



National Marine Electronics Association
International Marine Electronics Association

Technical Bulletin

Amendment to NMEA 2000 Version 2.000
AT 2000 20130906

NEW Man Overboard Notification (MOB) PGN 127233

NMEA 2000 Amendment

An amendment is a technical specification that is publically available and applies to the current version as specified. The content of the amendment will be incorporated into the next released version of the NMEA 2000 standard.

This document contains the released NMEA 2000 Man Overboard Notification (MOB) PGN 127233 that was developed and approved by the NMEA 2000 Standards Committee.

Man Overboard Notification(MOB)

PGN: 127233

hex: 1F101

The MOB PGN is intended to provide notification from a MOB monitoring system. The included position information may be that of the vessel or the MOB device itself as identified in field "X", position source. Additional information may include the current state of the MOB device, time of activation, and MOB device battery status.

This PGN may be used to set a MOB waypoint, or to initiate an alert process.

This PGN may be used to command or register a MOB device emitter Ids or other applicable fields in the message with an MOB System or other equipment. If the fields in this PGN are configured over the network, the Command Group Function (PGN 126208) shall be used.

Queries for this PGN shall be requested using either the ISO Request (PGN 059904) or the NMEA Request Group Function (PGN 126208).

A device receiving an ISO (PGN 059904) for this PGN (127233), shall respond by providing as many of these PGNs (127233) as necessary for every MOB Emitter ID that has associated data fields.

If a Request Group Function (PGN 126208) requesting this PGN (127233) is received, the receiving device shall respond in the following manner:

- If no requested fields have been included with the Request Group Function then the response is to return one or more PGNs, just like responding to the ISO Request (PGN 055904) described above.
- If the Request Group Function (PGN 126208) includes the MOB Emitter ID field or MOB Status field, then the response shall be filtered by these fields contained within this request resulting in one or more PGN (127233) responses.

If the MOB Emitter ID requested is not considered a valid MOB Emitter ID by the receiving device, then the appropriate response would be the Acknowledge Group Function (PGN 126208), containing the error state for PGN error code (Field 3) of "0x3 = Access denied." And the requested MOB Emitter ID field parameter error code (Field 6) of "0x3 = Requested or command parameter out-of-range;".

The Default update rate of this PGN is autonomous, as it is dependant upon notification rates of MOB devices.

Single Frame: N Priority Default: 3 Default Update Rate: milliseconds Frequency: NA cycles per second
Destination: Global Query Support: Required Command Support: Optional ACK Rqmnts: None
Field # Field Name Original Reference ID # 227

| Field # | Field Name | Byte Field Size | Bit Field Size | Request Parameter | Command Parameter |
|---------|---------------------------|---|---------------------------|-------------------|-------------------|
| 1 | Sequence ID | 1 | | Optional | Optional |
| DD056 | Sequence ID | An upward counting number used to tie related information together between different PGNs . For example, the SID would be used to tie together the COG, SOG and RAIM values to a given position. 255=no valid position fix to tie it to. Range 0 to 252 for valid position fixes. | | | |
| DF53 | Integer, 8 bit unsigned | uint8 | Range: 0 to 252 | Resolution: 1 bit | Unit-less number |
| 2 | MOB Emitter ID | 4 | | Required | Optional |
| DD010 | Generic numeric ID, large | Number of route, waypoint, event, mark, etc. | | | |
| DF55 | Integer, 32 bit unsigned | uint32 | Range: 0 to 4,294,967,292 | Resolution: 1 bit | Unit-less number |

This provides a unique Identifier for each MOB emitter (MOB emitter is unique to the vessel)

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|----------|---|---------------|--|------------------|---------------------------|--|
| 3 | Man Overboard (MOB) Status | | <i>Byte Field Size:</i> | | <i>Request Parameter</i> | Required |
| | | | <i>Bit Field Size:</i> | 3 | <i>Command Parameter:</i> | Optional |
| | DD369 Man Over Board (MOB) Status | | Provides information which can be used to evaluate the current state of the MOB. | | | |
| | | | 0=MOB Emitter Activated 1=Manual on-board MOB Button Activation 2=Test Mode 3=MOB Not Active 4 - 5=Reserved 6=Error 7=Unknown/Unavailable | | | |
| | DF52 Bit field | bit(n) | <i>Range:</i> | Variable | <i>Resolution:</i> | 1 Used to construct bit fields |
| 4 | NMEA Reserved | | <i>Byte Field Size:</i> | | <i>Request Parameter</i> | |
| | | | <i>Bit Field Size:</i> | resv 5 | <i>Command Parameter:</i> | |
| | DD001 Reserved field | | Variable number of reserved bits, all set to logic "1" | | | |
| | DF52 Bit field | bit(n) | <i>Range:</i> | Variable | <i>Resolution:</i> | 1 Used to construct bit fields |
| | Used to align subsequent data on a byte boundary. | | | | | |
| 5 | UTC Time of MOB Activation | | <i>Byte Field Size:</i> | 4 | <i>Request Parameter</i> | Optional |
| | | | <i>Bit Field Size:</i> | | <i>Command Parameter:</i> | Optional |
| | DD158 Generic time of day | | 24 hour clock, 0 = midnight, time is in UTC | | | |
| | DF06 Time of day | uint32 | <i>Range:</i> | 0 to 86,401 s | <i>Resolution:</i> | 1x10E-4 s ~24 hours, 0 = midnight, range allows for up to two leap seconds per day |
| | UTC of MOB activation provides the time of the initial MOB device activation. | | | | | |
| 6 | Position Source | | <i>Byte Field Size:</i> | | <i>Request Parameter</i> | Optional |
| | | | <i>Bit Field Size:</i> | 3 | <i>Command Parameter:</i> | Optional |
| | DD370 Position Source | | Identifies the source of the position information 0=MOB Position estimated by the Vessel 1=MOB position reported by MOB emitter 2-5= Reserved 6=Error 7=Unknown / Unavailable | | | |
| | DF52 Bit field | bit(n) | <i>Range:</i> | Variable | <i>Resolution:</i> | 1 Used to construct bit fields |
| 7 | NMEA Reserved | | <i>Byte Field Size:</i> | | <i>Request Parameter</i> | |
| | | | <i>Bit Field Size:</i> | resv 5 | <i>Command Parameter:</i> | |
| | DD001 Reserved field | | Variable number of reserved bits, all set to logic "1" | | | |
| | DF52 Bit field | bit(n) | <i>Range:</i> | Variable | <i>Resolution:</i> | 1 Used to construct bit fields |
| | Used to align subsequent data on a byte boundary. | | | | | |
| 8 | UTC Date of Position | | <i>Byte Field Size:</i> | 2 | <i>Request Parameter</i> | Optional |
| | | | <i>Bit Field Size:</i> | | <i>Command Parameter:</i> | Optional |
| | DD039 Generic date | | Days since January 1, 1970, Date is relative to UTC Time. | | | |
| | DF41 Date, day count | uint16 | <i>Range:</i> | 0 to 65,532 days | <i>Resolution:</i> | 1 day 0 = January 1, 1970, max = ~179 years |

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|--|---------------------------------------|---------------|--|--|
| 9 | UTC Time of Position | | Byte Field Size: <input type="text" value="4"/> | Request Parameter: Optional |
| | | | Bit Field Size: | Command Parameter: Optional |
| | DD158 Generic time of day | | 24 hour clock, 0 = midnight, time is in UTC | |
| | DF06 Time of day | uint32 | Range: 0 to 86,401 s Resolution: 1x10E-4 s | ~24 hours, 0 = midnight, range allows for up to two leap seconds per day |
| The UTC of position provides the time of the position information. | | | | |
| 10 | Latitude | | Byte Field Size: <input type="text" value="4"/> | Request Parameter: Optional |
| | | | Bit Field Size: | Command Parameter: Optional |
| | DD022 Latitude, WGS-84 | | Latitude referenced to WGS-84. The resolution of the latitude and longitude fields shall be fixed at 1 decimal place of minutes (1/10 of a minute). If a higher resolution is provided to an AIS unit, the receiving AIS unit shall truncate to 1/10's of minute. | |
| | DF23 Latitude | int32 | Range: +/- 90 deg Resolution: 1x10E-7 deg | "-" = South, resolution ~1.1 cm |
| 11 | Longitude | | Byte Field Size: <input type="text" value="4"/> | Request Parameter: Optional |
| | | | Bit Field Size: | Command Parameter: Optional |
| | DD023 Longitude, WGS-84 | | Longitude referenced to WGS-84. The resolution of the latitude and longitude fields shall be fixed at 1 decimal place of minutes (1/10 of a minute). If a higher resolution is provided to an AIS unit, the receiving AIS unit shall truncate to 1/10's of minute. | |
| | DF25 Longitude | int32 | Range: +/- 180 deg Resolution: 1x10E-7 deg | "-" = West, resolution ~1.1 cm |
| 12 | Course over ground Reference | | Byte Field Size: | Request Parameter: Optional |
| | | | Bit Field Size: <input type="text" value="2"/> | Command Parameter: Optional |
| | DD117 Direction reference | | 0 = True, 1 = Magnetic, 2 = Error, 3 = Null | |
| | DF52 Bit field | bit(n) | Range: Variable Resolution: 1 | Used to construct bit fields |
| 13 | NMEA Reserved | | Byte Field Size: | Request Parameter: Optional |
| | | | Bit Field Size: <input type="text" value="resv"/> <input type="text" value="6"/> | Command Parameter: Optional |
| | DD001 Reserved field | | Variable number of reserved bits, all set to logic "1" | |
| | DF52 Bit field | bit(n) | Range: Variable Resolution: 1 | Used to construct bit fields |
| 14 | Course over ground | | Byte Field Size: <input type="text" value="2"/> | Request Parameter: Optional |
| | | | Bit Field Size: | Command Parameter: Optional |
| | DD165 Course-Over-Ground (COG) | | The direction of the path over ground actually followed by a vessel. | |
| | DF02 Angle | uint16 | Range: 0 to 2Pi rad Resolution: 1x10E-4 rad | Resolution ~0.0057deg, 1 deg = .01745 rad |
| 15 | Speed over ground | | Byte Field Size: <input type="text" value="2"/> | Request Parameter: Optional |
| | | | Bit Field Size: | Command Parameter: Optional |
| | DD044 Generic Speed | | | |
| | DF35 Speed | uint16 | Range: 0 to 655.32 m/s Resolution: 1x10E-2 m/s | 1 Knot = 0.5144 m/s |

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|-----------|--|---------------------------|----------------------------------|--|
| 16 | MMSI of vessel of Origin | <i>Byte Field Size:</i> 4 | <i>Request Parameter</i> | Optional |
| | | <i>Bit Field Size:</i> | <i>Command Parameter:</i> | Optional |
| | DD010 Generic numeric ID, large | | | Number of route, waypoint, event, mark, etc. |
| | DF55 Integer, 32 bit unsigned | uint32 | <i>Range:</i> 0 to 4,294,967,292 | <i>Resolution:</i> 1 bit Unit-less number |

The MMSI number of the ship of origin may be set to 2,147,483,647 if unknown.

| | | | | |
|-----------|-----------------------------------|--------------------------|---------------------------|---|
| 17 | MOB Emitter Battery Status | <i>Byte Field Size:</i> | <i>Request Parameter</i> | Optional |
| | | <i>Bit Field Size:</i> 3 | <i>Command Parameter:</i> | Optional |
| | DD371 Battery Status | | | 0=Good 1=Low 2-5=Reserved 6=Error 7=Unavailable |
| | DF52 Bit field | bit(n) | <i>Range:</i> Variable | <i>Resolution:</i> 1 Used to construct bit fields |

| | | | | |
|-----------|-----------------------------|-------------------------------|---------------------------|--|
| 18 | NMEA Reserved | <i>Byte Field Size:</i> | <i>Request Parameter</i> | |
| | | <i>Bit Field Size:</i> resv 5 | <i>Command Parameter:</i> | |
| | DD001 Reserved field | | | Variable number of reserved bits, all set to logic "1" |
| | DF52 Bit field | bit(n) | <i>Range:</i> Variable | <i>Resolution:</i> 1 Used to construct bit fields |

Used to align subsequent data on a byte boundary.