

BAPLIEv3 – Development Notes

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SMDG Subgroup Version 3 of BAPLIE, MOVINS, Container Messages

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1 Context

SMDG's subgroup is working on versions 3 of Edifact messages BAPLIE, MOVINS and SMDG Container Messages. Since last SMDG plenary in Hamburg there have been 3 subgroup meetings focusing on a draft for message BAPLIEv3.0.

Working group's time line:

- SMDG plenary Bilbao (Oct 2012): approve message structure such that DMRs for D13.A can be submitted
- period until next plenary in Marseille (Apr 2013): finish work on SMDG code lists, remaining items for MIG (no more DMRs required)
- SMDG plenary Marseille (Apr 2013): approve MIG such that trial phase can be started

This document reports about the status of work: A draft for BAPLIEv3.0 has been prepared such that necessary DMRs could be submitted – provided plenary approves.

Chapter 2 lists the goals for the new message version, while chapter 3 provides an overview on revision of message structure. Chapters 4 and following describe details for new and changed features.

2 Goals

New features:

- DG: limited/excepted quantities, segregation groups
- flat racks / platforms: use collapsed flat as platform, end walls with flexible height, bundles
- discharge priorities, block stow
- containers without ISO number
- breakbulk: distribution on supporting equipment, center of gravity
- blocked positions
- variable reefer settings
- maximum allowable stacking weight
- positions with/without lashing gap
- reefer engine forward/aft

Structural message clean-up:

Set up message such that new feature can be added by use of new codes rather than revision of MIG. Codes may be defined by SMDG as code list responsible agency

Re-use of structural definitions in related messages (MOVINS, SMDG Container

Messages, special case IFTDGN).

3 Message Structure

See illustration 1 for an overview of the complete message structure.

3.1 Heading section and TDT-group4

Message structure before LOC-group5 (stowage positions) has been taken over from directory D12.A. Compared to BAPLIEv2.x it allows for a reference to another document and additional information about parties and contacts.

TDT-group4 including specification of import/export voyage and actual/estimated times for current and next port has become M9 (was M3). It is required to specify detail about main-carriage. On-carriage information can be transmitted if useful.

3.2 Separate Segment Groups for description of “stowage location” and “transported units of cargo/equipment”

In BAPLIEv2.x there is a LOC-group5 describing a stowage position which contains an EQD-group6 describing cargo within this position. Segments GID, GDS, MEA, DIM, TMP, RNG, LOC had been part of the stowage-position group although they describe cargo related information. This has been cleaned up by moving the segments GID, GDS, MEA, DIM, TMP, RNG, LOC into the EQD group.

Please note, LOC-group5 and EQD-group6 have their own FTX and RFF segment. Dependent on group's context different information is transmitted in these segments. For more details about function of sub-groups and segments see section 4.

In EQD-group6 sub-groups for segments LOC (POL/POD), TMP (reefer settings) and EQA (bundles) have been introduced. Details of these new features are described in chapter 4.

3.3 Re-arrangement of Segments

Sequence of segments (and groups) in EQD-group6 has been re-arranged. The intention is to transmit information defining equipment's characteristics before its details.

3.4 DGS Group

The structure of DGS group in BAPLIEv2.x made it extremely difficult to adjust it for the required extensions. A more global overworking and harmonization with Protect's IFTDG was intended.

Unfortunately it was not possible to arrange for discussions with the Protect Group yet. Informal contacts with Protect member Mr. Gund have been positive, but he cannot speak for the whole group. There was no Protect meeting during last year, the next meeting is scheduled for 2012-10-17.

SMDG's subgroup discussed policies and structure of a revised DGS group in BAPLIE, MOVINS and Container Messages. More details are described in section 4.1.

Pos. No.	Seg. ID	Name	Req. Des.	Max.Use	Group Repeat	Notes and Comments
0010	UNH	Message Header	M	1		
0020	BGM	Beginning of Message	M	1		
0030	DTM	Date/Time/Period	M	1		
0040		Segment Group 1: RFF-DTM	C		9	
0050	RFF	Reference	M	1		
0060	DTM	Date/Time/Period	C	9		
0070		Segment Group 2: NAD-SG3	C		9	
0080	NAD	Name and Address	M	1		
0090		Segment Group 3: CTA-COM	C		9	
0100	CTA	Contact Information	M	1		
0110	COM	Communication Contact	C	9		
0120		Segment Group 4: TDT-LOC-DTM-RFF-FTX	M		9	
0130	TDT	Transport Information	M	1		
0140	LOC	Place/Location Identification	M	9		
0150	DTM	Date/Time/Period	M	99		
0160	RFF	Reference	C	1		
0170	FTX	Free Text	C	1		
0180		Segment Group 5: LOC-FTX-RFF-SG6	M		99999	
0190	LOC	Place/Location Identification	M	1		
0200	FTX	Free Text	C	9		
0210	RFF	Reference	C	9		
0220		Segment Group 6: EQD-NAD-SG7-MEA -HAN-SG8-DIM-SG9-RFF-GDS-FTX-SG10	C		9	
0230	EQD	Equipment Details	M	1		
0240	NAD	Name and Address	C	9		
0250		Segment Group 7: LOC-TSR	C		9	
0260	LOC	Place/Location Identification	M	1		
0270	TSR	Transport Service Requirements	C	1		
0280	MEA	Measurements	C	9		
0290	HAN	Handling Instructions	C	99		
0300		Segment Group 8: TMP-RNG-DTM	C		9	
0310	TMP	Temperature	M	1		
0320	RNG	Range Details	C	1		
0330	DTM	Date/Time/Period	C	1		
0340	DIM	Dimensions	C	9		
0350		Segment Group 9: EQA-NAD	C		9	
0360	EQA	Attached Equipment	M	1		
0370	NAD	Name and Address	C	1		
0380	RFF	Reference	C	9		
0390	GDS	Nature of Cargo	C	99		
0400	FTX	Free Text	C	9		
0410		Segment Group 10: DGS-ATT-MEA-FTX-CTA	C		999	
0420	DGS	Dangerous Goods	M	1		
0430	ATT	Attribute	C	9		
0440	MEA	Measurements	C	9		
0450	FTX	Free Text	C	9		
0460	CTA	Contact Information	C	1		
0470	UNT	Message Trailer	M	1		

Illustration 1: Structure of BAPLIEv3.0

4 New/Modified Features

4.1 Dangerous Goods

4.1.1 Policy

Core policy for DGS-group is to transmit information *identifying* hazards according to IMDG Code. Transmission of stowage and segregation requirements as defined by IMDG Code is not purpose of the DGS-group. Once a hazard is correctly identified, the implicated requirements are well defined by IMDG Code.

Although hazards are defined separately for DG-items, in context of the message, derived requirements need to be applied for the whole unit described by EQD-group6, i.e. a container or unit of breakbulk.

With Dangerous Goods many shipping lines define their own *in-house-rules* on top of IMDG Code. Related requirements need to become part of the message. They are described as handling instruction as part of EQD-group6 rather than by a DGS-group.

4.1.2 Use of segments

The DGS segment does not completely allow to specify a hazard. For additional properties of a DG item segments ATT (attribute) and MEA (measurement) have been added. They provide for coded transmission of data.

Information transmitted in ATT segment includes: aggregate state, Marpol, limited/excepted quantity, proper shipping name, segregation group and UNDG number extended information. The MEA segment is provided for quantitative details like net weight of a substance, radioactivity, etc.

For additional information which cannot be transmitted in coded form FTX segments are allowed.

A CTA segment provides for specification of emergency contact.

4.2 Breakbulk

Application for a new code for un-containerized equipment in equipment type code qualifier DE8053 of segment EQD is still to be discussed.

4.2.1 Policy

In context of BAPLIE the term breakbulk refers to goods which are loaded/discharged separately from related equipment. Information about breakbulk is transmitted by a separate EQD-group6. By implication this means information about goods tightly lashed on a platform or flat rack (and thus loaded/discharged in a single move together with equipment) is transmitted within equipment's EQD-group6. (GDS and/or FTX can be used for details about goods.)

The new structure improves description of breakbulk with regard to

- arrangement of breakbulk and equipment (load/discharge operations)
- distribution of mass for calculation of stack weights and center of gravity (vessel safety)

Breakbulk information model compared to BAPLIEv2.x: There are no longer “leading” and “excess” stowage locations. Units of breakbulk are identified by the same style of breakbulk-ID as in BAPLIEv2.x.

- Breakbulk's EQD-group6 is transmitted in any one of the locations affected. There is a reference to every stowage location which is affected by breakbulk's weight (independent whether it contains supporting equipment or not). This reference allows to distribute breakbulk's weight over several stacks in calculations.
- Supporting equipment's EQD-group6 is transmitted in the location where stowed. Every unit of breakbulk carried by the equipment is indicated by a reference to its breakbulk-ID.

Multiple units of breakbulk on the same flat/platform are transmitted by multiple instances of EQD-group6 for breakbulk units plus one instance for the supporting equipment.

Information about a voluminous unit of breakbulk which spreads over multiple flats/platforms is transmitted by an EQD-group6 in one of the positions occupied by supporting equipment.

See section 4.2.3 for an illustrating example.

4.2.2 Use of segments

Summary for use of segments in EQD-group6 for *breakbulk*:

- EQD+BB+... : equipment id defines *breakbulk reference identification*¹ (DE 8260)
- MEA+WT+... : describes breakbulk's total mass – independent on distribution on supporting equipment
- MEA+VCG+... : describes breakbulk's vertical center of gravity
- DIM+1+... : describes breakbulk's gross dimensions
- RFF+AWN+... : reference to location(s) taking up breakbulk's mass; independent whether these locations contain supporting equipment or not

Special use of segments in EQD-group6 for *supporting equipment*:

- MEA+WT+... : supporting equipment's weight (without breakbulk)
- RFF+EQ+... : reference to breakbulk to be supported by the flat/platform (breakbulk reference identification)

¹ Breakbulk reference identification: UN-locode of port of loading plus unique 5-digit sequence number (same definition as in BAPLIE version 2.x).

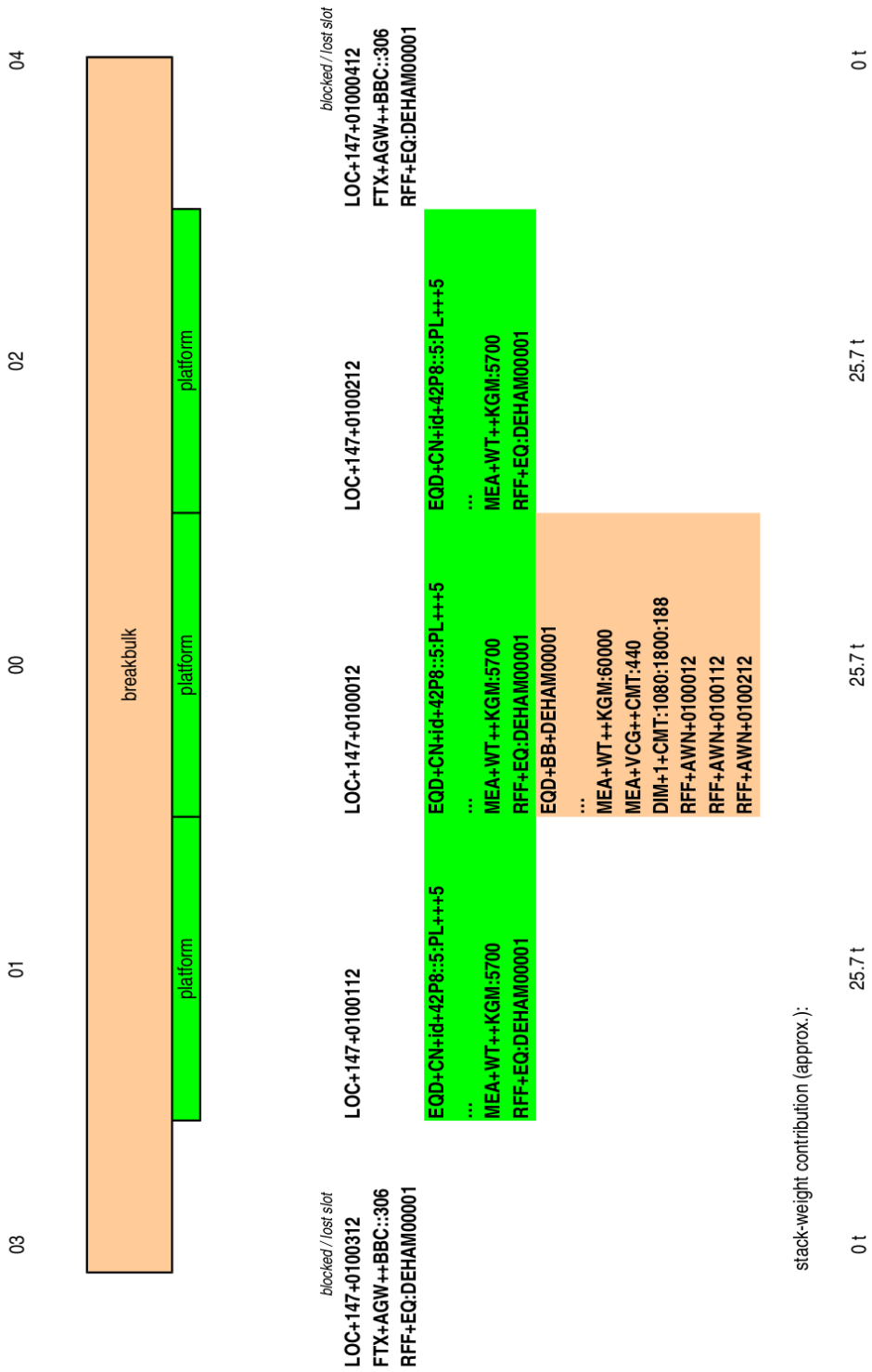


Illustration 2: One unit of breakbulk on three platforms

4.2.3 Example

Illustration 2 shows an example for description of one unit of breakbulk supported by three platforms and causing two lost slots.

The lower part of the illustration shows for each row simplified segments in LOC-group5. On white background there are segments describing lost slots (outer rows). Green (breakbulk) and brownish (platforms) background indicate segments in EQD-group6. (For simplicity, segments describing POL/POD, handling instructions, etc are not listed in this example).

For the outermost positions only, information about blocking by the breakbulk unit is to be transmitted (see section 4.4.1).

Supporting equipment is sufficiently described by its weight and a reference to the breakbulk unit(s) supported by it.

The breakbulk unit defines its unique breakbulk reference identification, its total weight, vertical center of gravity, gross dimensions and gives reference to positions with equipment supporting its weight. Note, reference is given not to all stowage locations occupied by breakbulks dimensions. Only locations taking up breakbulks mass are referred to!

Calculations derivable from description :

Breakbulk's weight is distributed over multiple stacks. Assuming equal distribution of weight its total weight is to be divided over 3 platforms (in example 20t each). Thus stackweight contribution to each of the stacks 01001, 01000 and 0102 is 24.7t (including platform's weight).

Breakbulk's vertical center of gravity is defined to be at 440 cm. For calculation of vessel's stability and stresses platform's base height and height of the platform itself are to be added.

4.3 Bundles

Multiple pieces of equipment in one position which are **not bundled** are transmitted as multiple instances of EQD-group6 in the same LOC-group5. The actual sequence within the position is indicated by an RFF+SQ segment. Sequence number 1 indicates the bottommost unit. Each unit's operators can be indicated in EQD-group6' NAD segment.

If multiple pieces of equipment are **bundled** there is one unit to be defined as the leading equipment while other units in the bundle are defined as attached units. Attached units are transmitted by instances of EQA-group7 within leading equipment's EQD-group6. For each attached unit ID and operator can be specified.

Note, it is possible to specify the sequence of bundles within a position, but it is not possible to specify a sequence within a bundle.

4.4 Stowage Locations

4.4.1 Policy

- Only even tier numbers shall be used in BAPLIE. In case of half-height containers transmit 2 containers in 8' position.
- If an ISO cell position number does not ultimately define the physical position on board according information shall be transmitted as handling instruction for the piece of cargo. (Covers lashing gap, multiple stacking cones, blocker in stack)
- In case of blocked positions “permanently blocked slots” and “lost slots” are distinguished by different codes for blocking.
- All positions except those marked as blocked can be used for stowing cargo. (Implication: positions above lost slots must be marked as lost slots too.)
- For *lost slots* the party in charge can be indicated by a reference to the container- or breakbulk-ID.
- *Permanently blocked slots* are assumed to be caused by equipment permanently on board (examples: power packs, fuel tanks for power packs, land-side power connection, containers with spare part for vessel engine, gear boxes, ...). For this permanent equipment an extra EQD-group6 is transmitted. It EQD's qualifier is different from that of a cargo container. A size-type code can be used to specify equipments dimension. Permanent equipment's identification shall be unique. Its EQD-group6 will in most cases be transmitted without POL/POD.
- If a stowage location allows for variants in equipment's position (e.g. with or without lashing gap, multiple stacking cones, etc) details about placement are transmitted as handling requests for the equipment.

4.4.2 Use of segments

- Blocked positions are marked by a FTX segment in LOC-group5 (position 200). Codes from a SMDG code list define the reason for blocking.
- In case of lost slots reference to the piece of cargo which causes the blocking is given by RFF in LOC group (position 210). The reference is defined to be the container- or breakbulk ID specified by cargo's EQD segment.
- In case of permanently blocking slots reference to the equipment permanent on board is given by RFF in LOC group (position 210). The reference is defined to be the ID specified in equipment's EQD segment.

4.5 Handling Requirements

4.5.1 Policy

- Any handling requirements for equipment or breakbulk shall be transmitted in a HAN segment. Codes covering all common requirements shall be provided by

SMDG maintained code lists. -- The FTX segment shall be used only for additional information or if no applicable code exists.

- Codes provided by SMDG code lists shall include
 - Stowage and/or segregation requirements (on deck only, away from food stuffs, keep cool, no over-stow, etc)
 - Operational requirements (e.g. floating crane)
 - Variants of a stowage location used/to be used (lashing gap, stacking cones, etc)
 - Reefer engine forward/aft
 - Ventilation settings

Related SMDG code lists are not yet defined. This work is left for the near future.

4.6 Equipment Dimensions

4.6.1 Policy

- Equipment dimensions not sufficiently defined by ISO size-type code will be defined in a DIM segment. Such dimensions include
 - Flat racks: variable height of upright end-walls
 - Flat racks: height with end-walls collapsed
 - Height of bundle
 - Container body wider than 8'
 - Container width at corner posts wider than 8'
 - Container height not defined by ISO code (e.g. 6'9)
 - Bottom height of platform/flat rack
- Transmit sizes in cm or mm (ambiguous coding for feet/inches)
- DMR for new qualifiers required

4.7 Containers without ISO number

For equipment not classified according to ISO 6345 the identification code still is to be kept unique among any equipment on board a vessel. Such equipment shall be distinguished by defining a different code list responsible agency than ISO in data element c237.3055.

SMDG recommends the following format for equipment identifier (c237.8260 – AN..17):

- 4 characters XXXX
- one or more digits for equipment's serial number (as defined by owner)

4.8 Variable Reefer Settings

For temperature controlled containers it is now possible to define time-dependent

settings/ranges. For this purpose a new TMP-group has been established. This group allows up to 9 definitions of settings and/or ranges together with related times. It consists of a mandatory TMP segment (trigger segment), an optional RNG segment and a dependent DTM segment. Transmission of the DTM segment is required in every but the first iteration of the group.

Transmission of the TMP segment is mandatory in every iteration of the group. In case a specific setting is not defined the segment is transmitted as 'TMP+2' just indicating the container is to be connected to a power plug. This handles cases where a setting is not (yet) known, as well as cases where control is defined by a temperature *range* only.

Transmission of the RNG segment will take place only if a temperature range is specified. This holds for fixed as well as for variable settings.

Transmission of the DTM segment is required in every but the first iteration of the TMP-group. Even in case of variable temperature control it is recommended to use the first iteration of the TMP-group for transmission of default values which are to be applied if a message receiver cannot handle variable settings/ranges. In any subsequent iteration transmission of a DTM segment is required.

The DTM segment defines the start of a time period for which values transmitted in same iteration's TMP and/or RNG segments are to be applied. The period ends when at the time when another period starts. Iterations specifying time-dependent settings need not necessarily be transmitted in sequence of starting time.

4.9 Discharge Priorities – On-carriage Information

4.9.1 Discharge Priority

For specification of discharge (or more general: handling-) priorities the LOC segment has been extended to LOC-group9 which includes an optional TSR (Transport Service Requirements) segment. From directory, this segment allows to specify transport priorities with meaning 1="express", 2="high speed", 3="normal speed".

4.9.2 On-carriage Information

In TSR segment information about on-carriage can optionally be transmitted:

- define mode of transport for on-carriage (train, barge, feeder)
- define voyage identification for on-carriage

4.10 Cargo Operator

The term cargo operator can be associated with different functions. In a Vessel Sharing Agreement (VSA) for example, there are two parties involved if a partner line sub-leases part of their slots to another shipping line. Both parties, partner line and sub-leasing shipping line might be seen as cargo operator. While terminals might be more interested in the VSA-partner, carriers might be more interested in the slot charterer.

BAPLIEv3.0 allows to transmit both parties in multiple instances of an NAD segment. Party's exact function is specified in NAD segment's qualifier. Codes for this qualifier are still to be defined. (DMR required!)

5 Code Lists

5.1 DE 1131

Since directory D04A data element 1131 (code list identification code) is no longer maintained by UN/ECE. Codes specified in DE1131 are to be maintained by the *code list responsible agency* (CLRA) specified in related data element 3055. Among many other segments this affects for example LOC segments specifying UN-locodes (CLRA = UN/ECE) or TDT segments specifying IMO number (CLRA = IMO). In both cases a *code list identification code* is not defined by the CLRA. DE1131 is left blank assuming the code list referred to is sufficiently defined by DE3055.

5.2 Codes for which DMR required

- DE 9017 (code qualifying attribute function), ATT: hazard identification
- DE 8053 (equipment type code qualifier), EQD: breakbulk + permanent on board
- DE 6041 (dimension type code qualifier), DIM: (7 requests for equipment dims)
- DE 6145 (party function code qualifier), NAD: operator function
- DE 1153 (reference code qualifier), RFF: longitudinal/transversal sequence
- DE 6311 (measurement purpose code qualifier), MEA: vertical center of gravity

5.3 SMDG code lists

The sub-group already identified many requests for codes. Existing code lists have reviewed. Sub-group members compile code requests for different demands. They all should become subject of SMDG-maintained code lists.

A final proposal for these code lists is still to be developed, however. In view of time pressure for getting the message structure reasonably stable, more detailed discussions have been postponed for the period after the Bilbao meeting.