IEEE P802.11  
Wireless LANs

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| Clause 22.3.10 Comment Resolution for D2.0 | | | | |
| Date: 08 March 2012 | | | | |
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|  |  |  |  |  |

Abstract

This document provides resolutions for CIDs: 5175, 5176, 5270, 5178, 5177, 5179, 5180, 5181, 5182, 5183, 5184, 5185, 5186, 5480, 5443, 5187, 4092, 5189, 5190, 5191, 5192, 5445, 5195

**Clause 22.3.10.1 (Data Field) General**

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| **CID** | **Page** | **Clause** | **Comment** | **Proposed Change** | **Resn Status** | **Resolution** |
| 5175 | 220.13 | 22.3.10.1 | Clarify "all bits" | Replace "all bits (including PHY pad bits)" with "all bits (i.e. SERVICE fields, PSDU and PHY pad bits)" | V | Revised. The sentence “For both BCC and LDPC, all bits (including the PHY pad bits) shall be encoded.” isn’t necessary since 22.3.10.5.1 states “The Data field shall be encoded using either…” and the definition of the Data field includes SERVICE, PSDU, and PHY pad bits.  TGac editor: delete paragraph on page 220, line 13-14 |
| 5176 | 220.41 | 22.3.10.1 | Inconsistent use of N\_DBPS | N\_DBPS,u is defined as N\_DBPS for user u. In Table 22-6, it says that N\_DBPS is undefined for MU. Delete sentence and replace with "is defined in Table 22-6" | A | Accepted |

**Clause 22.3.10.3 CRC calculation for VHT-SIG-B**

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| 5270 | 221.58 | 22.3.10.3 | NDP PPDUs have no service field, so the CRC detection cannot be done at receivers. The correctness of the VHT-SIG-B bits recovered by receivers cannot be guaranteed. The wrong VHT-SIG-B bits may lead to seriously bad consequences. | Improve the NDP structure to avoid this problem. | R | Rejected. The NDP PPDU is an SU PPDU, see 22.3.12. A receiver can ignore VHT-SIG-B since no information is required from it for processing an SU PPDU, see 22.3.21. Therefore no change is necessary. |

**Clause 22.3.10.4 Scrambler**

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| **CID** | **Page** | **Clause** | **Comment** | **Proposed Change** | **Resn Status** | **Resolution** |
| 5177 | 222.41 | 22.3.10.4 | Use consistent terminoogy | Replace "pad parts" with "PHY pad bits" | A | Accepted. |

**Clause 22.3.10.5 Coding**

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| 5178 | 222.05 | 22.3.10.5.2 | Use consistent terminoogy | Replace "pad parts" with "PHY pad bits" | A | Accepted. |
| 5179 | 223.30 | 22.3.10.5.2 | Inconsistent use of N\_DBPS | N\_DBPS,u is defined as N\_DBPS for user u. In Table 22-6, it says that N\_DBPS is undefined for MU. Delete sentence and replace with "is defined in Table 22-6" | A | Accepted. |
| 5180 | 223.34 | 22.3.10.5.2 | Ambiguous wording | Replace "Zero tail bits" with "Tail bits with value zero" | A | Accepted. |
| 5181 | 223.41 | 22.3.10.5.3 | Missing variable "i" | Replace "0 < N\_SYM N\_DBPS,u/N\_ES,u" with "0 <= i < N\_SYM N\_DBPS,u/N\_ES,u" | A | Accepted. |
| 5182 | 223.41 | 22.3.10.5.3 | Replace N\_ES with N\_ES,u | Replace N\_ES with N\_ES,u | A | Accepted. |
| 5183 | 224.65 | 22.3.10.5.5 | Inconsistent use of N\_ES | N\_ES,u is defined as N\_ES for user u. In Table 22-6, it says that N\_ES is undefined for MU. Delete sentence and replace with "is defined in Table 22-6" | A | Accepted. |
| 5184 | 225.01 | 22.3.10.5.5 | Inconsistent use of N\_DBPS | N\_DBPS,u is defined as N\_DBPS for user u. In Table 22-6, it says that N\_DBPS is undefined for MU. Delete sentence and replace with "is defined in Table 22-6" | A | Accepted. |

**Clause 22.3.10.6 Stream parser**

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| 5185 | 226.33 | 22.3.10.6 | Stream parser operation is described per symbol | N\_SS blocks of N\_CBPSS correspond to one symbol. This is not clear from the text. Add "per symbol" after "N\_CBPSS bits" | V | Revised. Make changes under heading CID 5185 in 12/0251 |
| 5186 | 226.65 | 22.3.10.6 | Don't use N\_ES for LDPC | N\_ES is not defined for LDPC. Instead of "assuming" it to be equal to 1, use separate equations to define N\_block (Eq. 80) for BCC and LDPC. Likewise for M (Eq 81). | V | Revised. The entire cited sentence “For the purpose of this subclause, PPDUs encoded by the LDPC code shall be assumed to have N\_ES=1”, makes a special definition for N\_ES specific this subclause. So N\_ES is in fact defined for this subclause.  However, Table 22-6 defines N\_ES specifically for BCC, but several other instances in the document N\_ES is used for both BCC and LDPC. The simplest way to clean this up is to define N\_ES=1 for LDPC in Table 22-6.  TGac editor, add additional definition to N\_ES in Table 22-6 as follows, “For LDPC, N\_ES=1 for SU PPDU and N\_ES,u=1 for MU PPDU for user u, u=0, …N\_u-1”.  TGac editor, delete paragraph on P226L64/65 |

**CID 5185**

**TGac editor: modify P226L33-36 as follows:**

After coding and puncturing, the data bit streams at the output of the FEC encoders are processed in groups of *NCBPS* bits. Each of these groups is re-arranged into *NSS* blocks of *NCBPSS* bits (*NSS,u* blocks of *NCBPSS,u* bits in the case of an MU-MIMO transmission). This operation is referred to as “stream parsing” and is described in this section.

**Clause 22.3.10.7 Segment parser & Clause 22.3.10.8 BCC interleaver**

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| 5480 | 228.43 | 22.3.10.7 | "frequency subblock" is not a general term. | Change "frequency subblock" to "frequency segment". The same problems are also in some other places. Please search it in the spec. | R | Rejected. The segment parser applies also to contiguous 160 MHz that has only one frequency segment, so frequency segment would not be the proper term in this case. The subclause defines frequency subblocks asN\_CBPSS/2 bits. |
| 5443 | 228.57 | 22.3.10.7 | R is already used as coding rate in Table 22-5. | Use an alternative character. | V | Revised. Agree in principle. TGac editor replace “R” with “N\_res” in two instances on P228L57 and once on P228L61. |
| 5187 | 229.43 | 22.3.10.8 | Interleaver is per symbol | Replace "the bits at the output of the stream parser" with "the bits for one symbol at the output of the stream parser" | V | Revised. Make changes under heading CID 5187 in 12/0251 |

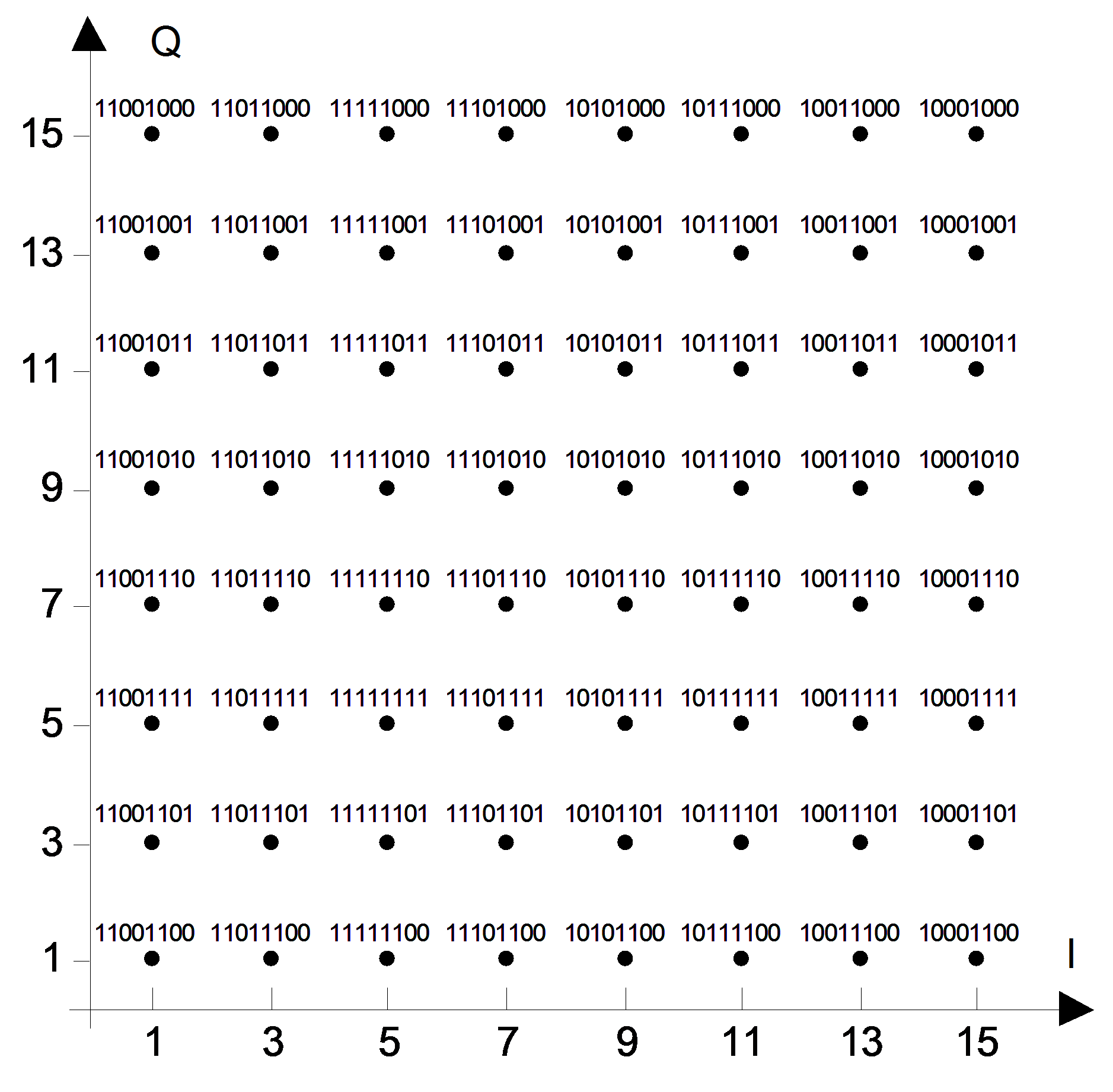
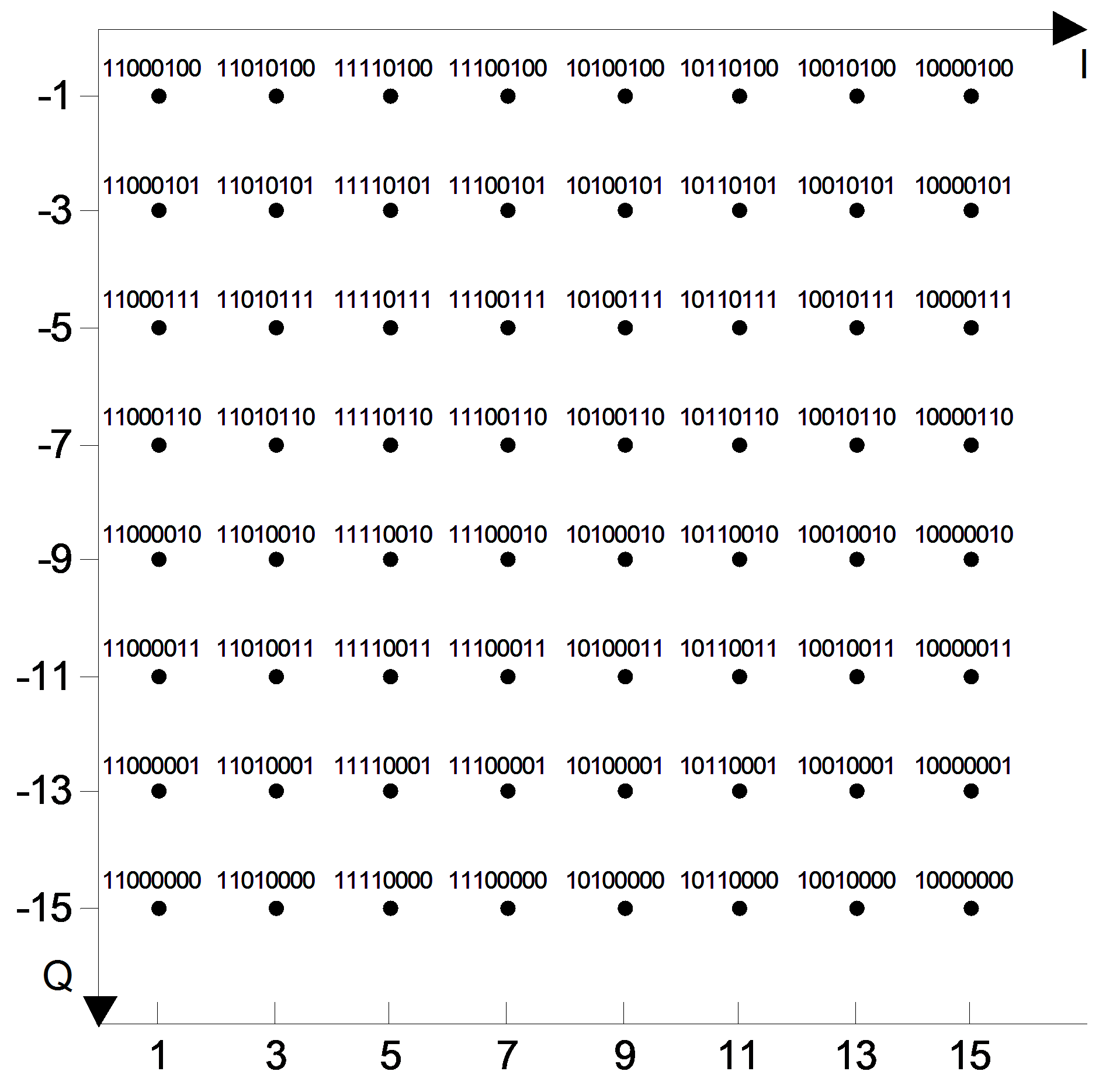
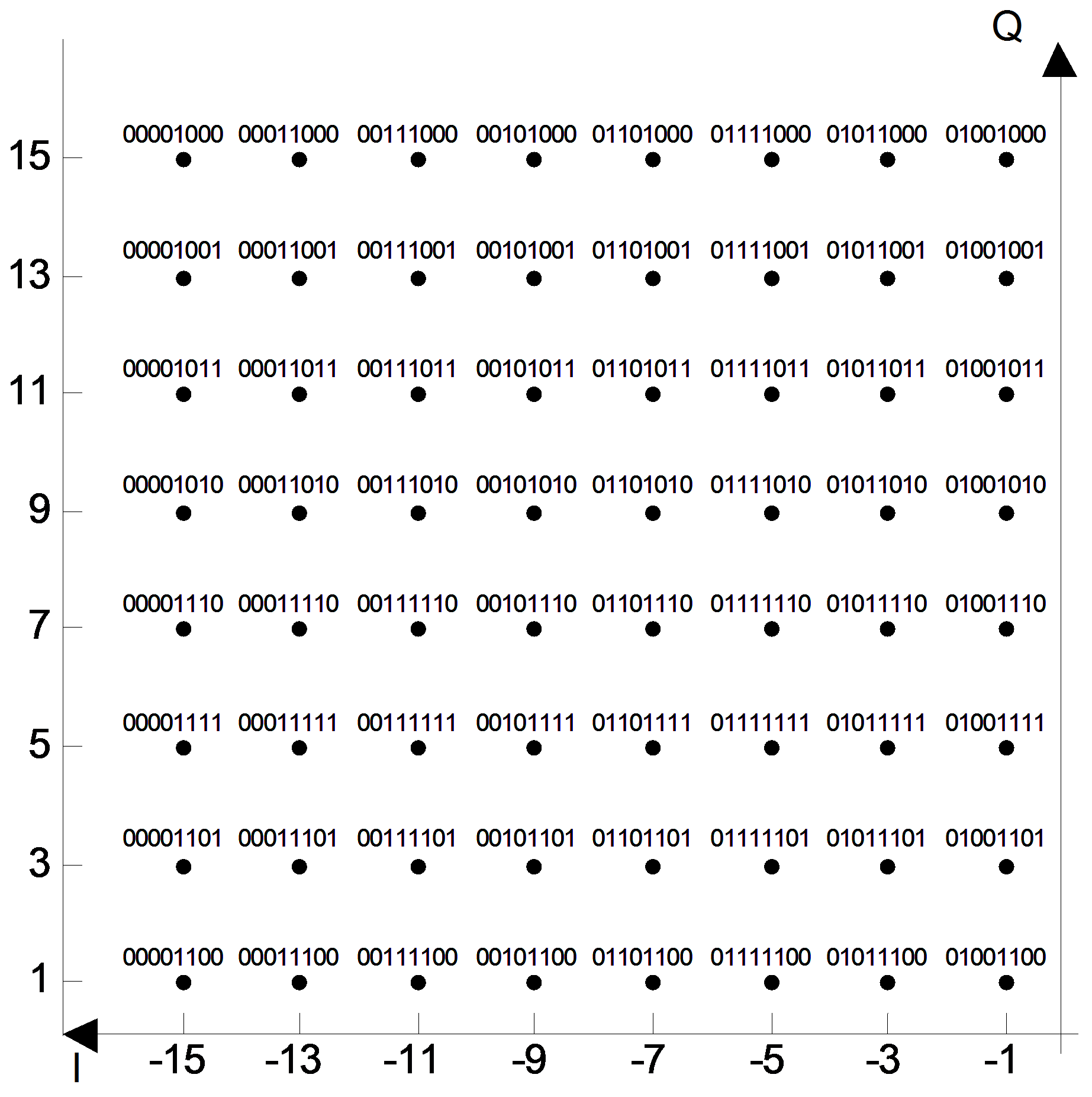
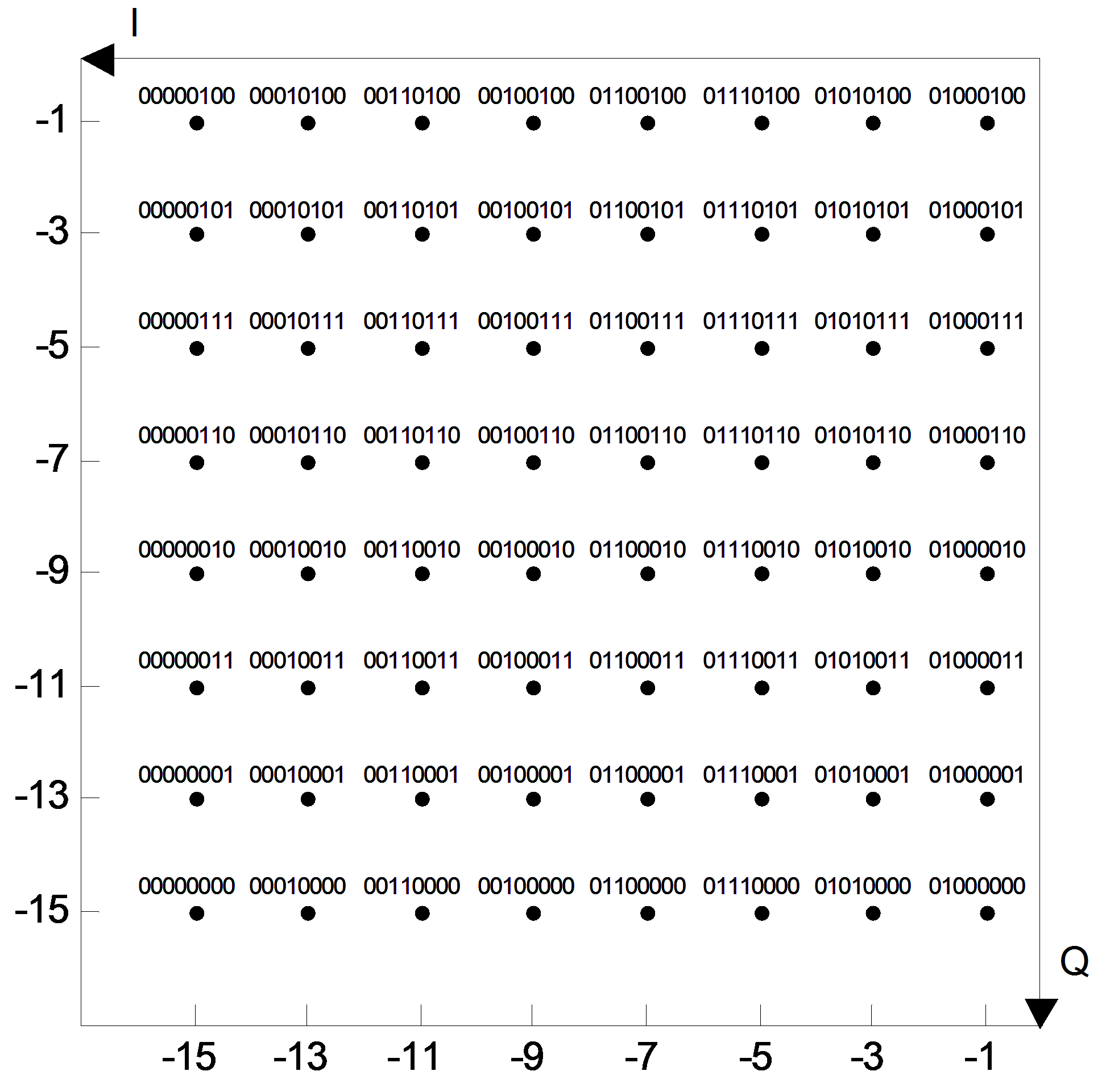
**CID 5187**

**TGac editor: modify P229L43-36 as follows:**

For a 20 MHz, 40 MHz or 80 MHz VHT PPDU transmission, the bits at the output of the stream parser are processed in groups of *NCBPS* bits. Each of these groups is divided into *NSS* blocks of *NCBPSS* bits and each block shall be interleaved by an interleaver based on the Clause 18 interleaver.

**Clause 22.3.10.9 Constellation mapping**

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| 4092 | 233.06 | 22.3.10.9.1 | Figure 22-18. The labelling of individual points is in a font that is too small to read conveniently on the printed page. The IEEE-SA requires that its printed standards be readable. | Find a way to represent this data in an accessible way. e.g. split the diagram into four quarters, or label the points in hex, or list the values in a table. | V | Revised. The diagram is split into four quarters. Refer to new figures in 12/0250.  TGac editor, replace Figure 22-18 with new figures. |
| 5189 | 234.04 | 22.3.10.9.1 | User index missing | d' does not have user index (u) | V | Revised. Agree in principle. In addition there are several other places where d is missing the user index.  TGac editor: add superscript u to d’ on P233L4, P234L42, and twice on P234L50, and to d-tilde on P239L54, P240L4, P240L22, P240L39 |
| 5190 | 234.05 | 22.3.10.9.1 | Wrong index | Replace "i=0 for 20 MHz, ..." with "l=0 for 20 MHz, ..." Replace "i=0,1 for 160 MHz, ..." with "l=0,1 for 160 MHz, ..." | V | Revised.  TGac editor: replace “i=0” with “l=0” on P234L5 and L6. Delete “( for 20, 40 and 80 MHz, for 160  and 80+80 MHz)” on P234L1-2. |
| 5191 | 234.42 | 22.3.10.9.2 | User index missing | d' does not have user index (u) | V | Revised. Agree in principle. In addition there are several other places where d is missing the user index.  TGac editor: add superscript u to d’ on P233L4, P234L42, and twice on P234L50, and to d-tilde on P239L54, P240L4, P240L22, P240L39 |
| 5192 | 234.50 | 22.3.10.9.2 | User index missing | d' and d'' do not have user index (u) | V | Revised. Agree in principle. In addition there are several other places where d is missing the user index.  TGac editor: add superscript u to d’ on P233L4, P234L42, and twice on P234L50, and to d-tilde on P239L54, P240L4, P240L22, P240L39 |





**Clause 22.3.10.11 OFDM modulation**

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| 5445 | 239.54 | 22.3.10.11.1 | "d" does not have a parameter of user index. Ditto for 40, 80, 160 and 80+80 MHz in 22.3.10.11.1. | Change the superscript of "d" as (t\_seg, u). | V | Revised. Agree in principle. In addition there are several other places where d is missing the user index.  TGac editor: add superscript u to d’ on P233L4, P234L42, and twice on P234L50, and to d-tilde on P239L54, P240L4, P240L22, P240L39 |
| 5195 | 240.56 | 22.3.10.11.1 | Q can be either spatial mapping or steering matrix | Replace "spatial mapping matrix" with "spatial mapping/steering matrix" | A | Accepted |