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## Secondary SCH structure for OHG harmonization: Simulations and Text Proposal

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### 1. Introduction

The Operators Harmonization Group recommendations imply a change of the number of slots per radio frame from 16 to 15. This document concerns the impact of this change for the synchronization and cell search process, and the encoding of scrambling code groups in particular. In [1] a proposal was made to use code words from a (15,3) Reed-Solomon code over an alphabet of size 16; this adapts the original RS(16,3) code to the 15 slot radio frame. In this document we show that the impact of this change on cell search performance is very small, and we present a text proposal documenting these changes in the 3GPP RAN documentation, Sections 25.211 and 25.213 [2][3]. The text proposal assumes 32 code groups. There is a proposal from Ericsson [4] under discussion, which may result in a larger number of code groups (64, 128, or 256), in which case the additional group code words will be included. Note that there are 272 comma-free code words in RS(15,3).

### 2. Simulation results

We compare performance of Stage 2 of the cell search process for the original RS(16,3) based comma-free code words, with the performance of the newly proposed code words from an RS(15,3) code. The RS(15,3) code has a minimum distance of 13 between code words, whereas the RS(16,3) code has a minimum distance of 14.

Interference is modeled as AWGN in our simulations, and we consider a single path Rayleigh fading channel with mobile speed of 3Kmph. 32 scrambling code groups are assumed. One frame (10ms) of accumulation is assumed for both cases, and coherent detection is employed. The result is shown in Figure 1, where the probability of correct detection in Stage 2 is plotted against total SCH SNR. As can be seen, the impact on Stage 2 performance of going to an RS(15,3) code is minimal. This difference will tend to become even smaller when all three stages of the cell search process are considered together.

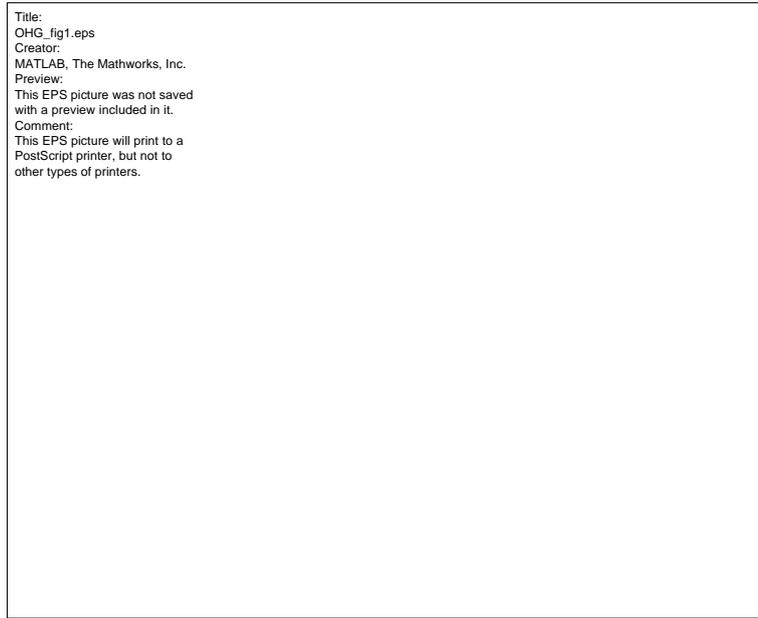


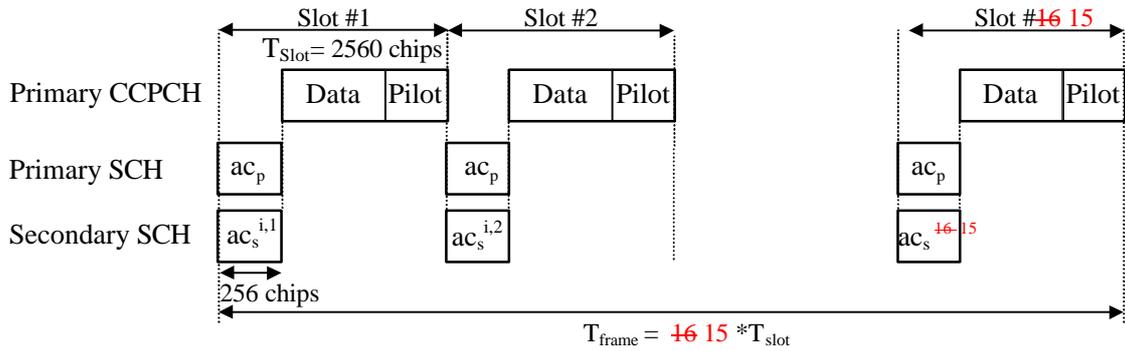
Figure 1. Comparison of Stage 2 performance

### 3. Text proposal

----- Begin text proposal for section 5.3.3.3 of S25.211-----

#### 5.3.3.3 Synchronisation Channel

The Synchronisation Channel (SCH) is a downlink signal used for cell search. The SCH consists of two sub channels, the Primary and Secondary SCH. Figure 1 illustrates the structure of the SCH and the transmission timing relationship with the Primary CCPCH:



$c_p$  : Primary Synchronization Code  
 $c_s^{i,k}$ : One of ~~17~~ 16 possible Secondary Synchronization  
 $(c_s^{i,1}, c_s^{i,2}, \dots, c_s^{i,16-15})$  encode cell specific long scrambling code group  $i$   
 $a$ : Modulation on primary and secondary synchronization codes to indicate STTD encoding on PCCPCH

**Figure 1: Structure of Synchronisation Channel (SCH).**

The Primary SCH consists of a modulated code of length 256 chips, the Primary Synchronisation Code, transmitted once every slot. The Primary Synchronisation Code is the same for every cell in the system and is transmitted time-aligned with the period where the Primary CCPCCH is not transmitted as illustrated in Figure 1.

The Secondary SCH consists of repeatedly transmitting a length ~~17~~ 16 sequence of modulated codes of length 256 chips, the Secondary Synchronisation Codes, transmitted in parallel with the Primary Synchronisation channel. Each Secondary Synchronisation code is chosen from a set of ~~17~~ 16 different codes of length 256. This sequence on the Secondary SCH indicates which of the 32 different code the cell's downlink scrambling code belongs. 32 sequences are used to encode the 32 different code groups each containing 16 scrambling codes.

The primary and secondary synchronization codes are modulated by the symbol  $a$  shown in Figure 1, which indicates the presence/ absence of STTD encoding on the PCCPCH and is given by the following table:

PCCPCH STTD encoded	$a = +1$
PCCPCH not STTD encoded	$a = -1$

----- End of text proposal for section 5.3.3.3 of S25.211 -----

----- Begin text proposal for section 5.2.3.2 of S25.213 -----

### 5.2.3.2 Code Allocation

The 32 sequences are constructed such that their cyclic-shifts are unique, i.e., a non-zero cyclic shift less than ~~17~~ 16 of any of the 32 sequences is not equivalent to some cyclic shift of any other of the 32 sequences. Also, a non-zero cyclic shift less than ~~17~~ 16 of any of the sequences is not equivalent to itself with any other cyclic shift less than ~~17~~ 16. The following sequences are used to encode the 32 different scrambling code groups (note that  $c_i$  indicates the  $i$ 'th Secondary Short code of the ~~17~~ 16 codes). Note that a Secondary Short code can be different from one time slot to another and that the sequence pattern can be different from one cell to another, depending on Scrambling

Code Group the cell uses.

Scrambling Code Groups	Slot Number															
	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12	#13	#14	#15	#16
Group 1	C <sub>1</sub>	C <sub>1</sub>	C <sub>2</sub>	C <sub>11</sub>	C <sub>6</sub>	C <sub>2</sub>	C <sub>15</sub>	C <sub>7</sub>	C <sub>8</sub>	C <sub>8</sub>	C <sub>7</sub>	C <sub>15</sub>	C <sub>2</sub>	C <sub>6</sub>	C <sub>11</sub>	C <sub>2</sub>
Group 2	C <sub>1</sub>	C <sub>2</sub>	C <sub>9</sub>	C <sub>2</sub>	C <sub>10</sub>	C <sub>11</sub>	C <sub>13</sub>	C <sub>13</sub>	C <sub>11</sub>	C <sub>10</sub>	C <sub>2</sub>	C <sub>9</sub>	C <sub>2</sub>	C <sub>1</sub>	C <sub>16</sub>	C <sub>16</sub>
Group 3	C <sub>1</sub>	C <sub>2</sub>	C <sub>16</sub>	C <sub>12</sub>	C <sub>14</sub>	C <sub>2</sub>	C <sub>11</sub>	C <sub>2</sub>	C <sub>14</sub>	C <sub>12</sub>	C <sub>16</sub>	C <sub>2</sub>	C <sub>1</sub>	C <sub>13</sub>	C <sub>4</sub>	C <sub>12</sub>
Group 4	C <sub>1</sub>	C <sub>4</sub>	C <sub>6</sub>	C <sub>4</sub>	C <sub>1</sub>	C <sub>10</sub>	C <sub>9</sub>	C <sub>8</sub>	C <sub>17</sub>	C <sub>14</sub>	C <sub>12</sub>	C <sub>14</sub>	C <sub>17</sub>	C <sub>8</sub>	C <sub>9</sub>	C <sub>10</sub>
Group 5	C <sub>1</sub>	C <sub>5</sub>	C <sub>13</sub>	C <sub>13</sub>	C <sub>5</sub>	C <sub>1</sub>	C <sub>7</sub>	C <sub>14</sub>	C <sub>3</sub>	C <sub>16</sub>	C <sub>8</sub>	C <sub>8</sub>	C <sub>16</sub>	C <sub>3</sub>	C <sub>14</sub>	C <sub>7</sub>
Group 6	C <sub>1</sub>	C <sub>6</sub>	C <sub>2</sub>	C <sub>5</sub>	C <sub>9</sub>	C <sub>9</sub>	C <sub>5</sub>	C <sub>2</sub>	C <sub>6</sub>	C <sub>1</sub>	C <sub>4</sub>	C <sub>2</sub>	C <sub>15</sub>	C <sub>15</sub>	C <sub>2</sub>	C <sub>4</sub>
Group 7	C <sub>1</sub>	C <sub>7</sub>	C <sub>10</sub>	C <sub>14</sub>	C <sub>12</sub>	C <sub>17</sub>	C <sub>2</sub>	C <sub>9</sub>	C <sub>9</sub>	C <sub>2</sub>	C <sub>17</sub>	C <sub>13</sub>	C <sub>14</sub>	C <sub>10</sub>	C <sub>2</sub>	C <sub>1</sub>
Group 8	C <sub>1</sub>	C <sub>8</sub>	C <sub>17</sub>	C <sub>6</sub>	C <sub>17</sub>	C <sub>8</sub>	C <sub>1</sub>	C <sub>15</sub>	C <sub>12</sub>	C <sub>5</sub>	C <sub>1</sub>	C <sub>7</sub>	C <sub>12</sub>	C <sub>5</sub>	C <sub>12</sub>	C <sub>15</sub>
Group 9	C <sub>1</sub>	C <sub>9</sub>	C <sub>7</sub>	C <sub>15</sub>	C <sub>4</sub>	C <sub>16</sub>	C <sub>16</sub>	C <sub>4</sub>	C <sub>15</sub>	C <sub>7</sub>	C <sub>9</sub>	C <sub>1</sub>	C <sub>12</sub>	C <sub>17</sub>	C <sub>17</sub>	C <sub>12</sub>
Group 10	C <sub>1</sub>	C <sub>10</sub>	C <sub>14</sub>	C <sub>7</sub>	C <sub>8</sub>	C <sub>7</sub>	C <sub>14</sub>	C <sub>10</sub>	C <sub>1</sub>	C <sub>9</sub>	C <sub>5</sub>	C <sub>12</sub>	C <sub>11</sub>	C <sub>12</sub>	C <sub>5</sub>	C <sub>9</sub>
Group 11	C <sub>1</sub>	C <sub>11</sub>	C <sub>4</sub>	C <sub>16</sub>	C <sub>12</sub>	C <sub>15</sub>	C <sub>12</sub>	C <sub>16</sub>	C <sub>4</sub>	C <sub>11</sub>	C <sub>1</sub>	C <sub>6</sub>	C <sub>10</sub>	C <sub>7</sub>	C <sub>10</sub>	C <sub>6</sub>
Group 12	C <sub>1</sub>	C <sub>12</sub>	C <sub>11</sub>	C <sub>8</sub>	C <sub>16</sub>	C <sub>6</sub>	C <sub>10</sub>	C <sub>5</sub>	C <sub>7</sub>	C <sub>13</sub>	C <sub>14</sub>	C <sub>17</sub>	C <sub>9</sub>	C <sub>2</sub>	C <sub>15</sub>	C <sub>3</sub>
Group 13	C <sub>1</sub>	C <sub>13</sub>	C <sub>1</sub>	C <sub>17</sub>	C <sub>3</sub>	C <sub>14</sub>	C <sub>8</sub>	C <sub>11</sub>	C <sub>10</sub>	C <sub>15</sub>	C <sub>10</sub>	C <sub>11</sub>	C <sub>8</sub>	C <sub>14</sub>	C <sub>3</sub>	C <sub>17</sub>
Group 14	C <sub>1</sub>	C <sub>14</sub>	C <sub>8</sub>	C <sub>9</sub>	C <sub>7</sub>	C <sub>5</sub>	C <sub>6</sub>	C <sub>17</sub>	C <sub>13</sub>	C <sub>17</sub>	C <sub>6</sub>	C <sub>5</sub>	C <sub>7</sub>	C <sub>9</sub>	C <sub>8</sub>	C <sub>14</sub>
Group 15	C <sub>1</sub>	C <sub>15</sub>	C <sub>15</sub>	C <sub>1</sub>	C <sub>11</sub>	C <sub>12</sub>	C <sub>4</sub>	C <sub>6</sub>	C <sub>16</sub>	C <sub>2</sub>	C <sub>2</sub>	C <sub>16</sub>	C <sub>6</sub>	C <sub>9</sub>	C <sub>12</sub>	C <sub>11</sub>
Group 16	C <sub>1</sub>	C <sub>16</sub>	C <sub>5</sub>	C <sub>10</sub>	C <sub>15</sub>	C <sub>4</sub>	C <sub>2</sub>	C <sub>12</sub>	C <sub>2</sub>	C <sub>4</sub>	C <sub>15</sub>	C <sub>10</sub>	C <sub>5</sub>	C <sub>16</sub>	C <sub>1</sub>	C <sub>8</sub>
Group 17	C <sub>1</sub>	C <sub>17</sub>	C <sub>12</sub>	C <sub>2</sub>	C <sub>2</sub>	C <sub>12</sub>	C <sub>12</sub>	C <sub>1</sub>	C <sub>5</sub>	C <sub>6</sub>	C <sub>11</sub>	C <sub>4</sub>	C <sub>4</sub>	C <sub>11</sub>	C <sub>6</sub>	C <sub>5</sub>
Group 18	C <sub>2</sub>	C <sub>8</sub>	C <sub>11</sub>	C <sub>15</sub>	C <sub>14</sub>	C <sub>1</sub>	C <sub>4</sub>	C <sub>10</sub>	C <sub>10</sub>	C <sub>4</sub>	C <sub>1</sub>	C <sub>14</sub>	C <sub>15</sub>	C <sub>11</sub>	C <sub>8</sub>	C <sub>2</sub>
Group 19	C <sub>2</sub>	C <sub>9</sub>	C <sub>1</sub>	C <sub>7</sub>	C <sub>1</sub>	C <sub>9</sub>	C <sub>2</sub>	C <sub>16</sub>	C <sub>12</sub>	C <sub>6</sub>	C <sub>14</sub>	C <sub>8</sub>	C <sub>14</sub>	C <sub>6</sub>	C <sub>12</sub>	C <sub>16</sub>
Group 20	C <sub>2</sub>	C <sub>10</sub>	C <sub>8</sub>	C <sub>16</sub>	C <sub>5</sub>	C <sub>17</sub>	C <sub>17</sub>	C <sub>5</sub>	C <sub>16</sub>	C <sub>8</sub>	C <sub>10</sub>	C <sub>2</sub>	C <sub>12</sub>	C <sub>1</sub>	C <sub>12</sub>	C <sub>12</sub>
Group 21	C <sub>2</sub>	C <sub>11</sub>	C <sub>15</sub>	C <sub>8</sub>	C <sub>9</sub>	C <sub>8</sub>	C <sub>15</sub>	C <sub>11</sub>	C <sub>2</sub>	C <sub>10</sub>	C <sub>6</sub>	C <sub>13</sub>	C <sub>12</sub>	C <sub>13</sub>	C <sub>6</sub>	C <sub>10</sub>
Group 22	C <sub>2</sub>	C <sub>12</sub>	C <sub>5</sub>	C <sub>17</sub>	C <sub>12</sub>	C <sub>16</sub>	C <sub>13</sub>	C <sub>17</sub>	C <sub>5</sub>	C <sub>12</sub>	C <sub>2</sub>	C <sub>7</sub>	C <sub>11</sub>	C <sub>8</sub>	C <sub>11</sub>	C <sub>7</sub>
Group 23	C <sub>2</sub>	C <sub>13</sub>	C <sub>12</sub>	C <sub>9</sub>	C <sub>17</sub>	C <sub>7</sub>	C <sub>11</sub>	C <sub>6</sub>	C <sub>8</sub>	C <sub>14</sub>	C <sub>15</sub>	C <sub>1</sub>	C <sub>10</sub>	C <sub>3</sub>	C <sub>16</sub>	C <sub>4</sub>
Group 24	C <sub>2</sub>	C <sub>14</sub>	C <sub>2</sub>	C <sub>1</sub>	C <sub>4</sub>	C <sub>15</sub>	C <sub>9</sub>	C <sub>12</sub>	C <sub>11</sub>	C <sub>16</sub>	C <sub>11</sub>	C <sub>12</sub>	C <sub>9</sub>	C <sub>15</sub>	C <sub>4</sub>	C <sub>1</sub>
Group 25	C <sub>2</sub>	C <sub>15</sub>	C <sub>9</sub>	C <sub>10</sub>	C <sub>8</sub>	C <sub>6</sub>	C <sub>7</sub>	C <sub>1</sub>	C <sub>14</sub>	C <sub>1</sub>	C <sub>7</sub>	C <sub>6</sub>	C <sub>8</sub>	C <sub>10</sub>	C <sub>9</sub>	C <sub>15</sub>
Group 26	C <sub>2</sub>	C <sub>16</sub>	C <sub>16</sub>	C <sub>2</sub>	C <sub>12</sub>	C <sub>14</sub>	C <sub>5</sub>	C <sub>7</sub>	C <sub>17</sub>	C <sub>3</sub>	C <sub>2</sub>	C <sub>17</sub>	C <sub>7</sub>	C <sub>5</sub>	C <sub>14</sub>	C <sub>12</sub>
Group 27	C <sub>2</sub>	C <sub>17</sub>	C <sub>6</sub>	C <sub>11</sub>	C <sub>16</sub>	C <sub>5</sub>	C <sub>2</sub>	C <sub>13</sub>	C <sub>3</sub>	C <sub>5</sub>	C <sub>16</sub>	C <sub>11</sub>	C <sub>6</sub>	C <sub>17</sub>	C <sub>2</sub>	C <sub>9</sub>
Group 28	C <sub>2</sub>	C <sub>1</sub>	C <sub>12</sub>	C <sub>2</sub>	C <sub>3</sub>	C <sub>12</sub>	C <sub>1</sub>	C <sub>2</sub>	C <sub>6</sub>	C <sub>7</sub>	C <sub>12</sub>	C <sub>5</sub>	C <sub>5</sub>	C <sub>12</sub>	C <sub>7</sub>	C <sub>6</sub>
Group 29	C <sub>2</sub>	C <sub>2</sub>	C <sub>3</sub>	C <sub>12</sub>	C <sub>7</sub>	C <sub>4</sub>	C <sub>16</sub>	C <sub>8</sub>	C <sub>9</sub>	C <sub>9</sub>	C <sub>8</sub>	C <sub>16</sub>	C <sub>4</sub>	C <sub>7</sub>	C <sub>12</sub>	C <sub>3</sub>
Group 30	C <sub>2</sub>	C <sub>3</sub>	C <sub>10</sub>	C <sub>1</sub>	C <sub>11</sub>	C <sub>12</sub>	C <sub>14</sub>	C <sub>14</sub>	C <sub>12</sub>	C <sub>11</sub>	C <sub>1</sub>	C <sub>10</sub>	C <sub>3</sub>	C <sub>2</sub>	C <sub>17</sub>	C <sub>17</sub>
Group 31	C <sub>2</sub>	C <sub>4</sub>	C <sub>17</sub>	C <sub>13</sub>	C <sub>15</sub>	C <sub>2</sub>	C <sub>12</sub>	C <sub>3</sub>	C <sub>15</sub>	C <sub>13</sub>	C <sub>17</sub>	C <sub>4</sub>	C <sub>2</sub>	C <sub>14</sub>	C <sub>5</sub>	C <sub>14</sub>
Group 32	C <sub>2</sub>	C <sub>5</sub>	C <sub>7</sub>	C <sub>5</sub>	C <sub>2</sub>	C <sub>11</sub>	C <sub>10</sub>	C <sub>9</sub>	C <sub>1</sub>	C <sub>15</sub>	C <sub>12</sub>	C <sub>15</sub>	C <sub>1</sub>	C <sub>9</sub>	C <sub>10</sub>	C <sub>11</sub>
[SyncBTS]	C <sub>2</sub>	C <sub>6</sub>	C <sub>14</sub>	C <sub>14</sub>	C <sub>6</sub>	C <sub>2</sub>	C <sub>8</sub>	C <sub>15</sub>	C <sub>4</sub>	C <sub>17</sub>	C <sub>9</sub>	C <sub>9</sub>	C <sub>17</sub>	C <sub>4</sub>	C <sub>15</sub>	C <sub>8</sub>

Scrambling Code Groups	Slot Number														
	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12	#13	#14	#15
Group 1	C <sub>1</sub>	C <sub>1</sub>	C <sub>2</sub>	C <sub>8</sub>	C <sub>9</sub>	C <sub>10</sub>	C <sub>15</sub>	C <sub>8</sub>	C <sub>10</sub>	C <sub>16</sub>	C <sub>2</sub>	C <sub>7</sub>	C <sub>15</sub>	C <sub>7</sub>	C <sub>16</sub>
Group 2	C <sub>1</sub>	C <sub>2</sub>	C <sub>5</sub>	C <sub>2</sub>	C <sub>3</sub>	C <sub>7</sub>	C <sub>7</sub>	C <sub>1</sub>	C <sub>8</sub>	C <sub>4</sub>	C <sub>6</sub>	C <sub>5</sub>	C <sub>8</sub>	C <sub>6</sub>	C <sub>3</sub>
Group 3	C <sub>1</sub>	C <sub>3</sub>	C <sub>12</sub>	C <sub>12</sub>	C <sub>16</sub>	C <sub>5</sub>	C <sub>13</sub>	C <sub>10</sub>	C <sub>7</sub>	C <sub>5</sub>	C <sub>10</sub>	C <sub>3</sub>	C <sub>16</sub>	C <sub>1</sub>	C <sub>7</sub>
Group 4	C <sub>1</sub>	C <sub>5</sub>	C <sub>7</sub>	C <sub>13</sub>	C <sub>7</sub>	C <sub>1</sub>	C <sub>9</sub>	C <sub>9</sub>	C <sub>5</sub>	C <sub>11</sub>	C <sub>3</sub>	C <sub>15</sub>	C <sub>13</sub>	C <sub>11</sub>	C <sub>15</sub>
Group 5	C <sub>1</sub>	C <sub>9</sub>	C <sub>16</sub>	C <sub>3</sub>	C <sub>8</sub>	C <sub>9</sub>	C <sub>3</sub>	C <sub>11</sub>	C <sub>1</sub>	C <sub>6</sub>	C <sub>8</sub>	C <sub>6</sub>	C <sub>11</sub>	C <sub>14</sub>	C <sub>14</sub>
Group 6	C <sub>1</sub>	C <sub>4</sub>	C <sub>15</sub>	C <sub>14</sub>	C <sub>6</sub>	C <sub>12</sub>	C <sub>6</sub>	C <sub>15</sub>	C <sub>9</sub>	C <sub>9</sub>	C <sub>14</sub>	C <sub>1</sub>	C <sub>7</sub>	C <sub>4</sub>	C <sub>12</sub>
Group 7	C <sub>1</sub>	C <sub>7</sub>	C <sub>13</sub>	C <sub>1</sub>	C <sub>2</sub>	C <sub>14</sub>	C <sub>12</sub>	C <sub>7</sub>	C <sub>12</sub>	C <sub>2</sub>	C <sub>11</sub>	C <sub>11</sub>	C <sub>14</sub>	C <sub>13</sub>	C <sub>8</sub>
Group 8	C <sub>1</sub>	C <sub>13</sub>	C <sub>9</sub>	C <sub>10</sub>	C <sub>10</sub>	C <sub>2</sub>	C <sub>5</sub>	C <sub>6</sub>	C <sub>14</sub>	C <sub>1</sub>	C <sub>5</sub>	C <sub>14</sub>	C <sub>9</sub>	C <sub>2</sub>	C <sub>13</sub>
Group 9	C <sub>1</sub>	C <sub>12</sub>	C <sub>1</sub>	C <sub>9</sub>	C <sub>11</sub>	C <sub>11</sub>	C <sub>10</sub>	C <sub>4</sub>	C <sub>2</sub>	C <sub>3</sub>	C <sub>12</sub>	C <sub>4</sub>	C <sub>3</sub>	C <sub>9</sub>	C <sub>10</sub>
Group 10	C <sub>1</sub>	C <sub>6</sub>	C <sub>4</sub>	C <sub>11</sub>	C <sub>13</sub>	C <sub>16</sub>	C <sub>1</sub>	C <sub>16</sub>	C <sub>11</sub>	C <sub>7</sub>	C <sub>7</sub>	C <sub>13</sub>	C <sub>6</sub>	C <sub>10</sub>	C <sub>4</sub>
Group 11	C <sub>1</sub>	C <sub>11</sub>	C <sub>6</sub>	C <sub>15</sub>	C <sub>1</sub>	C <sub>6</sub>	C <sub>2</sub>	C <sub>5</sub>	C <sub>16</sub>	C <sub>15</sub>	C <sub>16</sub>	C <sub>2</sub>	C <sub>12</sub>	C <sub>12</sub>	C <sub>5</sub>
Group 12	C <sub>1</sub>	C <sub>8</sub>	C <sub>10</sub>	C <sub>7</sub>	C <sub>12</sub>	C <sub>3</sub>	C <sub>4</sub>	C <sub>2</sub>	C <sub>6</sub>	C <sub>14</sub>	C <sub>15</sub>	C <sub>9</sub>	C <sub>5</sub>	C <sub>16</sub>	C <sub>11</sub>
Group 13	C <sub>1</sub>	C <sub>15</sub>	C <sub>3</sub>	C <sub>6</sub>	C <sub>15</sub>	C <sub>13</sub>	C <sub>8</sub>	C <sub>12</sub>	C <sub>3</sub>	C <sub>12</sub>	C <sub>13</sub>	C <sub>10</sub>	C <sub>10</sub>	C <sub>8</sub>	C <sub>6</sub>
Group 14	C <sub>1</sub>	C <sub>16</sub>	C <sub>8</sub>	C <sub>4</sub>	C <sub>5</sub>	C <sub>4</sub>	C <sub>16</sub>	C <sub>13</sub>	C <sub>13</sub>	C <sub>8</sub>	C <sub>9</sub>	C <sub>12</sub>	C <sub>1</sub>	C <sub>5</sub>	C <sub>9</sub>
Group 15	C <sub>1</sub>	C <sub>14</sub>	C <sub>14</sub>	C <sub>16</sub>	C <sub>4</sub>	C <sub>15</sub>	C <sub>13</sub>	C <sub>3</sub>	C <sub>4</sub>	C <sub>13</sub>	C <sub>1</sub>	C <sub>16</sub>	C <sub>2</sub>	C <sub>3</sub>	C <sub>2</sub>
Group 16	C <sub>1</sub>	C <sub>10</sub>	C <sub>11</sub>	C <sub>5</sub>	C <sub>14</sub>	C <sub>8</sub>	C <sub>11</sub>	C <sub>14</sub>	C <sub>15</sub>	C <sub>10</sub>	C <sub>4</sub>	C <sub>8</sub>	C <sub>4</sub>	C <sub>15</sub>	C <sub>1</sub>
Group 17	C <sub>2</sub>	C <sub>6</sub>	C <sub>8</sub>	C <sub>14</sub>	C <sub>8</sub>	C <sub>2</sub>	C <sub>10</sub>	C <sub>10</sub>	C <sub>6</sub>	C <sub>12</sub>	C <sub>4</sub>	C <sub>16</sub>	C <sub>14</sub>	C <sub>12</sub>	C <sub>16</sub>
Group 18	C <sub>2</sub>	C <sub>5</sub>	C <sub>3</sub>	C <sub>12</sub>	C <sub>14</sub>	C <sub>15</sub>	C <sub>2</sub>	C <sub>15</sub>	C <sub>12</sub>	C <sub>8</sub>	C <sub>8</sub>	C <sub>14</sub>	C <sub>5</sub>	C <sub>9</sub>	C <sub>3</sub>
Group 19	C <sub>2</sub>	C <sub>8</sub>	C <sub>14</sub>	C <sub>2</sub>	C <sub>1</sub>	C <sub>13</sub>	C <sub>11</sub>	C <sub>8</sub>	C <sub>11</sub>	C <sub>1</sub>	C <sub>12</sub>	C <sub>12</sub>	C <sub>13</sub>	C <sub>14</sub>	C <sub>7</sub>
Group 20	C <sub>2</sub>	C <sub>2</sub>	C <sub>1</sub>	C <sub>7</sub>	C <sub>10</sub>	C <sub>9</sub>	C <sub>16</sub>	C <sub>7</sub>	C <sub>9</sub>	C <sub>15</sub>	C <sub>1</sub>	C <sub>8</sub>	C <sub>16</sub>	C <sub>8</sub>	C <sub>15</sub>
Group 21	C <sub>2</sub>	C <sub>14</sub>	C <sub>10</sub>	C <sub>9</sub>	C <sub>9</sub>	C <sub>1</sub>	C <sub>6</sub>	C <sub>5</sub>	C <sub>13</sub>	C <sub>2</sub>	C <sub>6</sub>	C <sub>13</sub>	C <sub>10</sub>	C <sub>1</sub>	C <sub>14</sub>

Group 22	C <sub>2</sub>	C <sub>7</sub>	C <sub>9</sub>	C <sub>8</sub>	C <sub>11</sub>	C <sub>4</sub>	C <sub>3</sub>	C <sub>1</sub>	C <sub>5</sub>	C <sub>13</sub>	C <sub>16</sub>	C <sub>10</sub>	C <sub>6</sub>	C <sub>15</sub>	C <sub>12</sub>
Group 23	C <sub>2</sub>	C <sub>4</sub>	C <sub>11</sub>	C <sub>11</sub>	C <sub>15</sub>	C <sub>6</sub>	C <sub>13</sub>	C <sub>9</sub>	C <sub>8</sub>	C <sub>6</sub>	C <sub>9</sub>	C <sub>4</sub>	C <sub>15</sub>	C <sub>2</sub>	C <sub>8</sub>
Group 24	C <sub>2</sub>	C <sub>10</sub>	C <sub>15</sub>	C <sub>4</sub>	C <sub>7</sub>	C <sub>10</sub>	C <sub>4</sub>	C <sub>12</sub>	C <sub>2</sub>	C <sub>5</sub>	C <sub>7</sub>	C <sub>5</sub>	C <sub>12</sub>	C <sub>13</sub>	C <sub>13</sub>
Group 25	C <sub>2</sub>	C <sub>15</sub>	C <sub>7</sub>	C <sub>3</sub>	C <sub>6</sub>	C <sub>3</sub>	C <sub>15</sub>	C <sub>14</sub>	C <sub>14</sub>	C <sub>7</sub>	C <sub>10</sub>	C <sub>11</sub>	C <sub>2</sub>	C <sub>6</sub>	C <sub>10</sub>
Group 26	C <sub>2</sub>	C <sub>1</sub>	C <sub>6</sub>	C <sub>1</sub>	C <sub>4</sub>	C <sub>8</sub>	C <sub>8</sub>	C <sub>2</sub>	C <sub>7</sub>	C <sub>3</sub>	C <sub>5</sub>	C <sub>6</sub>	C <sub>7</sub>	C <sub>5</sub>	C <sub>4</sub>
Group 27	C <sub>2</sub>	C <sub>16</sub>	C <sub>4</sub>	C <sub>5</sub>	C <sub>16</sub>	C <sub>14</sub>	C <sub>7</sub>	C <sub>11</sub>	C <sub>4</sub>	C <sub>11</sub>	C <sub>14</sub>	C <sub>9</sub>	C <sub>9</sub>	C <sub>7</sub>	C <sub>5</sub>
Group 28	C <sub>2</sub>	C <sub>3</sub>	C <sub>16</sub>	C <sub>13</sub>	C <sub>5</sub>	C <sub>11</sub>	C <sub>5</sub>	C <sub>16</sub>	C <sub>10</sub>	C <sub>10</sub>	C <sub>13</sub>	C <sub>2</sub>	C <sub>8</sub>	C <sub>3</sub>	C <sub>11</sub>
Group 29	C <sub>2</sub>	C <sub>12</sub>	C <sub>5</sub>	C <sub>16</sub>	C <sub>2</sub>	C <sub>5</sub>	C <sub>1</sub>	C <sub>6</sub>	C <sub>15</sub>	C <sub>16</sub>	C <sub>15</sub>	C <sub>1</sub>	C <sub>11</sub>	C <sub>11</sub>	C <sub>6</sub>
Group 30	C <sub>2</sub>	C <sub>11</sub>	C <sub>2</sub>	C <sub>10</sub>	C <sub>12</sub>	C <sub>12</sub>	C <sub>9</sub>	C <sub>3</sub>	C <sub>1</sub>	C <sub>4</sub>	C <sub>11</sub>	C <sub>3</sub>	C <sub>4</sub>	C <sub>10</sub>	C <sub>9</sub>
Group 31	C <sub>2</sub>	C <sub>9</sub>	C <sub>12</sub>	C <sub>6</sub>	C <sub>13</sub>	C <sub>7</sub>	C <sub>12</sub>	C <sub>13</sub>	C <sub>16</sub>	C <sub>9</sub>	C <sub>3</sub>	C <sub>7</sub>	C <sub>3</sub>	C <sub>16</sub>	C <sub>2</sub>
Group 32	C <sub>2</sub>	C <sub>13</sub>	C <sub>13</sub>	C <sub>15</sub>	C <sub>3</sub>	C <sub>16</sub>	C <sub>14</sub>	C <sub>4</sub>	C <sub>3</sub>	C <sub>14</sub>	C <sub>2</sub>	C <sub>15</sub>	C <sub>1</sub>	C <sub>4</sub>	C <sub>1</sub>
[SyncBTS]	C <sub>3</sub>	C <sub>11</sub>	C <sub>14</sub>	C <sub>1</sub>	C <sub>6</sub>	C <sub>11</sub>	C <sub>1</sub>	C <sub>9</sub>	C <sub>3</sub>	C <sub>8</sub>	C <sub>6</sub>	C <sub>8</sub>	C <sub>9</sub>	C <sub>16</sub>	C <sub>16</sub>

**Table 9 Spreading Code allocation for Secondary SCH Code**

----- End of text proposal for section 5.2.3.2 of S25.213 -----

#### 4. References

- [1] "Impact of OHG harmonization recommendation on UTRA/FDD and UTRA/TDD," 3GPP TSGR1-(99)677, June, 1999.
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- [3] 3GPP RAN TS 25.211 V2.1.0 (1999-06). Physical channels and mapping of transport channels onto physical channels (FDD)
- [4] Ericsson, "New Downlink Scrambling Code Grouping Scheme for UTRA/FDD (revised)" 3GPP TSGR1-(99)884, July, 1999.