

3GPP TSG-RAN Working Group 1, Meeting #3  
Nynäshamn, March 22-26 1999

**Agenda Item:**

**Source:** Siemens AG

**Title:** Multiframe Structure for CCPCH in TDD Mode

**Document for:** Decision

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## Scope

With this contribution additional information is given for the multiframe structure of the CCPCH in TDD mode. It should be seen as an addition to TDoc TSG RAN WG1 (99)161 – “Recommended text changes according to decisions on PSCH/CCPCH in TDD”. The text below gives examples of TDD Multiframes in the case 2 of PSCH/CCPCH schemes. It should be treated in the context of TDoc 161 at the WG1 meeting.

It is recommended to include the text below in S1.21, “Transport Channels and Physical Channels (TDD)”.

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## Annex A (Informative)

### CCPCH Multiframe Structure

In the following figures A.1 to A.3 some examples for Multiframe Structures on CCPCH are given. The figures show the placement of Common Transport Channels on the Common Control Physical Channel. Especially those CCPCH containing the BCH are depicted. Additional CCPCH capacity can be allocated on other codes and timeslots of course, e.g. FACH capacity is related to overall cell capacity and can be configured according to the actual needs. Channel capacities in the annex are derived using bursts with short midambles (Burst format 2). Every TrCH-box in the figures is assumed to be valid for two frames (see row 'Frame #'), i.e. the transport channels in CCPCH have an interleaving time of 20msec.

The figures A.1 to A.3 as given below are considered for case 2) of Physical Synchronisation Channel (PSCH), cf. section 7.4. In this case CCPCH is to be transmitted in timeslots  $k$  and  $k+8$ . The BCH is split on those timeslots  $k$  and  $k+8$  in a redundant way, thus a UE can collect the BCH information even if one of both slots is interfered.

The actual CCPCH Multiframe Scheme used in the cell is described and broadcast on Primary BCH. Thus the system information structure has its roots in this particular transport channel and allocations of other Common Channels can be handled this way, i.e. by pointing from primary BCH.

**Recommended Additions to S1.21 depicting CCPCH Multiframe Structure in TDD**

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TDoc TSG RAN WG1 (99)159, 'Multiframe Structure for CCPCH in TDD Mode'

Frame #	0 1	2 3	4 5	6 7	8 9	10 11	12 13	14 15	16 17	18 19	20 21	22 23	24 25	26 27	28 29	30 31	32 33	34 35	36 37	38 39	40 41	42 43	44 45	46 47	48 49	50 51	52 53	54 55	56 57	58 59 60 61 62 63 64 65 66 67 68 69 70 71		
CCPCH in TS k, Code 0	Dark	Light	Dark	Dark	Dark	Dark	Dark	Dark	Dark	Dark	Dark	Light	Light	Light	Light	Light	Light	Light	Light	Dark	Dark	Dark	Dark	Dark	Dark	Dark	Dark	Dark	Dark	Dark	Dark	Dark
CCPCH in TS k+8, Co 0	Light	Light	Light	Light	Light	Light	Light	Light	Light	Light	Light	Dark	Dark	Dark	Dark	Dark	Dark	Dark	Dark	Dark	Dark	Dark	Dark	Dark	Dark	Dark	Dark	Dark	Dark	Dark	Dark	Dark

Primary BCH 3,07 kbps	Secondary BCH 3,07 kbps	PCH 18,4kbps	FACH 30,7kbps
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Figure A.1: Example for a multiframe structure for DL-CCPCH.

## Recommended Additions to S1.21 depicting CCPCH Multiframe Structure in TDD

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TDoc TSG RAN WG1 (99)159, 'Multiframe Structure for CCPCH in TDD Mode'

Frame #	0	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50	52	54	56	58
	1	3	5	7	9	11	13	15	17	19	21	23	25	27	29	31	33	35	37	39	41	43	45	47	49	51	53	55	57	59
CCPCH in TS k, Code 0																														
CCPCH in TS k, Code n																														
CCPCH in TS k+8, Co 0																														

Primary BCH 3,07 kbps	Secondary BCH 3,07 kbps	PCH 18,4kbps	FACH 58,3kbps
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**Recommended Additions to S1.21 depicting CCPCH Multiframe Structure in TDD**

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TDoc TSG RAN WG1 (99)159, 'Multiframe Structure for CCPCH in TDD Mode'

Figure A.2: Example for a multiframe structure for DL-CCPCH.  $n=1\dots7$

Frame #	0 1	2 3	4 5	6 7	8 9	10 11	12 13	14 15	16 17	18 19	20 21	22 23	24 25	26 27	28 29	30 31	32 33	34 35	36 37	38 39	40 41	42 43	44 45	46 47	48 49	50 51	52 53	54 55	56 57	58 59 60 61 62 63 64 65 66 67 68 69 70 71	
CCPCH in TS k, Code 0	Dark	Light	Dark	Dark	Dark	Dark	Dark	Dark	Light	Light	Light	Light	Light	Light	Light	Light	Light	Light	Light	Light	Dark	Dark	Dark	Dark	Dark	Dark	Light	Light	Light	Light	Light
CCPCH in TS k+8, Co 0	Light	Light	Light	Light	Light	Light	Light	Light	Light	Dark	Dark	Dark	Dark	Dark	Dark	Dark	Dark	Dark	Dark	Dark	Light	Light	Light	Light	Light	Light	Light	Light	Light	Light	Dark

Primary BCH 3,07 kbps	Secondary BCH 1,53 kbps	PCH 18,4kbps	FACH 32,2 kbps
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Figure A.3: Example for a multiframe structure for DL-CCPCH.