UN Number Variant Codes for use in GA EDICOM IFTMBF Messages

1. Variant Code Structure

A set of 4-character codes, each unique 4-character code describing a single variant, as follows:

Character	Description
1	The packing group, coded as 0, 1, 2 or 3
2	A sequence letter for the PSN, or 0 if there were no alternative PSNs
3 and 4	Two sequence letters for other information, for the cases where the variant is required because of differences in stowage category, subrisks, packing instruction etc.

This structured code is preferred over a sequential number as it has the advantage that when changes to the IMDG Code force new variants for a UN number, new variants can be placed at intermediate positions (if appropriate) in the variant list, rather than being placed at the end of the list having been assigned the next sequential number.

This approach will make system maintenance easier and help to preserve data consistency between different systems.

2. Variant Code Examples

UN Number	Variant Code	Description
1993	1000	Variants resulting from different Packing Groups I, II and III
	2000	
	3000	
1170	2A00	Packing Group II and 4 PSNs: ETHANOL ETHYL ALCOHOL ETHANOL SOLUTION ETHYL ALCOHOL SOLUTION
	2B00	
	2C00	
	2D00	
	3A00	Packing Group III and 4 PSNs: ETHANOL ETHYL ALCOHOL ETHANOL SOLUTION ETHYL ALCOHOL SOLUTION
	3B00	
	3C00	
	3D00	
0004	000A	Variants resulting from different Packing Instructions: P112(a) - Solid wetted, 1.1D P112(b) - Solid dry, other than powder 1.1D P112(c) - Solid dry powder 1.1D
	000B	
	000C	

3. Variant Code Distribution

The information will be made available as a CSV file suitable for import into MS Access, MS Excel or any application or database able to import a CSV file.

The first record will have field names. The second and subsequent records will each represent a single variant.

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Field Name	Description
Unno	UN number
Variant	Variant Code
Version	Version of the data corresponding to this variant
Pg	Packing Group
Name	Proper Shipping Name if the 2nd character of Variant is non-zero
VarDesc	Human readable variant description
VarExtra	Coded extra data forcing the variant, e.g. stowage category

Using the example UN numbers in item 2 above, their entries in the CSV file would be,

i) Using vertical bar (|) as the delimiter (no text qualifier is needed):

```
Unno|Variant|Version|Pg|Name|VarDesc|VarExtra
1993|1000|36000|1|||
1993|2000|36000|2|||
1993|3000|36000|3|||
1170|2A00|36000|2|ETHANOL||
1170|2B00|36000|2|ETHYL ALCOHOL|
1170|2C00|36000|2|ETHANOL SOLUTION||
1170|2D00|36000|2|ETHYL ALCOHOL SOLUTION||
1170|3A00|36000|3|ETHANOL||
1170|3B00|36000|3|ETHYL ALCOHOL||
1170|3C00|36000|3|ETHANOL SOLUTION||
1170|3D00|36000|3|ETHYL ALCOHOL SOLUTION||
0004|000A|36000|||Solid wetted|PIN=P112(a)
0004|000B|36000|||Solid dry, other than powder|PIN=P112(b)
0004|000C|36000|||Solid dry powder|PIN=P112(c)
```

ii) Using comma (,) as the delimiter and double quote (") as the text qualifier:

```
"Unno","Variant","Version","Pg","Name","VarDesc","VarExtra"
"1993","1000","36000","1","","",","
"1993","2000","36000","2","","",","
"1993","3000","36000","3","","",","
"1170","2A00","36000","2","ETHANOL","","","
"1170","2B00","36000","2","ETHYL ALCOHOL",","
"1170","2C00","36000","2","ETHANOL SOLUTION","","","
"1170","2D00","36000","2","ETHYL ALCOHOL SOLUTION","","","
"1170","3A00","36000","3","ETHANOL","","","
"1170","3B00","36000","3","ETHYL ALCOHOL","","","
"1170","3C00","36000","3","ETHANOL SOLUTION","","","
"1170","3D00","36000","3","ETHYL ALCOHOL SOLUTION","","","
"0004","000A","36000","","","Solid wetted","PIN=P112(a) "
"0004","000B","36000","","","Solid dry, other than powder","PIN=P112(b) "
"0004","000C","36000","","","Solid dry powder","PIN=P112(c) "
```

For variants that have multiple codes in field VarExtra, the values will be delimited by the forward slash character, /. For example, SEC=8/CAT=03.

A complete list of codes for use in field VarExtra is not available at present.

In addition to supplying the above data in a separate data file, the details will also be included in the full Dangerous Goods List provided by Exis to its data supply customers.

4. EDI

A recent document, "IFTMBFv1-3 (GA).pdf", describes the GA EDICOM Version 1.3 IFTMBF Firm Booking Message, and includes a number of proposed changes.

One proposed change describes the syntax for incorporating the UNNo variant details in an IFTMBF message.

At the DGS level (Segment Group 16, Goods Item Details) an optional FTX segment can be included.

The following syntax differs from the document by using the structured code (4 characters) and version rather than a sequential number to identify the variant.

FTX+AAC++UNNOSUFFIX+<variant>:<version>

For example,

FTX+AAC++UNNOSUFFIX+0B0A:36000

Although including the UNNO variant codes in an IFTMBF message is optional, it can be useful for helping the receiving system identify the correct variant intended by the sending system.

It is possible that two systems exchanging EDI files may be using different versions of the IMDG Code data. This is a consequence of different implementation times for new data when either a new IMDG Code amendment is released (allowing implementation at any time within the transition year) or an erratum or note verbal is released with no specified implementation time.

By using both the variant code and the version number, a receiving system can check for a match with the UNNO, the variant code and the version number. If all match, then the substance data (i.e. record) identified within the receiving system is the same as the substance record used in the sending system to produce the EDI file.

5. Dangerous Goods Information Schedule

The above, however, makes an assumption. It assumes that the both the sending system and the receiving system have implemented the same scope of supply (or schedule) for the dangerous goods information.

Factors affecting the schedule can be summarised as follows:
• some companies do not need all variants for a substance (e.g. UN1950)
• some companies do not need all the information that influences characters 3 and 4 of the variant code (stowage category, subrisks, packing instruction etc.)

In such cases, it is possible that the data included in some fields is changed, or that the fields themselves are not supplied at all.

Differences in the schedule can affect the variant codes. In these cases it is possible that the same variant code is used to represent difference substance records in the sending and

receiving systems. This is most easily understood by examples of different dangerous goods schedules.

Example 1
Company 1: Schedule includes full dangerous goods data

Company 2: Schedule excludes UN1950 above 1L

A difference occurs in the variant list for UN1950:

• Company 1 has all variants including the variants above 1L.

```
"1950","0A0A",,"AEROSOLS","Flammable, max. 1L."
"1950","0A0D",,"AEROSOLS","Flammable, containing substances of class 8, max. 1L."
"1950","0A0B",,"AEROSOLS","Flammable, containing substances of class 6.1, max. 1L."
"1950","0A0C",,"AEROSOLS","Flammable, containing substances of classes 6.1 and 8, max. 1L."
"1950","0A0E",,"AEROSOLS","Non-flammable, non-toxic, max. 1L."
"1950","0A11",,"AEROSOLS","Non-flammable, containing substances of class 8, max. 1L."
"1950","0A0F",,"AEROSOLS","Non-flammable, containing substances of class 6.1, max. 1L."
"1950","0A10",,"AEROSOLS","Non-flammable, containing substances of classes 6.1 and 8, max. 1L."
"1950","0B0A",,"AEROSOLS (above 1L)","Flammable."
"1950","0B0D",,"AEROSOLS (above 1L)","Flammable, containing substances of class 8."
"1950","0B0B",,"AEROSOLS (above 1L)","Flammable, containing substances of class 6.1."
"1950","0B0C",,"AEROSOLS (above 1L)","Flammable, containing substances of classes 6.1 and 8."
"1950","0B0E",,"AEROSOLS (above 1L)","Non-flammable, non-toxic."
"1950","0B11",,"AEROSOLS (above 1L)","Non-flammable, containing substances of class 8."
"1950","0B0F",,"AEROSOLS (above 1L)","Non-flammable, containing substances of class 6.1."
"1950","0B10",,"AEROSOLS (above 1L)","Non-flammable, containing substances of classes 6.1 and 8."
"1950","0C0A",,"WASTE AEROSOLS","Flammable."
"1950","0C0D",,"WASTE AEROSOLS","Flammable, containing substances of class 8."
"1950","0C0B",,"WASTE AEROSOLS","Flammable, containing substances of class 6.1."
"1950","0C0C",,"WASTE AEROSOLS","Flammable, containing substances of classes 6.1 and 8."
"1950","0C0E",,"WASTE AEROSOLS","Non-flammable, non-toxic."
"1950","0C11",,"WASTE AEROSOLS","Non-flammable, containing substances of class 8."
"1950","0C0F",,"WASTE AEROSOLS","Non-flammable, containing substances of class 6.1."
"1950","0C10",,"WASTE AEROSOLS","Non-flammable, containing substances of classes 6.1 and 8."
```

• Company 2 does not include the variants above 1L.

```
"1950","0A0A",,"AEROSOLS","Flammable, max. 1L."
"1950","0A0D",,"AEROSOLS","Flammable, containing substances of class 8, max. 1L."
"1950","0A0B",,"AEROSOLS","Flammable, containing substances of class 6.1, max. 1L."
"1950","0A0C",,"AEROSOLS","Flammable, containing substances of classes 6.1 and 8, max. 1L."
"1950","0A0E",,"AEROSOLS","Non-flammable, non-toxic, max. 1L."
"1950","0A11",,"AEROSOLS","Non-flammable, containing substances of class 8, max. 1L."
"1950","0A0F",,"AEROSOLS","Non-flammable, containing substances of class 6.1, max. 1L."
"1950","0A10",,"AEROSOLS","Non-flammable, containing substances of classes 6.1 and 8, max. 1L."
"1950","0B0A",,"WASTE AEROSOLS","Flammable."
"1950","0B0D",,"WASTE AEROSOLS","Flammable, containing substances of class 8."
"1950","0B0B",,"WASTE AEROSOLS","Flammable, containing substances of class 6.1."
"1950","0B0C",,"WASTE AEROSOLS","Flammable, containing substances of classes 6.1 and 8."
"1950","0B0E",,"WASTE AEROSOLS","Non-flammable, non-toxic."
"1950","0B11",,"WASTE AEROSOLS","Non-flammable, containing substances of class 8."
"1950","0B0F",,"WASTE AEROSOLS","Non-flammable, containing substances of class 6.1."
"1950","0B10",,"WASTE AEROSOLS","Non-flammable, containing substances of classes 6.1 and 8."
```

It can be seen that variants beginning with 0B (i.e. AEROSOLS (above 1L)) for Company 1 represent different substance data than those beginning with 0B (WASTE AEROSOLS) for Company 2.

Such differences are limited to UN 1950 and UN 2037 at present (as these have the most variants and are not divided by packing group) and so should be straightforward to deal with in a receiving system.

Example 2
Company 1: Schedule includes full dangerous goods data

Company 2: Schedule excludes stowage category, packing instructions and packing provisions

A difference occurs in the variant list for UN1790 Packing Group I:

- Company 1 has 2 variants due to packing provision PP79 which states "For UN 1790 with more than 60% but not more than 85% hydrofluoric acid, see P001". The first variant applies to packing instruction P802. The second variant applies to packing instruction P001.

  Company 1 has 2 variants for UN 1803 because "In metal drums" has stowage category B, and "Not in metal drums" has stowage category C.

- Company 2 has only one variant for UN 1790 and 1803 because the stowage category, packing instructions and packing provisions are not included in the schedule.

This change of variant codes is straightforward for a receiving system to process because there will be a mis-match between the sending system variant codes and the receiving system variant codes.

It is also likely that shipping lines exchanging EDI messages would implement a full dangerous goods substance database so that the above mis-match example would not occur.

It is possible, however, that EDI files from a non-shipping line may have different variants as not all fields are of interest to them. This may only be a future consideration at present, but is included for completeness.

6. EDI Additional Notes

Examples 1 and 2 above describe two scenarios in which a mis-match between the sending and receiving system variant codes may occur.

Example 2 is easily managed as the variant codes in one system do not have a match in the other system. There is no ambiguity and the receiving system can issue appropriate warning/error messages according to the nature of the mis-match and company policy.

Example 1 is different in that an assumption that the UNNo, variant code and version are sufficient to identify matching records in the sending and receiving systems is not true.

Fortunately this applies only to two UNNos at present:

- UN 1950 (AEROSOLS) [Max of 24 variants in IMDG Code 35-10]
- UN 2037 (RECEPTACLES, SMALL, CONTAINING GAS (GAS CARTRIDGES) without a release device, non refillable) [Max of 18 variants in IMDG Code 35-10]

UN 0190 (SAMPLES, EXPLOSIVE) has a maximum of 35 variants in IMDG Code 35-10. It is possible, however, that a shipping line may restrict which divisions it carries which would impact the variant codes used.

For the UNNos listed above, it will be necessary for the receiving system to do additional checks on the booking item data to ensure that the correct substance record is matched.