059392 ISO Acknowledgment

This message is provided by ISO 11783 for a handshake mechanism between transmitting and receiving devices. This message is the possible response to acknowledge the reception of a “normal broadcast” message or the response to a specific command to indicate compliance or failure.

Field #	*Field Description*
1	Control Byte
2	Group Function Value
3	NMEA Reserved
4	PGN of Requested Information

059904 ISO Request

As defined by ISO, this message has a data length of 3 bytes with no padding added to complete the single frame. The appropriate response to this message is based on the PGN being requested, and whether the receiver supports the requested PGN.

Field #	*Field Description*
1	PGN being requested

060160 ISO Transport Protocol, Data Transfer

ISO 11783 defines this PGN as part of the transport protocol method used for transmitting messages that have 9 or more data bytes. This PGN represents a single packet of a multipacket message.

Field #	*Field Description*
1	Sequence number of multi-packet frame
2	Multi-packet packetized data

060416 ISO Transport Protocol, Connection Management - RTS group function

ISO 11783 defines this group function PGN as part of the transport protocol method used for transmitting messages that have 9 or more data bytes. This PGN’s role in the transport process is determined by the group function value found in the first data byte of the PGN.

Field #	*Field Description*
1	RTS Group Function Code
2	Total message size, bytes
3	Total number of frames to be transmitted
4	NMEA Reserved
5	PGN of multi-packet message

060416 ISO Transport Protocol, Connection Management - CTS group function

ISO 11783 defines this group function PGN as part of the transport protocol method used for transmitting messages that have 9 or more data bytes. This PGN’s role in the transport process is determined by the group function value found in the first data byte of the PGN.

Field #	*Field Description*
1	CTS Group Function Code
2	Number of frames that can be sent
3	Number of next frame to be transmitted
4	NMEA Reserved
5	PGN of multi-packet message

060416 ISO Transport Protocol, Connection Management - EOM group function

ISO 11783 defines this group function PGN as part of the transport protocol method used for transmitting messages that have 9 or more data bytes. This PGN's role in the transport process is determined by the group function value found in the first data byte of the PGN.

Field #	*Field Description*
1	EOM Group Function Code
2	Total message size, bytes
3	Total number of frames received
4	NMEA Reserved
5	PGN of multi-packet message

060416 ISO Transport Protocol, Connection Management - BAM group function

ISO 11783 defines this group function PGN as part of the transport protocol method used for transmitting messages that have 9 or more data bytes. This PGN's role in the transport process is determined by the group function value found in the first data byte of the PGN.

Field #	*Field Description*
1	BAM Group Function Code
2	Total message size, bytes
3	Total number of frames to be transmitted
4	NMEA Reserved
5	PGN of multi-packet message

060416 ISO Transport Protocol, Connection Management - Abort group function

ISO 11783 defines this group function PGN as part of the transport protocol method used for transmitting messages that have 9 or more data bytes. This PGN's role in the transport process is determined by the group function value found in the first data byte of the PGN.

Field #	*Field Description*
1	Abort Group Function Code
2	NMEA Reserved
3	PGN of multi-packet message

060928 ISO Address Claim

This network management message is used to claim a network address and to respond with device information (NAME) requested by the ISO Request or Complex Request Group Function. This PGN contains several fields that are Request Parameters that can be used to control the expected response to requests for this PGN.

Field #	*Field Description*
1	Unique Number (ISO Identity Number)
2	Manufacturer Code
3	Device Instance Lower (ISO ECU Instance)
4	Device Instance Upper (ISO Function Instance)
5	Device Function (ISO Function)
6	NMEA Reserved
7	Device Class
8	System Instance (ISO Device Class Instance)
9	Industry Group
10	NMEA Reserved (ISO Self Configurable)

065240 ISO Commanded Address

ISO 11783 defined this message to provide a mechanism for assigning a network address to a node. The NAME information in the data portion of the message must match the name information of the node whose network address is to be set.

Field #	*Field Description*
1	Unique Number (ISO Identity Number)
2	Manufacturer Code
3	Device Instance Lower (ISO ECU Instance)
4	Device Instance Upper (ISO Function Instance)
5	Device Function (ISO Function)
6	NMEA Reserved
7	Device Class
8	System Instance (ISO Device Class Instance)
9	Industry Group
10	Reserved (ISO Self Configurable)
11	New Source Address

126208 NMEA - Request group function

The Request / Command / Acknowledge Group type of function is defined by first field. The message will be a Request, Command, or Acknowledge Group Function.

Field #	*Field Description*
1	Request Group Function Code
2	Requested PGN
3	Transmission interval
4	Transmission interval offset
5	Number of Pairs of Request Parameters to follow
6	Field number of first requested parameter
7	Value of first requested parameter
8	Variable Number of fields, Field number 6 repeated
9	Variable Number of fields, Field number 7 repeated

126208 NMEA - Command group function

The Request / Command / Acknowledge Group type of function is defined by first field. The message will be a Request, Command, or Acknowledge Group Function.

Field #	*Field Description*
1	Command Group Function Code
2	Commanded PGN
3	Priority Setting
4	NMEA Reserved
5	Number of Pairs of Commanded Parameters to follow
6	Field number of first commanded parameter
7	Value of first command parameter
8	Variable Number of fields, Field number 6 repeated
9	Variable Number of fields, Field number 7 repeated

126208 NMEA - Acknowledge group function

The Request / Command / Acknowledge Group type of function is defined by first field. The message will be a Request, Command, or Acknowledge Group Function.

Field #	*Field Description*
1	Acknowledgment Group Function Code
2	Requested or Commanded PGN # being acknowledged
3	PGN error code
4	Transmission Interval / Priority error code
5	Number of Requested or Commanded Parameters
6	First parameter error code
7	Variable Number of fields, Field number 6 repeated

126208 NMEA - Read Fields - group function

This Read Fields Group Function provides a means to read specific fields in a PGN.

Field #	*Field Description*
1	Complex Request Group Function Code
2	PGN Number
3	Manufacturer's Code
4	NMEA Reserved
5	Industry Group
6	Unique ID
7	Number of Selection Pairs
8	Number of Parameter Pairs to be Read
9	Field Number of First Selection Pair
10	Field Value of First Selection Pair
11	Variable Number of fields, field 9 repeated
12	Variable Number of Fields, field 10 repeated
13	Field Number of First Parameter Pair to be Read
14	Variable Number of Fields, field 13 repeated

126208 NMEA - Read Fields Reply - group function

The Read Fields Reply Group Function is a reply to the Read Fields Group Function.

Field #	*Field Description*
1	Complex Request Group Function Code
2	PGN Number
3	Manufacturer's Code
4	NMEA Reserved
5	Industry Group
6	Unique ID
7	Number of Selection Pairs
8	Number of Parameter Pairs to be Read
9	Field Number of First Selection Pair
10	Field Value of First Selection Pair
11	Variable Number of fields, field 9 repeated
12	Variable Number of Fields, field 10 repeated
13	Field Number of First Parameter Pair to be Read
14	Field Value of First Parameter Pair to be Read
15	Variable Number of Fields, field 13 repeated
16	Variable Number of Fields, field 14 repeated

126208 NMEA - Write Fields - group function

This Write Fields Group Function provides a means to write specific fields in a PGN.

Field #	*Field Description*
1	Complex Request Group Function Code
2	PGN Number
3	Manufacturer's Code
4	NMEA Reserved
5	Industry Group
6	Unique ID
7	Number of Selection Pairs
8	Number of Parameter Pairs to be Written
9	Field Number of First Selection Pair
10	Field Value of First Selection Pair
11	Variable Number of fields, field 9 repeated
12	Variable Number of Fields, field 10 repeated
13	Field Number of First Parameter Pair to be Written
14	Field Value of First Parameter Pair to be Written
15	Variable Number of Fields, field 13 repeated
16	Variable Number of Fields, field 14 repeated

126208 NMEA - Write Fields Reply - group function

The Write Fields Reply Group Function is a reply to the Write Fields Group Function.

Field #	*Field Description*
1	Complex Request Group Function Code
2	PGN Number
3	Manufacturer's Code
4	NMEA Reserved
5	Industry Group
6	Unique ID
7	Number of Selection Pairs
8	Number of Parameter Pairs to be Written
9	Field Number of First Selection Pair
10	Field Value of First Selection Pair
11	Variable Number of fields, field 9 repeated
12	Variable Number of Fields, field 10 repeated
13	Field Number of First Parameter Pair to be Written
14	Field Value of First Parameter Pair to be Written
15	Variable Number of Fields, field 13 repeated
16	Variable Number of Fields, field 14 repeated

126464 PGN List - Transmit PGNs group function

The PGN List group function type is defined by the first field. The message will be either a Transmit PGNs or a Receive PGNs group function that identifies the PGNs transmitted from or received by a node.

Field #	*Field Description*
1	Transmitted PGN Group Function Code
2	First PGN supported
3	Variable Number of fields, Field number 2 repeated

126464 PGN List - Received PGNs group function

The Transmit / Receive PGN List Group type of function is defined by first field. The message will be a Transmit or Receive PGN List group function.

Field #	*Field Description*
1	Received PGN Group Function Code
2	First PGN supported
3	Variable Number of fields, Field number 2 repeated

126983 Alert

This PGN is used to report the status of an alert.

Field #	*Field Description*
1	Alert Type
2	Alert Category
3	Alert System
4	Alert Sub-System
5	Alert ID
6	Data Source Network ID NAME
7	Data Source Instance
8	Data Source Index / Source
9	Alert Occurrence Number
10	Temporary Silence Status
11	Acknowledge Status
12	Escalation Status
13	Temporary Silence Support
14	Acknowledge Support
15	Escalation Support
16	NMEA Reserved
17	Acknowledge Source Network ID NAME
18	Trigger Condition
19	Threshold Status
20	Alert Priority
21	Alert State

126984 Alert Response

This PGN is used to control an active Alert.

Field #	*Field Description*
1	Alert Type
2	Alert Category
3	Alert System
4	Alert Sub-System
5	Alert ID
6	Data Source Network ID NAME
7	Data Source Instance
8	Data Source Index / Source
9	Alert Occurrence Number
10	Acknowledge Source Network ID NAME
11	Response Command
12	NMEA Reserved

126985 Alert Text

The Alert text PGN is used to convey identification and location text strings associated with source of an Alert

Field #	*Field Description*
1	Alert Type
2	Alert Category
3	Alert System
4	Alert Sub-System
5	Alert ID
6	Data Source Network ID NAME
7	Data Source Instance
8	Data Source Index / Source
9	Alert Occurrence Number
10	Language ID
11	Alert Text Description
12	Alert Location Text Description

126986 Alert Configuration

This PGN is used to report the configuration of an alert.

Field #	*Field Description*
1	Alert Type
2	Alert Category
3	Alert System
4	Alert Sub-System
5	Alert ID
6	Data Source Network ID NAME
7	Data Source Instance
8	Data Source Index / Source
9	Alert Occurrence Number
10	Alert Control
11	User Defined Alert Assignment
12	NMEA Reserved
13	Reactivation Period
14	Temporary Silence Period
15	Escalation Period

126987 Alert Threshold

The Alert Threshold PGN is used to convey or program the trigger method and threshold level associated with an Alert.

Field #	*Field Description*
1	Alert Type
2	Alert Category
3	Alert System
4	Alert Sub-System
5	Alert ID
6	Data Source Network ID NAME
7	Data Source Instance
8	Data Source Index / Source
9	Alert Occurrence Number
10	Total Number of Threshold Parameters
11	Parameter Number
12	Trigger Method
13	Threshold Data Format
14	Threshold Level
15	Fields 11 to 14 Repeat as necessary

126988 Alert Value

The Alert Value PGN is used to convey the instantaneous value parameter directly linked with an associated Alert.

Field #	*Field Description*
1	Alert Type
2	Alert Category
3	Alert System
4	Alert Sub-System
5	Alert ID
6	Data Source Network ID NAME
7	Data Source Instance
8	Data Source Index / Source
9	Alert Occurrence Number
10	Total Number of Value Parameters
11	Value Parameter Number
12	Value Data Format
13	Value Data
14	Fields 11 to 13 Repeat as necessary

126992 System Time

The purpose of this PGN isto provide a regular transmission of UTC time and date; optionally synchronized to other parameter groups from the same source.

Field #	*Field Description*
1	Sequence ID
2	Source
3	NMEA Reserved
4	Date
5	Time

126993 Heartbeat

This PGN shall be transmitted by all NMEA devices.

Reception of this PGN confirms that a device is still present on the network.

Reception of this PGN may also be used to maintain an address to NAME association table within the receiving device.

Field #	*Field Description*
1	Update Rate
2	Heartbeat Sequence Counter
3	Class 1 CAN Controller State
4	Class 2 Second CAN Controller State
5	Equipment Status
6	NMEA Reserved

126996 Product Information

Provides product information onto the network that could be important for determining quality of data coming from this product.

Field #	*Field Description*
1	NMEA Network Message Database Version
2	NMEA Manufacturer's Product Code
3	Manufacturer's Model ID
4	Manufacturer's Software Version Code
5	Manufacturer's Model Version
6	Manufacturer's Model Serial Code
7	NMEA 2000 Certification Level
8	Load Equivalency

126998 Configuration Information

Free-form alphanumeric fields describing the installation (e.g., starboard engine room location) of the device and installation notes (e.g., calibration data).

Field #	*Field Description*
1	Installation Description, Field 1
2	Installation Description, Field 2
3	Manufacturer Information, Field 3

127233 Man Overboard Notification(MOB)

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.

Field #	*Field Description*
1	Sequence ID
2	MOB Emitter ID
3	Man Overboard (MOB) Status
4	NMEA Reserved
5	UTC Time of MOB Activation
6	Position Source
7	NMEA Reserved
8	UTC Date of Position
9	UTC Time of Position
10	Latitude
11	Longitude
12	Course over ground Reference
13	NMEA Reserved
14	Course over ground
15	Speed over ground
16	MMSI of vessel of Origin
17	MOB Emitter Battery Status
18	NMEA Reserved

127237 Heading/Track Control

Sends commands to, and receives data from, heading control systems. Allows for navigational (remote) control of a heading control system and direct rudder control.

Field #	*Field Description*
1	Rudder Limit Exceeded
2	Off-Heading Limit Exceeded
3	Off-Track Limit Exceeded
4	Override
5	Steering Mode
6	Turn Mode
7	Heading Reference
8	NMEA Reserved
9	Commanded Rudder Direction
10	Commanded Rudder Angle
11	Heading-To-Steer (Course)
12	Track
13	Rudder Limit
14	Off-Heading Limit
15	Radius of Turn Order
16	Rate of Turn Order
17	Off-Track Limit
18	Vessel Heading

127245 Rudder

Rudder order command in direction or angle with current rudder angle reading.

Field #	*Field Description*
1	Rudder Instance
2	Direction Order
3	NMEA Reserved
4	Angle Order
5	Position
6	NMEA Reserved

127250 Vessel Heading

Heading sensor value with a flag for True or Magnetic. If the sensor value is Magnetic, the deviation field can be used to produce a Magnetic heading, and the variation field can be used to correct the Magnetic heading to produce a True heading.

Field #	*Field Description*
1	Sequence ID
2	Heading Sensor Reading
3	Deviation
4	Variation
5	Heading Sensor Reference
6	NMEA Reserved

127251 Rate of Turn

Rate of Turn is the rate of change of the Heading.

Field #	*Field Description*
1	Sequence ID
2	Rate of Turn
3	NMEA Reserved

127252 Heave

Vertical displacement perpendicular to (smooth, wave-free water on) the earth's surface.

Field #	*Field Description*
1	Sequence ID
2	Heave
3	Delay
4	Delay Source
5	NMEA Reserved

127257 Attitude

This parameter group provides a single transmission that describes the position of a vessel relative to both horizontal and vertical planes. This would typically be used for vessel stabilization, vessel control and onboard platform stabilization.

Field #	*Field Description*
1	Sequence ID
2	Yaw
3	Pitch
4	Roll
5	NMEA Reserved

127258 Magnetic Variation

Message for transmitting variation. The message contains a sequence number to allow synchronization of other messages such as Heading or Course over Ground. The quality of service and age of service are provided to enable recipients to determine an appropriate level of service if multiple transmissions exist.

Field #	*Field Description*
1	Sequence ID
2	Variation Source
3	NMEA Reserved
4	Age of Service (Date)
5	Variation
6	NMEA Reserved

127488 Engine Parameters, Rapid Update

Provides data with a high update rate for a specific engine in a single frame message. The first field provides information as to which engine.

Field #	*Field Description*
1	Engine Instance
2	Engine Speed
3	Engine Boost Pressure
4	Engine tilt/trim
5	NMEA Reserved

127489 Engine Parameters, Dynamic

Used to provide real-time operational data and status relevant to a specific engine, indicated by the engine instance field. This message would normally be broadcasted periodically to provide information for instrumentation or control functions.

Field #	*Field Description*
1	Engine instance
2	Engine oil pressure
3	Engine oil temp.
4	Engine temp.
5	Alternator potential
6	Fuel rate
7	Total engine hours
8	Engine coolant pressure
9	Fuel Pressure
10	Not Available
11	Engine Discrete Status 1
12	Engine Discrete Status 2
13	Percent Engine Load
14	Percent Engine Torque

127493 Transmission Parameters, Dynamic

Used to provide the operational state and internal operating parameters of a specific transmission, indicated by the transmission instance field. This message would normally be broadcasted periodically to provide information for instrumentation or control functions.

Field #	*Field Description*
1	Transmission instance
2	Transmission Gear
3	NMEA Reserved
4	Transmission oil pressure
5	Transmission oil temperature
6	Transmission Discrete Status
7	NMEA Reserved

127496 Trip Fuel Consumption, Vessel

Trip fuel parameters relative to Vessel

Field #	*Field Description*
1	Time to Empty
2	Distance to Empty /Fuel Range
3	Estimated Fuel Remaining
4	Trip Run Time

127497 Trip Fuel Consumption, Engine

Engine related trip / fuel information.

Field #	*Field Description*
1	Engine instance
2	Trip fuel used
3	Fuel Rate, Average
4	Fuel Rate, Economy
5	Instantaneous Fuel Economy

127498 Engine Parameters, Static

Provides identification information and rated engine speed for the engine indicated by the engine instance field. Used primarily by display devices.

Field #	*Field Description*
1	Engine instance
2	Rated engine speed
3	VIN
4	Software ID

127500 Load Controller Connection State / Control

Broadcast the state and status of a Load Controller output/connection & control of the output/connection with PGN 126208 Command Group Function.

Field #	*Field Description*
1	Sequence ID
2	Connection ID
3	State
4	Status
5	Operational Status & Control
6	PWM Duty Cycle
7	TimeON
8	TimeOFF

127501 Binary Status Report

Universal status report for binary state devices in banks of up to 28 devices each.

Field #	*Field Description*
1	Binary Device Bank Instance
2	Status 1
3	Status 2
4	Status 3
5	Status 4
6	Status 5
7	Status 6
8	Status 7
9	Status 8
10	Status 9
11	Status 10
12	Status 11
13	Status 12
14	Status 13
15	Status 14
16	Status 15
17	Status 16
18	Status 17
19	Status 18
20	Status 19
21	Status 20
22	Status 21
23	Status 22
24	Status 23
25	Status 24
26	Status 25
27	Status 26
28	Status 27
29	Status 28

127502 Switch Bank Control

Universal commands to multiple banks of two-state devices.

Field #	*Field Description*
1	Switch Bank Instance
2	Switch 1
3	Switch 2
4	Switch 3
5	Switch 4
6	Switch 5
7	Switch 6
8	Switch 7
9	Switch 8
10	Switch 9
11	Switch 10
12	Switch 11
13	Switch 12
14	Switch 13
15	Switch 14
16	Switch 15
17	Switch 16
18	Switch 17
19	Switch 18
20	Switch 19
21	Switch 20
22	Switch 21
23	Switch 22
24	Switch 23
25	Switch 24
26	Switch 25
27	Switch 26
28	Switch 27
29	Switch 28

127503 AC Input Status -DEPRECATED

Any device with an AC Input may transmit this message

Field #	*Field Description*
1	AC Instance
2	Number of Lines
3	Line
4	Acceptability
5	NMEA Reserved
6	Voltage
7	Current
8	Frequency
9	Breaker Size
10	Real Power
11	Reactive Power
12	Power Factor

127504 AC Output Status -DEPRECATED

Any device with an AC Output may transmit this message.

Field #	*Field Description*
1	AC Instance
2	Number of lines
3	Line
4	Waveform
5	NMEA Reserved
6	Voltage
7	Current
8	Frequency
9	Breaker Size
10	Real Power
11	Reactive Power
12	Power Factor

127505 Fluid Level

Fluid Level contains an instance number, type of fluid, level of fluid, and tank capacity. For example the fluid instance may be the level of fuel in a tank or the level of water in the bilge. Used primarily by display or instrumentation devices.

Field #	*Field Description*
1	Fluid Instance
2	Fluid Type
3	Fluid Level
4	Tank Capacity
5	NMEA Reserved

127506 DC Detailed Status

Provides parametric data for a specific battery, indicated by the battery instance field. Used primarily by display or instrumentation devices, but may also be used by battery management controls.

Field #	*Field Description*
1	Sequence ID
2	DC Instance
3	DC Type
4	State of Charge
5	State of Health
6	Time Remaining
7	Ripple Voltage
8	Amp Hours

127507 Charger Status- DEPRECATED

Any device capable of charging a battery may transmit this message.

Field #	*Field Description*
1	Charger Instance
2	Battery Instance
3	Operating State
4	Charge Mode
5	Charger Enable/Disable
6	Equalization Pending
7	NMEA Reserved
8	Equalization Time Remaining

127508 Battery Status

Provides parametric data for a specific DC Source, indicated by the instance field. The type of DC Source can be identified from the DC Detailed Status PGN. Used primarily by display or instrumentation devices, but may also be used by power management.

Field #	*Field Description*
1	Battery Instance
2	Battery Voltage
3	Battery Current
4	Battery Case Temperature
5	Sequence ID

127509 Inverter Status- DEPRECATED

Any device capable of inverting a DC source to an SC output may transmit this message.

Field #	*Field Description*
1	Inverter Instance
2	AC Instance
3	DC Instance
4	Operating State
5	Inverter Enable/Disable
6	NMEA Reserved

127510 Charger Configuration Status

Any device capable of charging a battery may transmit this message.

Field #	*Field Description*
1	Charger Instance
2	Battery Instance
3	Charger Enable/Disable
4	NMEA Reserved
5	Charge Current Limit
6	Charging Algorithm
7	Charger Mode
8	Estimated Battery Temp - When No Sensor Present
9	Equalize One Time Enable/Disable
10	Over Charge Enable/Disable
11	Equalize Time

127511 Inverter Configuration Status

Any device capable of inverting DC to AC may transmit this message.

Field #	*Field Description*
1	Inverter Instance
2	AC Instance
3	DC Instance
4	Inverter Enable/Disable
5	Inverter Mode
6	Load Sense Enable/Disable
7	Load Sense Power Threshold
8	Load Sense Interval

127512 AGS Configuration Status

Any device that is capable of starting/stopping a generator may transmit this message.

Field #	*Field Description*
1	AGS Instance
2	Generator Instance
3	AGS Mode
4	NMEA Reserved

127513 Battery Configuration Status

Any device connected to a battery may transmit this message.

Field #	*Field Description*
1	Battery Instance
2	Battery Type
3	Supports Equalization
4	NMEA Reserved
5	Nominal Voltage
6	Battery Chemistry
7	Battery Capacity
8	Battery Temperature Coefficient
9	Peukert Exponent
10	Charge Efficiency Factor

127514 AGS Status

Any device capable of starting/stopping a generator may transmit this message.

Field #	*Field Description*
1	AGS Instance
2	Generator Instance
3	AGS Operating State
4	Generator State
5	Generator On Reason
6	Generator Off Reason

127744 AC Power / Current- Phase A

The purpose of this PGN is to provide a common way to report Phase A AC Current / Power status.

Field #	*Field Description*
1	Sequence ID
2	Connection Number
3	AC RMS Current
4	Power

127745 AC Power / Current- Phase B

The purpose of this PGN is to provide a common way to report Phase B AC Current / Power status.

Field #	*Field Description*
1	Sequence ID
2	Connection Number
3	AC RMS Current
4	Power

127746 AC Power / Current- Phase C

The purpose of this PGN is to provide a common way to report Phase C AC Current / Power status.

Field #	*Field Description*
1	Sequence ID
2	Connection Number
3	AC RMS Current
4	Power

127747 AC Voltage / Frequency-Phase A

The purpose of this PGN is to provide a common way to report Phase A AC Voltage/ Frequency status.

Field #	*Field Description*
1	Sequence ID
2	Connection Number
3	AC RMS Voltage Line to Neutral
4	AC RMS Voltage Line to Line
5	AC Frequency

127748 AC Voltage / Frequency-Phase B

The purpose of this PGN is to provide a common way to report Phase B AC Voltage/ Frequency status.

Field #	*Field Description*
1	Sequence ID
2	Connection Number
3	AC RMS Voltage Line to Neutral
4	AC RMS Voltage Line to Line
5	AC Frequency

127749 AC Voltage / Frequency-Phase C

The purpose of this PGN is to provide a common way to report Phase C AC Voltage/ Frequency status.

Field #	*Field Description*
1	Sequence ID
2	Connection Number
3	AC RMS Voltage Line to Neutral
4	AC RMS Voltage Line to Line
5	AC Frequency

127750 Converter (Inverter/Charger) Status

Provides both state and status information about a Charger, Inverter or combined Inverter / Charger.

Field #	*Field Description*
1	Sequence ID
2	Connection Number
3	Operating State
4	Temperature State
5	Overload State
6	Low DC Voltage State
7	Ripple State
8	NMEA Reserved

127751 DC Voltage / Current

Provides a common way to report and extended range of DC Voltage and DC Current status including high voltage / high power systems.

Field #	*Field Description*
1	Sequence ID
2	Connection Number
3	DC Voltage
4	DC Current
5	NMEA Reserved

128259 Speed, Water Referenced

This parameter group provides a single transmission that describes the motion of a vessel.

Field #	*Field Description*
1	Sequence ID
2	Speed Water Referenced
3	Speed Ground Referenced
4	Speed Water Referenced Type
5	Speed Direction
6	NMEA Reserved

128267 Water Depth

Water depth relative to the transducer and offset of the measuring transducer. Positive offset numbers provide the distance from the transducer to the waterline.

Field #	*Field Description*
1	Sequence ID
2	Water Depth, Transducer
3	Offset
4	Maximum Depth Range

128275 Distance Log

This PGN provides the cumulative voyage distance traveled since the last reset. The distance is tagged with the time and date of the distance measurement.

Field #	*Field Description*
1	Measurement Date
2	Measurement Time
3	Total Cumulative Distance
4	Distance Since Last Reset

128520 Tracked Target Data

Message for reporting status and target data from tracking radar external devices.

Field #	*Field Description*
1	Sequence ID
2	Target ID #
3	Track Status
4	Bearing Reference
5	NMEA Reserved
6	Bearing
7	Distance
8	Course
9	Speed
10	CPA
11	TCPA
12	UTC of Fix
13	Name
14	Reference Target

129025 Position, Rapid Update

This PGN provides latitude and longitude referenced to WGS84. Being defined as single frame message, as opposed to other PGNs that include latitude and longitude and are defined as fast or multi-packet, this PGN lends itself to being transmitted more frequently without using up excessive bandwidth on the bus for the benefit of receiving equipment that may require rapid position updates.

Field #	*Field Description*
1	Latitude
2	Longitude

129026 COG & SOG, Rapid Update

This parameter group is a single frame parameter group that provides Course Over Ground (COG) and Speed Over Ground (SOG).

Field #	*Field Description*
1	Sequence ID
2	COG Reference
3	NMEA Reserved
4	Course Over Ground
5	Speed Over Ground
6	NMEA Reserved

129027 Position Delta, High Precision Rapid Update

The "Position Delta, High Precision Rapid Update" Parameter Group is intended for applications where very high precision and very fast update rates are needed for position data. This PGN can provide delta position changes down to 1 millimeter with a delta time period accurate to 5 milliseconds.

Field #	*Field Description*
1	Sequence ID
2	Time Delta
3	Latitude Delta
4	Longitude Delta

129028 Altitude Delta, High Precision Rapid Update

The "Altitude Delta, High Precision Rapid Update" Parameter Group is intended for applications where very high precision and very fast update rates are needed for altitude and course over ground data. This PGN can provide delta altitude changes down to 1 millimeter, a change in direction as small as 0.0057 degrees, and with a delta time period accurate to 5 milliseconds.

Field #	*Field Description*
1	Sequence ID
2	Time Delta
3	GNSS Quality
4	Direction
5	NMEA Reserved
6	Course Over Ground
7	Altitude Delta

129029 GNSS Position Data

This parameter group conveys a comprehensive set of Global Navigation Satellite System (GNSS) parameters, including position information.

Field #	*Field Description*
1	Sequence ID
2	Position date
3	Position time
4	Latitude
5	Longitude
6	Altitude
7	Type of System
8	Method, GNSS
9	Integrity
10	NMEA Reserved
11	Number of SVs
12	HDOP
13	PDOP
14	Geoidal Separation
15	Number of Reference Stations
16	Reference Station Type"1"
17	Reference Station ID"1"
18	Age of DGNSS Corrections "1"
19	Reference Station Type "n"
20	Reference Station ID "n"
21	Age of DGNSS Reference Station "n"

129033 Local Time Offset

This parameter group has a single transmission that provides: UTC time, UTC Date and Local Offset Datum Local geodetic datum and datum offsets from a reference datum.

Field #	*Field Description*
1	Date
2	Time
3	Local Offset, Minutes

129038 AIS Class A Position Report

This parameter group provides data associated with the ITU-R M.1371 Messages 1, 2, and 3 Position Reports, autonomous, assigned, and response to interrogation, respectively. An AIS device may generate this parameter group either upon receiving a VHF data link message 1,2 or 3, or upon receipt of an ISO or NMEA request PGN (see ITU-R M.1371-1 for additional information).

Field #	*Field Description*
1	Message ID
2	Repeat Indicator
3	User ID
4	Longitude
5	Latitude
6	Position Accuracy
7	RAIM-flag
8	Time Stamp
9	COG
10	SOG
11	Communication State
12	AIS Transceiver Information
13	True Heading
14	Rate of Turn
15	Navigational Status
16	Special Maneuver Indicator
17	NMEA Reserved
18	AIS Spare
19	NMEA Reserved
20	Sequence ID

129039 AIS Class B Position Report

This parameter group provides data associated with the ITU-R M.1371 Message 18 Standard Class B Equipment Position Report. An AIS device may generate this parameter group either upon receiving a VHF data link message 18, or upon receipt of an ISO or NMEA request PGN (see ITU-R M.1371-1 for additional information).

Field #	*Field Description*
1	Message ID
2	Repeat Indicator
3	User ID
4	Longitude
5	Latitude
6	Position Accuracy
7	RAIM-flag
8	Time Stamp
9	COG
10	SOG
11	Communication State
12	AIS Transceiver Information
13	True Heading
14	Reserved for Regional Applications
15	Reserved for Regional Applications
16	Class B unit flag
17	Class B Display Flag
18	Class B DSC Flag
19	Class B Band Flag
20	Class B Msg 22 Flag
21	Mode Flag
22	Communication State Selector Flag
23	NMEA Reserved
24	Sequence ID

129040 AIS Class B Extended Position Report

This parameter group provides data associated with the ITU-R M.1371 Message 19 Extended Class B Equipment Position Report containing position and static information. An AIS device may generate this parameter group either upon receiving a VHF data link message 19, or upon receipt of an ISO or NMEA request PGN.

Field #	*Field Description*
1	Message ID
2	Repeat Indicator
3	User ID
4	Longitude
5	Latitude
6	Position Accuracy
7	RAIM-flag
8	Time Stamp
9	COG
10	SOG
11	Reserved for Regional Applications
12	Reserved for Regional Applications
13	NMEA Reserved
14	Ship/Cargo Type
15	True Heading
16	NMEA Reserved
17	Type of Electronic Positioning Device
18	Ship Length
19	Ship Beam
20	Position Reference Point from Starboard
21	Position Reference Point aft of Ship's Bow
22	Name
23	Data Terminal Equipment (DTE)
24	Mode Flag
25	AIS Spare
26	AIS Transceiver Information
27	NMEA Reserved
28	Sequence ID

129041 AIS Aids to Navigation (AtoN) Report

This PGN provides information received from an AtoN AIS station conforming to ITU-R M.1371-4 Message 21.

Field #	*Field Description*
1	Message ID
2	Repeat Indicator
3	ID
4	Longitude
5	Latitude
6	Position Accuracy
7	RAIM Flag
8	Time Stamp
9	AtoN Structure Length/Diameter
10	AtoN Structure Beam/Diameter
11	Position Reference Point from Starboard Structure Edge/Radius
12	Position Reference Point from True North facing Structure Edge/Radius
13	Aid to Navigation (AtoN) Type
14	Off Position Indicator
15	Virtual AtoN Flag
16	Assigned Mode Flag
17	AIS Spare
18	Electronic Fixing Position Fixing Device Type
19	NMEA Reserved
20	AtoN Status
21	AIS Transceiver Information
22	NMEA Reserved
23	Aid to Navigation (AtoN) Name

129044 Datum

This parameter group is used to define the datum to which a position location output by the same device in other PGNs is referenced.

Field #	*Field Description*
1	Local Datum
2	Delta Latitude
3	Delta Longitude
4	Delta Altitude
5	Reference Datum

129045 User Datum Settings

Transformation parameters for converting from WGS-84 to other Datums.

Field #	*Field Description*
1	Delta X
2	Delta Y
3	Delta Z
4	Rotation in X
5	Rotation in Y
6	Rotation in Z
7	Scale
8	Ellipsoid Semi-major Axis
9	Ellipsoid Flattening Inverse
10	Datum Name

129283 Cross Track Error

This parameter group provides the magnitude of position error perpendicular to the desired course.

Field #	*Field Description*
1	Sequence ID
2	XTE Mode
3	NMEA Reserved
4	Navigation Terminated
5	XTE
6	NMEA Reserved

129284 Navigation Data

This parameter group provides essential navigation data for following a route. Transmissions will originate from products that can create and manage routes using waypoints. This information is intended for navigational repeaters.

Field #	*Field Description*
1	Sequence ID
2	Distance to Destination Waypoint
3	Course/Bearing Ref.
4	Perpendicular Crossed
5	Arrival Circle Entered
6	Calculation Type
7	ETA Time
8	ETA Date
9	Bearing, Origin To Destination Waypoint
10	Bearing, Position To Destination Waypoint
11	Origin Waypoint Number
12	Destination Waypoint Number
13	Destination Wpt Latitude
14	Destination Wpt Longitude
15	Waypoint Closing Velocity

129285 Navigation - Route/WP information

This parameter group returns Route and WP data ahead in the Active Route. It can be requested or may be transmitted without a request, typically at each Waypoint advance.

Field #	*Field Description*
1	Start RPS#
2	nItems
3	Database ID
4	Route ID
5	Navigation direction in route
6	Supplementary Route/WP data available
7	NMEA Reserved
8	Route Name
9	NMEA Reserved
10	WPID
11	WP Name
12	WP Latitude
13	WP Longitude
14	Fields 10 thru 13 repeat as needed

129291 Set & Drift, Rapid Update

The Set and Drift effect on the Vessel is the direction and the speed of a current.

Field #	*Field Description*
1	Sequence ID
2	Set Reference
3	NMEA Reserved
4	Set
5	Drift
6	NMEA Reserved

129301 Time to/from Mark

Time to go to or elapsed from a generic mark, that may be non-fixed. The mark is not generally a specific geographic point but may vary continuously and is most often determined by calculation (the recommended turning or tacking point for sailing vessels, the wheel-over point for vessels making turns, a predicted collision point, etc.)

Field #	*Field Description*
1	Sequence ID
2	Time elapsed (from) or to-go to mark
3	Mark Type
4	NMEA Reserved
5	Mark ID

129302 Bearing and Distance between two Marks

Bearing and distance from the origin mark to the destination mark, calculated at the origin mark, for any two arbitrary generic marks. The calculation type (Rhumb Line, Great Circle) is specified, as well as the bearing reference (Mag, True).

Field #	*Field Description*
1	Sequence ID
2	Bearing Ref.
3	Calculation Type
4	NMEA Reserved
5	Bearing, Origin To Destination
6	Distance
7	Origin Mark Type
8	Destination Mark Type
9	Origin Mark Id
10	Destination Mark ID

129538 GNSS Control Status

GNSS common satellite receiver parameter status

Field #	*Field Description*
1	SV Elevation Mask
2	PDOP Mask
3	PDOP Switch
4	SNR Mask
5	GNSS Mode
6	DGNSS Mode
7	Position / Velocity Filter
8	Max Correction Age
9	Antenna Altitude for 2D Mode
10	Use Antenna Altitude for 2D Mode
11	Reserved

129539 GNSS DOPs

This PGN provides a single transmission containing GNSS status and dilution of precision components (DOP) that indicate the contribution of satellite geometry to the overall positioning error. There are three DOP parameters reported, horizontal (HDOP), Vertical (VDOP) and time (TDOP).

Field #	*Field Description*
1	Sequence ID
2	Set Mode
3	Op Mode
4	NMEA Reserved
5	HDOP
6	VDOP
7	TDOP

129540 GNSS Sats in View

GNSS information on current satellites in view tagged by sequence ID. Information includes PRN, elevation, azimuth, SNR, defines the number of satellites; defines the satellite number and the information.

Field #	*Field Description*
1	Sequence ID
2	Mode
3	NMEA Reserved
4	Number of SVs
5	PRN "1"
6	Elevation "1"
7	Azimuth "1"
8	SNR "1"
9	Range Residuals 1
10	PRN Status "1"
11	NMEA Reserved
12	PRN "n"
13	Elevation "n"
14	Azimuth "n"
15	SNR "n"
16	Range Residuals "n"
17	PRN Status "n"
18	NMEA Reserved

129541 GPS Almanac Data

This parameter group provides a single transmission that contains relevant almanac data for GPS products. The almanac contains satellite vehicle course orbital parameters. This information is not considered precise and is only valid for several months at a time. GPS products receive almanac data directly from the satellites. This information would either be transmitted to and from GPS products for update, or system interrogation.

Field #	*Field Description*
1	PRN
2	GPS Week number
3	SV Health Bits
4	Eccentricity
5	Almanac Reference Time
6	Inclination Angle
7	Rate of Right Ascension
8	Root of Semi-major Axis
9	Argument of Perigee
10	Longitude of Ascension Node
11	Mean Anomaly
12	Clock Parameter 1
13	Clock Parameter 2
14	NMEA Reserved

129542 GNSS Pseudorange Noise Statistics

GNSS pseudorange measurement noise statistics can be translated in the position domain in order to give statistical measures of the quality of the position solution. Intended for use with a Receiver Autonomous Integrity Monitoring (RAIM) application.

Field #	*Field Description*
1	Sequence ID
2	RMS of Position Uncertainty
3	STD of Major axis
4	STD of Minor axis
5	Orientation of Major axis
6	STD of Lat Error
7	STD of Lon Error
8	STD of Alt Error

129545 GNSS RAIM Output

This parameter group is used to provide the output from a GNSS Receiver's Receiver Autonomous Integrity Monitoring (RAIM) process. The Integrity field value is based upon the parameters set in PGN 130059 GNS RAIM Settings.

Field #	*Field Description*
1	Sequence ID
2	Integrity Flag
3	NMEA Reserved
4	Latitude expected error
5	Longitude expected error
6	Altitude expected error
7	SV ID of most likely failed sat
8	Probability of missed detection
9	Estimate of pseudorange bias
10	Std Deviation of bias

129546 GNSS RAIM Settings

This PGN is used to report the control parameters for a GNSS Receiver Autonomous Integrity Monitoring (RAIM) process.

Field #	*Field Description*
1	Radial Position Error Maximum threshold
2	Probability of False Alarm
3	Probability of Missed Detection
4	Pseudorange Residual Filtering Time Constant
5	NMEA Reserved

129547 GNSS Pseudorange Error Statistics

This parameter group is used to support Receiver Autonomous Integrity Monitoring (RAIM). Pseudorange measurement error statistics can be translated in the position domain in order to give statistical measures of the quality of the position solution.

Field #	*Field Description*
1	Sequence ID
2	RMS Std Dev of Range Inputs
3	Std Dev major error ellipse
4	Std Dev minor error ellipse
5	Orientation of error ellipse
6	Std Dev Latitude error
7	Std Dev Longitude error
8	Std Dev Altitude error

129549 DGNSS Corrections

This PGN provides a means to pass differential GNSS corrections between NMEA devices. Passing DGNSS data this way allows for more flexibility than traditional methods. One differential correction receiver could supply multiple GNSS receivers. Multiple differential correction receivers or data streams could be connected to a GNSS receiver allowing for network DGNSS approaches. This PGN can accommodate DGPS and DGLONASS corrections.

Field #	*Field Description*
1	Sequence ID
2	Reference Station ID
3	Reference Station Type
4	Time of corrections
5	Station Health
6	NMEA Reserved
7	Satellite ID
8	PRC
9	RRC
10	UDRE
11	IOD

129550 GNSS Differential Correction Receiver Interface

GNSS common differential correction receiver parameter status.

Field #	*Field Description*
1	Channel
2	Frequency
3	Serial Interface Bit Rate
4	Serial Interface Detection Mode
5	Differential Source
6	Differential Operation Mode
7	NMEA Reserved

129551 GNSS Differential Correction Receiver Signal

GNSS differential correction receiver status tagged by sequence ID. Status information includes frequency, SNR, and use as a correction source.

Field #	*Field Description*
1	Sequence ID
2	Channel
3	Signal Strength
4	Signal SNR
5	Frequency
6	Station Type
7	Station ID
8	Differential Signal Bit Rate
9	Differential Signal Detection Mode
10	Used as Correction Source
11	NMEA Reserved
12	Differential Source
13	Time Since Last Sat Differential Sync
14	Satellite Service ID No.

129556 GLONASS Almanac Data

This PGN provides a single transmission that contains relevant almanac data for Glonass products. The almanac contains satellite vehicle course orbital parameters. This information is not considered precise and is only valid for several months at a time. Glonass products receive almanac data directly from the satellites. This information would either be transmitted to and from Glonass products for update, or system interrogation.

Field #	*Field Description*
1	PRN
2	NA
3	NMEA Reserved
4	CnA
5	HnA
6	(epsilon)nA
7	(deltaTnA)DOT
8	(omega)nA
9	(delta)TnA
10	tnA
11	(lambda)nA
12	(delta)inA
13	tcA
14	tnA

129792 AIS DGNSS Broadcast Binary Message

This parameter group provides data associated with the ITU-R M.1371 Message 17 GNSS Broadcast Binary Message containing DGNSS corrections from a base station. An AIS device may generate this parameter group either upon receiving a VHF data link message 17, or upon receipt of an ISO or NMEA request PGN (see ITU-R M.1371-1 for additional information).

Field #	*Field Description*
1	Message ID
2	Repeat Indicator
3	Source ID
4	NMEA Reserved
5	AIS Transceiver Information
6	AIS Spare
7	Longitude
8	Latitude
9	NMEA Reserved
10	AIS Spare
11	Number of Bits in Binary Data Field
12	Binary Data

129793 AIS UTC and Date Report

This parameter group provides data from ITU-R M.1371 message 4 Base Station Report providing position, time, date, and current slot number of a base station, and 11 UTC and date response message providing current UTC and date if available. An AIS device may generate this parameter group either upon receiving a VHF data link message 4 or 11, or upon receipt of an ISO or NMEA request PGN.

Field #	*Field Description*
1	Message ID
2	Repeat Indicator
3	User ID
4	Longitude
5	Latitude
6	Position accuracy
7	RAIM-flag
8	NMEA Reserved
9	Position time
10	Communication State
11	AIS Transceiver Information
12	Position Date
13	NMEA Reserved
14	Type of Electronic Positioning Device
15	AIS Spare
16	NMEA Reserved
17	Sequence ID

129794 AIS Class A Static and Voyage Related Data

This parameter group provides data associated with the ITU-R M.1371 Message 5 Ship Static and Voyage Related Data Message. An AIS device may generate this parameter group either upon receiving a VHF data link message 5, or upon receipt of an ISO or NMEA request PGN.

Field #	*Field Description*
1	Message ID
2	Repeat Indicator
3	User ID
4	IMO
5	Call Sign
6	Name
7	Ship/Cargo Type
8	Ship Length
9	Ship Beam
10	Position Reference Point from Starboard
11	Position Reference Point aft of Ship's Bow
12	Estimated Date of Arrival
13	Estimated Time of Arrival
14	Draft
15	Destination
16	AIS Version
17	Type of Electronic Positioning Device
18	Data Terminal Equipment (DTE)
19	AIS Spare
20	AIS Transceiver Information
21	NMEA Reserved
22	Sequence ID

129795 AIS Addressed Binary Message

This parameter group provides data associated with the ITU-R M.1371 Message 6 Addressed Binary Message supporting address communication of binary data. An AIS device may generate this parameter group either upon receiving a VHF data link message 6, or upon receipt of an ISO or NMEA request PGN.

Field #	*Field Description*
1	Message ID
2	Repeat Indicator
3	Source ID
4	NMEA Reserved
5	AIS Transceiver Information
6	Sequence Number
7	Destination ID
8	NMEA Reserved
9	Retransmit Flag
10	AIS Spare
11	Number of Bits in Binary Data Field
12	Binary Data

129796 AIS Acknowledge

This parameter group provides data associated with the ITU-R M.1371 Messages 7 Binary Acknowledge Message and 13 Safety Related Acknowledge Message. Message 7 acknowledges receipt of message 6 while message 13 acknowledges receipt of message 14. An AIS device may generate this parameter group either upon receiving a VHF data link message 7 or 13, or upon receipt of an ISO or NMEA request PGN.

Field #	*Field Description*
1	Message ID
2	Repeat Indicator
3	Source ID
4	NMEA Reserved
5	AIS Transceiver Information
6	AIS Spare
7	Destination ID"1"
8	NMEA Reserved
9	Sequence Number for ID"1"
10	Destination ID"n"
11	NMEA Reserved
12	Sequence Number for ID"n"
13	Sequence ID

129797 AIS Binary Broadcast Message

This parameter group provides data associated with the ITU-R M.1371 Message 8 Binary Broadcast Message supporting broadcast communication of binary data. An AIS device may generate this parameter group either upon receiving a VHF data link message 8, or upon receipt of an ISO or NMEA request PGN.

Field #	*Field Description*
1	Message ID
2	Repeat Indicator
3	Source ID
4	NMEA Reserved
5	AIS Transceiver Information
6	AIS Spare
7	Number of Bits in Binary Data Field
8	Binary Data

129798 AIS SAR Aircraft Position Report

This parameter group provides data associated with the ITU-R M.1371 Message 9 SAR Aircraft Position Report Message for Airborne AIS units conducting Search and Rescue operations. An AIS device may generate this parameter group either upon receiving a VHF data link message 9, or upon receipt of an ISO or NMEA request.

Field #	*Field Description*
1	Message ID
2	Repeat Indicator
3	User ID
4	Longitude
5	Latitude
6	Position Accuracy
7	RAIM-Flag
8	Time Stamp
9	COG
10	SOG
11	Communication State
12	AIS Transceiver Information
13	Altitude
14	Reserved for Regional Applications
15	Data Terminal Equipment (DTE)
16	AIS Spare
17	NMEA Reserved
18	Sequence ID

129799 Radio Frequency/Mode/Power

This PGN provides status and control for a Radiotelephone, connected to a NMEA network. The Radiotelephone will transmit and receive status along with remote control and repeater products.

Field #	*Field Description*
1	Rx Frequency
2	Tx Frequency
3	Radio Channel
4	Tx Power
5	Mode
6	Channel Bandwidth

129800 AIS UTC/Date Inquiry

This parameter group provides data associated with the ITU-R M.1371 Message 10 UTC and Date Inquiry Message used to request current UTC and date. An AIS device may generate this parameter group either upon receiving a VHF data link message 10, or AIS Addressed Safety Related Message.

Field #	*Field Description*
1	Message ID
2	Repeat Indicator
3	Source ID
4	NMEA Reserved
5	AIS Transceiver Information
6	AIS Spare
7	Destination ID
8	AIS Spare
9	NMEA Reserved
10	Sequence ID

129801 AIS Addressed Safety Related Message

This parameter group provides data associated with the ITU-R M.1371 Message 12 Addressed Safety Related Message supporting addressed communication of safety related data. An AIS device may generate this parameter group either upon receiving a VHF data link message 12, or upon receipt of an ISO or NMEA request PGN.

Field #	*Field Description*
1	Message ID
2	Repeat Indicator
3	Source ID
4	NMEA Reserved
5	AIS Transceiver Information
6	Sequence Number
7	Destination ID
8	NMEA Reserved
9	Retransmit Flag
10	AIS Spare
11	Safety Related Text
12	Sequence ID

129802 AIS Safety Related Broadcast Message

This parameter group provides data associated with the ITU-R M.1371 Message 14 Safety Related Broadcast Message supporting broadcast communication of safety related data. An AIS device may generate this parameter group either upon receiving a VHF data link message 14, or upon receipt of an ISO or NMEA request PGN.

Field #	*Field Description*
1	Message ID
2	Repeat Indicator
3	Source ID
4	NMEA Reserved
5	AIS Transceiver Information
6	AIS Spare
7	Safety Related Text
8	Sequence ID

129803 AIS Interrogation

This parameter group provides data associated with the ITU-R M.1371 Message 15 Interrogation Message used to request a specific ITU-R M.1371 message resulting in responses from one or more AIS mobile units. An AIS device may generate this parameter group either upon receiving a VHF data link message 15, or upon receipt of an ISO or NMEA request PGN.

Field #	*Field Description*
1	Message ID
2	Repeat Indicator
3	Source ID
4	NMEA Reserved
5	AIS Transceiver Information
6	AIS Spare
7	Destination ID 1
8	NMEA Reserved
9	Message ID 1.1
10	Slot Offset 1.1
11	AIS Spare
12	Message ID 1.2
13	Slot Offset 1.2
14	NMEA Reserved
15	AIS Spare
16	Destination ID 2
17	NMEA Reserved
18	Message ID 2.1
19	Slot Offset 2.1
20	AIS Spare
21	NMEA Reserved
22	Sequence ID

129804 AIS Assignment Mode Command

This parameter group provides data associated with the ITU-R M.1371 Message 16 Assigned Mode Command Message for assigning specific behavior by a competent authority. An AIS device may generate this parameter group either upon receiving a VHF data link message 16, or upon receipt of an ISO or NMEA request PGN.

Field #	*Field Description*
1	Message ID
2	Repeat Indicator
3	Source ID
4	NMEA Reserved
5	AIS Transceiver Information
6	AIS Spare
7	Destination ID A
8	Offset A
9	Increment A
10	Destination ID B
11	Offset B
12	Increment B
13	AIS Spare
14	NMEA Reserved
15	Sequence ID

129805 AIS Data Link Management Message

This parameter group provides data associated with the ITU-R M.1371 Message 20 Data Link Management Message for reserving slots for base stations. An AIS device may generate this parameter group either upon receiving a VHF data link message 20, or upon receipt of an ISO or NMEA request PGN.

Field #	*Field Description*
1	Message ID
2	Repeat Indicator
3	Source Station ID
4	NMEA Reserved
5	AIS Transceiver Information
6	AIS Spare
7	Offset Number 1
8	Number of Slots 1
9	Time Out 1
10	Increment 1
11	Offset Number 2
12	Number of Slots 2
13	Time Out 2
14	Increment 2
15	Offset Number 3
16	Number of Slots 3
17	Time Out 3
18	Increment 3
19	Offset Number 4
20	Number of Slots 4
21	Time Out 4
22	Increment 4
23	AIS Spare
24	NMEA Reserved
25	Sequence ID

129806 AIS Channel Management

This parameter group provides data associated with the ITU-R M.1371 Message 22 Channel Management Message supporting management of transceiver modes and channels by a base station.

Field #	*Field Description*
1	Message ID
2	Repeat Indicator
3	Station ID
4	NMEA Reserved
5	AIS Transceiver Information
6	AIS Spare
7	Channel A
8	Channel B
9	Source Identifier
10	Power
11	Tx/Rx Mode
12	North East Longitude Corner 1
13	North East Latitude Corner 1
14	South West Longitude Corner 2
15	South West Latitude Corner 2
16	NMEA Reserved
17	Addressed or Broadcast Message Indicator
18	Channel A Bandwidth
19	Channel B Bandwidth
20	NMEA Reserved
21	Transitional Zone Size
22	AIS Spare
23	NMEA Reserved
24	In-Use Flag
25	NMEA Reserved
26	Time of in-use Flag Change
27	Sequence ID

129807 AIS Group Assignment

The Group Assignment Command is transmitted by a base station when operating as a controlling entity for AIS Stations.

Field #	*Field Description*
1	Message ID
2	Repeat Indicator
3	Source ID
4	AIS Spare
5	Tx/Rx Mode
6	NMEA Reserved
7	North East Longitude Corner 1
8	North East Latitude Corner 1
9	South West Longitude Corner 2
10	South West Latitude Corner 2
11	Station Type
12	NMEA Reserved
13	Ship and Cargo Filter
14	AIS Spare
15	NMEA Reserved
16	Reporting Interval
17	Quiet Time
18	AIS Spare
19	NMEA Reserved
20	AIS Transceiver Information
21	NMEA Reserved
22	Sequence ID

129808 DSC Call Information

This parameter group provides Digital Selective Calling (DSC) data according to ITU M.493-9 with optional expansion according to ITU M.821-1. DSC is a paging system that is used to automate distress alerts sent over terrestrial communication systems such as VHF, MF and HF marine radio systems. DSC provides a mechanism to report significantly more information regarding a distress call rather than just the distress itself. Products equipped with DSC will transmit and receive this information.

Field #	*Field Description*
1	DSC Format Symbol
2	DSC Category Symbol
3	DSC Message Address
4	Nature Of Distress or 1st Telecommand
5	Subsequent Communication Mode or 2nd Telecommand
6	Proposed Rx Frequency / Channel
7	Proposed Tx Frequency / Channel
8	Telephone Number
9	Latitude of Vessel Reported
10	Longitude of Vessel Reported
11	Time of Position
12	MMSI Of Ship In Distress
13	DSC EOS Symbol
14	Expansion Enabled
15	NMEA Reserved
16	Calling Rx Frequency/Channel
17	Calling Tx Frequency/Channel
18	Time of Receipt/Transmission
19	Date of Receipt/Transmission
20	DSC Equipment Assigned Message ID
21	DSC Expansion Field Symbol
22	DSC Expansion Field Data
23	Variable Number Of Fields, Field 21 Repeated, Expansion Field Type
24	Variable Number Of Fields, Field 22 Repeated, Expansion Field Data

129809 AIS Class B "CS" Static Data Report, Part A

This parameter group is used by Class B "CS" shipborne mobile equipment each time Part A of ITU-R M.1372 Message 24 is received.

Field #	*Field Description*
1	Message ID
2	Repeat Indicator
3	User ID
4	Name
5	AIS Transceiver Information
6	NMEA Reserved
7	Sequence ID

129810 AIS Class B "CS" Static Data Report, Part B

This parameter group is used by Class B "CS" shipborne mobile equipment each time Part B of ITU-R M.1372 Message 24 is received.

Field #	*Field Description*
1	Message ID
2	Repeat Indicator
3	User ID
4	Type of Ship and Cargo
5	Vendor ID
6	Call Sign
7	Ship Length
8	Ship Beam
9	Reference Point Position from Starboard
10	Reference Point Position Aft of Bow
11	Mother Ship MMSI
12	NMEA Reserved
13	AIS Spare
14	AIS Transceiver Information
15	NMEA Reserved
16	Sequence ID

129811 AIS Single Slot Binary Message

This parameter group provides data associated with the ITU-R M.1371 Message 25 Single Slot Binary Message supporting both addressed and broadcast communication of binary data.

Field #	*Field Description*
1	Sequence ID
2	Message ID
3	Repeat Indicator
4	Source ID
5	Destination Indicator
6	Binary data flag
7	AIS Spare
8	NMEA Reserved
9	Destination ID
10	Number of bits in Binary Data Field
11	Binary Data

129812 AIS Multi Slot Binary Message

This parameter group provides data associated with the ITU-R M.1371 Message 26 Multi Slot Binary Message with Communication State supporting both addressed and broadcast communication of binary data.

Field #	*Field Description*
1	Sequence ID
2	Message ID
3	Repeat Indicator
4	Source ID
5	Destination Indicator
6	Binary data flag
7	NMEA Reserved
8	Destination ID
9	AIS Spare
10	Communication state selector flag
11	Communication state
12	AIS Spare
13	NMEA Reserved
14	Number of Bits in Binary Data Field – 1st slot
15	Number of Bits in Binary Data Field – 2nd slot
16	Number of Bits in Binary Data Field – 3rd slot
17	Number of Bits in Binary Data Field – 4th slot
18	Number of Bits in Binary Data Field – 5th slot
19	Binary Data – 1st slot
20	Binary Data – 2nd slot
21	Binary Data – 3rd slot
22	Binary Data – 4th slot
23	Binary Data – 5th slot

129813 AIS Long-Range Broadcast Message

This parameter group provides data associated with the ITU-R M.1371 Message 27 Long-Range AIS Broadcast Message.

Field #	*Field Description*
1	Sequence ID
2	Message ID
3	Repeat Indicator
4	User ID
5	Longitude
6	Latitude
7	Position Accuracy
8	Raim Flag
9	Navigation Status
10	Position Latency
11	AIS Spare
12	Speed Over Ground
13	Course Over Ground

130052 Loran-C TD Data

This provides Time Difference (TD) lines of position of Loran-C signals relative to a single Group Repetition Interval.

Field #	*Field Description*
1	Group Repetition Interval (GRI)
2	Master Range
3	V Secondary TD
4	W Secondary TD
5	X Secondary TD
6	Y Secondary TD
7	Z Secondary TD
8	Station status: Master
9	Station status: V
10	Station status: W
11	Station status: X
12	Station status: Y
13	Station status: Z
14	Mode
15	NMEA Reserved

130053 Loran-C Range Data

This provides Propagation times (Ranges) of Loran-C signals relative to a single Group Repetition Interval.

Field #	*Field Description*
1	Group Repetition Interval (GRI)
2	Master Range
3	V Secondary Range
4	W Secondary Range
5	X Secondary Range
6	Y Secondary Range
7	Z Secondary Range
8	Station status: Master
9	Station status: V
10	Station status: W
11	Station status: X
12	Station status: Y
13	Station status: Z
14	Mode
15	NMEA Reserved

130054 Loran-C Signal Data

SNR, ECD, and ASF values of Loran-C signals

Field #	*Field Description*
1	Group Repetition Interval (GRI)
2	Station identifier
3	Station SNR
4	Station ECD
5	Station ASF

130060 Label

The Label PGN is used to set and retrieve a text label assigned to a particular device or a particular hardware resource within a particular device. The Label PGN supports multiple-channel devices.

Field #	*Field Description*
1	Hardware Channel ID
2	PGN
3	Data Source Instance Field Number
4	Data Source Instance Value
5	Secondary Enumeration Field Number
6	Secondary Enumeration Field Value
7	Parameter Field Number
8	Label

130061 Channel Source Configuration

The Channel Source Configuration parameter group is used to identify data sources that a device receives from the NMEA network to satisfy device operational requirements. For example, if a device stores the vessel location any time an event monitored by the device occurs, and there are more than one GPS device aboard the vessel, this parameter group may be used to report and also command which GPS is used/to use by the device. An example may be a MOB sensor.

Field #	*Field Description*
1	Data Source Channel ID
2	Source Selection Status
3	NMEA Reserved
4	NAME Selection Criteria Mask
5	Source NAME
6	PGN
7	Data Source Instance Field Number
8	Data Source Instance Value
9	Secondary Enumeration Field Number
10	Secondary Enumeration Field Value
11	Parameter Field Number

130064 Route and WP Service - Database List

Complex request for this PGN should return a list of Databases in which a navigation Device organizes its Routes and WPs. A Database may contain one WP-List and multiple Routes.

Field #	*Field Description*
1	Start Database ID
2	nItems
3	Number of Databases available
4	Database ID
5	Database Name
6	Database Timestamp
7	Database Datestamp
8	WP Position Resolution
9	NMEA Reserved
10	Number of Routes in Database
11	Number of WPs in Database
12	Number of Bytes in Database
13	Fields 4 thru 12 repeat as needed

130065 Route and WP Service - Route List

Complex request for this PGN should return a list of Routes in a Database.

Field #	*Field Description*
1	Start Route ID
2	nItems
3	Number of Routes available in Database
4	Database ID
5	Route ID
6	Route Name
7	NMEA Reserved
8	WP Identification Method
9	Route Status
10	Fields 5 thru 9 repeat as needed

130066 Route and WP Service - Route/WP-List Attributes

Complex request for this PGN should return the attributes of a Route or the WP-List.

Field #	*Field Description*
1	Database ID
2	Route ID
3	Route/WP-List Name
4	Route/WP-List Timestamp
5	Route/WP-List Datestamp
6	Change at Last Timestamp
7	Number of WPs in the Route/WP-List
8	Critical supplementary parameters
9	Navigation Method
10	WP Identification Method
11	Route Status
12	XTE Limit for the Route
13	NMEA Reserved

130067 Route and WP Service - Route - WP Name & Position

Complex request of this PGN should return the Waypoints belonging to a Route.

Field #	*Field Description*
1	Start RPS#
2	nItems
3	Number of WPs in the Route
4	Database ID
5	Route ID
6	WPID
7	WP Name
8	WP Latitude
9	WP Longitude
10	Fields 6 thru 9 repeat as needed

130068 Route and WP Service - Route - WP Name

Complex request of this PGN should return the Waypoints belonging to a Route.

Field #	*Field Description*
1	Start RPS#
2	nItems
3	Number of WPs in the Route
4	Database ID
5	Route ID
6	WPID
7	WP Name
8	field 6 thru 7 repeat as needed

130069 Route and WP Service - XTE Limit & Navigation Method

Complex request of this PGN will return XTE Limit and/or Navigation Method specific to individual legs of a Route.

Field #	*Field Description*
1	Start RPS#
2	nItems
3	Number of Waypoints with a specific XTE Limit or Nav. Method
4	Database ID
5	Route ID
6	RPS#
7	XTE limit in the leg after WP
8	Nav. Method in the leg after WP
9	NMEA Reserved
10	Fields 6 thru 9 repeat as needed

130070 Route and WP Service - WP Comment

Complex request of this PGN should return supplementary Comments attached to Waypoints in a Route or a WP-List

Field #	*Field Description*
1	Start ID
2	nItems
3	Number of WPs with Comments
4	Database ID
5	Route ID
6	WPID / RPS#
7	Comment
8	Fields 6 thru 7 repeat as needed

130071 Route and WP Service - Route Comment

Complex request of this PGN should return supplementary Comments attached to Routes.

Field #	*Field Description*
1	Start Route ID
2	nItems
3	Number of Routes with Comments
4	Database ID
5	Route ID
6	Comment
7	Fields 5 thru 6 repeat as needed

130072 Route and WP Service - Database Comment

Complex request of this PGN should return supplementary Comments attached to Databases in the navigation Device.

Field #	*Field Description*
1	Start Database ID
2	nItems
3	Number of Databases with comments
4	Database ID
5	Comment text
6	Fields 4 thru 5 repeat as needed

130073 Route and WP Service - Radius of Turn

Complex request of this PGN should return the Radius of Turn at specific Waypoints of a Route.

Field #	*Field Description*
1	Start RPS#
2	nItems
3	Number of Waypoints with a specific Radius of Turn
4	Database ID
5	Route ID
6	RPS#
7	Radius of Turn
8	Fields 6 and 7 repeated as needed

130074 Route and WP Service - WP List - WP Name & Position

Complex request of this PGN should return the Waypoints of a WP-List.

Field #	*Field Description*
1	Start WPID
2	nItems
3	Number of valid WPs in the WP-List
4	Database ID
5	NMEA Reserved
6	WPID
7	WP Name
8	WP Latitude
9	WP Longitude
10	Fields 6 thru 9 repeat as needed

130306 Wind Data

Direction and speed of Wind. True wind can be referenced to the vessel or to the ground. The Apparent Wind is what is felt standing on the (moving) ship, I.e., the wind measured by the typical mast head instruments. The boat referenced true wind is given by the vector sum of Apparent wind and vessel's heading and speed though the water. The ground referenced true wind is given by the vector sum of Apparent wind and vessel's heading and speed over ground.

Field #	*Field Description*
1	Sequence ID
2	Wind Speed
3	Wind Direction
4	Wind Reference
5	NMEA Reserved

130310 Environmental Parameters - DEPRECATED

Local atmospheric environmental conditions. This PGN has been depricated. Specific PGNs 130316 Temperature, 130313 Relative Humidity, 130314 Actual Pressure, 130315 Set Pressure shall be used.

Field #	*Field Description*
1	Sequence ID
2	Water Temp
3	Outside Ambient Air Temp.
4	Atmospheric Pressure
5	NMEA Reserved

130311 Environmental Parameters- DEPRECATED

This PGN has been depricated. Specific PGNs 130316 Temperature, 130313 Relative Humidity, 130314 Actual Pressure, 130315 Set Pressure shall be used.

Field #	*Field Description*
1	Sequence ID
2	Temperature Instance
3	Humidity Instance
4	Temperature
5	Humidity
6	Atmospheric Pressure

130312 Temperature - DEPRECATED

Temperature as measured by a specific temperature source. This PGN has been depricated. Please use PGN 130316 (Temperature-Extended Range) for all new designs.

Field #	*Field Description*
1	Sequence ID
2	Temperature Instance
3	Temperature Source
4	Actual Temperature
5	Set Temperature
6	NMEA Reserved

130313 Humidity

Humidity as measured by a specific humidity source.

Field #	*Field Description*
1	Sequence ID
2	Humidity Instance
3	Humidity Source
4	Actual Humidity
5	Set Humidity
6	NMEA Reserved

130314 Actual Pressure

Pressure as measured by a specific pressure source

Field #	*Field Description*
1	Sequence ID
2	Pressure Instance
3	Pressure Source
4	Pressure
5	NMEA Reserved

130315 Set Pressure

This parameter group can be sent to a device that controls pressure to change its targeted pressure, or it can be sent out by the control device to indicate its current targeted pressure.

Field #	*Field Description*
1	Sequence ID
2	Pressue Instance
3	Pressure Source
4	Pressure
5	NMEA Reserved

130316 Temperature, Extended Range

This parameter group is used to report a wide variety of temperature measurements.

Field #	*Field Description*
1	Sequence ID
2	Temperature Instance
3	Temperature Source
4	Actual Temperature
5	Set Temperature

130320 Tide Station Data

Tide station measurement data including station location, numeric identifier, and name

Field #	*Field Description*
1	Mode
2	Tide Tendency
3	NMEA Reserved
4	Measurement date
5	Measurement time
6	Station location, latitude
7	Station location, longitude
8	Tide level
9	Tide level standard deviation
10	Station ID String
11	Station Name String

130321 Salinity Station Data

Salinity station measurement data including station location, numeric identifier, and name.

Field #	*Field Description*
1	Mode
2	NMEA Reserved
3	Measurement Date
4	Measurement time
5	Station location, latitude
6	Station location, longitude
7	Salinity
8	Water Temperature
9	Station ID String
10	Station Name String

130322 Current Station Data

Current station measurement data including station location, numeric identifier, and name.

Field #	*Field Description*
1	Mode
2	State
3	NMEA Reserved
4	Measurement date
5	Measurement time
6	Station location, latitude
7	Station location, longitude
8	Measurement depth
9	Current speed
10	Current flow direction
11	Water Temperature
12	Station ID String
13	Station Name String

130323 Meteorological Station Data

Meteorological station measurement data including station location, numeric identifier, and name.

Field #	*Field Description*
1	Mode
2	NMEA Reserved
3	Measurement date
4	Measurement time
5	Station location, latitude
6	Station location, longitude
7	Wind Speed
8	Wind Direction
9	Wind Reference
10	NMEA Reserved
11	Wind Gusts
12	Atmospheric Pressure
13	Air Temperature
14	Station ID String
15	Station Name String

130324 Moored Buoy Station Data

Moored buoy measurement data including station location and numeric identifier.

Field #	*Field Description*
1	Mode
2	NMEA Reserved
3	Measurement date
4	Measurement time
5	Station location, latitude
6	Station location, longitude
7	Wind Speed
8	Wind Direction
9	Wind Reference
10	NMEA Reserved
11	Wind Gusts
12	Wave Height
13	Dominate Wave Period
14	Atmospheric Pressure
15	Pressure Tendency Rate
16	Air temperature
17	Water temperature
18	Station ID String

130560 Payload Mass

The Payload Mass parameter group is used to transmit the mass associated with vessel payloads. Applications for this PGN vary from recreational to commercial use. This may include, but is not limited to weighing fish, or weighing cargo .

Field #	*Field Description*
1	Sequence ID
2	Measurement Status
3	NMEA Reserved
4	Measurement ID
5	Payload Mass
6	NMEA Reserved

130567 Watermaker Input Setting and Status

This PGN transmits the watermaker status, alerts, and measurement information from the watermaker to the NMEA 2000 network.

This PGN may be requested or used to command and configure a number of Watermaker controls.

Field #	*Field Description*
1	Watermaker Operating State
2	Production Start/Stop
3	Rinse Start/Stop
4	Low Pressure Pump Status
5	High Pressure Pump Status
6	Emergency Stop
7	Product Solenoid Valve Status
8	Flush Mode Status
9	Salinity Status
10	Feed Pressure Status
11	Oil Change Indicator Status
12	Filter Status
13	System Status
14	NMEA Reserved
15	Salinity
16	Product Water Temperature
17	Pre-filter Pressure
18	Post-filter Pressure
19	Feed Pressure
20	System High Pressure
21	Product Water Flow
22	Brine Water Flow
23	Run Time

130569 Entertainment - Current File and Status

Current playing file and status by zone, sent by audio/video source
Sent upon startup, upon any change, upon request, and periodically while playing.
Display devices command using Command Group Function

Field #	*Field Description*
1	Zone Number
2	Audio/Video Source Type
3	Audio/Video Source Number
4	File ID
5	Play Status
6	Elapsed Track/Chapter Time
7	Track/Chapter Time
8	Repeat Status
9	Shuffle Status
10	Save Favorite Number (write only)
11	Play Favorite Number
12	Thumbs Up/Thumbs Down
13	Signal Strength
14	Radio Frequency
15	HD Frequency Multicast

130570 Entertainment - Library Data File

Library Data of an individual A/V file. Output on Request by the A/V Device.
Complex request used to request data type of A/V File.

Field #	*Field Description*
1	Audio/Video Source Type
2	Audio/Video Source Number
3	File ID
4	Library Data Type
5	Library Data Name
6	Track/Chapter Number
7	Station Number
8	Favorite Number
9	Radio Frequency
10	HD Frequency Multi-Cast
11	Play Queue Zone Number
12	In Play Queue

130571 Entertainment - Library Data Group

Library information output by Audio / Video source device in response to Complex Request for this PGN.
Fields to be repeated as needed.

Field #	*Field Description*
1	Audio/Video Source Type
2	Audio/Video Source Number
3	Group Type
4	Play Queue Zone Number
5	Group ID
6	Index of first ID in PGN
7	Number of IDs in this PGN
8	Total number of IDs available
9	ID Type
10	ID
11	ID Name
12	Fields 9 – 11 repeat as needed

130572 Entertainment - Library Data Search

Library Data Search. Output on request by the A/V Device.
A complex request for this PGN will initiate a search for A/V files and return a Group ID containing search results.

Field #	*Field Description*
1	Audio/Video Source Type
2	Audio/Video Source Number
3	Group ID
4	Library Group Type 1
5	Library Data Name 1
6	Library Group Type 2
7	Library Data Name 2
8	Library Group Type 3
9	Library Data Name 3

130573 Entertainment - Supported Source Data

Supported source data output by Audio / Video source device at upon change or in response to request.

Field #	*Field Description*
1	Index of first Source ID in this PGN
2	Number of Source IDs in this PGN
3	Total number of Source IDs available
4	Source ID
5	Audio/Video Source Type
6	Audio/Video Source Number
7	Audio/Video Source Name
8	Supported Play Status
9	Supported Browsing Methods
10	Thumbs Supported
11	Source Connected
12	NMEA Reserved
13	Repeat Supported
14	Shuffle Supported
15	Fields 4 – 12 repeat as needed

130574 Entertainment - Supported Zone Data

Supported zone data output by Audio / Video source device at upon change or in response to request.

Field #	*Field Description*
1	Index of first Zone Number in this PGN
2	Number of Zone Numbers in this PGN
3	Total number of Zone Numbers available
4	Zone Number
5	Zone Name
6	Fields 4 – 5 repeat as needed

130576 Trim Tab Status

Provides data on various small craft control surfaces and speed through the water. Used primarily by display or instrumentation.

Field #	*Field Description*
1	Port trim tab
2	Starboard trim tab
3	NMEA Reserved

130577 Direction Data

The purpose of this PGN is to group three fundamental vectors related to vessel motion, speed and heading referenced to the water, speed and course referenced to ground and current speed and flow direction.

Field #	*Field Description*
1	Data Mode
2	Set/COG/Heading Ref.
3	NMEA Reserved
4	Sequence ID
5	Course Over Ground
6	Speed Over Ground
7	Heading
8	Speed through Water
9	Set
10	Drift

130578 Vessel Speed Components

This PGN provides a single transmission that accurately describes the speed of a vessel by component vectors.

Field #	*Field Description*
1	Longitudinal Speed, Water-referenced
2	Transverse Speed, Water-referenced
3	Longitudinal Speed, Ground-referenced
4	Transverse Speed, Ground-referenced
5	Stern Speed, Water-referenced
6	Stern Speed, Ground-referenced

130580 Entertainment - System Configuration Status

Configuration Status information for entire A/V Device output by Audio / Video source device at startup, upon change, or in response to request.
Fields output as Data Not Available will be understood as unsupported
Command Group Function used to command message, i.e. change audio/video configuration

Field #	*Field Description*
1	Power
2	Default Settings
3	Tuner Regions
4	Supported Number of Favorites (read only)

130581 Entertainment - Zone Configuration Status

Configuration Status information for entire A/V Device output by Audio / Video source device at startup, upon change, or in response to request.
Fields output as Data Not Available will be understood as unsupported
Command Group Function used to command message, i.e. change audio/video configuration

Field #	*Field Description*
1	Zone Number
2	Volume Limit
3	Fade
4	Balance
5	Non-Fader, Sub Volume
6	Equalizer – Treble
7	Equalizer – Mid Range
8	Equalizer – Bass
9	EQ Preset Type
10	Audio Filter Setting
11	High-Pass Filter Frequency (read only)
12	Low-Pass Filter Frequency (read only)

130582 Entertainment - Zone Volume Status

Current volume status of zones
Sent by audio/video source device. Sent upon startup, upon any change, and upon request.
Command Group Function used to command message, i.e. change zone volume

Field #	*Field Description*
1	Zone Number
2	Zone Volume – Absolute
3	Zone Volume – Relative (Write Only)
4	Mute
5	NMEA Reserved

130583 Entertainment - Available Audio EQ Presets

Available Audio EQ Presets source data output by Audio / Video source device
Sent upon change or in response to request.

Field #	*Field Description*
1	Index of first EQ Preset Type in this PGN
2	Number of EQ Preset Types in this PGN
3	Total number of EQ Preset Types available
4	EQ Preset Type
5	EQ Preset Name
6	Fields 4 – 5 repeat as needed

130584 Entertainment - Bluetooth Devices

Bluetooth devices with Status
Sent in response to request.
Fields to be repeated as needed

Field #	*Field Description*
1	Index of first Bluetooth Address in this PGN
2	Number of Bluetooth Addresses in this PGN
3	Number of Bluetooth Addresses available
4	Bluetooth Device Address
5	Bluetooth Device Status
6	Bluetooth Device Name
7	Bluetooth Signal Strength
8	Fields 4 – 7 repeat as needed

130585 Entertainment - Bluetooth Source Status

Status of Bluetooth Sources
Sent upon change or in response to request.
Display devices command using Command Group Function

Field #	*Field Description*
1	Bluetooth Source Number
2	Bluetooth Pairing Status
3	Forget Bluetooth Device
4	NMEA Reserved
5	Bluetooth Device Address