Preamble ad-hoc report

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Source: Peiying Zhu, Preamble Ad-hoc group

Venue: Aug. 28, 2004 teleconference

Base Document:
Purpose: Preamble ad-hoc report

Preamble Ad-Hoc CC Attendees

- ~50 participants on each CC
- Due to the larger number of participants, I only captured the company names here
  - Adavcom, Alvarion; Arraycom; Beceem; Broadband Mobile Technologies; ETRI; Hanaro Telecom; Hexagon; Intel; LGE; KT; Motorola; Nextel; Nortel; Proxim; Qualcomm; Runcom; SOLiD Technologies; Samsung; Sprint; ST;ZTE

Activities

- Six conference calls were held on July 27, Aug. 3, Aug. 10, Aug. 13, Aug. 23, Aug. 25
- There were 7 contributions from the Portland meeting, 37 new contributions/revisions were submitted to ad-hoc temporary upload server http://temp.wirelessman.org and were discussed in ad-hoc CC.
- One consensus document generated on preamble requirements and desirable features, see Preamble_design_requirement (ad-hoc tele conference 07_27 agreement) .ppt in ad-hoc temp server.
- The topics were converged to
  - Common Sync Symbol
  - Preamble sequence design
  - MIMO Mid-amble

Common Sync Symbol

- **Consensus reached to add a Common Sync Symbol with time domain repetition structure and without changing the existing preamble**
- **Two similar joint contributions were discussed: 261 and 327**
  - Both have the same structure design
  - 216: Sync symbol is optional, located in the last DL OFDM symbol, controlled overhead
  - 327: Sync symbol is mandatory, located before the existing preamble, occurs every frame
- **Contribution 261 received the wide support from ad-hoc group except one member according to the straw poll conducted on Aug. 23 CC*. The results are:**
    - Members who are against the contribution 261: Jiho from Samsun
    - Members who are against the contribution 327:
      - Yossi from Runcom
      - Sriram from Beceem
      - Izhar from Adavcom
      - Avi from Hexagon
      - Mark from Motorola
      - Jose from Intel

*** Members from the following 18 companies are present when the poll was done: Adavcom, Alvarion; Beceem; Broadband Mobile Technologies; ETRI; Hanaro Telecom; Hexagon; Intel; KT; LGE; Motorola; Nortel; Qualcomm; Runcom; SOLiD Technologies; Samsung; Sprint; ZTE**

Preamble Sequence Design

- **6 competing solutions, one was removed from further discussion due to lack of support from ad-hoc straw poll**
- **Straw poll conducted on PN vs Poly phase design approach**
  - **Majority support for PN type of sequence design: 71% vs. 28%**
- **Straw poll conducted on preference of 5 remaining proposals**
  - **Proposal from Runcom received the most support (44%), no proposal received majority suppport.**

Poll 1: Do you support PN type sequence? (yes or no or abstain)
Poll 2: Do you support Poly phase type sequence? (yes or no or abstain)
Poll 3: Which sequence design do you support? (Chose 1-5 or abstain)

1. Contribution from Tal (Alvarion), Preamble adhoc PRBS based design
2. Contribution 241 from Jeff et al.(Motorola)
3. Contribution 125 from Yossi et al.(Runcom)
4. Contribution 164r1 from Jiho et al.(Samsung)
5. Contribution 245 from Jason et al.(ZTE)

	yes	no	abstain	total voters	Yes percentage		
Poll 1 results	37	14	1	52	71.15%		
Poll 2 results	15	36	1	52	28.85%		
	1 (Alvarion)	2 (Motorola)	3 (Runcom)	4 (Samsung)	5 (ZTE)	abstain	Total voters
Poll 3 resutls	0	8	23	13	5	3	52
Percentage	0.00%	15.38%	44.23%	25.00%	9.62%	5.77%	

MIMO Mid-amble

- **Consensus reached to support the mid-amble concept.**
- **4 contributions related to mid-amble were submitted: Beceem, Samsung, Nortel and ZTE**
- **Proposals from Beceem, Samsung, Nortel and ZTEwere harmonized to the contribution 290r1 and were discussed in ad-hoc CC.**
- **Other members from Runcom, Motorola and TI expressed the interests in contributing to the harmonized proposal.**

Comments Related to Preambles

List of submitted comments, related contributions and outcomes of preamble ad-hoc discussions

Comment #	Comment by	Contribution #	Notes	Ad-hoc results
849	Mark Cudas	241	GCL sequence	No consensus
850	Itzik Kitroser	125	Preamble sequence	No consensus, most support from strawpoll
851	Irving Wang	265	CAZAC sequnece	No consensus
972	Anand Dabak	279r1	Hierarchical Preamble Design	No support from ad-hoc
852	SeungJoo Maeng	327	Common SYNC Symbol	Many objections
802	SeungJoo Maeng	328	Operating Mode Identification	No consensus
948, 952, 961, 1001	Raja Banerjea, Kamlesh Rath, Wen Tong	261	Common SYNC Symbol	Everyone supported except Jiho from Samsung
997	PyungSu Park	276	Clarification of cell search	Not submitted to ad-hoc
1007	Peiying Zhu		ad-hoc outcome place holder	
878	Jing Wang	302	MIMO Midamble	Consensus on concept. Harmonized to 290r1
953,962	Kamlesh Rath	290	MIMO Midamble	
1000	Wen Tong	323	MIMO Midamble	