestedRemedy Integrate CBP with Logical control connection (connection based inter BS communication method) for enhancement.
C/ 06 SC 6.21.2.1 HU, Wendong	P 156 L 7 # 217 STMicroelectronics	Proposed Response Response Status O
Comment Type TR Regarding CBP: This is a Best Effort, Co and efficiency issues. SuggestedRemedy Addess the issues. Enh connections).	Comment Status X ontention Based Beaconing Mechanism, that has inherent reliab nance CBP with logical control connection (inter-BS control	Control SC 6.21.2.1 P 136 L 10 # 212 HU, Wendong STMicroelectronics bility Comment Type TR Comment Status X Consider the following text - ""CPEs do not continuously stay locked to a BS"". How to handle the interference issue when a beacon is transmitted while CPEs in other cells are transmitting/receiving? SuggestedRemedy
Proposed Response	Response Status O	Address the question. Enhance CBP by integrating with Logical Control Connection (inter- BS control connections). Proposed Response Response Status O
C/ 06 SC 6.21.2.1	P 156 L 7 # 214	
Comment Type TR Traffic contrait of CBP: contain time allocation of airtime, but not between Question: Is this fair? w for spectrum sharing fo SuggestedRemedy Address the question. E Proposed Response	Comment Status X CBP allow that future upstream bandwidth reservation requests constraints, for example, a CPE can specify: ôGive me 100Kb c n T1 and T2ö. what if it is always unacceptably large between T1 and T2 (no roo r other WRANs)? Enhance CBP with spectrum contention algo for fairness.	Cl 06 SC 6.21.2.1 P 156 L 10 # 211 HU, Wendong STMicroelectronics S can of Comment Type TR Comment Status X Consider the following text - ""CPEs do not continuously stay locked to a BS"". In fact, a CPE would have to perform more work, such as out-of-band sensing and in-band sensing, rather than being dedicated to CBP listening. This would decrease the probability CBP beacons can be received by CPEs. SuggestedRemedy Address the issue. Enhance CBP by integrating with Logical Control Connection (inter-BS
rioposea Response	Response Status U	control connections). Proposed Response Response Status O

C/ 06 SC 6.21.2.1	P 156	L 10	# 210	C/ 06	SC	6.21.2.3	P 159	L 15	# 100
HU, Wendong	STMicroelectroni	cs		Cordeiro,	Carlos		Philips		
Comment Type TR	Comment Status X			Comment	Туре	TR	Comment Status X		
Consider the following Does a CPE searcher multi-channel CBP co transmission on a cha channel? This would	g text - ""CPEs do not continuousl s CBP packets in other channels? mmunications can be facilitated, i annel can be received by another add more uncertainties to the inte	y stay locked to In essence, the n other words, h WRAN that is op r-BS communica	a BS"". question is how the ow to facilitate that a erating on anther tions.	As it a on top clear t Suggestee	greed b of whic rom this dRemed	by the grou ch all mech s write-up a dy	p over telcos, emails and face anisms presented under this and hence needs to be include	e-to-face, CBP subclause are ed for clarity an	is the mandatory mode to operate. This is not d understandability.
SuggestedRemedy				Includ Apper	e introd dix whe	luctory text ere more in	(see below) in this section to formation about the specific to	clarify this poir echnologies ca	it, and then refer to the n be found.
Address the question BS control connectior	s. Enhance CBP by integrating wins).	th Logical Contro	I Connection (inter-	1) Inc	ude the	e following p	paragraph:	oonnologioo oo	
Proposed Response	Response Status O			""The the m sharin descri	CBP pr echanis g functi bed in <i>l</i>	otocol is th ms describ ionality of C	e mandatory and default self- ed in this section are implement CBP, it can also be used to ne	coexistence pr ented. In addition gotiate which (ent 802 22 svst	otocol on top of which on to the basis resource if any) of the schemes
C/ 06 SC 6.21.2.1	P 156	L 10	# 209	illustra	ates the	self-coexis	stence architecture of this star	ndard.""	
HU, Wendong	STMicroelectroni	cs		2) Inc	uda tha	Figure -X	XX> (see above) that denicts	the self-coevie	tence architecture. I
Comment Type TR	Comment Status X			have	he figur	re available	and can provide it upon requ	lest.	tence architecture. I
Consider the following on this? How much tin satisfactory reception	g text - ""CPEs do not continuousl ne has a CPE need to monitor for ?	y stay locked to beacons in orde	a BS"". Simulations or to achieve the	Proposed	Respor	nse	Response Status O		
SuggestedRemedy				C/ 06	SC	6.21.2.4	P 159	L 17	# 216
Provide convincing si	mulation results.			HU, Wend	ong	-	STMicroelectro	nics	
Proposed Response	Response Status O			Comment	Туре	TR	Comment Status X		
				Regai listen	ding Int to or ev	er-BS Com	nmunications using CBP, it sp le downstream/upstream per t	ecifies that BS	may either periodically indically
C/ 06 SC 6.21.2.1 Chouinard, Gerald	P 156 Communications	L 14 Rese	# 41	detect	ing SCI	H frames tr hat a BS re	ansmitted by other BSs within acceives CBP packets (either o	its transmission its ransmission its transmission its tra	peration or during quiet
Comment Type TR Optional mechanisms and agreed upon.	Comment Status X should be introduced in the stand	dard when they h	ave been discussed	Quest consid How d	ions: Ho lering q an a be	ow can a C uiet period	BP packet be received/transr s of all collocated WRANs are etected in a reliable way if the	nitted during a synchronized time of beacor	quiet period, ? n transmissions is
SuggestedRemedy				unkno	wn to o	ther BSs?	nakaa aanaa ta TV/DV aaavia	tanan haaaana	during the
Line 14: Delete the fo ""Several mechanism	llowing paragraph: s are implemented on top of CBP inel assignment ""	, such as the ren	ter/offerer algorithm	synch	ronized	coexistenc	time slots (intervals).	tence beacons	during the
Proposed Response	Response Status O			Suggestee	dRemed	dy			
				Addre contro	ss the is I conne	ssues and ections).	questions. Enhance CBP with	n logical control	connection (inter-BS
				Proposed	Respor	nse	Response Status O		

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C/ 06	SC 6.21.3	P 159	L 36	# 223	C/ 06	SC 6.21	.3	P 160	L 2	# 224
HU, Wend	ong	STMicroelectror	ics		HU, Wend	ong		STMicroelectr	onics	
Comment	Type TR	Comment Status X			Comment	Type TF	Co	mment Status X		
Out-of BS is of simulta	-band sensing sl communicating v aneously perform	nould also been performed when vith its CPEs or not. This is true, a sensing in the DL when they're	never it is pos for example, e receiving.	sible, regardless of the CPEs can	How le time, l	ong is the tir DFS signalir	ne for resyr g time, and	nc and channel estimati I quiet sensing time, ad	on? This time, t d into the servic	ogether with reporting e interruption time.
Suaaestea	Remedy	5	0		Suggester	Remedy	Consider	DELL for onbonoing the	n orform on oo	
Addre	ss the comment,	and revise the text if appropriat	e.		Addre				penomance.	
Proposed	Response	Response Status O			Proposed	Response	Res	sponse Status U		
	50 0 01 0	D 450	1.00	# 1000 h	C/ 06	SC 6.21	.3	P 160	L 3	# 93
C/ Ub HII Wend	SC 6.21.3	P 159 STMicroelectror	L 30	# 222	Cordeiro,	Carlos		Philips		
Comment	Type TR	Comment Status X	105		Comment It is no	<i>Type</i> TF ot 'transmit a	Co preamble	mment Status X		
Consid during opport	dering the followi normal cell oper unistic in-band s	ng text - ""Whenever not engag ation, CPEs shall perform out-o ensing (see 6.21.3.3). ""	ed in commu f-band sensir	nication with its BS ng first, and then	<i>Suggested</i> Repla	<i>lRemedy</i> ce 'a preaml	ole' by 'both	the short and the long	training sequer	ces'
Out-of BS is (-band sensing sl communicating v	nould also been performed when vith its CPEs or not.	never it is pos	sible, regardless of the	Proposed	Response	Res	sponse Status O		
Suggested	Remedy				C/ 06	SC 6 21	3 1	P 160	/ 13	# 225
modify	the text.				HU. Wend	ona		STMicroelectr	onics	π 225
Proposed	Response	Response Status 0			Comment			mment Status X		
		2.450		"	Why c syster	lon't we sim ns? Cost is	oly conside	r GPS for sharing a con al issue for BSs.	nmon clock amo	ong coexisting WRAN
C/ 06	SC 6.21.3	P 159	L 45	# 43	Suggested	Remedy				
Chouinard	, Geraid	Communications	s Rese		Consi	der using GI	PS for WRA	N systems synchroniza	ation.	
Comment	Type TR	Comment Status X		111 FN 1 /	Proposed	Response	Res	sponse Status O		
""For o sensin differe	out-of-band measing may not be do ntial, and even d	surements, quiet periods are no ne during CPE burst transmission luring reception if a single RF pa	necessary on because o hth is used for	"" [Not necessary true: f the large signal : RX and sensing.]						
Suggested	Remedy									
Clarify the Se	sentence accore ensing Tiger Tear	dingly and include the above ex m.	planation and	any other material from						

Proposed Response Response Status **O**

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general COMMENT STATUS: D/dispatched A/accepted R/rejected RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn SORT ORDER: Clause, Subclause, page, line

C/ 06 SC 6.21.3.2	P 160	L	# 70	C/ 06	SC	6.21.3.2	P 161	L 4	# 227			
Chang, Soo-Young	Huawei Techn	ologies		HU, Wend	dong		STMicroelect	onics				
Comment Type TR C	Comment Status X			Comment	Туре	TR	Comment Status X					
It is based on a two-stage seasing is done before the f	ensing approach: fast se ine sensing, and typically	nsing and fine uses a quick	sensing. The fast and simple detection	Consi Perio	idering t d Mana	the efficien gement sh	cy and effectiveness issues, all not be mandatory.	the Two Stage	Mechanism for Quiet			
algorithm such as energy de	etection. It is done primar	rily over in in-ba	and channels, and the	Suggeste	dReme	dy						
sensing."				Consi Perior roquir	Considering the efficiency and effectiveness issues, the Two Stage Mechanism for Quiet Period Management shall not be mandatory. Consider DFH as the solution to the requirements for both incumbanet consider and QoS support of WRAN							
In order to detect signals of whole system is required to	LU, QP (Quiet Period) is keep quiet which means	the whole syst	tem shall not perform any	Proposed	Respo			Support of WR	AIN.			
transmissions. This brings s 1) higher stringent requirem	ome points to be conside ent to the WRAN system	ered for perform	nance improvement:	FTOPOSEG	Respo	1130	Response Status 0					
2) because of the multipath,	QP may be longer than	tens millisecon	nds which affects the	C/ 06	SC	6.21.3.2	P 161	L 14	# 228			
3) because in the QP the w	, nole system shall not per	form any trans	missions, this is a waste	HU, Wend	dong		STMicroelect	onics				
of the system resource;	ne using OP frequently	is needed while	a this causes a lot of	Comment	Type	TR	Comment Status X					
waste of the system resource	e.			How o and th feasib	can ene ne requi	ergy detecti ired(Pd, Pf uch stringe	ion in micro seconds achieve a) performance? Reality is lil ent sensing requirements.	es the sensing r kely that energy	equirement of -116dBm sensing would never			
SuggestedRemedy	rith and a second size of the O			Sugaeste	dReme	dv						
0000_Huawei_Orthogonal_	Interference_Detection.	2-06-0262-00-		Addre	ess the t	feasibility a	and practicalily of using ""fast	sensing"" for v	veak signal energy			
Proposed Response R	esponse Status O			detec for Qu	tion. Co uiet Peri	onsidering t iod Manag	the efficiency and effectivene ement shall not be mandator	ess issues, the ` y.	Two Stage Mechanism			
				Proposed	Respo	nse	Response Status 0					
C/ 06 SC 6.21.3.2	P 160	L 49	# 226									
HU, Wendong	STMicroelectro	onics		C/ 06	SC	6.21.3.2	P 161	L 14	# 231			
Comment Type TR C	Comment Status X			HU, Wend	dong		STMicroelect	onics				
The text - ""how can a 802.2	22 network protect incum	bents through	quieting channels while,	Comment	Type	TR	Comment Status X					
at the same time, supporting motivation of DFH, which ca	g the expected QoS requ	ired by 802.22	users?"", is one of the	For re	elativelv	weak sign	als (e.g. below the noise floo	or), it doesn't ma	ake sensing to have fast			
SuggestedRemedy				sensi	ng beca	ause it does	sn't help. Fine sensing is alw	ays needed in	many situations.			
Consider DFH as the solution	on to the issue described	here.		Suggeste	dReme	dy						
Proposed Response R		Address the issue. Consider DFH as the alternative to the problem being addres Considering the efficiency and effectiveness issues, the Two Stage Mechanism Period Management shall not be mandatory.										
				Proposed	Respo	nse	Booponoo Statua					

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C/ 06 SC 6.21.3.2	P 161	L 17	# 94	C/ 06	SC 6.21.3.2	P 161	L 28	# 233
Cordeiro, Carlos	Philips			HU, Wend	long	STMicroelect	ronics	
Comment Type TR	Comment Status X			Comment	Type TR	Comment Status X		
Specific numbers sho	uld not be mentioned			Dynar	nically appearan	ce of fine sensing doesn't act	ually resolve the	QoS requirement issue.
SuggestedRemedy				Quiet	periods of more	than 20ms are still needed in	many situations.	
- Replace 'a few' by 'ir	n the order of			Suggested	dRemedy			
- Delete the text betw	een parenthesis '(e.g., 20usec)'		Addre addre	ss the issue. Co ssed, Considerin	nsider DFH as the alternative	solution to the p	roblem being Two Stage Mechanism
Proposed Response	Response Status O			for Qu	iet Period Mana	gement shall not be mandato	ry.	ine etage meenamen
				Proposed	Response	Response Status 0		
C/ 06 SC 6.21.3.2	P 161	L 20	# 229					
HU, Wendong	STMicroelectr	onics		CL 06	SC 6 21 3 2	P 161	/ 31	# 232
Comment Type TR	HU. Wend	lona	STMicroelect	ronics	# 232			
If the energy in the aft the channel is incumb making sense.	fected channel is always below pent free such that the fine sens	the threshold, C sing can be canc	an we conclude that elled? It seems not	Comment Why 3	<i>Type</i> TR sorders?	Comment Status X		
SuggestedRemedy				Suggested	dRemedy			
Address the issue. Co Mechanism for Quiet	onsidering the efficiency and ef Period Management shall not l	fectiveness issue be mandatory.	es, the Two Stage	Addre	ss the question.			
Proposed Response	Response Status 0			Proposed	Response	Response Status 0		
	D D 161	1 22	# 220	C/ 06	SC 6.21.3.2	P 161	L 37	# 234
HU. Wendong	STMicroelectr	onics	# 230	HU, Wend	long	STMicroelect	ronics	
Commont Typo TB	Commont Status V			Comment	Type TR	Comment Status X		
At lease quiet time for	r 1 chnanel is needed if there is	any doubt. Fine	sensing quiet time	Fine s neede	ensing shall not d to be reserved	ends at the end of the channel for sensing reporting on the	el detection time same channel.	because extra time is
would be 24ms/chanr	iei!!! QoS issue is still unsolved	I.		Suggested	dRemedy			
SuggestedRemedy	anaidar DELLas the colution for	the problem Co	noidering the officient	Addre	ss the issue and	revise the scheme. Consider	ing the efficiency	and effectiveness
and effectiveness issue	ues, the Two Stage Mechanism	ine problem. Co i for Quiet Period	d Management shall not	issues	s, the Two Stage	Mechanism for Quiet Period	Management sh	all not be mandatory.
be mandatory.			<u>.</u>	Proposed	Response	Response Status O		
Proposed Response	Response Status O							

-										
C/ 06	SC 6.21.3.2	P 161	L 41	# 44	C/ 06	SC 6.21.3.2	P 163 L 7 # 236			
Chouinard	, Gerald	Communicatio	ons Rese		HU, Wend	ong	STMicroelectronics			
Comment	Type TR	Comment Status X			Comment	Type TR	Comment Status X			
Fast se can ch while t	ensing may be su hange channel an he system operat	fficient to indicate presence of d do the fine sensing off-char es normally if a separate sen	of incumbent. T nnel since this c ising RF chain is	hen the WRAN system ould possibly be done s used.	How to Imagir condu data2	o synchronize "" ne some WRANs cted for those W	dynamically allocated"" fine sensing periods of overlapping WRANs? s need fine sensing but others don't. How can fine sensing be effective VRANs that need it when others who don't need it are transmitting			
Suggested	Remedy									
Line 4 ""IF fas on-cha	1: Add the followi st sensing gives s annel. The syster	ng sentences: sufficient information on incur n could change channel and	nbent, fine sens carry out the fin	ing may not be needed e sensing off-channel.""	Addre: Consid Period	ss the issue. Co dering the efficie Management s	onsider DFH as the alternative to the problem being addressed. ency and effectiveness issues, the Two Stage Mechanism for Quiet shall not be mandatory.			
rioposeu	Response	Response Status			Proposed	Response	Response Status O			
<i>CI</i> 06 HU, Wende	SC 6.21.3.2	P 161 STMicroelectr	L 46 onics	# 235	C/ 06	SC 6.21.3.2	P 163 L 11 # 45			
Comment	Type TR	Comment Status X			Chouinard	, Gerald	Communications Rese			
This w	ould only make s	ense if the incumbent signal	is strong enoug	h most of the time.	Comment	Type TR	Comment Status X			
Otherv Suggested	vise, fast sensing <i>IRemedy</i>	will never help for both incur	nbent protectior	and WRAN QoS.	So all WRAN systems would synchronize their frames and quiet periods in an area. How would the SCH be detectable by adjacent cell BS and CPEs in a nearly synchronized case if they all occur at the same time? How would the fine tining he done?					
Addres	ss the issue. Con	sider DFH as the alternative	to the problem b	eing addressed.	Liney a					
Consic Period	dering the efficien I Management sh	cy and effectiveness issues, all not be mandatory.	the Two Stage	Mechanism for Quiet	Suggestearkemeay Augment the paragraph to explain the mechanism for the fine super-frame alignment.					
Proposed	Response	Response Status O			Proposed	Response	Response Status O			
C/ 06	SC 6.21.3.2	P 162	L 6	# 125						
Chu, Liwer	า	STMicroelectr	onics							
Comment here th of thes sensin not ne	<i>Type</i> TR ne standard says se measurements ng."". This is contr ed fine sensing a	Comment Status X that ""It is done primarily ove determine the need and the odictory with synchronization nd some cells need fine sens	r in in-band cha duration of the among overlap sing).	nnels, and the outcome upcoming fine ped cells (some cells do						
Suggested Fix it.	Remedy									
Proposed	Response	Response Status O								

C/ 06	SC 6.21.3.2.1	P 163	L 26	# 46	CI 06	SC 6.2	1.3.2.3	P 164	L 16	# 238	
Chouinard, G	Gerald	Communicatio	ns Rese		HU, Wend	ong		STMicroelectro	nics		
Chouinard, G Comment Ty ""More s be more Not sure filter ring needed b frame. I ""For this sensing perform It would it could b its DS-M "" and BTG is n	Gerald <i>type</i> TR than sufficient t than sufficient t than sufficient t than sufficient t than sufficient t than sufficient to the RTG may ping, it would be wan t would be wan t would cost too s scheme to be in is to be perform fast sensing" be known since be done by a CF IAP that there is how large the S pot a variable.	Communication Comment Status X RTG window shall be used to o, for example, perform a sing be as small as 46 usec and be sufficient to secure a qui isteful since on-channel sense o much in overhead. Implemented, the BS has to ed. Not only that, the BS show it is on-channel sensing! Of E if a separate sensing chai no data addressed to it in the ensing RTG window has to be it is set by the PHY parameter	ns Rese perform the far nple energy det removing the c et channel. A la sing does not or inform CPEs in build also specify f-channel sensi n is used when e current frame be.""	et sensing, as this it will ection."" hannel time spread and irger RTG would then be ccur necessary on every which frame fast y in which channel to ing is another story since the BS has indicated in	HU, Wend Comment Consi sensir stage Suggested Speci Proposed C/ 06 HU, Wend Comment ""this	ong <i>Type</i> T dering the t ig measure s). "" What <i>IRemedy</i> y the criteri <i>Response</i> <i>SC</i> 6.2 ong <i>Type</i> T can be done	R Co ext - ""Once ments, it ca criteria is u a that are u Re 1.4 R Co e through c	STMicroelectro omment Status X e the BS receives the repu an make a decision with re- sed for the decision? used to decide if fine sens esponse Status O P 165 STMicroelectro omment Status X lustering"" - Why is cluste	nics orts from enou espect to the fo ing is need. <i>L</i> 22 nics	gh CPEs about their fas ollowing fine sensing # 2 <u>39</u> d in particular?	st
frame co SuggestedRe Line 27: rather the Line 30: sensing	ould be declared emedy Add text to the p an the RTG. Clarify why it wo scheme.	as 'quiet' however. baragraph to clarify the use o build need to indicate the cha	of the last slots	of a frame for sensing be the off-channel	Suggested Addre Proposed Cl 06 Chu Liwe	Remedy ss the ques Response SC 6.2	ation and re Re	vise the text where appro esponse Status O P 165 STMicroelectro	priate.	# 126	
Line 31: could be Proposed Re	Clarify that RTG used for sensin esponse	a has a set length for a given g. <i>Response Status</i> O	cyclic prefix ar	d that last data slots	Comment Since (unica (broad	<i>Type</i> T the explicit st/multicast lcast). The	R Co channel ma t/broadcast, 802.22 do r	omment Status X anagement mode provide , being sent out at any tim not need embedded chan	es more flexible he) and the sar nel manageme	e ne spectrum utilization ent mode.	
C/ 06	SC 6.21.3.2.2	P 164	L 14	# 237	suggested	e embedde	ed channel r	management mode from	the draft.		
HU, Wendon Comment Ty Figure 59 SuggestedRe Change Proposed Re	ng /pe TR 9 needs to be ch le <i>medy</i> the figure 59. esponse	S I Microelectr Comment Status X nanged for single channel op Response Status O	pnics	of channel bonding.	Proposed	Response	Re	sponse Status O			

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general COMMENT STATUS: D/dispatched A/accepted R/rejected RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn SORT ORDER: Clause, Subclause, page, line

CI 06 S	SC 6.21.4.1	P 166	L 9	# 240	CI 06	SC 6.21.4.3	P 167	L 4	# 241
HU, Wendong		STMicroelec	tronics		HU, Wendo	ng	STMicroelectr	ronics	
Comment Type	e TR	Comment Status X			Comment T	ype TR	Comment Status X		
Active set features su	1 and set 2: C uch as channe	Channels used for BS and C el aggregation and channel	CPEs can be differed bonding are employed	ent only when optional byed.	How eff much lo	fective is it that onger interferen	a WRAN detect the collision, the collision, the collision of a WRAN? It could	given a 33km co d interfere but no	overage radius and ot be able to detect the
SuggestedRen	nedy				existen time co	ce of another W	RAN in the neighborhood. It r	may be able to c	detect but the response
Such cated mandated.	gorization wou Address the	uld only make sense as opt issue.	tional. The specific	ation shall not be	interfere	ence may not b n, its services h	e acceptable for WRANs. What ave to be interrupted and such	en a WRAN bac h service interru	ckoff when it detects a prior way hurt the QoS
Proposed Res	ponse	Response Status O			of the V	VRAN.			
					Suggested	Remedy			
C/ 06 S	SC 6 21 4 2	P 167	/ 31	# 127	Addres	s the issues. Th	he scheme should not be stan	dardized as a m	handatory feature.
Chu, Liwen	0.21.4.2	STMicroelec	tronics		Proposed R	Response	Response Status O		
Comment Type The chann service ap	e T lel in the sets pears.	Comment Status X other than occupied set sh	ould become usele	ess as incumbent	<i>CI</i> 06 HU, Wendo	SC 6.21.5 na	P 168 STMicroelectr	L 3 onics	# 242
SuggestedRen	nedv				Comment T		Comment Status V		
modify 1) a	accordingly.				The ""S		of Overlanning BSs" precedu	ire is too comple	ex and has limitations
Proposed Resi	ponse	Response Status 0			Sugges	st to use GPS for	or synchronizing the BS by sha	aring a common	clock.
					Suggested	Remedy			
					- Sugges	t to use GPS fo	or synchronizing the BS by sha	aring a common	clock.
C/ 06 S Chu, Liwen	SC 6.21.4.2	P 167 STMicroelec	L 36 tronics	# 128	Proposed R	Response	Response Status O		
Comment Type	e T	Comment Status X							
This item s channel wi	should be rede ith best quality	efined. Otherwise the candi /.	idate channel set v	vill include only one	<i>CI</i> 06 Ji, Baowei	SC 6.21.5	P 168 Samsung Tele	L 3 ecom. A	# 53
SuggestedRen	nedy				Comment T	vpe TR	Comment Status X		
Proposed Res	ponse	Response Status O			The me address precisio words, far from	ethod of synchro s the propagatio on of net synchr two neighbor co n the desired pro	onization of overlapping BSs in on delays between a CBP tran onization is directly limited by ells could be off synch by up to ecision (say 25Ásec).	n the current 80 Ismitter and a C this kind of prop D hundreds of m	2.22 spec. draft does not BP receiver. The pagation delay. In other icroseconds, which is
					Suggested	Remedy			
					Please sugges 0000_F	insert a new se ted text for this Revisit_CBP_an	ection 6.21.5.4 right above Sec new section is on Slides 28 - nd_Synchronization_of_Overla	ction 6.21.6.1 or 30 of the docum apping_WRAN.p	n Page 172, Line 32. The nent 22-07-0021-01- opt.
					Proposed R	Response	Response Status O		



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C/ 06 SC 6.2	21.5	P 168	L 3	# 244	C/ 06	SC 6.21.5.1	P 169	L 6	# 48
HU, Wendong		STMicroelectr	ronics		Chouinard	l, Gerald	Communicati	ions Rese	
Comment Type	TR Comme	nt Status X			Comment	Type ER 0	Comment Status X		
OFDMA based s common system	spectrum sharing r n clock for every ba	equires accurates ase station.	sychronization w	hich would need a	Clarify stand	the assumptions use ard.	ed and make sure they a	re aligned with th	ne characteristics of the
So the sychroniz appropriate sinc provided.	zation method prop ce a method to prov	oosed in this subc vide more accurat	lause is not nece e common systm	essary and not ne clock will have to be	Suggester Modif	dRemedy y the two paragraphs	as follows:		
SuggestedRemedy					impos	any synchronization s ed on the overall fram	cheme to be mostly effe ne timinas. In the specific	ctive, some cons	2.22 CMAC, the
Achieve BS syn clock is provided	chronization by sha d by Global position	aring a common s ning system (GPS	ystem clock. Sud i).	ch common system	super frame	frames shall have the s within a superframe	same length in terms of shall also have the same	time, that is 16 he size, that is 10	frames. Individual ms. This will facilitate
Proposed Response	e Respons	se Status O			not or keepi	nly in establishing syn ng it with very low ove	chronization amongst ov rheads.	erlapping cells, l	out, most importantly, in
C/ 06 SC 6.2 Chouinard, Gerald	21.5	P 168 Communicatio	L 20 ons Rese	# 47	If a G impos absolu	PS device is available ing an additional requ ute points in time. But	at the 802.22 BSs, syno irement that BSs shall o for the purpose of this s	chronization can only initiate super tandard, no mar	be accomplished by frames at specific datory GPS device is
""This will furthe compromised if One could imag incumbent and o detect the incun necessarily for F	er enhance the incu it occurs randomly jine that the WRAN change frequency. nbent and change of Part 74 microphone	In Glaus A imbent detection p "" I cell closest to the This would then channel and so or operation.	probability, which incumbent wou allow the second n. This is true for	a can otherwise be Id first detect this I closest cell to then r DTV but not	Proposed Cl 06 Chouinarc	Response R SC 6.21.5.1 I, Gerald	P 169 Communicati	L 38 ions Rese	# [49
SuggestedRemedy					Comment	<i>Type</i> TR (Comment Status X	ithin on to such a	at Ordet Devied ""
Larify paragraph	n as to the possibili	ty of a progressive Part 74 microph	e sensing of the i	incumbent based on	w	iet period is allowed t	o include a number of su	uper-frames it is	unlikely that the OoS
Proposed Response	e Respons	se Status O			will be ms!	e provided. Sensing s	hould not require more t	han a few 10s of	f ms, not multiple of 160
					Suggeste	dRemedy			
C/ 06 SC 6.2	21.5.1	P 169	L 6	# 95	Chan	ge NSTQP in NSIQP	in the extracted phrase a	and clarify text.	
Cordeiro, Carlos		Philips			Proposed	Response R	esponse Status O		
Comment Type This section is r addressed and	TR Comme no longer required g overcome in the cu	ent Status X given that all of the irrent draft.	e assumptions h	ave been fully					
SuggestedRemedy Delete section 6	6.21.5.1								
Proposed Response	e Respons	se Status O							

Cl 06 SC 6.21.5.3	P 172 Communication	L 21	# 50	C/ 06 HU Wend	SC 6.3	P 9 STMicroelec	L 29	# 176	
Comment Type TR "" the BS shall sched is recommended to be If the complete charac coexistence window n	Comment Status X dule self-coexistence windows v at least three slots."" terization of the channel respon eeds to be at least 7+3= 10 slo	with an appropr nse is to be ma ts.	iate guard band, which de, then the self	Comment The s Suggested The s	<i>Type</i> TR pecified Superfr. <i>JRemedy</i> pecified Superfr	Comment Status X ame structure is designed for ame structure shall be option	r the optional cha nal or redeisgned	nnel bonding feature. for mandatory features.	
SuggesteaRemeay Modify the extracted n	brase accordingly			Proposea	Response	Response Status 0			
Proposed Response	Response Status O			C/ 06 Chouinard	SC 6.3 I, Gerald	P 9 Communica	L 33 tions Rese	# 9	
C/ 06 SC 6.21.6 HU, Wendong	P 172 STMicroelectro	L 32 mics	# 243	<i>Comment</i> Chanr first di	<i>Type</i> ER nel bonding and raft. See Annex	Comment Status X aggregation are to be discus	ssed later and sh	ould not appear in the	
Comment Type TR The ""Clustering"" pro- limitations. The algorit SuggestedRemedy Address the issue. Clu algorithm shall not be Proposed Response	comment Status X cedure and algorithm are too co hm shall not be standardized. ustering procedure shall not be included in the standard. <i>Response Status</i> O	omplex to imple	ment and have specific clustering	SuggestedRemedy Line 33: À A PHY preamble (composed of a synchronization symbol and two channel training symbols)- see 8 À A Superframe Control Header (SCH) - see 6.5.1 À 16 frames, of which the first frame comes without a preamble and is shortened so tha total length is still equal to the nominal frame length (10 ms) when the superframe pream and the SCH are included - see 6.4					
Cl 06 SC 6.21.6.2 Chu, Liwen Comment Type TR Since clustering algori among neighboring BS necessary to indicate	P 177 STMicroelectro Comment Status X thm is only implemented in eac Ss, BS and CPEs. It is a totally a mandatory algorithm.	L 3 nics h BS. No coop implementation	# 129 erations are required issue. So it is not	Line 3 At the trainin chann order frame the up measu	7: beginning of ev g symbols and s iel that synchror to establish com s are transmitte ostream and dov urement activitie	ery superframe, the BS shall SCH (with a known modulation izes and receives the SCH, imunication with the BS. Du d. During each MAC frame, to instream directions, which models, and the state of the st	I transmit a speci on/coding). Any d is able to obtain t ring the lifetime o he BS has the re- ay include ordina and so on.	al preamble and channel levice tuned to the TV the information it needs in of a superframe, 16 MAC sponsibility to manage ary data communication,	
SuggestedRemedy clearly says that the si clustering algorithm is Proposed Response	andard do not need to define a a informative algorithm. <i>Response Status</i> O	clustering algo	rithm and the k-means	Line 4 The sulist of coexis 6.21. Proposed	6: uperframe shall frame sizes). Th st and share res <i>Response</i>	have a fixed and pre-determ is is needed to guarantee th ources through the numerous Response Status O	ined size of 16 fr at overlapping 80 s coexistence me	ames (see Table 27 for a I2.22 BSs can efficiently achanisms described in	

C/ 06 SC 6.3	P 10 L 1 # 10	C/ 06 SC 6.4	P 10	L 11 # 11
Chouinard, Gerald	Communications Rese	Chouinard, Gerald	Communications	Rese
Comment Type ER	Comment Status X	Comment Type TR	Comment Status X	a not at the TTG which varies based
first draft. See Annex	Res.	on US/DS capacity spli	it.	, not at the TTO which valles based
SuggestedRemedy		SuggestedRemedy		
Figure 3 needs to be mechanism. Include i	re-done to depict the super-frame structure without the 'bonding' Illustration of the shorter first frame.	Modify Figure 4 accord	lingly.	
Proposed Response	Response Status O	Proposed Response	Response Status 0	
C/ 06 SC 6.4	P 10 L 3 # 177	C/ 06 SC 6.4 Chouinard, Gerald	P 11 Communications	L 4 # 12
Comment Type TR Sliding self-coexisten between the US and SuggestedRemedy Sliding self-coexisten between the US and	Comment Status X ce slots shall be only appeared in the US subframe and located in DS subframes. Figure 4 has error. ce slots shall be only appeared in the US subframe and located in DS subframes. Fix such error in Figure 4.	Comment Type TR Remove the ""possible Shouldn't the notion of OFDMA structure rathe SuggestedRemedy Line 3:	contention intervals for coexiste sub-channels be added in the te er than the TDMA structure?	ence"" in the DS sub-frame. ext around line 8 to reflect the
Proposed Response	Response Status O	""the downstream and consists of only one do intervals""	upstream capacity can be easily wnstream PHY PDU. An upstream	done. The downstream subframe am subframe consists of contention
C/ 06 SC 6.4 HU, Wendong	P 10 L 3 # 178 STMicroelectronics	Line 8: of fixed size (MAC) slo sub-channels (currently	ts, which are, in turn, an integral v. 1 MAC slot = 1 modulation svi	number of modulation symbols and modulation symbols and
Comment Type TR Self-coexistence slots known/synchronized	Comment Status X s shall not be slided and shall be in fixed sized and well- locations in the frame.	Proposed Response	Response Status O	
SuggestedRemedy Self-coexistence slots known/synchronized	s shall not be slided and shall be in fixed sized and well- locations in the frame. Specify fixed sized self-coexistence slots.			
Proposed Response	Response Status O			

Chouland, Geraid Communications Rese Comment Type TR Comment Status X Also, remember, in OFDMA, the bursts are defined in terms of time slots and sub-channels, not only time slots. Comment Type TR Comment Type TR Comment Type TR Line 30: Carrier Status X CBP bursts are to signal the passibility of coexistence situation "on the same channel". This is done through on-channel decoding. June 30: Suggested/Remedy Line 15: Line 30: Carrier Status X Proposed Response Response Status X Comment Type TR Comment Status X Proposed Response Response Status X Why does the SS need to slide? Its place should be at the end of the US sub-trame. Suggested/Remedy Line 5: "Together with coexistence beacons (i.e., through CBP) shall be employed. The SSS window (depicted in Figure 4) is scheduled astermer of designed SCH for single channel operations. Suggested/Remedy Line 5: Line 5: "Together with coexistence beacons (i.e., through CBP) shall be employed. The SSS window (depicted in Figure 4) is scheduled astimer coexist designed SCH for single channel operations. Suggested/Remedy Line 5: Line 5: "Together with coexistence with GCD EP) shall be employed. The SSS window (depicted in Figure 4) is scheduled astimper receiver designs. These beacons are transmi	C/ 06 SC 6.4	P 11	L 30	# 13	C/ 06	SC 6.4	P 12	L 15	# 15
Comment Type TR Comment Type Comment Type TR Comment Type	Chouinard, Gerald	Communication	ons Rese		Chouinard	d, Gerald	Communicatio	ons Rese	
Also, remember, in OPDMA, the bursts are defined in terms of time slots and sub-channels, not only time slots. Line 33: Why is the SSS a sliding window. This window should occupy the last time slots of the US subframe. Line 33: Why is the SSS a sliding window. This window should occupy the last time slots of the US subframe. Line 30: ""allocation and use the resource for some other purpose. Preceding upstream CPE PHY bursts, in this case, the BS may schedule up to four contention windows (see 6.14) before the next scheduled upstream CPE PHY bursts, the initialization windows (see 6.14) before the next scheduled upstream CPE PHY burst. The initialization windows (see 6.14) before the next scheduled upstream CPE PHY burst. The initialization windows (see 6.14) before the next scheduled upstream CPE PHY burst. Status X Proposed Response Response Status O Cl 06 SC 6.1 P 12 L 29 # [73] Cl 06 SC 6.1 P 12 L 29 # [73] Cl 106 SC 6.1 P 12 L 29 # [73] Comment Type TR Comment Status X Why does the SS need to slide? Its place should be at the end of the US sub-frame. SuggestedRemedy Line 5: "together with coexistence beacons (i.e., through CBP) shall be employed. The SSS window (depiced in Figure 4) is scheduled at the end of the upstream sufframe for simple frame control header. (SCH) is optional or re-designed SCH for single channel operations. SuggestedRemedy Line 5: "together with coexistence beacons (i.e., through CBP) shall be employed. The SSS window (depicted in Figure 4) is scheduled at the end of the upstream sufframe for simple frame control header. (SCH) is optional or re-designed SCH for single channel operations. SuggestedRemedy Line 5: "together with coexistence beacons (i.e., through CBP) shall be employed. The SSS window (depicted in Figure 4) is scheduled at the end of the upstream sufframe for simple frame control header. (SCH) is optional or re-designed SCH for single channel operations. SuggestedRemedy Line 5: "together with coexistenc	Comment Type TR Line 30: Clarification	Comment Status X n of the sentence.			Comment CBP This i	<i>Type</i> TR bursts are to sig s done through (Comment Status X nal the possibility of coexistenc on-channel decoding.	ce situation ""on	the same channel"".
Line 30: "allocation and use the resource for some other purpose. Preceding upstream CPE PHY bursts, in this case, the BS may schedule up to four contention window (see 6.14) before the next scheduled upstream CPE PHY burst. The initialization window is used" Proposed Response Status 0 Proposed Response Response Status 0 Cl 06 SC 6.4 P 12 L 5 # 14 Comment Type TR Comment Status X Super frame control header, designed for optional features such as channel bonding, should be optional or re-designed for single channel operations. Suggested/Remedy Line 5: "togesther with coexistence beacons (i.e., through CBP) shall be employed. The SSS window (depicted in Figure 4) is scheduled at the end of the upstream subframe for simpler multiplexing and to accommodate simpler receiver designs. These beacons are transmitted by" Progosed Response Response Status 0 Proposed Response Response Status 0 Comment Type TR Comment Type TR 200 Window (depicted in Figure 4) is scheduled at the end of the upstream subframe for simpler multiplexing and to accommodate simpler receiver designs. These beacons are transmitted by" Proposed Response Response Status 0 Proposed Response Response Status 0 Comment Type TR Comment Type TR 200 # 16 Cl 06 SC 6.5.1 P 12 L 30	Also, remenber, in C not only time slots. Line 33: Why is the the US subframe. SuggestedRemedy	DFDMA, the bursts are defined in SSS a sliding window. This wind	n terms of time	slots and sub-channels, upy the last time slots of	Suggeste Line Wher perfor perfor nearb	dRemedy 15: hever a CPE is n rm out-of-band n rmed by the sam by CPEs belongi	either receiving nor sending da neasurements (see 6.21.1.5), a ne RF chain or a different one, ng to other BSs operating on th	ata to its BS, it is and/or, dependir decode CBP pa ne same TV cha	s capable to, first, ng on whether sensing is ckets transmitted by innel
Proposed Response Response Status 0 Cl 06 SC 6.4 P 12 L 5 # 14 Chouinard, Geraid Communications Rese X Super frame control header, designed for optional feature such as channel bonding, should be optional or re-designed for single channel operations. SuggestedRemedy Line 5: "together with coexistence beacons (i.e., through CBP) shall be employed. The SSS window (depicted in Figure 4) is scheduled at the end of the upstream subframe for simpler multiplexing and to accommodate simpler receiver designs. These beacons are transmitted by* P 12 L 30 # 16 Cl 06 SC 6.5.1 P 12 L 30 # 16 Chouinard, Gerald Communications Rese Commonitations Rese Commonitations Rese SuggestedRemedy Line 5: "together with coexistence beacons (i.e., through CBP) shall be employed. The SSS window (depicted in Figure 4) is scheduled at the end of the upstream subframe for simpler multiplexing and to accommodate simpler receiver designs. These beacons are transmitted by* P 12 L 30 # 16 Chouinard, Gerald Communications Rese Commonications Rese Commonications Rese Commonications Rese Proposed Response Response Status 0 M 16 Commonications Rese Contineer Covision Covert He time a device takes C	Line 30: ""allocation and use bursts, in this case, the next scheduled u	the resource for some other put the BS may schedule up to four upstream CPE PHY burst. The	pose. Precedin contention wind initialization win	g upstream CPE PHY dows (see 6.14) before dow is used""	Proposed	Response	Response Status 0		
IVU, Wendong STMicroelectronics Cl 06 SC 6.4 P 12 L 5 # 14 Chouinard, Gerald Communications Rese Comment Type TR Comment Status X Why does the SS need to slide? Its place should be at the end of the US sub-frame. SuggestedRemedy Line 5: "together with coexistence beacons (i.e., through CBP) shall be employed. The SSS window (depicted in Figure 4) is scheduled at the end of the upsteam subframe tor simpler multiplexing and to accommodate simpler receiver designs. These beacons are transmitted by" Proposed Response Response Status O Proposed Response Response Status O O Cl 06 SC 6.5.1 P 12 L 30 # 16 Chouinard, Gerald Communications Rese Comment Type TR Communications Rese Communications Rese Proposed Response Response Status O O Stater option AAS: later option AS: later option AS: later option AS: later option AS: later option Stagestemedy Line for the beacon sync burst SuggestedRemedy Line for the beacon sync burst SuggestedRemedy Line for the beacon sync burst SuggestedRemedy SuggestedRemedy Line for the beacon sync burst SuggestedRemedy Line for the beacon sync burst </td <td>Proposed Response</td> <td>Response Status 0</td> <td></td> <td></td> <td>CI 06</td> <td>SC 6.5.1</td> <td>P 12</td> <td>L 29</td> <td># 179</td>	Proposed Response	Response Status 0			CI 06	SC 6.5.1	P 12	L 29	# 179
Cl 06 SC 6.4 P 12 L 5 # 14 Cl 06 SC 6.4 P 12 L 5 # 14 Comment Gerald Communications Rese Comment Status X Sugestand Communications or Reselection of the designed for optional features such as channel bonding, should be optional or re-designed for single channel operations. SuggestedRemedy Line 5: "together with coexistence beacons (i.e., through CBP) shall be employed. The SSS window (depicted in Figure 4) is scheduled at the end of the upstream subframe for simpler multiplexing and to accommodate simpler receiver designs. These beacons are transmitted by" Proposed Response Response Status 0 Proposed Response Response Status 0 Comment Type TR Comment Status X SuggestedRemedy Line 5: "together with coexistence beacons (i.e., through CBP) shall be employed. The SSS window (depicted in Figure 4) is scheduled at the end of the upstream subframe for simpler multiplexing and to accommodate simpler receiver designs. These beacons are transmitted by" P 12 L 30 # 16 Chouinard, Gerald Comment Type TR Comm					HU, Wend	dong	STMicroelectr	onics	
Cl 06 SC 6.4 P 12 L 5 # 14 Chouinard, Gerald Communications Rese Comment Type TR Comment Status X Why does the SS need to slide? Its place should be at the end of the US sub-frame. SuggestedRemedy Line 5: "together with coexistence beacons (i.e., through CBP) shall be employed. The SSS window (depicted in Figure 4) is scheduled at the end of the upstream subframe for simpler multiplexing and to accommodate simpler receiver designs. These beacons are transmitted by** O Proposed Response Response Status O Proposed Response Response Status O Cl 06 SC 6.5.1 P 12 L 30 # 16 Chouinard, Gerald Communications Rese Communications Rese Communications Rese Proposed Response Response Status O Cl 06 SC 6.5.1 P 12 L 30 # 16 Chouinard, Geraid Communications Rese Communications Rese Communications Rese Communications Rese Proposed Response Response Status O AAS: later option AAS: later option AAS: later option AAS: Later Option Sougested/Remedy Line xx: "800.22 cell and brings with it many benefits includ		D			Comment	Type TR	Comment Status X		
Comment Type TR Comment Status X Why does the SS need to slide? Its place should be at the end of the US sub-frame. SuggestedRemedy Line 5: ""together with coexistence beacons (i.e., through CBP) shall be employed. The SSS window (depicted in Figure 4) is scheduled at the end of the upstream subframe for simpler multiplexing and to accommodate simpler receiver designs. These beacons are transmitted by" Proposed Response Response Status O Proposed Response Response Status O Cl 06 SC 6.5.1 P 12 L 30 # 16 Chouinard, Gerald Communications Rese Communications Rese Comment Type TR Comment Status X Bonding: later option AAS: later option AAS: later option AAS: later option AAS: later option Better coexistence with FCC Part 74 systems: not clear since Part 7 devices are sensed all the time for the beacon sync burst SuggestedRemedy SuggestedRemedy Line x: "302.22 cell and brings with it many benefits including control over the time a device takes to join the network, better self-coexistence, support for quiet periods, better coexistence with incumbents and FCC Part 74 systems employing beacon signals, eventual support for channel bonding (see annex X), and so on.	C/ 06 SC 6.4 Chouinard, Gerald	P 12 Communication	L 5 ons Rese	# 14	Super be op	r frame control h tional or re-desi	leader, designed for optional fe gned for single channel operati	aturs such as c ions.	hannel bonding, should
Why does the SS need to slide? Its place should be at the end of the US sub-frame. SuggestedRemedy Line 5: "** together with coexistence beacons (i.e., through CBP) shall be employed. The SSS window (depicted in Figure 4) is scheduled at the end of the upstream subframe for simpler multiplexing and to accommodate simpler receiver designs. These beacons are transmitted by"" Proposed Response Response Status O Proposed Response Response Status O Cl 06 SC 6.5.1 P 12 L 30 # 16 Chouinard, Gerald Communications Rese Comment Type TR Comment Status X Bonding: later option Better coexistence with FCC Part 74 systems: not clear since Part 7 devices are sensed all the time for the beacon sync burst SuggestedRemedy Line xx: "802.22 cell and brings with it many benefits including control over the time a device takes to join the network, better self-coexistence, support for quiet periods, better coexistence with incumbents and FCC Part 74 systems employing beacon signals, eventual support for channel bonding (see annex X), and so on.	Comment Type TR	Comment Status X			Suggeste	dRemedy			
SuggestedRemedy Line 5: "together with coexistence beacons (i.e., through CBP) shall be employed. The SSS window (depicted in Figure 4) is scheduled at the end of the upstream subframe for simpler multiplexing and to accommodate simpler receiver designs. These beacons are transmitted by" Proposed Response Response Status O Response Status O Cl 06 SC 6.5.1 P 12 L 30 # 16 Chouinard, Gerald Communications Rese Proposed Response Response Status O Suggested/Remedy Line 7: Comment Status X Bonding: later option AAS: later option AAS: later option ASS: later option Better coexistence with FCC Part 74 systems: not clear since Part 7 devices are sensed all the time for the beacon sync burst Suggested/Remedy Line xx: ""802.22 cell and brings with it many benefits including control over the time a device takes to join the network, better self-coexistence, support for quiet periods, better coexistence with incumbents and FCC Part 74 systems employing beacon signals, eventual support for channel bonding (see annex X), and so on. Proposed Response Response Status O	Why does the SS ne	eed to slide? Its place should be	e at the end of t	he US sub-frame.	Speci chanr	fy that super fra	me control header (SCH) is op	tional or re-desi	gned SCH for single
window (depicted in Figure 4) is scheduled at the end of the upstream subframe for simpler multiplexing and to accommodate simpler receiver designs. These beacons are transmitted by"" Cl 06 SC 6.5.1 P 12 L 30 # 16 Proposed Response Response Status 0 Comment Status X Bonding: later option AAS: later option AAS: later option Better coexistence with FCC Part 74 systems: not clear since Part 7 devices are sensed all the time for the beacon sync burst SuggestedRemedy Line xx: ""802.222 cell and brings with it many benefits including control over the time a device takes to join the network, better self-coexistence, support for quiet periods, better coexistence with incumbents and FCC Part 74 systems employing beacon signals, eventual support for channel bonding (see annex X), and so on. Proposed Response Response Status 0	SuggestedRemedy Line 5: ""together with coex	istence beacons (i.e., through C	BP) shall be en	nployed. The SSS	Proposed	Response	Response Status O		
Proposed Response Response Status O Comment Type TR Comment Status X Bonding: later option AAS: later option AAS: later option Better coexistence with FCC Part 74 systems: not clear since Part 7 devices are sensed all the time for the beacon sync burst SuggestedRemedy Line xx: ""802.22 cell and brings with it many benefits including control over the time a device takes to join the network, better self-coexistence, support for quiet periods, better coexistence with incumbents and FCC Part 74 systems employing beacon signals, eventual support for channel bonding (see annex X), and so on. Proposed Response Response Status O	window (depicted in multiplexing and to a by""	Figure 4) is scheduled at the en accommodate simpler receiver of	d of the upstrea lesigns. These	am subframe for simpler beacons are transmitted	C/ 06 Chouinard	SC 6.5.1 d, Gerald	P 12 Communication	L 30 ons Rese	# 16
SuggestedRemedy Line xx: "802.22 cell and brings with it many benefits including control over the time a device takes to join the network, better self-coexistence, support for quiet periods, better coexistence with incumbents and FCC Part 74 systems employing beacon signals, eventual support for channel bonding (see annex X), and so on. Proposed Response Response Status O	Proposed Response	Response Status O			Comment Bondi AAS: Bette the tir	<i>Type</i> TR ing: later option later option r coexistence wi ne for the beacc	Comment Status X th FCC Part 74 systems: not cl on sync burst	ear since Part 7	' devices are sensed all
Line xx: ""802.22 cell and brings with it many benefits including control over the time a device takes to join the network, better self-coexistence, support for quiet periods, better coexistence with incumbents and FCC Part 74 systems employing beacon signals, eventual support for channel bonding (see annex X), and so on. Proposed Response Response Status O					Suggeste	dRemedy			
Proposed Response Response Status O					Line > ""802 to joir incum chanr	cx: .22 cell and brin h the network, be bents and FCC hel bonding (see	gs with it many benefits includi etter self-coexistence, support f Part 74 systems employing be annex X), and so on.	ng control over for quiet periods acon signals, ev	the time a device takes s, better coexistence with ventual support for
					Proposed	Response	Response Status O		

Chourierd, Geraid Communications Rese Chourierd, Comment Type TR Comment Type Change parameter (ST = 0) Change parameter (ST or "Reserved" Change parameter RFD for "R	C/ 06 SC	6.5.1	P 12	L 45	# 17	C/ 06	SC 6.5.2		P 15	L 7	# 18
Comment Type T Comment Type TAble 1: Table 1: Second parameter seems to be redundent since by definition 802.22 Standard will carry 802.29 standard will carry 802.29 stendard will carry 802.20	Chouinard, Gera	ald	Communicatio	ns Rese		Chouinard	l, Gerald	(Communicat	ions Rese	
Second parameter SBC Performed tisice by definition 802-22 stinuard will carry 802-29 stemulation type. Fourties to page 12 goes against what 802-22.1 is developing as a beacon for Pat 74 devices. Insert new 4th parameter. SBC. It will replace the later TxUD bince SCH is only transmitted by BS. Reordering makes it consistent with other similar tables. Did 5th parameter (SFC) is redundant if we decide that the number of frames in a superframe is 16. Should the variable? Bonding is an option to be discussed later (see annexes). Parameters for bonding should be marked "Reserved" in the Table 1. Did 5th parameter (SFC) Parameter (SFC) Should the variable? Repetition Indication parameter is not clear. Suggested/Remedy Delete second parameter (ST-0) Repetition Indication parameter is not clear. Remove FS parameter in Table 1 unless it is decided that the number of frames in a superframe is a variable. Change parameter PI or "Reserved" Change parameter CH for "Reserved" Increase the addressing size for the DS-MAP Length. Change parameter BFD for "Reserved" Increase the addressing size for the DS-MAP Length. Change parameter RFD for "Reserved" Comment Status X Change parameter RFD for "Reserved" Comment Status X Change parameter RFD for "Reserved" Comment Status X Change parameter RFD for "Reserved" CBP Beacons, base status beacons are designed for CDP (coexistence beaconing protocoi such as an rehermand spectrum co	Comment Type Table 1:	TR	Comment Status X	l (' ''' - 000 0		Comment Table	<i>Type</i> TR 4:	Comment S	tatus X		
Insert new 4th parameter: BSID. It will replace the later TxID since SCH is only transmitted by BS. Reordering makes it consistent with other similar tables. Old 5th parameter (FS) is redundant if we decide that the number of frames in a super- frame is 15. Should it be variable? Bonding is an option to be discussed later (see annexes). Parameters for bonding should be marked "Reserved" in the Table 1. Parameter (BI connot be only 1 bit since it has 5 option. SuggestedRemedy Delete second parameter (ST=0) Insert new 4th parameter: SID 46 bits. Address that uniquely identifies the transmitting BS. Remove FS parameter (ST=0) Insert new 4th parameter: SID 46 bits. Address that uniquely identifies the transmitting BS. Remove FS parameter TND Change parameter TND Change parameter NC for "Reserved" Change parameter fSFD for "Reserved" Change parameter SFD for "Reserved" Change parameter BFD for "Reserved" Change the size of parameter GN for "Reserved" Change parameter BFD for "Reserved" Change the size of parameter BFD for "Reserved" Change	Second para 80.22 syster beacon for F	ameter seer n type. Foo Part 74 devi	ms to be redundent since by o stnote on page 12 goes agains ices.	st what 802.22	is developing as	The n	nodulation/coding	g for the FCH has	s to be decid	ed upon.	
Disting parameter (FS) is redundant if we decide that the number of frames in a super-frame is 16. Should it be variable? US-MAP Length: B bit addressing => up to 256 bits, up	Insert new 4 by BS. Reo	th paramet rdering mal	er: BSID. It will replace the la kes it consistent with other sir	ter TxID since s	SCH is only transmitted	DS-M chanr for the	AP Length: 8 bit hels with the CID e burst start and	t addressing => u os of 16 bit each. length for each 0	p to 256 bits It only allow CID.	, this is not suffif s for 16 CID's ar	ient to map 30 sub- nd then there is no room
Bonding is an option to be discussed later (see annexes). Parameters for bonding should be marked "Reserved" in the Table 1. Repetition Indication parameter is not clear. Parameter GIF connot be only 1 bitsince it has 5 option. SuggestedRemedy SuggestedRemedy Delete second parameter (ST=0) Insert new 4th parameter: SID 48 bits Address that uniquely identifies the transmitting BS. Remove FS parameter in Table 1 unless it is decided that the number of frames in a superframe is a variable. Increase the addressing size for the DS-MAP Length. Change parameter XID Increase the addressing size for the DS-MAP Length. Change parameter KTND Clarify or remove Repetition Indication parameter. Change parameter BFD for "Reserved"* Remove the Short Training Sequence Present parameter. Change parameter RFD for "Reserved"* Clarify or remove Repetition Indication parameter. Change parameter BFD for "Reserved"* Clore SC 6.6.1.2 P 17 L 3 # 180 HU, Wendong STMicreelectronics Comment Status X CBP Beacons, base status O CBP Beacons, base status O Clarify or remove Response Response Status O O CBP should not be standardized as a mandatory feature. Consider negotiation based coexistence precools. Connge the size of parameter GF to 3 bits. O CBP Beacons, base station ordend redit to	Old 5th para frame is 16.	meter (FS) Should it b	is redundant if we decide that be variable?	t the number of	frames in a super-	US-M map 6	AP Length: 8 bit 60 sub-channels	t addressing => u with the CID's of	p to 256 bits 16 bit each?	, up to 256 bits,	this is not sufficient to
Parameter GIF connot be only 1 bit since it has 5 option. There will likely be an agreement on the absence of the training symbol following a Superframe header. No need for the Short Training Sequence Present parameter. Suggested/Remedy Suggested/Remedy Delete second parameter (ST=0) Change the note for the FCH in Table 4 to: Transmitted with modulation/coding QPSK rate e. Insert new 4th parameter: SID 48 bits Address that uniquely identifies the transmitting BS. Increase the addressing size for the DS-MAP Length. Remove FS parameter in Table 1 unless it is decided that the number of frames in a superframe is a variable. Increase the addressing size for the DS-MAP Length. Change parameter TxID Change parameter TxiD Change parameter SD for "Reserved" Change parameter RFD for "Reserved" C/ 06 Change parameter RFD for "Reserved" C Change parameter GIF to 3 bits. O Proposed Response Response Status O Cup and the size of parameter GIF to 3 bits. O Proposed Response Response Status O Cup and the size of parameter GIF to 3 bits. O Proposed Response	Bonding is a be marked "	n option to "Reserved"	be discussed later (see anne	exes). Paramete	ers for bonding should	Repe	tition Indication p	parameter is not o	clear.		
SuggestedRemedy Delete second parameter (ST=0) SuggestedRemedy Change the note for the FCH in Table 4 to: Transmitted with modulation/coding QPSK rate e. Increase the addressing size for the DS-MAP Length. Insert new 4th parameter: Subject of the second parameter in Table 1 unless it is decided that the number of frames in a superframe is a variable. Increase the addressing size for the DS-MAP Length. Increase the addressing size for the DS-MAP Length. Change parameter PP for "Reserved" Change parameter TxID Clarify or remove Repetition Indication parameter. Change parameter NC for "Reserved" Remove the Short Training Sequence Present parameter. Change parameter BFD for "Reserved" C Change parameter BFD for "Reserved" C Change parameter GIF to 3 bits. 0 Proposed Response Response Status C CBP should not be standardized as a mandatory feature. Consider integrate COB victor of coexistence protocol such as on-demand spectrum contention protocol or/and credit token renting protocol. SuggestedRemedy CBP should not be standardized as a mandatory feature. Consider integrate COB victor of coexistence protocol such as on-demand spectrum contention protocol or/and credit token renting protocol. SuggestedRemedy Clarify to remove Response Response Status O Clarify to remove Response Response Status O	Parameter G	GIF connot l	be only 1 bit since it has 5 op	tion.		There frame	will likely be an header. No nee	agreement on th ed for the Short T	e absence o raining Sequ	f the training syr Jence Present pa	nbol following a Super- arameter.
Delete second parameter (ST=0) Change the note for the FCH in Table 4 to: Transmitted with modulation/coding QPSK rate ¢. Insert new 4th parameter: SID 48 bits Address that uniquely identifies the transmitting BS. Increase the addressing size for the DS-MAP Length. Remove FS parameter in Table 1 unless it is decided that the number of frames in a superframe is a variable. Increase the addressing size for the DS-MAP Length. Change parameter PP for "Reserved"* Clarify or remove Repetition Indication parameter. Remove parameter TxID Remove the Short Training Sequence Present parameter. Change parameter BFD for "Reserved"* Response Status 0 Change the size of parameter GIF to 3 bits. P 17 L 3 # 180 Proposed Response Response Status 0 STMicroelectronics Comment Type TR Comment Type TR Comment Status X CBP Beacons, base statur be eator be standardized as a mandatory feature. Consider megotiation based coexistence protocols such as on-demand spectrum contention protocol or/and credit token rending protocol. CBP should not be standardized as a mandatory feature. Consider megotiation based coexistence protocols. Proposed Response Response Status 0 Cerver Status 0 N	SuggestedReme	edy				Suggeste	dRemedy				
Insert new 4th parameter: SID 48 bits Address that uniquely identifies the transmitting BS. Remove FS parameter in Table 1 unless it is decided that the number of frames in a super- frame is a variable. Change parameter PP for "Reserved"' Change parameter CN for "Reserved"' Change parameter SID for "Reserved"' Change parameter BFD for "Reserved"' Change parameter GIF to 3 bits. <i>Proposed Response</i> Response Status O CI 06 SC 6.6.1.2 <i>P</i> 17 <i>L</i> 3 # <u>180</u> HU, Wendong STMicroelectronics Comment Type TR Comment Status X CBP Beacons, base station beacons are designed for CBP (coexistence beaconing protocol) which is not sufficiently an efficient and fair coexistence method. SuggestedRemedy CBP Should not be standardized as a mandatory feature. Consider negotiation based coexistence protocols such as on-demand spectrum contention protocol or/and credit token renting protocol instead. Or consider integrate CBP with on-demand spectrum contention or/and credit token renting protocols. <i>Proposed Response</i> Response Status O	Delete seco	nd paramet	ter (ST=0)			Chang Trans	ge the note for th mitted with mode	he FCH in Table ulation/coding QF	4 to: PSK rate ¢.		
Remove FS parameter in Table 1 unless it is decided that the number of frames in a super frame is a variable. Increase the addressing size for the DS-MAP Length. Change parameter PP for ""Reserved"" Remove parameter TxID Clarify or remove Repetition Indication parameter. Change parameter ON for "Reserved"" Response Status O Change parameter BFD for ""Reserved"" Clo 6 SC 6.6.1.2 P 17 L 3 # 180 Change parameter GIF to 3 bits. O STMicroelectronics Comment Status X CBP bacons, base status O CBP Bacons, base status on submit on the standardized as a mandatory feature. Consider negotiation based coexistence protocols. which is not sufficient and fair coexistence method. SuggestedRemedy CBP should not be standardized as a mandatory feature. Consider negotiation based coexistence protocols. which is not sufficient protocol such as on-demand spectrum contention protocol or/and credit token renting protocols. Proposed Response Response Status O	Insert new 4 SID 48 bits	th paramete Address	er: that uniquely identifies the tra	nsmitting BS.		Increa	ase the addressi	ng size for the D	S-MAP Leng	th.	
Change parameter PP for ""Reserved"" Remove parameter TxID Change parameter CN for ""Reserved"" Change parameter CN for ""Reserved"" Change parameter NC for ""Reserved"" Change parameter BFD for ""Reserved"" Change parameter BFD for ""Reserved"" Change the size of parameter GIF to 3 bits. Proposed Response Response Status O CBP should not be standardized as a mandatory feature. Consider negotiation based coexistence protocols. Proposed Response Response Status O CBP should not be standardized as a mandatory feature. Consider negotiation based coexistence protocols. Proposed Response Respons	Remove FS frame is a va	parameter ariable.	in Table 1 unless it is decided	d that the numb	er of frames in a super-	Increa	ase the addressi	ng size for the D	S-MAP Leng	th.	
Remove parameter TxID Remove the Short Training Sequence Present parameter. Change parameter CN for ""Reserved"" Proposed Response Response Status O Change parameter BFD for ""Reserved"" Cl 06 SC 6.6.1.2 P 17 L 3 # 180 Change parameter GIF to 3 bits. Froposed Response Response Status X CBP Beacons, base station beacons are designed for CBP (coexistence beaconing protocol), which is not sufficiently an efficient and fair coexistence method. SuggestedRemedy CBP should not be standardized as a mandatory feature. Consider negotiation based coexistence protocols such as on-demand spectrum contention protocol or/and credit token renting protocols. Proposed Response Proposed Response Response Status O	Change para	ameter PP	for ""Reserved""			Clarify	or remove Rep	etition Indication	parameter.		
Change parameter CN for ""Reserved"" C/ 06 SC 6.6.1.2 P 17 L 3 # 180 Change parameter BFD for ""Reserved"" Change parameter BFD for ""Reserved"" Change the size of parameter GIF to 3 bits. Proposed Response Response Status O CBP Beacons, base station beacons are designed for CBP (coexistence beaconing protocol), which is not sufficiently an efficient and fair coexistence method. SuggestedRemedy CBP should not be standardized as a mandatory feature. Consider negotiation based coexistence protocol such as on-demand spectrum contention protocol or/and credit token renting protocol. Or consider integrate CBP with on-demand spectrum contention or/and credit token renting protocols. Proposed Response Response Status O	Remove par	ameter TxI	D			Remo Proposed	ve the Short Tra Response	aining Sequence Response Si	Present para tatus O	imeter.	
Change parameter NC for ""Reserved"" C/ 06 SC 6.6.1.2 P 17 L 3 # 180 Change parameter BFD for ""Reserved"" HU, Wendong STMicroelectronics Change the size of parameter GIF to 3 bits. Proposed Response Response Status O Response Status O CBP Beacons, base station beacons are designed for CBP (coexistence beaconing protocol), which is not sufficiently an efficient and fair coexistence method. SuggestedRemedy CBP should not be standardized as a mandatory feature. Consider negotiation based coexistence protocol such as on-demand spectrum contention protocol or/and credit token renting protocol. CBP should not be standardized as a mandatory feature. Consider negotiation based coexistence protocols such as on-demand spectrum contention protocol or/and credit token renting protocol. Proposed Response Response Status O	Change para	ameter CN	for ""Reserved""								
Change parameter BFD for ""Reserved"" FIO, Wendong STMICrodelectronics Change the size of parameter GIF to 3 bits. Comment Type TR Comment Status X Proposed Response Response Status O CBP Beacons, base station beacons are designed for CBP (coexistence beaconing protocol), which is not sufficiently an efficient and fair coexistence method. SuggestedRemedy CBP should not be standardized as a mandatory feature. Consider negotiation based coexistence protocol such as on-demand spectrum contention protocol or/and credit token renting protocol. Or consider integrate CBP with on-demand spectrum contention or/and credit token renting protocols. Proposed Response Response Status O	Change para	ameter NC	for ""Reserved""			C/ 06	SC 6.6.1.2		P 17	L 3	# 180
Change the size of parameter GIF to 3 bits. Proposed Response Response Status O CBP Beacons, base station beacons are designed for CBP (coexistence beaconing protocol), which is not sufficiently an efficient and fair coexistence method. SuggestedRemedy CBP should not be standardized as a mandatory feature. Consider negotiation based coexistence protocols such as on-demand spectrum contention protocol or/and credit token renting protocol instead. Or consider integrate CBP with on-demand spectrum contention or/and credit token renting protocols. Proposed Response Response Status O	Change para	ameter BFD	O for ""Reserved""			HU, wenc	Type TR	Comment S	s i Microeleci	tronics	
Proposed Response Response Status O SuggestedRemedy CBP should not be standardized as a mandatory feature. Consider negotiation based coexistence protocols such as on-demand spectrum contention protocol or/and credit token renting protocols. Proposed Response Response Status O Proposed Response	Change the	size of para	ameter GIF to 3 bits.			CBP I	Beacons, base s	station beacons a	re designed	for CBP (coexist	ence beaconing
CBP should not be standardized as a mandatory feature. Consider negotiation based coexistence protocols such as on-demand spectrum contention protocol or/and credit token renting protocol instead. Or consider integrate CBP with on-demand spectrum contention or/and credit token renting protocols. Proposed Response Response Status O	Proposed Respo	onse	Response Status O			protoc		sumclenity an er			
Proposed Response Response Status O						CBP s coexis rentin or/and	should not be sta stence protocols g protocol instea d credit token rer	andardized as a r such as on-dem ad. Or consider in nting protocols.	nandatory fe and spectrur tegrate CBP	ature. Consider n contention pro with on-demand	negotiation based tocol or/and credit token d spectrum contention
						Proposed	Response	Response St	tatus O		

C/ 06 SC 6.6.1.2 Page 29 of 49 1/15/2007 4:05:52

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C/ 06 SC 6.6.1.2	P 18	L 21	# 19	C/ 06 Chouinard	SC 6.8.1.1	P 25	L 10	# 21
Comment Type TR Table 8:	Comment Status X			Comment Table 2	<i>Type</i> TR 26:	Comment Status X		
Explanation is need	ed for parameters 5 to 11.			TTG p absorb	arameter should the round-trip of	t be expressed as a fraction of delay for 30 km while the time	of a time slot sir slot is 330 use	nce it is 210 usec to .c.
Same channels wou	ld be used for DS and US in a	TDD system.		RTG is DS and	s redundent sind d US slots are k	e it will represent the left-ove nown.	r of the 10 ms f	rame once all the header,
If these parameters stack of reserved ch	relate to bonding, replace them annels for DFS, then clarify the	by ""Reserved" wording.	". If they relate to the	The 80	2.22 WG is like	ly to adopt a single frame per	iod.	
Remove parameters	9 to 11 since the parameters 5	-8 apply also to	US in a TDD system.	The nu sec. A	Imbering of the longer period n	Super-frames is limited to 8 b nay be necessary to avoid rep	its, giving a rep petitions.	etition period of 40.8
Proposed Response	Response Status O			The ""I channe	Number of Char els available in t	nnel for Backup"" parameter s he stack in case incumbents	hould indicate appear on one	the number of backup or more operational and
C/ 06 SC 6.7.3 Chouinard, Gerald	P 22 Communicati	L 8 ons Rese	# 20	backup channe these l	o channels. It is el to be vacant a packup channels	a not clear why it should be 1 fas indicated in the Table. One s should be included in a follo	to maximize the ce this paramete owing paramete	Probability of the er is given, then the list of r.
Comment Type ER What is the unit of p	Comment Status X ower in Table 19.			The pa (46 use useles	arameter Sensin ec for CP= 1/8). s for sensing. T	g RTG is unlikely to be usefu The filter ringing and channe his feature should be remove	I since the RTG el spreading is l ed.	is likely to be very short ikely to make such RTG
Indicate unit of power	er in Table 19 in the definition o	f the value.		Suggested	Remedy			
Proposed Response	Response Status O			Code t	he TTG in numb	per of sampling periods.		
				Remov	ve the RTG para	ameter.		
				Remov	ve the Frame Du	uration Code.		
				Increa	se the length of	the Action Super-frame Num	ber parameter.	
				Chang channe	e the note for th els in the BS sta	e parameter: Number of Cha ick to align the CPE stack.	nnels for Backı	p to: Number of backup
				Insert a	a new paramete els stored in the	r with a loop based on the pro BS stack.	evious paramet	er to list the backup
				Remov	ve parameters S	Sensing RTG and Channel Nu	Imber for Sensi	ng RTG.
				Proposed I	Response	Response Status O		

C/ 06 SC 6.8.1.1

Cl 06 SC 6.8.1.1.1 P 27 L 5 # 22 Chouinard, Gerald Communications Rese	C/ 06 SC 6.8.15.3.3.4.1 P L # 27 Chouinard, Gerald Communications Rese 27
Comment Type TR Comment Status X ""In addition, in the TDD case, note that the RTG and TTG guard intervals must be included in a frame."" The 802.22 WG should decide that the WRAN standard only addresses TDD. That RTG and TTG guard intervals have to bve included inb a frame is motherhood. The 802.22 WG should decide on 10 ms for the frame period.	Comment TypeTRComment StatusXThe 802.22 WG agreed to limit the system o 2k FFT. This section is no longer necessary.SuggestedRemedyDelete section 6.8.15.3.3.4.1Proposed ResponseResponse StatusO
SuggestedRemedy This section 6.8.1.1.1 should be deleted.	C/ 06 SC 6.8.2 P 28 L 9 # 62 Chang, Soo-Young Huawei Technologies Huawei Technologies
Cl 06 SC 6.8.15.3.3.2 P L # 26 Chouinard, Gerald Communications Rese Comment Type TR Comment Status X The parameter that need to be monitored by the WRAN system is the EIRP and not the output power. The gain of the transmit antenna will need to be known by the manufacturer	Comment Type TR Comment Status X Referring to Section 6.8.2, it states ""If the length of the DS-MAP message is a non-integral number of bytes, the length field in the MAC header is rounded up to the next integral number of bytes. The message shall be padded to match this length, but the CPE shall disregard the four pad bits"". However, since byte-processing is always preferable, the 4 pad bits can be removed. SuggestedRemedy Refer to 22-06-0086-01-0000 Huawei_MAC_Overhead_Reduction_for_Downlink_Bursts for
and controlled through tamper-proof equipment. The range that can be covered by 8 bit address is -64 dBm to 64 dBm in 0.5 dBm steps.	details. Proposed Response Response Status O
SuggestedRemedy In the title and the text of this section, the word power should read EIRP. The step size should be changed to 0.5 dB	
In Table 122, Value should read:	
Byte 0: Maximum transmitted power for QPSK Byte 1: Maximum transmitted power for 16-QAM Byte 2: Maximum transmitted power for 64-QAM.	

Proposed Response Response Status **O**

	P 66 1 '	3 # 63	CL 06 SC 6 8 22 1 1	P 60	/ 2 # 153
Chang, Soo-Young	Huawei Technologies		Shellhammer, Steve	Qualcomm	
Comment Type TR C This comment relates to the Section 6.8.22	Comment Status X e current MAC management mess	ages which is described in	Comment Type T Co The sencond row of Table 15 peeds to be more specific	omment Status X 50 is a ""Part 74 System Rela	ated Measurement Request"" This
The MAC management met channels, which will impose such kinds of channels for s discontinuous to sense. In p continuous set of channels.	ssages in the current draft do not a a heavy overhead penalty on the sensing. Specifically, a lot of overh particular, one BLM-REQ message Therefore, N BLM-REQ message	address discontiguous systems that need to specify nead is needed to specify e can only facilitate one as with almost identical	SuggestedRemedy Change to ""Wireless Micropi Proposed Response Res	hone Related Measurement sponse Status O	Request ""
contents are required to spe lot of overheads to the syste	ecify N discontiguous channel inte em.	rvals for sensing, which add a	C/ 06 SC 6.8.22.3.1 Shellhammer, Steve	P 72 Qualcomm	L 6 # 155
It is possible that the incum signals which may leave aft is dispatched to somewhere case, the base station does But due to the strong signal presence very reliably. Mos channels whose statuses an discontiguous channels	ents are not fixed 1 V incumbents er some time (e.g. a television sta e in the WRAN cell and sends a si not have a priori information of its of the incumbent, only few CPEs t of the CPEs can save the sensir re more uncertain. In this case, BS	tion's remote-news van, which gnal back to the station). In this s presence from the database. are sufficient to detect its ng period to sense the other S needs to specify	Comment Type T Comment Type Once again the reference to I SuggestedRemedy Change entry 130 to ""Wirele Change entry 134 to ""IEEE & Proposed Response Response	omment Status X Part 74 is too vauge. ess Microphone Measuremen 802.22.1 Beacon Measureme sponse Status O	nt Report "" ent Report ""
SuggestedRemedy					
Refer to 22-06-0084-03-000 Huawei MAC Managemen	0 t Messages for Efficient Sensin	a for details.	C/06 SC 6822311	P 72	/ 10 # 28
Proposed Response R	esponse Status O		Chouinard, Gerald	Communications R	ese
C/ 06 SC 6.8.22.1.1	P 69 L 2	2 # 154	Comment Type ER Co The type of measurement ne SINR, etc.	omment Status X eds to be known from a num	ber of possible options (e.g., RSSI,
Shellhammer, Steve	Qualcomm		SuggestedRemedy		
Comment Type T C Entry 6 is titled ""Beacon (P	Comment Status X art 74) Measurement Request.""	This needs to be more specific.	Add the parameter to Table 1 Type of Measurement	162:	
SuggestedRemedy Change Entry 6 to ""IEEE 8	02.22.1 Beacon Measurement Re	quest""	Proposed Response Res	sponse Status O	
Proposed Response R	esponse Status O				

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general COMMENT STATUS: D/dispatched A/accepted R/rejected RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn SORT ORDER: Clause, Subclause, page, line

C/ 06 SC 6.8.22.3.1.1

IEEE P802.22

IEEE P802.22 WRAN pre-draft WG Review v0.2 comments

Shellhamm	_	F 73	L 1	# 158	C/06 SC 6.	8.22.3.1.6	P 77	L 14	# 29
	ner, Steve	Qualcomm			Chouinard, Gerald		Communicati	ons Rese	
Comment 7	Type TR	Comment Status X			Comment Type	TR Comm	ent Status X		
Table 1 measu standa	163 does not say v rement"" and gives rd needs to specify	vhat is to be reported. It or s an example of SINR. Thi y what is to be reported and	ly says the ""val s cannot be impl I in what format.	ue of the emented since the	The parameter for each channe	"Duration"" in Tal I or the total dura	ble 171 is not clear tion of the group o	r. Is it the duration f measurements	on of each measurement ?
Suggested Specify	<i>Remedy</i> y exactly what is to	be reported and in what fo	rmat. I recomm	end that an estimate of	The way the cha contiguous TV of stack of backup	annels are specific hannels. It shoul channels.	ed in the table only Id allow a list of sp	allow measurer ecific TV channe	ment on a group of els such as those on the
the field	d strength be repo	rted and that a reasonable	range and of fiel	d strength values be	SuggestedRemedy				
Proposed	Pesnonse				Clarify the ""Du	ation"" parameter	r in the Notes of Ta	ble 171. Clarify	the unit for this duration.
FTOPOSEUT	Response				in the state of the state		and the second second		a list of successful
C/ 06 Shellhamm	SC 6.8.22.3.1.1	I P 73 Qualcomm	L 1	# 159	channels where measurement p	g a starting ans a the measuremen rocess.	i number of channe its have been done	eis, it should hav e for more flexibi	e a list of specific lity and more optimized
Comment .	Туре тр	Comment Status ¥			Proposed Response	e Respon	nse Status O		
The en if preci tends t	ntry entitled ""precis sion is what is use to inply the numerio	sion"" is not specific enough ful here or would it be bette cal resoluion and not the ad	n to be implemen r to change this curacy.	nted. Also, it is not clear to accuracy. Precision	C/ 06 SC 6.	8.23	P 78	L 6	# [182
Sugaested	Remedy				HU, Wendong		STMicroelect	ronics	
Chang	e ""precision"" to "	"accuracy"" and define it as	the standard de	eviation of the field	Comment Type	TR Comm	ent Status X		
strengt Proposed I	th estimate. Speci Response	fy the mapping from bits to Response Status O	field strength.		The Scheduling and fair method	Contraint is spec for self coexisten	tified to support Cl ice and spectrum s	BP which is not s haring.	sufficiently an efficient
•		· · · · · · · · · · · · · · · · · · ·			SuggestedPomody				
					Suggesteurreineuy				
					The scheduling	contraint feature	shall not be specifi	ed as mandator	у.
C/ 06 Cordeiro, C	SC 6.8.22.3.1.2 Carlos	2 P 73 Philips	L 6	# 92	The scheduling Proposed Response	contraint feature : Respon	shall not be specifi nse Status O	ed as mandator	у.
C/ 06 Cordeiro, C Comment 7 Senten	SC 6.8.22.3.1.2 Carlos <i>Type</i> TR oce is not fully com	2 P 73 Philips Comment Status X	L 6	# 92	The scheduling Proposed Response Cl 06 SC 6.	contraint feature : Resport	shall not be specifi nse Status O	ed as mandator	y. # 184
Cl 06 Cordeiro, C Comment T Senten	SC 6.8.22.3.1.2 Carlos <i>Type</i> TR nce is not fully com	2 P 73 Philips Comment Status X plete	L 6	# 92	Cl 06 SC 6.	contraint feature : Resport	shall not be specifi nse <i>Status</i> O <i>P</i> 80 STMicroelect	ed as mandatory	y. # [<u>184</u>
Cl 06 Cordeiro, C Comment : Senten Suggested	SC 6.8.22.3.1.2 Carlos <i>Type</i> TR nce is not fully com <i>Remedy</i> ad/or BSs' right aft	2 P 73 Philips Comment Status X plete	L 6	# <u>92</u>	Cl 06 SC 6. HU, Wendong	contraint feature : Respon 8.25	shall not be specifi nse Status O P 80 STMicroelect	ed as mandatory	y. # [<u>184</u>
Cl 06 Cordeiro, C Comment Suggested add 'ar	SC 6.8.22.3.1.2 Carlos <i>Type</i> TR nce is not fully com <i>Remedy</i> nd/or BSs' right afte	2 P 73 Philips Comment Status X plete er 'other CPEs'	L 6	# <u>92</u>	Cl 06 SC 6. HU, Wendong Comment Type Frame synchron	contraint feature : Resport B.25 TR Comm	shall not be specifi nse Status O P 80 STMicroelect ment Status X systems benefits V	ed as mandator <i>L</i> 9 ronics WRAN self-coex	y. # <u>184</u> istance. Using frame
Cl 06 Cordeiro, C Comment Senter Suggested add 'ar Proposed F	SC 6.8.22.3.1.2 Carlos <i>Type</i> TR nce is not fully com <i>Remedy</i> nd/or BSs' right afte <i>Response</i>	2 P 73 Philips Comment Status X plete er 'other CPEs' Response Status 0	L 6	# <u>92</u>	Cl 06 SC 6. HU, Wendong Comment Type Frame synchron sliding, howeve CBP packets an exchange contr	Respon Respon B.25 TR Comm nization of WRAN r, complicates the id performing com ol messages are a	shall not be specifi nse Status O P 80 STMicroelect nent Status X systems benefits V process of frame nputation, and has able to synchronize	ed as mandatory <i>L</i> 9 ronics WRAN self-coex synchronization limitation that or a.	# 184 istance. Using frame by iteratively exchanging hly BSs that can reliably
Cl 06 Cordeiro, C Comment ⁻ Suggested add 'ar Proposed F	SC 6.8.22.3.1.2 Carlos Type TR Ince is not fully com Remedy Ind/or BSs' right afte Response	2 P 73 Philips Comment Status X plete er 'other CPEs' Response Status O	L 6	# <u>92</u>	Cl 06 SC 6. HU, Wendong Comment Type Frame synchron sliding, howeve CBP packets ar exchange contr SuggestedRemedy	contraint feature Respon 8.25 TR Comm nization of WRAN r, complicates the id performing com ol messages are a	shall not be specifi nse Status O P 80 STMicroelect nent Status X systems benefits N process of frame nputation, and has able to synchronize	ed as mandatory <i>L</i> 9 ronics WRAN self-coex synchronization limitation that or a.	y. # <u>184</u> istance. Using frame by iteratively exchanging nly BSs that can reliably
C/ 06 Cordeiro, C Comment ⁻ Suggested add 'ar Proposed I	SC 6.8.22.3.1.2 Carlos Type TR Ince is not fully com Remedy Ind/or BSs' right afte Response	2 P 73 Philips Comment Status X plete er 'other CPEs' Response Status O	L 6	# <u>92</u>	Cl 06 SC 6. HU, Wendong Comment Type Frame synchron sliding, howeve CBP packets ar exchange contr SuggestedRemedy Frame sliding m shall be used in the above ment	contraint feature : Respon B.25 TR Comm ization of WRAN r, complicates the id performing com of messages are a nethod is not appro- stead for frame sy ioned limitations a	shall not be specifi nse Status O P 80 STMicroelect ent Status X systems benefits N process of frame nputation, and has able to synchronized opriate to be stand ynchronization suc and complexity. Fr	ed as mandatory <i>L</i> 9 ronics WRAN self-coex synchronization limitation that or ardized as a ma h that all BSs are ame slide messa	# 184 istance. Using frame by iteratively exchanging ly BSs that can reliably ndatory feature. GPS e synchronized without age is not needed.

TYPE: TR/technical required ER/editorial required GR/gene	ral required T/technical E/editorial G/general	CI 00	Dama 22 of 40
COMMENT STATUS: D/dispatched A/accepted R/rejected	RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn	C/ U6	Page 33 of 49
SORT ORDER: Clause, Subclause, page, line		SC 6.8.25	1/15/2007 4:05:52

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C/ 06	SC 6.8.25	P 80	L 9	# 183	CI 06	SC 6.8	3.4.1	Р	34	L 14	# 24
HU, Wendor	ng	STMicroelectr	ronics		Chouinard,	Gerald		Con	nmunicati	ons Rese	
Comment T	ype TR	Comment Status X			Comment	Гуре Т	ſR	Comment Statu	s X		
Frame s base sta coexiste	slide message ations, howev ence is neede	is transmitted by BS only. This er, base stations may not reliab d, i.e. they have overlapping co	s constrains me bly hear one and overage areas.	ssage exchange among other even though self-	The alg symbol channe	gorithm fo granulari el. The lin	r mappi ity so th near layi	ing the US data cap at each US burst c ing of the capacity	oacity has ontains a as propos	s to be changed Il the necessary sed will not work	to correspond to the pilots to train for the .
SuggestedF	Remedy				In Tabl	e 43 ther	e seem	s to be a confusior	hetweer	channel and su	ıb-channel
Frame s relays.	slide message	shall be able to be transmitted	by CPEs as w	ell, which behave as	The 80	2.22 WG	will like	ly agree that there	is no pre	amble for the US	S burst.
Proposed R	lesponse	Response Status 0			Suggested	Remedy					
C/ 06	SC 6.8.3.1	P 31	L 5	# 23	Rewrite 43 to a	e the first lign with t	paragra he new	ph of the section a capacity allocation	nd the de scheme	etailed allocation	algorithm given in Table
Chouinard,	Gerald	Communicatio	ons Rese		Table 4	13: all the	words '	"channel"" in the ta	able neec	I to be changed f	for ""sub-channel"".
Comment T	ype TR Disvistem the	Comment Status X	the DS frequen	CV.	Table 4	13: delete	the par	ameter ""Preamble	Present	""	
SuggestedF In Table Proposed R	Remedy 38, the Freq Response	uency parameter should be del Response Status O	eted.		Cl 06 Chouinard,	SC 6.8	3.4.1.2.1	Response Status	36 36	L 1 ons Rese	# 25
C/ 06 HU, Wendor	SC 6.8.30	P 98 STMicroelecti	L 1 onics	# 185	Comment 7 At vario 0.25 de	<i>Type</i> 1 bus places 3, 0.5 dB	FR s in the and als	<i>Comment Statu</i> Draft 0.5, the gran o 1 dB. Can we ag	s X ularity of pree that i	the power levels t will be 0.5 dB ii	and TPC is indicated as n all cases?
Comment T DFH Me	<i>ype</i> T essages is ne	Comment Status X eded to be filled in in this section	on.		Suggested Table 4	R <i>emedy</i> 16, Power	⁻ Contro	l parameter, indica	te that th	e signed integer	will be in 0.5 dB.
SuggestedF	Remedy				Align th	ne other ta	ables as	s well (e.g., Table 1	10 and s	ection 6.8.15.3.3	3.2).
Fill in D	FH messages				Proposed I	Response	•	Response Status	6 O		
Proposed R	esponse	Response Status O									

C/ 06 SC 6.8.4.1.2.1

C/ 06	SC 6.8.7.3.7.9	P 43	L 9	# 157	C/ 06 SC figure	e 41 <i>P</i> 151	L	# 124
Comment T In Table 74 devic SuggestedF In Table 1. Wirel 2. IEEE	er, Steve Type TR 70 on of the entrices. Remedy 70 change the e ess Microphones 802.22.1 beacon	Qualcomm Comment Status X ries is ""Part 74."" That is to ntry entitled ""Part 74"" into	o vauge since t two entries:	here are mulitple Part	Chu, Liwen Comment Type TR It is difficult to under 1) connect two inpu 2) connect decision 3) not clear which the SuggestedRemedy Fix these problemss Proposed Response	Comment Status X erstand figure 63. There are the ut events/messages directly, n criterion and input event/signa timer is used. s to make the figure clear. Response Status O	ctronics following proble al directly.	ims:
Proposed R	Response	Response Status O			C/ 06 SC table	e1 P 13	L	# 116
Cl 06 Shellhamme Comment T The title table ar SuggestedF Change reference	SC 6.8.7.3.7.9 er, Steve Type TR e of Table 70 is "" e all the signal type Remedy e the title of Table ces in the text acc	P 43 Qualcomm Comment Status X System Profiles."" This title bes that need to be sensed. 70 from ""System Profiles"" cordinging.	L 9 is very confusir So I think a be to ""Signal Typ	# 156 ng. What is listed in the tter title is needed. es."" Change all	Chu, Liwen Comment Type TR FS field is not need 16 frames as define SuggestedRemedy Delete FS field from Proposed Response	STMicroele Comment Status X ded since the superframe shall ed in L46, P9. m Table 1 Response Status 0	ctronics have a fixed and	I pre-determined size of
Proposed R Cl 06 HU, Wendor Comment T Measur SuggestedR Measur well.	SC 6.88.22.1 ng Type TR ements managen Remedy ement manageme	Response Status O P 66 STMicroelectro Comment Status X nent is designed for contigue ent shall be modified for sup	L 19 onics eous channels o porting non-cor	# 181	Cl 06 SC table Chu, Liwen Comment Type TR In SCH, some felds fields should be rep CBP should be fixe SuggestedRemedy define SCH IE and Proposed Response	a 1 P 13 STMicroele <i>Comment Status</i> X s are used for superframe contr placed by two IEs: SCH IE and ed fields. This can decrease SC CBP IE and reorganize SCH a <i>Response Status</i> O	L ctronics ol. Some fields a CBP IE. Fields u H related messa ccordingly.	# 117 are used for CBP. These used by both SCH and age length.
Proposed R	esponse	Response Status O						

C/ 06 SC table 1

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CI 06 Chu, Liwe	SC table 1 n	P 13 STMicroelectro	L onics	# 118	<i>CI</i> 06 Chu, Liwer	SC table 30	P 27 STMicroele	<i>L</i> ctronics	# 122		
<i>Comment</i> It is di	<i>Type</i> T fficult to parse the	Comment Status X SCH.			<i>Comment</i> It is no	<i>Type</i> T ot clear what does	Comment Status X				
Suggested reorga	dRemedy anize the SCH field	s to make message parsing	more easier.		Suggested Add th	SuggestedRemedy Add the meaning of ""n"" to the table.					
Proposed	Response	Response Status O			Proposed	Response	Response Status 0				
C/ 06 Chu, Liwe	SC table 162	P 74 STMicroelectro	L	# 135	<i>Cl</i> 06 Chu, Liwer	SC table 37	P 31 STMicroeler	L ctronics	# 123		
Comment ""start length	<i>Type</i> T frame""in table 16 Which one is corr	Comment Status X 2 has 8 bits length, but ""sta rect?	rt frame""in tal	ole 164 has 16 bits	Comment It is no Suggested	<i>Type</i> T ot clear what does <i>IRemedy</i>	Comment Status X				
Clarify	/ it.				Add th Proposed	e meaning of ""n Response	"" to the table.				
Proposed	Response	Response Status O			11000000	10000100					
C/ 06	SC table 21	P 22	L	# 120	<i>CI</i> 06 Chu, Liwer	SC table 8	P 18 STMicroele	L ctronics	# 119		
Comment It is no	<i>Type</i> T ot clear what do ""F	Comment Status X REQ-REQ" and ""REQ-RSP	"" mean.		<i>Comment</i> Backu not a g	<i>Type</i> TR p channels norm good structure.	Comment Status X ally are disjoint channels, s	o channel numbe	r+number of channels is		
Suggested Provid	dRemedy de the meaning of '	"REQ-REQ" and ""REQ-RS	SP""		Suggested	IRemedy umber of channel	+channel numbers to indica	ate backup chann	els		
Proposed	Response	Response Status 0			Proposed	Response	Response Status 0				
<i>Cl</i> 06 Chu, Liwe	SC table 25	P 25 STMicroelectro	L	# 121	<i>Cl</i> 07 Cordeiro, 0	SC 7 Carlos	P 179 Philips	L 8	# 109		
Comment It is no	<i>Type</i> T ot clear what does	Comment Status X			<i>Comment</i> This s	<i>Type</i> TR ection seems to b	Comment Status X				
Suggester	dRemedy				Suggested	Remedy	non and fill in this and t	a a cual to set a			
Add tr Proposed	Response	Response Status O			Start f Proposed	rom the 802.16 s Response	Response Status O	ccoraingly.			
-											

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general COMMENT STATUS: D/dispatched A/accepted R/rejected RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn SORT ORDER: Clause, Subclause, page, line

C/ 07 SC 7

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IEEE P802.22 IEEE P802.22 WRAN pre-de			raft WG Review v0.2 comments			l pre-di	I pre-draft WG Review v0.2	
C/ 07 SC 7.4.	2 P 182 L 29	# 130	C/ 08	SC 8.3	P 187	L 10	# 58	
Chu, Liwen	STMicroelectronics		Chang, Soo-Y	'oung	Huawei Techno	ologies		
Comment Type TI here the standard facilitate registrat says that ""all crit by the receiver be packet."" So I have the follo 1) does 802.22 p 2) if yes what are 3) does 802.22 p and provide enou	R Comment Status X d says that ""All MAC management messages sh ion, ranging, and normal operation of the MAC."" ical management packets are digitally signed, ar efore further use: there is thus no mean for an at owing questions: rovide security to the MAC management packets the defination of critical management packets? rovide partial protection of a management packet gh information for new CPEs to join the cell?	hall be sent in the clear to ". But Line 2 in page 183 and their integrity is checked tacker to craft such a s? At to guarantee the security	Comment Typ The prear componel superfram (> 7 dB). I synchroni performar allow impl especially the PAPR Furthermo synchroni cross-corr	TR mbles defined ints generated he preambles High-PAPR p zation and ch nce. The PAP roved perform when some of of the data n ore, to reduce zation and ch relation is des	Comment Status X in the current draft are formed by two binary PN sequences, defined in this way have high eambles may be clipped by th annel estimation accuracy and R of preambles should be min ance by boosting up the trans effective methods (e.g. clipping iodulation signals may be app the adverse effect of adjacent annel estimation accuracy, a s irable.	d by QPSK sym respectively. H peak-to-averag te power amplif d hence degrad imized as much mission power g, coding, comp lied. t cell interferent set of low-PAPF	bols with I and Q lowever, the frame and e-power ratios (PAPR) ier, resulting in lower ed detection n as possible so as to of preambles, banding) for reducing ce on the R preambles with low	
SuggestedRemedy	uestions		SuggestedRe	medy				
Proposed Response	Response Status O		Based on correlation correlation that for the	the unified co n (CAZAC) se n energy are o	nstruction of polyphase perfect quences, sets of low-PAPR po- bbtained. Since the design crit	ct or constant a olyphase pream erion for pream in the current o	mplitude zero auto nbles with low cross- bles is very similar to traft it is possible to use	
C/ 08 SC 8 Chouinard, Gerald	P 182 L 34 Communications Rese	# 51	the same preamble affordable	lookup table i s. Consequer complexity a	or generating both the soundii tly, the improved PAPR gain of nd memory. Refer to 22-07-00	ng sequences a can be obtained 002-00-0000	and the proposed at the price of	
Align the PHV se	R Comment Status X ction with the outcome of the PHV discussions in	802.22	Huawei_s	equences_lo	w_PAPR for details.			
SuggestedRemedy		1002.22.	Proposed Res	sponse	Response Status O			
Proposed Response	Response Status O		C/ 08 Cordeiro, Carl	SC 8.3.1.2 los	P 190 Philips	L 24	# 96	
	P 187 / 10	# 247	Comment Typ It is not 's	be TR hort and long	Comment Status X			
HU, Wendong	STMicroelectronics		SuggestedRe	medv	•			
Comment Type T	R Comment Status X		Replace i	t by 'short and	long training sequences'			
Superframe incur design. Superfrar	s an additional level of complexcity to the system ne is not necessary function-wise.	n design and hardware	Proposed Res	sponse	Response Status O			
SuggestedRemedy								
Superframe is no	t needed function-wise and should be made opti	onal or removed.						
Proposed Response	Response Status O							

C/ 08 SC 8.3.1.2

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	Cordoiro Carlos Pillos
<i>Comment Type</i> TR <i>Comment Status</i> X Digital Video Broadcasting-Terrestrial (DVB-T), the European Standard on digital TV radio, has already been adopted by more than 30 countries. So it is reasonable to develop DVB-T sensing algorithms for IEEE 802.22 WRAN system. There are some distinct characteristics	Comment Type TR Comment Status X Figure 4 needs to be updated to indicate the Self-coexistence window at the end of the frame SuggestedRemedy
of DVB-T signal, such as OFDM, Cyclic Prefix (CP), Pilot symbols etc.	I have the updated figure and can provide it upon request.
SuggestedRemedy	Proposed Response Response Status O
referenced here. They are cyclic prefix based sliding correlation detection,, time domain pilot signals ,based sliding correlation, time domain pilot signals in cyclic prefix based sliding correlation and multi-antennas detection. These algorithms should be included in the standard. All of these algorithms are described and corresponding simulation results are presented in ""22-06-0263-00-0000_Huawei_Sensing_Scheme_for_DVB-T"".	C/ 68.2 SC Table 143 P 65 L 14 # 90 Cordeiro, Carlos Philips Philips <td< td=""></td<>
D 6.13. SC P 111 L 1 # 137 Mazzarese, David Samsung	SuggestedRemedy Under the for() loop, add a 2 bit 'Priority' field that can take the following values: i) Low; ii) Medium; iii) High; vi) Undefined.
Comment Type TR Comment Status X	Proposed Response Response Status O
Revisions are required to the method that determines the maximum allowed transmitted	
EIRP for one WRAN device, taking in account TV operations in nearby TV channels in the vicinity of the WRAN device, which is described in Section 6.13.5 of 22-06-0259-00-0000_v0.2_with_line_numbers.doc. FRD 195 and FRD 168 in 22-06-0138-05-0000-Compliance_with_FRD.doc mandate a limit on maximum transmitted EIRP on channels adjacent to a TV channel operation when the CPE or the BS is located inside the TV protected contour, and co-channel when the CPE or the BS is located at some distance of the TV protected contour. Section 6.13.5 requires updating based firstly on the most recent calculations on required separation distances to meet the D/U ratios at the TV protected contour, and secondly on a more accurate description of the decision process (flowchart and tables) and language suitable to describe requirements in technical specifications. Changes are not accurated to protect the protect of the transmitted to protect it destription and protections.	Cl 6.8.2 SC Table 151 P 69 L 7 # 91 Cordeiro, Carlos Philips Comment Type TR Comment Status X Since the Threshold value may change over time and is dependent on factors such as CPE distribution, it would be important to amend this table to allow for the specification of this possibily time varying threshold. SuggestedRemedy Include a 'Threshold' (15 bite) and 'Threshold uplid' (1) bit in this table.
EIRP for one WRAN device, taking in account TV operations in nearby TV channels in the vicinity of the WRAN device, which is described in Section 6.13.5 of 22-06-0259-00-0000_v0.2_with_line_numbers.doc. FRD 195 and FRD 168 in 22-06-0138-05-0000-Compliance_with_FRD.doc mandate a limit on maximum transmitted EIRP on channels adjacent to a TV channel operation when the CPE or the BS is located inside the TV protected contour, and co-channel when the CPE or the BS is located at some distance of the TV protected contour. Section 6.13.5 requires updating based firstly on the most recent calculations on required separation distances to meet the D/U ratios at the TV protected contour, and secondly on a more accurate description of the decision process (flowchart and tables) and language suitable to describe requirements in technical specifications. Changes are also required to precisely identify mandatory and optional features of TPC for maximum transmitted EIRP.	Cl 6.8.2 SC Table 151 P 69 L 7 # 91 Cordeiro, Carlos Philips Comment Type TR Comment Status X Since the Threshold value may change over time and is dependent on factors such as CPE distribution, it would be important to amend this table to allow for the specification of this possibily time varying threshold. SuggestedRemedy Include a 'Threshold' (15 bits) and 'Threshold valid' (1) bit in this table. Proposed Response Response Status 0
EIRP for one WRAN device, taking in account TV operations in nearby TV channels in the vicinity of the WRAN device, which is described in Section 6.13.5 of 22-06-0259-00-0000_v0.2_with_line_numbers.doc. FRD 195 and FRD 168 in 22-06-0138-05-0000-Compliance_with_FRD.doc mandate a limit on maximum transmitted EIRP on channels adjacent to a TV channel operation when the CPE or the BS is located inside the TV protected contour, and co-channel when the CPE or the BS is located at some distance of the TV protected contour. Section 6.13.5 requires updating based firstly on the most recent calculations on required separation distances to meet the D/U ratios at the TV protected contour, and secondly on a more accurate description of the decision process (flowchart and tables) and language suitable to describe requirements in technical specifications. Changes are also required to precisely identify mandatory and optional features of TPC for maximum transmitted EIRP.	Cl 6.8.2 SC Table 151 P 69 L 7 # 91 Cordeiro, Carlos Philips Comment Type TR Comment Status X Since the Threshold value may change over time and is dependent on factors such as CPE distribution, it would be important to amend this table to allow for the specification of this possibily time varying threshold. SuggestedRemedy Include a 'Threshold' (15 bits) and 'Threshold valid' (1) bit in this table. Proposed Response Response Status O
EIRP for one WRAN device, taking in account TV operations in nearby TV channels in the vicinity of the WRAN device, which is described in Section 6.13.5 of 22-06-0259-00-0000_v0.2_with_line_numbers.doc. FRD 195 and FRD 168 in 22-06-0138-05-0000-Compliance_with_FRD.doc mandate a limit on maximum transmitted EIRP on channels adjacent to a TV channel operation when the CPE or the BS is located inside the TV protected contour, and co-channel when the CPE or the BS is located at some distance of the TV protected contour. Section 6.13.5 requires updating based firstly on the most recent calculations on required separation distances to meet the D/U ratios at the TV protected contour, and secondly on a more accurate description of the decision process (flowchart and tables) and language suitable to describe requirements in technical specifications. Changes are also required to precisely identify mandatory and optional features of TPC for maximum transmitted EIRP.	Cl 6.8.2 SC Table 151 P 69 L 7 # 91 Cordeiro, Carlos Philips Comment Type TR Comment Status X Since the Threshold value may change over time and is dependent on factors such as CPE distribution, it would be important to amend this table to allow for the specification of this possibily time varying threshold. SuggestedRemedy Include a 'Threshold' (15 bits) and 'Threshold valid' (1) bit in this table. Proposed Response Response Status O

C/ 6.8.2 SC Table 151

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C/ 6.8.2 SC Table :	30 <i>P</i> 28	L 4	# 88	C/ 99	SC		P	L	# 131
Cordeiro, Carlos	Philips			Chu, Liwe	n 	8	IMICroele	ctronics	
Comment Type TR Message should be	an integer number of bytes			Comment Add 2	<i>1 ype</i> TR 2-06-0228-00	Comment Sta 0-0000 Scheduling (<i>atus</i> X Connectior	n Bsed Inter BS	Communications doc to
SuggestedRemedy				the dr	aft standard	o oooo_oonoddinig_	20111001101	1_B0004_III101_B0	
Delete Padding Nibb	ble of 4 bits			Suggestee	dRemedy				
Proposed Response	Response Status O			Proposed	Response	Response Sta	atus O		
Cl 6.8.2 SC Table : Cordeiro, Carlos	32 P 28 Philips	L 9	# 89	C/ 99	SC		P	L	# 136
Comment Type TR	Comment Status X			Chu, Liwe	n	S	TMicroele	ctronics	
Message should be	an integer number of bytes			Comment	Type TR	Comment St	atus X		
SuggestedRemedy				Synch	ard.	BSs by common clo	ck provide	d by GPS should	be included in the 802.22
Delete padding nibbl	le of 4 bits			Suggestee	dRemedy				
Proposed Response	Response Status O								
				Proposed	Response	Response Sta	itus O		
CI 8.4 SC	P 192	L	# 146						
Pirat, Patrick	France Telecom	l		C/ 99	SC		Ρ	L	# 132
Comment Type T	Comment Status X			Chu, Liwe	n	S	TMicroele	ctronics	
SuggestedRemedy				Comment Add 2 standa	<i>Type</i> TR 2-06-0229-00 ard	Comment Sta 0-0000_Spectrum_Co	atus X ontention_	Algorithm_Subm	ission.doc to the draft
Proposed Response	Response Status O			Suggestee	dRemedy				
C/ 8.6 SC	P 201	L 19	# 142	Proposed	Response	Response Sta	itus O		
Pirat, Patrick	France Telecom	1							
Comment Type E Usually the section of decument) is placed	Comment Status X	hannel alloca	tion, section 8.4 of the	<i>CI</i> 99 Chu, Liwe	SC n	S	P TMicroele	L ctronics	# 115
SuggestedRemedy				Comment	<i>Type</i> TR	Comment Sta	atus X		
Swap sections 8.4 a	nd 8.5			Suggester	Domodu	parsing uniour.			
Proposed Response	Response Status O			Delete	e SCH from th	ne standard			
				Proposed	Response	Response Sta	atus O		
Cl 8.6 SC Pirat, Patrick Comment Type E Usually the section of document) is placed SuggestedRemedy Swap sections 8.4 at Proposed Response	P 201 France Telecom Comment Status X on frequency interleaving (or sub-o just before this section and 8.5 Response Status O	L 19 hannel alloca	# 142	Proposed Cl 99 Chu, Liwe Comment SCH r Suggested Delete Proposed	Response SC n Type TR makes frame dRemedy e SCH from th Response	Response Sta S Comment Sta parsing difficult. ne standard Response Sta	ntus O P TMicroele atus X atus O	L ctronics	# <u>115</u>

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general

TYPE: TR/technical required ER/editorial required GR/genera	al required T/technical E/editorial G/general	01 00	Dama 20 of 40
COMMENT STATUS: D/dispatched A/accepted R/rejected	RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn	C/ 99	Page 39 of 49
SORT ORDER: Clause, Subclause, page, line	·	SC	1/15/2007 4:05:53

CI 99 SC	Р	L	# 114	C/ A	SC A.1.1	P 208	L 19	# 249
Chu, Liwen	STMicroelect	ironics		HU, Wend	long	STMicroelectr	onics	
Comment Type TR	Comment Status X			Comment	Type TR	Comment Status X		
The protocol should p SuggestedRemedy Provide basic non ho Proposed Response	provide basic non hopping mod pping mode and DFH mode. <i>Response Status</i> O	de and DFH mo	ode.	Cons shall show group The " SCH dynar not si	dering the follow transmit in each n in Figure 3. W ed together, wh "multiple channe in the text. In fact nic frequency how the support	wing text - ""When in the multip TV channel the SCH frame pre ithin the SCH the BS shall indic ich will allow CPEs to detect th el mode"" implies ""channel bor ct, ""multiple channel mode"" w opping, hence the text describir opping, other multiple channel mode	le channel mode eceded by the s cate which TV c e multiple chan nding"" mode wi ould include chan ng multiple chan odes	e of operation, the BS uperframe preamble as hannels are being nel mode of operation."" th the specially designed annel aggregation and onel support with SCH is
C/ 99 SC	Р	L	# 113	Suggeste	dRemedy			
Chu, Liwen Comment Type TR CMAC put coexisten	STMicroelect Comment Status X ce in pretty important position.	ronics Inter-cell comm	nunication play a	Elimir accor dynar	nate/modify the nmadate other t nic frequency he	""channel bonding"" oriented de ypes of multiple channel opera opping.	escription/proce tion such as cha	dure in the text and annel aggregation and
important role in CMA security. Current draf	AC. The inter-cell communicati t does not support this kind of	on should be e securitv.	ncrypted to guarantee	Proposed	Response	Response Status O		
SuggestedRemedy Provide authenticatio	n, encryption to the inter-cell c	ommunication.		C/ A HU. Wend	SC A.1.1	P 208 STMicroelectr	L 25	# 250
Proposed Response	Response Status O			Comment	Type TR	Comment Status X		
C/ 99 SC Conten	ts P Fox	L	# 263	Supe not a	frame and SCH	are ""channel bonding"" oriented des	ed. The text en cription.	force a ""shall"" which is
Comment Type TR Need a new Section	Comment Status X	Prohibition an	d Exit Procedures (like	Any " made	channel bondin optional in the	g"" oriented descriptions (text, text.	figures, termino	ologies, etc.) shall be
Nework Access and detected or the CPE	Initialization) in a problematic e has moved.	event, such as	an incumbent signal is	Proposea	Response	Response Status O		
SuggestedRemedy Add section.				C/ A	SC A.1.2	P 209	L 7	# 251
Proposed Response	Response Status 0			HU, Wend	long	STMicroelectr	onics	
				<i>Comment</i> ""the bondi	<i>Type</i> TR MAC shall neve ng"" mandatory	Comment Status X r change the MAC frame size"" (fixed MAC frame size for the t	- this makes or hree-channel be	otional ""channel onding case).
				Suggeste	dRemedy			
				Any " made	channel bondin optional.	g"" oriented descriptions (text,	figures, termino	logies, etc.) must be
				Proposed	Response	Response Status 0		

C/ A SC **A.1.2** Page 40 of 49 1/15/2007 4:05:53

C/ A SC A.1.3 HU, Wendong	P 209 L 12 STMicroelectronics	# 253	C/ A HU, Wend	SC A.1.5 long	P 214 STMicroelectr	L 1 onics	# 255
Comment Type TR No definition for termo Not clear how ""chann	Comment Status X blogies such as ""active set"", FA, Spectrum Mana hel grouping and matching"" would benefit overhe	ager, etc. ad reduction.	<i>Comment</i> This f is also	<i>Type</i> TR eature is to supp poptional.	Comment Status X ort optional channel bonding.	So it shall make	it clear that this feature
SuggestedRemedy Need more informatio method does not bene	n to be convienced. Remove ""channel grouping efit the system operation with justified complexity.	and matching"" if this	Suggester Repla featur	dRemedy lice ""shall"" with ' 'e.	""may"" or words along the line	e to indicate the	optional nature of this
Proposed Response	Response Status O		Proposed	Response	Response Status O		
C/ A SC A.1.3 HU, Wendong	P 209 L 12 STMicroelectronics	# 252	C/ A Cordeiro,	SC A.1.6 Carlos	<i>P</i> 215 Philips	L 4	# 112
Comment Type TR This section, ""channe specified in the spec. SuggestedRemedy it has to clarify if FDD	Comment Status X el grouping and matching"", is designed for FDD r is supported, and how it is supported if it is suppo	node, which is not orted.	Comment I belie the T 802.2 some	<i>Type</i> TR we that 802.22 W V white spaces. I 2 networks and r (or all) of the 802	Comment Status X VG is not assuming that 802.22 f that is the case, consider a s non-802.22 networks operating 2.22 networks operate using D	2 will be the only cenario where w g in vicinity. In ac DFH.	y system operating in ve have a number of ddition, assume that
Proposed Response	Response Status O		In this onto t unlike	s scenario, isn't tr he other non-802 ly that these sys	ue to say that the DFH-enable 2.22 wireless systems operatin tems will coordinate.	ed 802.22 netwo ig in the same b	rks may constantly step and? After all, it is
C/ A SC A.1.4.1 HU, Wendong	P 211 L 16 STMicroelectronics	# 254	To ma same simila	ake matters wors band can also e r way?	e, would it not be possible tha mploy something similar to DF	t the non-802.22 H and harm 802	2 systems using the 2.22 operations in a
The ""Hidden Incumbe of BS and CPE to the	ent Scenarios" should not exist, given the fact the DTV protection contour are enfored.	at keep-out distances	Pleas unlice	e note that the pi insed bands due	roblem may be particularly wo to the much higher transmit po	rse here than in owers of 802.22	other existing devices.
SuggestedRemedy This feature as descrithe A.1.4.	bed in subclause A.1.4 would not be appropriate.	Revise or remove	<i>Suggeste</i> The V DFH.	<i>dRemedy</i> VG needs to disc Do we need som	uss this and come to a resolut ne sort of etiquette?	tion on the best	approach to employ
Proposed Response	Response Status O		Proposed	Response	Response Status O		

C/ A SC **A.1.6**

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C/ A SC A.1.6 HU, Wendong	P 215 STMicroelectr	L 4 onics	# 256		C/ A HU, Wendo	SC A.3 ng	P 227 STMicroelectro	L 20 onics	# 258
Comment Type ER	Comment Status X				Comment T	ype TR	Comment Status X		
DHF text and figures n	need to be refine.				With qu	iet period alloc	ated within a channel detection	time (2s), cha	nnel can be vacated
SuggestedRemedy	the DHE text and figures				with gua faster th	arantee within han what is act	the required time limit. Why do urally needed?	we need extra	effort to vacate channel
					SuggestedF	Remedy			
Proposed Response	Response Status O				Address	s the issue and	I question and revise the related	d mehtod.	
					Proposed R	lesponse	Response Status O		
C/ A SC A.1.7 HU, Wendong	P 222 STMicroelectr	L 3 onics	# 257			SC A 3	D 227	1.00	# loco
Comment Type TR	Comment Status X				U A HII Wendo	30 A.3	F ZZI STMicroelectro	L ZO	# 239
The ""out-band distribu probability of false alar arrange of a WRAN de	utive sensing scheme for active rm by reporting incumbent app evice.	e set 2"" schem bearances out si	e would increase the de the interference		Comment T How to guarant	<i>ype</i> TR synchronized seed for opport	Comment Status X sensing frames of overlapped V unistic sensing?	VRANs so that	clean sensing is
Address the issue of o	wer-protection (increased Pfa)	Roviso the sch	neme		SuggestedF	Remedy			
Proposed Persponse	Responses Status		lenie.		Address	s the issue by	revising the related mehtod.		
Floposed Response	Response Status U				Proposed R	esponse	Response Status O		
C/ A SC A.1.7.2	P 224	L 7	# 99						
Cordeiro, Carlos	Philips				C/ A	SC A.3	P 227	L 29	# 260
Comment Type FR	Comment Status X				HU, Wendo	ng	STMicroelectro	onics	
There is no need for a	'Conclusion' section here				Comment T	ype TR	Comment Status X		
SuggestedRemedy					""Note that the Channel Detection Time Interval need not be of fixed duration. The sensing duration also need not occupy exactly one frame."" - Why is this important?				
Delete this section					SuaaestedF	Remedv		, ,	
Proposed Response	Response Status 0				Address	s the question	and revise the text if appropriat	e.	
					Proposed R	Response	Response Status O		
C/ A SC A.2.3 HU, Wendong	P 226 STMicroelectr	L 5 onics	# 248		,		· · · · · ·		
Comment Type TR Figure A.22 is based of mandatory case where	Comment Status X on the optional channel bondin e single channel is in use by th	g feature, hence le system.	e it is appropriate for t	the					
SuggestedRemedy Modify Figure A.22 to	reflect the mandatory single ch	nannel case.							
Proposed Response	Response Status O								

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general COMMENT STATUS: D/dispatched A/accepted R/rejected RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn SORT ORDER: Clause, Subclause, page, line

C/ A SC **A.3**

J pre-draft WG Review v0.2

C/ A HU Wend	SC A.3	P 228 STMicroelectr	L 14	# 261	C/ A Cordeiro	SC A.4. Carlos	.3 <i>P</i> 230 Philips	L 4	# 103
Comment		Comment Status X	01105		Comment		Comment Status X		
Consi	der the text - ""w	henever a CPE is neither tran	smitting nor rec	eiving it shall first	Is this	an impleme	entation issue?		
perfor	m out-of-band so	ensing through the method de	picted in Figure	43. "" Actually out-of-	Suggested	dRemedy			
Suggester	dRomody	conducted when a CPE is rece	aving.		In cas	e this is abo	out implementation, this section	should be deleted.	Otherwise, the
Resol	ve the issue by r	evising the method.			algorit	thm has to b	be specified. Ask the MAC team	to undertake this d	liscussion.
Proposed	Response	Response Status O			Proposed	Response	Response Status O		
					C/ A	SC A.4.	.4 P 230	L 12	# 262
C/ A	SC A.4.1	P 229	L 17	# 101	HU, Wend	long	STMicroele	ectronics	
Cordeiro,	Carlos	Philips			Comment	Туре Т	R Comment Status X		
Comment	Type TR	Comment Status X	ture de ONA de se	na tha fuance analysis	Updat	te the text fo	or Spectrum Contention Algorithr	n.	
nere O	is no specificati		it work? what a	re the frame exchanges?	Suggestee	dRemedy			
Suggestee	dRemedy ds to be specifie	d and integrated with the CBP	nrotocol Ask M	IAC team to undertake	Repla	ce subclaus	se A.4.4 with text from the follow	ing document:	doc
this ta	isk.				Proposed	Response	Response Status 0		
Proposed	Response	Response Status O							
	50 4 4 2	D 220	/ 25	# 400	CI A	SC A.4.	4 P 230	L 12	# 104
Cordeiro.	Carlos	P 229 Philips	L Z 3	# 102	Cordeiro,	Carlos	Philips		
Comment	Type TR	Comment Status X			Comment	Type TF	R Comment Status X		
There	is no specificati	on for this scheme. How does	it work? What a	re the frame exchanges?	Currente	lis no speci	incation for this scheme. How do	es it work? what a	re the frame exchanges?
Suggestee	dRemedy				Suggested	arcemeay ds to be spe	ecified and integrated with the CI	BP protocol Ask th	e MAC team to
It nee	ds to be specifie	d and integrated with the CBP	protocol. Ask th	ne MAC team to	under	take this tas	sk.		
Under	take this task.				Proposed	Response	Response Status O		
Proposed	Response	Response Status 0			_				
					CI A	SC A.4.	.5 P 233	L 11	# 105
					Cordeiro,	Carlos	Philips		
					Comment	Туре Т	R Comment Status X		
					There	is no speci	fication for this scheme. How do	es it work? What a	re the frame exchanges?
					Suggestee	dRemedy			
					lt nee under	ds to be spe take this tas	ecified and integrated with the Cl sk.	BP protocol. Ask th	e MAC team to

 TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general
 C/ A
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 COMMENT STATUS: D/dispatched A/accepted R/rejected RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn
 C/ A
 Page 43 of 49

 SORT ORDER:
 Clause, Subclause, page, line
 SC A4.5
 1/15/2007 4:05:53

CI

CI A	SC A.5.1	P 236	L 22	# 133	
Chu, Liwen		STMicroelect	ronics		
Comment 7 Here th multiple 802.22	<i>Type</i> TR ne draft says that e number of the BSs"". What do	Comment Status X ""Upon initialization, this CF maximum superframe size ir es ""multiple number"" mean	PE shall scan the n search for SCH ?	desired channel fo packets transmitter	ra dby
Suggestedi Clarify	Remedy it.				
Proposed F	Response	Response Status O			
C/ AA	SC AA.A.2	P 224 Huawei Tech	L	# 59	
Chang, Soc	o-Young	Huawei Tech	nologies		

Comment Type TR Comment Status X

In upstream, the polling strategy for BW requesting of the CPEs in the extended coverage is not efficient. This is because the BS shall waste time polling the AAS-CPEs which do not have BW request while the CPEs do have a BW requesting may wait for quite a long time before the BS poll them. It may be necessary to extend the existing upstream access to include a more efficient BW requesting mechanism for upstream of AAS-CPE.

SuggestedRemedy

To remedy the comment, the BS can maintain N fixed beams and capture the bandwidth request from CPEs from all the beams simultaneously (using N parallel correlators). The N fixed beams shall cover the whole cell and hence, each AAS-CPE may belong to one of these beams. When an AAS-CPE sends an autonomous upstream bandwidth request, at least one of the N correlators at the BS could capture the request. Refer to 22-07-xxxx-00-0000 Huawei Random Access Adaptive Antenna which will be posted in the Jan. meeting document area for details.

Proposed Response

Response Status 0

AA	SC AA.c.3	P 253	L 1	# 6
ang, S	oo-Youna	Huawei Technol	oaies	-

Chang, Soo-Young

Comment Type TR Comment Status X

When the narrowband incumbent (i.e. wireless microphone) users operate in a single TV channel, they only occupy portion of the TV channel, and the rest vacant channel can be used by other IU or RU users with guard band from the narrowband incumbent users. However, not only the rest vacant channel but also the neighboring TV channel can not be used by the WRAN system in fractional usage mode or channel bonding mode. This would waste the vacate spectrum resource.

SugaestedRemedv

One solution for this case is to divide a WRAN sub-band into M fractional sub-bands with the width 1MHz. The core idea of the fractional bandwidth usage is that WRAN system will transmit preamble, pilot and data in fractional sub-bands that will be used. The fractional bandwidth usage mode can be divided into two types according to whether or not preamble be segmented, segmented preamble insertion type and full preamble insertion type.

Segmented Preamble Insertion:

BS assigns pseudo random sequence PNi whose length equals to length of subcarrier band in fragment sub-band that will be used, then transmit pilot and data in this part of fragmented sub-band. These M preamble sequences will form a full OFDM preamble sequence in subband. The fractional bandwidth usage mode can be identified by detecting whether PN sequence exits in corresponding fragmented sub-band. This detection method can be implemented by frequency domain correlation and compare correlation values with predetermined threshold after OFDM demodulation.

Full Preamble Insertion:

First of all, receiver is notified of the mode of fractional bandwidth in advance (the method of segmented preamble insertion). The next step is inserting the longer or flexible PN sequence in corresponding fragmented sub-band. The difference between segmented and full insertions is that receiver will take out received data in unused fragmented sub-band before frequency domain correlation, and using the rest of data for correlation and synchronization.

Proposed Response Response Status 0

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general COMMENT STATUS: D/dispatched A/accepted R/rejected RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn SORT ORDER: Clause, Subclause, page, line

 $C \mid \mathbf{A}\mathbf{A}$ SC AA.c.3 Page 44 of 49 1/15/2007 4:05:53

CI AA	SC AA.C.6	P 258	L 1	# 60	C/ AA	SC AA.D.11.3	P 280	L 5	# 67	
Chang, Soc	o-Young	Huawei Techno	ologies		Chang, So	po-Young	Huawei Techr	ologies		

Chang, Soo-Young

Comment Type **TR** Comment Status X

The existing schemes do not fully utilize the information provided by limited feedback, which can already be used for the following:

1. Power adaptation

2. MCS adaptation

3. Mode selection (number of spatial streams)

Furthermore, the current schemes do not take into account the potential spatial correlation between antennas. This is important because antennas are likely to be correlated when the operating frequency is low.

SuggestedRemedy

We propose an integrated framework of joint optimizing the MCS, mode and precoder adaptation design for WRAN systems with limited feedback. Two MAC management messages are show proposed to support our limited feedback design. Refer to 22-07-xxxx-00-0000 Huawei MIMO Limited Feedback which will be posted in the Jan. meeting document area for details.

Proposed Response Response Status 0 Chang, Soo-Young Huawei Technologies

Comment Status X Comment Type TR

When channel measurement is mandated by the BS, CPEs shall make the required channel measurement. The channel measurements can range from simple received signal strength measurements (RSSI) or signal energy in a given TV band or frequency, or the detection of the characteristics of the signal. The RSSI can be used for quality measurement of the signal from the BS station, or for detecting the presence of any other signal in a TV band.

One point which can be improved as following: Because a WRAN system needs to detect interference from other system, every CPE should have the capability of sensing. The basic sensing methods of WRAN are coarse power detection and fine/feature detection. But, WRAN will be used in many countries and regions, coexistence environments are different in different regions, and the coexistence requirements will change in the same region. For example, the LU to be detected is ASTC in the U. S. A., while the LU is DVB in China. Moreover, the LU is DVB at present in China, but DMB may be used as the technology is developed. Hence, as the coexistence environment changes, it is needed that WRAN can detect new LU systems. In this case, WRAN system will deploy CPEs with the capability of detecting new LU systems. So, CPEs with capabilities of detecting different LU systems will coexist in the same cell. In addition, new advanced sensing technologies will be developed for old LU systems as the technologies of WRAN system advanced. CPEs with new sensing technologies will exist in markets, and then CPEs with different capabilities of detection will coexist in a WRAN cell. For that case, BS does not know detecting capabilities of every CPE, which means that BS does not know detecting methods of CPEs to detect signals of LUs. Otherwise, in the process of data fusion, WRAN needs to distinguish sensing reports from every CPE, especially in fine detection phase. For example, there are some CPEs (set 1) with old ATSC system fine characteristics detection method called Method 1 and some CPEs (set 2) with the latest ATSC system fine characteristics detection method called Method 2. When BS requests the CPEs of set 1 and set 2 to detect ATSC signals, because Method 2 is more veracious than Method 1, in data fusion, the BS must have more trust in the sensing result of CPEs in set 2 than in set 1. So it is very important for the whole sensing judgment process that the BS knows sensing capabilities of every CPE in advance.

SuggestedRemedy

The procedure to improve sensing capability for this case as follows:

First, every CPE notifies detection capability to BS. BS cluster CPEs with different sensing goal (for example, BS can notify CPEs in an area to detect a specific type of interference signals). When BS requests CPEs in every cluster to send sensing reports back to BS, it will assign detection methods to CPEs. Finally, CPEs send sensing reports to BS, and BS judges the existence of interferences by data fusion.

Proposed Response Response Status **O**

CI AA SC AA.D.11.3

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CI AA SC AA4.3 P	230 L 4	# 54	C/ Annex SC 11.3	P 280	L 5	# 160	
Ji, Baowei Sam	Shellhammer, Steve	Qualcomm					
Comment Type TR Comment Statu Spectrum Etiquette was included in the Wo moved to A.4.3 with all other optional featu contribution have not been captured in the necessary for the completeness of the stat SuggestedRemedy Please replace section A.4.3 with the text s 0023-00-0000_Proposed_text_changes_o Proposed Response Response Status	X draft v0.1 (Section res. However, the o draft from the begin idard. Suggested in Sectio n_Spectrum_Etique O	n 6.21.2.3.3), and has been details in the original ning. Those details are n 2.0 of the document 22-07- tte.doc.	Comment Type TR The section states ""Th strength measurement detection of the charac of the signal from the E band. The measurement However, there are no SuggestedRemedy Change text to ""The m	Comment Status X e channel measurements car s (RSSI) or signal energy in a teristics of the signal. The RS S station, or for detecting the ent messages are specified in specifics about what the CPE	a range from sin given TV band SI can be used presence of an 6.8.22"" is to report in C pecified in 6.8.2	nple received signal or frequency, or the for quality measureme y other signal in a TV Clause 6.8.22.	
Cl Annex SC P Mazzarese, David Sam	240 L isung	# 138	Cl Annex SC 11.3.1	Response Status 0 P 280	L 13	# 161	
""Multiple CPE joint TPC"" was identified a zone"" in 22-06-0200-01-0000_Table_of_C Annex B.2 in 22-06-0259-00-0000_v0.2_w The current transmitted EIRP control mech individual WRAN device meets the D/U rat However, when multiple WRAN devices ar simultaneously, the interferences induced is proposed herein for the mandatory joint devices simultaneously transmitting on the aggregate interference created at the edge are located in a certain vicinity of each other	s ""URGENT work - ptions_in_P802-22 ith_line_numbers is anism guarantees t io requirement at the e scheduled to tran at the TV protected transmitted power c same TV channel, of the TV protected er.	results needed for green 	Shellhammer, Steve Qualcomm Comment Type TR Comment Status X The text states ""(iii) signal detection block to process the signals and detect the presence interested signal or identify the signal types"" However, there is no support for ""identifying the signal types"" in the document. SuggestedRemedy Change text to ""(iii) signal detection block to detect the presence of various signal types Proposed Response Response Status O				

SuggestedRemedy

Section 2.0 in the companion document of this comment [22-07-016-00-

0000_Proposed_text_changes_to_22-06-0259-00-0000_v0.2_AnnexB2] presents the proposed text for inclusion as sections 6.13.5.3 and 6.13.5.4, in replacement of Annex B.2. Sections 6.13.5.1 and 6.13.5.2 have been submitted in a separate comment supported by the document 22-06-0219-01-0000_Proposed_text_changes_to_P802-22_D0.1_Final_Section_6_13_5.doc, as a replacement of section 6.13.5 in 22-06-0259-00-

0000_v0.2_with_line_numbers.

Proposed Response Response Status **O**

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general COMMENT STATUS: D/dispatched A/accepted R/rejected RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn SORT ORDER: Clause, Subclause, page, line

C/ Annex SC 11.3.1

Cl Annex Shellhamme	SC 11.3. er, Steve	1 P 280 Qualcomn	L 1825	# 162	<i>Cl</i> Annex Shellhammer,	SC 11.3.22 Steve	P 282 Qualcomm	L	# 164		
Comment T	ype TR	Comment Status X			Comment Typ	e TR	Comment Status X	A 111			
The text	t says that " :h In the	"The unoccupied channel sel two step approach, multiple u	ection may be done	by one step or two step	I have not seen any simulation results for this technique. So it is unclear how well it works.						
determi	ned by ene	rgy detection method""			SuggestedRe	medy					
Howeve techniqu clear wh another useful fo licensec	er, the worki ue is used, nat value a technqiue or identifyin d system.	ing document does not have a so there is no way of implement two step approach has. If the would need to be attempted s g channels that are definatley	any support for spec enting a two step ap ED does not detect ubsequently anyway occupied by somet	ifying what detection proach. Also, it is not a signal it is likely that ys. So the ED is only hing, not necessarity a	Do one of 1. Supply 2 Delete t <i>Proposed Res</i>	the following simulation re his section. sponse	g, esults. Response Status O				
SugaestedF	Remedv										
Either d detectio	rop the enti n technique	re secion on the ""two step ap e in the document.	oproach"" or add sup	port for specifying the	Cl Annex Shellhammer,	SC 11.3.3.1 Steve	P 282 Qualcomm	L	# 165		
Proposed R	esponse	Response Status 0			Comment Typ This seen ""fine ene	be TR ns like anothe rgy-based de	Comment Status X er section on energy detection. It etection"" means. What does it me	s not clea an to be	ar to me what the phrase ""fine?""		
C/ Annex	SC 11.3.	2.1 <i>P</i> 281	L	# 163	SuggestedRe	medy					
Shellhamme	er, Steve	Qualcomn	n		If they is a	anything new	in this section add to the engergy	detectior	n section, otherwise delete.		
Comment T	ype TR	Comment Status X			Proposed Res	sponse	Response Status O				
This sec BS. In t can tell.	ction decrib the section It is not clo	es how to calcuate the RSSI a on measurement reporting the ear at all that RSSI is a useful	and states that the F ere are no reports of report for sensing.	RSSI is reported to the the RSSI, as far as I	Cl Annex Shellhammer,	SC 11.3.3.2. Steve	1 <i>P</i> 283 Qualcomm	L	# [166		
Also, sir be a me	nce the equ easure of th	ation for p(k) divides by the nee power and not the energy.	umber of samples, i	t seems that this might	Comment Typ	e TR	Comment Status X				
SuggestedF	Remedy				I do not b	elieve I have	seen any results for this approach	i, so I am	not clear how well it works.		
Do one	of the follow	ving,			Suggested	madu					
1. Show docume	that RSSI	is a useful report and then ad	ded support for RSS	SI reporting to the	Suggesteurie Supply sir	mulation resu	ults for this approach.				
2. Delet	e this section	on.			i ioposed Nes	,00100	Nesponse Status U				
Proposed R	esponse	Response Status 0									

C/ Annex SC 11.3.3.2.1

IEEE P802.22		IEEE	P802.22 WRAN pre-dr	aft WG Review v0.2 com	ments	l pre-dr	aft WG Review v0.2
Cl Annex SC 11.3.3.2.2 Shellhammer, Steve	P 283 Qualcomm	L	# 167	Cl Annex SC 11.3.3.3 Shellhammer, Steve	P 288 Qualcomm	L	# 170
Comment Type TR Comme This approach has been shown to are removed and replaced with a approach has been shown to work improved method that uses ""peal than the max of the correlator out	ent Status X have issues. How max() operation on k and simulation res k combining"" has b put, if for longer sen	ever, if the run the output of th sults have been been shown to g nsing times.	ning mean and variance ne correlator, this n presented. Also, an give better performance	Comment Type TR I have not seen any res SuggestedRemedy Supply simulation resul Proposed Response	Comment Status X sults for this approach. ts for this approach.		
SuggestedRemedy							
Replace the text with the running on the ""peak combining"" techniq Proposed Response Respon	mean and variance jue. se Status O	with a max ope	eration. Also, add text	Cl Annex SC 11.3.3.4 Shellhammer, Steve	P 290 Qualcomm	L	# 171
C/ Annex SC 11.3.3.2.3 Shellhammer, Steve	P 285 Qualcomm	L	# 168	Comment Type TR It is not clear to me the technique. SuggestedRemedy	⊮s not give any	specific sensing	
This is an interesting idea. However, the CPE is required to track the BS clock, which is accurate to within 2 ppm. It is not clear that having a more accurate clock is useful. It may be useful, but I have not seen any results to show that it is useful.				Explain what the purpo Proposed Response	se of this section is. Response Status O		
SuggestedRemedy Supply some simulation results sh Proposed Response Respon	nowing that this is a se <i>Status</i> O	useful feature.		Cl Annex SC 11.3.4 Shellhammer, Steve Comment Type TR	P 291 Qualcomm Comment Status X	L	# <u>172</u>
Cl Annex SC 11.3.3.2.3 Shellhammer, Steve Comment Type TR Comme Table 239 is a useful table. If is n only two of the rows in this table v completion of the DTV transition	P 288 Qualcomm ent Status X ny impression that a vill still apply. Since	L after the DTV tra e 802.22 can or	# 169 ansition is complete that any be deployed after the	I do not believe I have s section. SuggestedRemedy Supply simulation resul Proposed Response	seen any simulation results for ts for the approaches describe <i>Response Status</i> O	any of the idea ed in this sectio	as described in this n.
SuggestedRemedy Update this table to be correct after should be in a section giving back course, it should be in an information	er the completion of group information c	f the DTV trans	ition. I think this table ot this section. Of				

Proposed Response Response Status 0

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general COMMENT STATUS: D/dispatched A/accepted R/rejected RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn SORT ORDER: Clause, Subclause, page, line

C/ Annex SC 11.3.4

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C/ C4	SC C4.1	P 251	L 4	# 52
Benko	, John	France Telecom		

Comment Type T Comment Status X

The duo-binary turbo is missing some parts. Specifically the interleaver parameters (P,P1,P2,P3) are not defined for relevant block sizes for 802.22. In addition the block concatention scheme is not defined (which is required for OFDMA). The missing parts are included in an updated version of the duo-binary turbo code. The changes are only the addition of the interleavers parameters, the concatention scheme, and a puncturing scheme for a rate 5/6 code. Everything else remains the same.

SuggestedRemedy

Incorporate sections of updated duo-binary turbo code in 22-07-0030-00-0000.doc

Proposed Response Response Status **0**