

<h2 style="margin: 0;">CHANGE REQUEST</h2>		Please see embedded help file at the bottom of this page for instructions on how to fill in this form correctly.	
25.221 CR 009		Current Version: 3.0.0	
GSM (AA.BB) or 3G (AA.BBB) specification number ↑		↑ CR number as allocated by MCC support team	
For submission to: RAN #6 <small>list expected approval meeting # here ↑</small>		for approval for information	<input checked="" type="checkbox"/> <input type="checkbox"/>
		strategic non-strategic	<input type="checkbox"/> <input type="checkbox"/> <small>(for SMG use only)</small>

Form: CR cover sheet, version 2 for 3GPP and SMG The latest version of this form is available from: <ftp://ftp.3gpp.org/Information/CR-Form-v2.doc>

Proposed change affects: (U)SIM ME UTRAN / Radio Core Network
(at least one should be marked with an X)

Source: Siemens AG, Nokia **Date:** 1st December 99

Subject: Midamble Allocation in UTRA TDD

Work item: _____

Category:	F Correction <input type="checkbox"/> A Corresponds to a correction in an earlier release <input type="checkbox"/> B Addition of feature <input type="checkbox"/> C Functional modification of feature <input checked="" type="checkbox"/> D Editorial modification <input type="checkbox"/>	Release:	Phase 2 <input type="checkbox"/> Release 96 <input type="checkbox"/> Release 97 <input type="checkbox"/> Release 98 <input type="checkbox"/> Release 99 <input checked="" type="checkbox"/> Release 00 <input type="checkbox"/>
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(only one category shall be marked with an X)

Reason for change: Default mappings between midambles and channelisation codes reduce signalling overhead and enhance UE code detection performance.

Clauses affected: 5.8, annex A.3

Other specs affected:	Other 3G core specifications <input type="checkbox"/> Other GSM core specifications <input type="checkbox"/> MS test specifications <input type="checkbox"/> BSS test specifications <input type="checkbox"/> O&M specifications <input type="checkbox"/>	→ List of CRs: → List of CRs: → List of CRs: → List of CRs: → List of CRs:	
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Other comments: _____



<----- double-click here for help and instructions on how to create a CR.

5.8 Midamble Allocation for Physical Channels

In general, midambles are part of the physical channel configuration which is performed by higher layers.

Optionally, if no midamble is allocated by higher layers, a default midamble allocation shall be used. This default midamble allocation is given by a fixed association between midambles and channelisation codes, see annex A.3, and shall be applied individually to all channelisation codes within one time slot. Different associations apply for different burst types and cell configurations with respect to the maximum number of midambles.

5.8.1 Midamble Allocation for DL Physical Channels

For DL physical channels the midamble allocation depends on whether the midambles are signalled by higher layers or by default and whether TxDiversity/Beamforming is used.

5.8.1.1 Midamble Allocation by signalling

5.8.1.1.1 DL Physical Channels without TxDiversity/Beamforming

If the midamble is part of the physical channel configuration, a common midamble shall be assigned to all physical channels in one time slot, except for physical channels providing the beacon function, see 5.4. When PDSCH physical layer signalling based on the midamble is used, each UE that may share the PDSCH shall get an individual midamble, see 5.3.6.

5.8.1.1.2 DL Physical Channels with TxDiversity/Beamforming

When DL beamforming or TX Diversity is used, each user to which TxDiversity/Beamforming is applied and which has a dedicated channel shall get one individual midamble, see 5.2.4.

5.8.1.2 Midamble Allocation by default

If no midamble is allocated by signalling, the UE shall derive the midamble from the associated channelisation code and shall use an individual midamble for each channelisation code, except for physical channels providing the beacon function, see 5.4. For each association between midambles and channelisation codes in annex A.3, there is one primary channelisation code associated to each midamble. A set of secondary channelisation codes is associated to each primary channelisation code. All the secondary channelisation codes within a set use the same midamble as the primary channelisation code to which they are associated.

Higher layers shall allocate the channelisation codes in a particular order. Primary channelisation codes shall be allocated prior to associated secondary channelisation codes. If midambles are reserved for the beacon function, all primary and secondary channelisation codes that are associated with the reserved midambles shall not be used.

Primary and its associated secondary channelisation codes shall not be allocated to different UE's.

In the case that secondary channelisation codes are used, secondary channelisation codes of one set shall be allocated in ascending order, with respect to their numbering.

5.8.2 Midamble Allocation for UL Physical Channels

If the midamble is part of the physical channel configuration, an individual midamble shall be assigned to all UE's in one time slot.

If no midamble is allocated by higher layers, the UE shall derive the midamble from the assigned channelisation code as for DL physical channels. If the UE changes the SF according to the data rate, it shall always vary the channelisation code along the lower branch of the OVSF tree.

A.3 Association between Midambles and Channelisation Codes

The following mapping schemes apply for the association between midambles and channelisation codes if no midamble is allocated by higher layers. Secondary channelisation codes are marked with a (*). These associations apply both for UL and DL.

A.3.1 Association for Burst Type 1 and K=16 Midambles

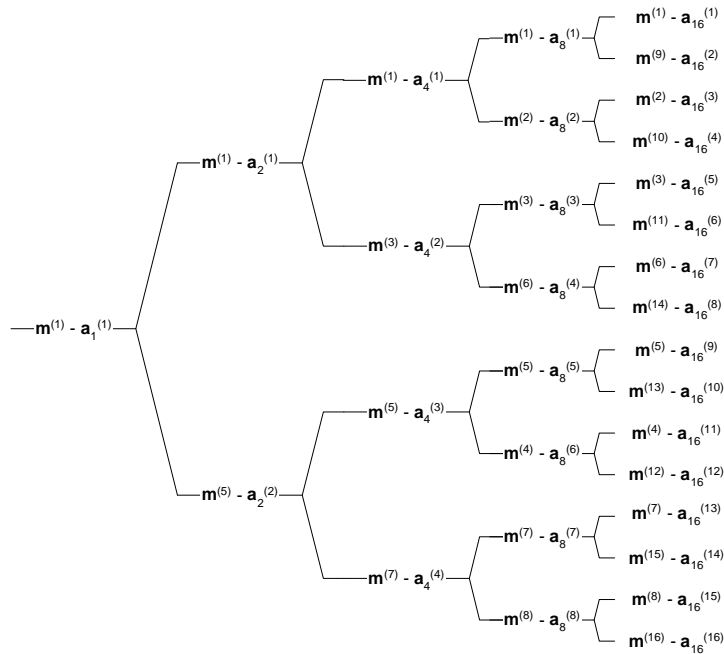


Figure A-1 Association of Midambles to Spreading Codes for Burst Type 1 and K=16

A.3.2 Association for Burst Type 1 and K=8 Midambles

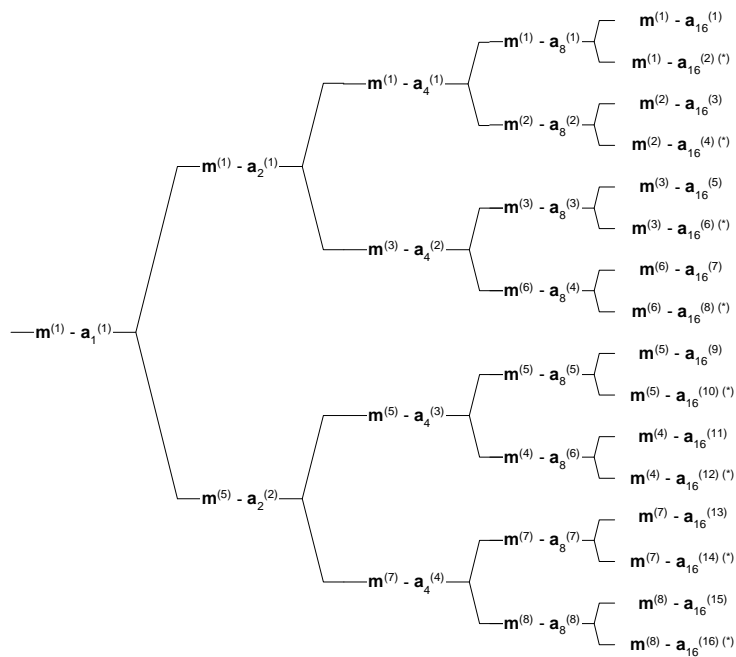


Figure A-2 Association of Midambles to Spreading Codes for Burst Type 1 and K=8

A.3.2 Association for Burst Type 1 and K=4 Midambles

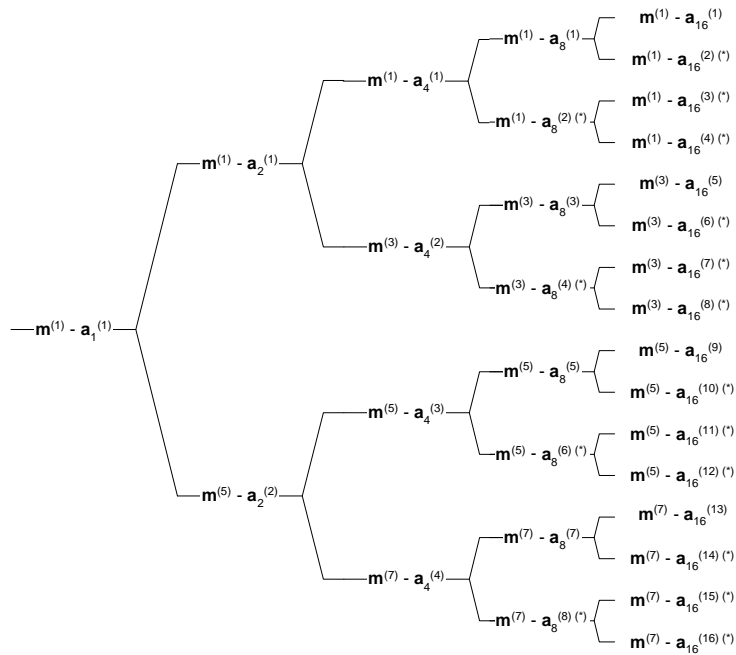


Figure A-3 Association of Midambles to Spreading Codes for Burst Type 1 and K=4

A.3.4 Association for Burst Type 2 and K=6 Midambles

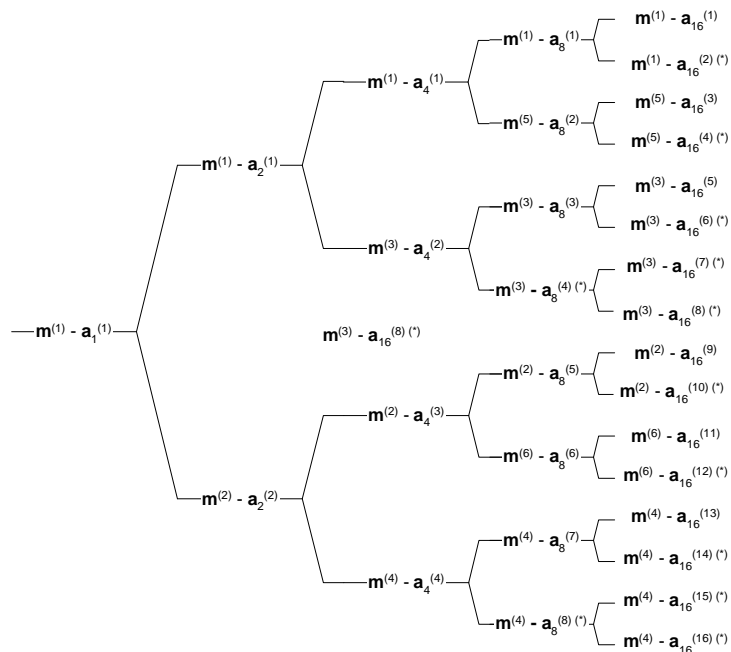


Figure A-4 Association of Midambles to Spreading Codes for Burst Type 2 and K=6

A.3.5 Association for Burst Type 2 and K=3 Midambles

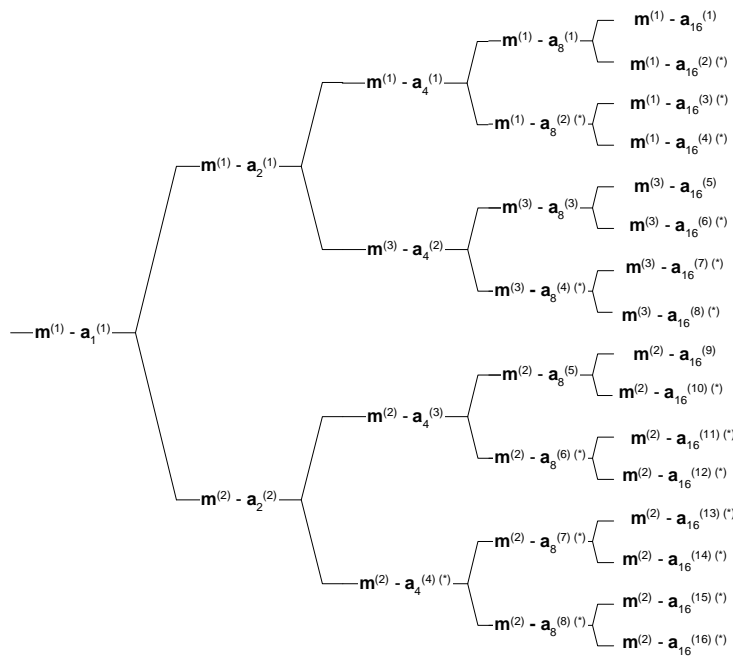


Figure A-5 Association of Midambles to Spreading Codes for Burst Type 2 and K=3

Note that the association for burst type 2 can be derived from the association for burst type 1, using the following table:

Burst Type 1	m(1)	m(2)	m(3)	m(4)	m(5)	m(6)	m(7)	m(8)
Burst Type 2	m(1)	m(5)	m(3)	m(6)	m(2)	m(4)	-	-