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Introduction

The primary CPICH and CCPCH have a fixed channelization code each. Nokia suggests that the primary AICH and PICH should have a fixed channelization code as well.

5.2 Code generation and allocation

5.2.1 Channelization codes

The channelization codes of Figure 9 and Figure 10 are the same codes as used in the uplink, namely Orthogonal Variable Spreading Factor (OVSF) codes that preserve the orthogonality between downlink channels of different rates and spreading factors. The OVSF codes are defined in Figure 2 in Section 4.3.1.

The channelization code for the Primary CPICH is fixed to $c_{256,0}$ and the channelization code for the Primary CCPCH is fixed to $c_{256,1}$. The channelization code for the Primary AICH is fixed to $c_{256,2}$ and the channelization code for the Primary PICH is fixed to $c_{256,3}$. The channelization codes for all other physical channels are assigned by UTRAN.

When compressed mode is implemented by reducing the spreading factor by 2, the OVSF code of spreading factor SF/2 on the path to the root of the code tree from the OVSF code assigned for normal frames is used in the compressed frames. For the case where the scrambling code is changed during compressed frames, an even numbered OVSF code used in normal mode results in using the even alternative scrambling code during compressed frames, while an odd numbered OVSF code used in normal mode results in using the odd alternative scrambling code during compressed frames. The even and odd alternative scrambling codes are described in the next section.

In case the OVSF code on the PDSCH varies from frame to frame, the OVSF codes shall be allocated such a way that the OVSF code(s) below the smallest spreading factor will be from the branch of the code tree pointed by the smallest spreading factor used for the connection. This means that all the codes for UE for the PDSCH connection can be generated according to the OVSF code generation principle from smallest spreading factor code used by the UE on PDSCH.

In case of multicode PDSCH allocation, the same rule applies, but all of the branches identified by the multiple codes, corresponding to the smallest spreading factor, may be used for higher spreading factor allocation.