

The dAIS Software is an AIS message decoding tool specialized in messages used by AIS-AtoN Navigation Aids teams.

This tool allows users of AIS-AtoN systems to perform the verification of messages in a visualization in a simpler and clearer way without including in the decoding the information issued by the ships.

The decoding that is performed focuses only on the following messages:

Message 21	. AIS-AtoN Navigation Aids. (A126)
Message 6 (GLA)	Monitoring AtoN equipment (Msg 6 type GLA A126))
Message 6 (MsM)	Monitoring AtoN equipment (Msg 6 type MsM)
Message 8	Metheo-hydrografic (ITU 289).

Messages issued by Class A and B transponders on ships are not decoded or recorded.

Designed in accordance with the IMO, ITU, IEC and IALA Recommendations.

The data to be decoded can be received by three ways:

- Direct connection by RS232 to a local computer with AIS receiver.
- Direct ip/port connection to a remote receiving equipment
- Loading data from a data file with AIS NEMEA sentences previously received and recorded in the file.



1- MAIN SCREEN

([•])MSM	NMEA INPUT: IAIVDM,1,1,B,1ESVNv001UskR SPGHP1,2021,3,7,13,0,16,663, IAIVDM,1,1,B,1K@1j>P1Mshv8 SPGHP1,2021,3,7,13,0,16,663,0 IAIVDM,1,1,A,1ESVNv001UskR SPGHP1,2021,3,7,13,0,16,663,0	<mdl8?t;sld00 0,0,0,1,34*17 1Qd`;UnJwvB20 0,0,0,1,0E*65 <mdl8?t;sld00 0,0,0,1,1E*64</mdl8?t;sld00 </mdl8?t;sld00 	100,0*0D 100,0*34 100,0*0E				dais - MSM AIS DECODER vo.
Serial RS-232	Filters: 🗌 MSG 6 MSM	🛛 MSG 6 🛛 🗹	MSG 8 MSG 21				HELP
Port COM:	CREATIONTIME (UTC)	MMSI	NAME	MSG	DAC	FI	
	07/03/2021 13:39:39	997011041		6	235	10	!AIVDM,1,1,,B,6>nlfH@00000>da
BaudRate:	07/03/2021 13:39:40	997011044		6	235	10	!AIVDM,1,1,,B,6>nlf1000000>da10
OPEN	07/03/2021 13:39:40	997011044		6	235	10	!AIVDM,1,1,,B,6Nnlf1000000>da1
	07/03/2021 13:39:40	997011054		6	235	10	!AIVDM,1,1,,B,6>nlfKP00000>da1
	07/03/2021 13:39:40	997011054		6	235	10	IAIVDM,1,1,,B,6NnlfKP00000>da
TCP	07/03/2021 13:39:41	997011059		6	235	10	IAIVDM,1,1,,B,6>nlfLh00000>da0
200.0.1.2 4444	07/03/2021 13:39:41	997011064		6	235	10	!AIVDM,1,1,,B,6>nlfN000000>da(
	07/03/2021 13:39:42	969696969		6	235	10	!AIVDM,1,1,,B,6>LiVj@00000>da:
OPEN	07/03/2021 13:41:31	997701099	ATON	21			IAIVDM,1,1,,A,E>oNmrw0b7W000
	07/03/2021 13:41:31	997011142	PAE WARNING ZONE	21			!AIVDM,1,1,,A,E>nlfi``0Rh;Pa74W
	07/03/2021 13:41:31	997011078	BALIZA MITRE	21			IAIVDM,1,1,,A,ENnlfQaQ0V4e0h6
FILE	07/03/2021 13:41:31	997011078	BALIZA MITRE	21			AIVDM,1,1,,B,ENnlfQaQ0V4e0h6
	07/03/2021 13:41:31	997011011	BRL 28K7	21			!AIVDM,1,1,,A,E>nlf@tQ96@IL5s
IMPORT FILE		-		-		~	

RS232 Serial Connection.

Allows you to select the COM port of the computer and the speed of communication with the AIS receiver

Port COM:	COM1	~
BaudRate:	38400	~

TCP connection.

Select the remote IP address and Communications Port with the AIS receiver.





Import data files.

You can decode the contents of a file that contains previously registered AIS frames from an AIS receiver. This mode is especially useful for further analysis messages received during field tasks.

The date and time of processing shown will correspond to those of the import of the file and not to those of the time of receipt of the message log.

IMPORT FILE

Message filter.

You can filter the type of message you want to display in the table to make it easier to search for messages. Unused messages will not be decoded.

Filters:	MSG 6 MSM	MSG 6	MSG 8	MSG 21

Control keys.

The control keys allow you to manage the decoding actions performed by the program:





2- MESSAGE 21 AIS AtoN.

Message Window 21 displays the decoded information of the selected AIS ATON message:

MESSAGE 21		
DESCRIPTION	VALUE	VALUE DESCRIPTION
Creation Time UTC	07/03/2021 18:59:55	
NMEA Sentence	!BSVDM,1,1,2,A,E>o3H2B`	
Sentence type	!BSVDM	
Fragments in this message	1	
Fragment No.	1	
Sequential message ID	2	
Radio Channel	A	
Payload	E>o3H2B`:2b000000000	276 bits (46 6-bit words)
Fill bits * CRC check	4*52	
AIS message		276 bits (35 8-bit words)
Message Type	21	Meteo Aids to Navigation Report
Repeat Indicator	0	Repeatable
MMSI	997251081	
Aid type	5	Light, without sectors
Name	PTET	
Position Accuracy	1	High (< 10 m; Differential Mode)
Longitude	-70,62685	70° 37,6111' W
Latitude	-23,51593	23° 30,9556' S
Dimension to Bow	0	
Dimension to Stern	0	
Dimension to Port	0	
Dimension to Starboard	0	
Type of EPFD	1	GPS
UTC second	40	
Off-Position Indicator	1	Off position
Regional reserved	11100100(228)	
RAIM flag	1	RAIM in use
Virtual-aid flag	0	Real Aid to Navigation at indicated position (default)
Assigned-mode flag	0	Autonomous and continuous mode (default)
Spare	0	(Not used)
<		>



3- MESSAGE 6 GLA FORMAT.

Message Window 6 GLA displays the decoded information of the selected monitoring message.

and the second se	MESSAGE 6	
DESCRIPTION	VALUE	VALUE DESCRIPTION
Creation Time UTC	07/03/2021 13:11:39	
NMEA Sentence	!AIVDM,1,1,(none),A,6>	
Sentence type	IAIVDM	
Fragments in this message	1	
Fragment No.	1	
Sequential message ID	(none)	
Radio Channel	A	
Payload	6>o3HL@JOJtL>da3@	144 bits (24 6-bit words)
Fill bits * CRC check	0*59	
AIS message		144 bits (18 8-bit words)
Message ID	6	(DAC235 or DAC250, FI10) / GLA Format for AIS Aids to Navigation Monitoring
Repeat Indicator	0	Repeatable
Source ID	997251185	
Sequence Number	0	
Destination ID	111111111	
Retransmit Flag	0	no retransmit (default)
Spare	0	
DAC	235	
FI	10	
Analogue (internal)	13,45	0.05 to 36V, 0.05V steps
Analogue (external - from hardware analogue input nº1)	0,00	0.05 to 36V, 0.05V steps
Analogue (external - from hardware analogue input nº2)	0,00	0.05 to 36V, 0.05V steps
Status Bits (internal – same as the 5 LSBs of status bits from Message typ	Racon status=0, Light s	Racon status=no RACON installed, Light status=Light OFF, Health status=Go
Status Bits (external - derived from hardware digital inputs)	In7=0,In6=0,In5=0,In4=	Digital Input 0=Off, 1=On
Off Position Status	0	0=On position, 1=Off position
Spare	0	
<	37	>

The MSG6-GLA format (DAC235, FI10) for monitoring AtoN equipment is described by the recommendation of the A126 IALA as an example of the use of a targeted message and is used by many AIS AtoN equipment on the market.



Recommendation A-126 – the use of the Automatic Identification Systems (AIS) in Marine Aids to Navigation Services June 2004 – Revised June 2011

Parameter	Number of bits	Description
Message ID	6	Identifier for this message 6; always 6.
Repeat Indicator	2	Used by the repeater to indicate how many times a
		message has been repeated.
		0 – 3; default = 0; 3 = do not repeat any more.
Source ID	30	MMSI number of source Unit
Sequence Number	2	0 – 3
Destination ID	30	MMSI number of destination Unit.
Retransmit Flag	1	Retransmit Flag should be set upon retransmission:
-		0 = no retransmission = default
		1 = retransmitted.
Spare	1	Not used. Should be zero.
DAC	10	Destination Area Code.
		Default: 235 (UK & NI) or 250 (ROI)
FI	6	Function Identifier
		Default: 10 for this GLA standard message
Analogue (internal)	10	0.05– 36V 0.05V step Supply voltage to AIS Unit
		0 – Not Used
Analogue (external -	10	0.05 – 36V 0.05V step
from hardware analogue		0 – Not Used
input No 1		
Analogue (external -	10	0.05 – 36V 0.05V step
from hardware analogue		0 – Not Used
input No 2		
Status Bits 0 / 1	5	4 \/ 00 - no RACON installed; 01 - RACON not monitored
(internal – same as the 5		3 /\ 10 - RACON operational; 11 - RACON ERROR
LSBs of status bits from		$2 \times 100 - 10 \text{ light of no monitoring, 01 - Light ON}$
Message type 21)		0 0 - Good Health 1 - Alarm
Status Bits 0 / 1	8	7 Digital Input Off/ / On
(external - derived from	-	·
hardware digital inputs)		
3 1 7		0 Digital Input Off/ / On
Off Position Status	1	Off position or On position
		0: On position
		1: Off position
Spare	4	For future use. Should be zero.
TOTAL OF BITS.	136	Occupies 1 slot.

Table 4	GLA Format for A	AIS Aids to	Navigation	Monitorina	Messade
rubio 4	OLATI Onnucion	10710010	nungunon	wonitoning	moodage



4- MESSAGE-6 MSM FORMAT.

Message 6-MsM Window displays decoded information from the selected monitoring message.

dais	MESSAGE 6 MSM	
DESCRIPTION	VALUE	VALUE DESCRIPTION
Creation Time UTC	07/03/2021 13:11:58	
NMEA Sentence	!AIVDM,1,1,(none),A,6No3HJ@1f`KP078>cT6qp	
Sentence type	IAIVDM	
Fragments in this message	1	
Fragment No.	1	
Sequential message ID	(none)	
Radio Channel	A	
Payload	6No3HJ@1f`KP078>cT6gpM>Ha4l<093000000	258 bits (43 6-bit words)
Fill bits * CRC check	2*75	
AIS message		258 bits (33 8-bit words)
Message ID	6	(DAC1, FI50, SID1) / MsM Format for AIS Aids to Navigat
Repeat Indicator	1	Repeatable
Source ID	997251177	
Sequence Number	0	
Destination ID	7250360	
Retransmit Flag	0	no retransmit (default)
Spare	0	
DAC	1	
FI	50	
SID	1	
Longitud	-73,78118	73° 46,8705' W
Latitud	-52,73193	52° 43,9158' S
Analogue (internal)	13,75	0.05 to 36V, 0.05V steps
Analogue (external - from hardware analogue input nº1	13,40	0.05 to 36V, 0.05V steps
Analogue (external - from hardware analogue input nº2	0,10	0.05 to 36V, 0.05V steps
Analogue (external - from hardware analogue input nº3	13,40	0.05 to 36V, 0.05V steps
Analogue (external - from hardware analogue input nº4	0,00	0.05 to 36V, 0.05V steps
Analogue (external - from hardware analogue input nº5	0,00	0.05 to 36V, 0.05V steps
Analogue (external - from hardware analogue input nº6	0,00	0.05 to 36V, 0.05V steps
Analogue (external - from hardware analogue input nº7 SP	0,00	0.05 to 36V, 0.05V steps
Status Bits-1 (internal - same as the 5 LSBs of status bits from Mess	Racon status=0, Light status=2, Health status=0	Racon status=no RACON installed, Light status=Light OF
Status Bits-2 (external - derived from hardware digital inputs)	In7=0,In6=0,In5=0,In4=0,In3=0,In2=0,In1=0,In0=0,	Digital Input: 0=Off, 1=On
Status Bits-3 (external - derived from hardware digital inputs)	In7=0,In6=0,In5=0,In4=0,In3=0,In2=0,In1=0,In0=0,	Digital Input: 0=Off, 1=On
Off Position Status	0	0=On position, 1=Off position
Spare	0	
<		>

The MSG6-MsM format (DAC1 , FI50) for monitoring AtoN equipment is created by MsM and is used by MsM AIS transponders.

The Msg 6 -MsM is an extended version of the MSg6 that contains more data from the monitored AotN. This message is used for monitoring complex installations with a large number of analog (8) and digital (16) signals.



MsM Format for AIS Aids to Navig	gation Monitori	ng Message
VERSION 1.0	11 NOV-19	
Parameter	Nº BITS	Description
Message ID	6	Identifier for this message 6; always 6.
Repeat Indicator	2	Used by the repeater to indicate how many times a
		message has been repeated.
		0 - 3: default = 0: 3 = do not repeat any more.
Source ID	30	MMSI number of source Unit
Sequence Number	2	0 – 3
Destination ID	30	MMSI number of destination Unit.
Retransmit Flag	1	Retransmit Flag should be set upon retransmission:
		0 = no retransmission = default
		1 = retransmitted
Spare	1	Not used. Should be zero.
DAC	10	Destination Area Code.
		Default:1 (INTERNATIONAL)
FI	6	Function Identifier
		Default: 50 for MsM STÁNDAR MSG
SID	5	Sub-application ID Default: 1 (0.32)
	5	Longitud en 1/10.000 min de la posición de una avuda a la
Longitud	20	Eoligidad en 1/10 000 min de la posición de una ayada a la povo gogión $(\pm 180^{\circ})$ Esto — positivo Ogosto — pogotivo
Longitud	20	$\frac{1}{121} = \frac{1}{120} + \frac{1}{120} + \frac{1}{120} = \frac{1}{120} + \frac{1}$
		181 = (6/91ACOn) = no disponible = defecto)
		Latitud en 1/10 000 min de una ayuda a la navegación
Latitud	27	$(\pm 90^\circ, \text{Norte} = \text{positiva}, \text{Sur} = \text{negativa}.$
		$91 = (3412140_{\rm h}) = $ no disponible = defecto)
Analogue (internal)	10	0.05– 36V 0.05V step Supply voltage to AIS Unit
		0 – Not Used
Analogue (external - from	10	0.05 – 36V 0.05V step
hardware analogue input nº1		0 – Not Used
Analogue (external - from	10	0.05 – 36V 0.05V step
hardware analogue input nº2		0 – Not Used
Analogue (external - from	10	0.05 – 36V 0.05V step
hardware analogue input nº3		0 – Not Used
Analogue (external - from	10	0.05 – 36V 0.05V step
hardware analogue input nº4		0 – Not Used
Analogue (external - from	10	0.05 – 36V 0.05V step
hardware analogue input nº5		0 – Not Used
Analogue (external - from	10	0.05 – 36V 0.05V step
hardware analogue input nº6		0 – Not Used
Analogue (external - from	10	0.05 – 36V 0.05V step
hardware analogue input nº7 SP		0 – Not Used
Status Bits-1	5	4 \ / 00 – no RACON installed; 01 – RACON not monitored
(internal – same as the 5		3 / \ 10 – RACON operational; 11 – RACON ERROR
LSBs of status bits from		2 \ / 00 – no light or no monitoring (0); 01 – Light ON (1)
Message type 21)		1 / \ 10 – Light OFF(2); 11 – Light ERROR (3)
		0 - Good Health BIIT , 1 - Alarm
Status Bits-2	8	7 Digital Input Off/ / On
(external - derived from		:
hardware digital inputs)		0 Digital Input Off/ / On
Status Bits-3	8	7 Digital Input Off/ / On
(external - derived from		:
hardware digital inputs)		0 Digital Input Off/ / On
Off Position Status	1	Off position or On position
		0: On position
		1: Off position
Spare	4	For future use. Should be zero.
TOTAL OF BITS.	254	Occupies 1 slot.
1	1	1



5- MESSAGE 8 METEO/HYDROGRAPHIC.

Message-8 window displays the decoded information for the selected message.

Ais		MESSAGE 8
DESCRIPTION	VALUE	VALUE DESCRIPTION
AIS message		360 bits (45 8-bit words)
Message Type	8	Meteo Aids to Navigation Report
Repeat Indicator	0	Repeatable
Source MMSI	997011018	
Spare	0	
DAC	1	
FID	31	
Longitude	-58,35155	58° 21,0930' W
Latitude	-34,63033	34° 37,8200' S
Fix quality	1	High (< 10 m; Differential Mode)
Day (UTC)	7	
Hour (UTC)	13	
Minute (UTC)	3	
Average Wind Speed	1	kts, 126 = wind >= 126 knots, 127 = N/A (default)
Gust Speed	2	kt(s), 126 = wind >= 126 knots, 127 = N/A (default)
Wind Direction	8	degree(s), 360 = N/A (default)
Wind Gust Direction	13	degree(s), 360 = N/A (default)
Air Temperature	22,1	degree(s) (Celsius), -1024 = N/A (default)
Relative Humidity	85	%, 101 = N/A (default)
Dew Point	501	degree(s) Celsius - 501 = N/A (default)
Air Pressure	213 (1012 hPa)	hPa
Pressure Tendency	2	0 = steady, 1 = decreasing, 2 = increasing, 3 - N/A (default)
Horiz. Visibility	127	NM, 127 = N/A (default)
Water Level	849 (-1,51 m)	m, 4001 = N/A (default)
Water Level Trend	0	0 = steady, 1 = decreasing, 2 = increasing, 3 - N/A (default)
Surface Current Speed	255	knots , 251 = speed >= 25.1 knots, 255 = N/A (default)
Surface Current Direction	360	degree(s), 360 = N/A (default)
Current Speed #2	255	knots , 255 = N/A (default)
Current Direction #2	360	degree(s), 360 = N/A (default)
Measurement Depth #2	31	m, 31 = N/A (default)
Current Speed #3	255	knots, 251 = speed >= 25.1 knots, 255 = N/A (default)
Current Direction #3	360	degree(s), 360 = N/A (default)
Measurement Depth #3	31	m, 31 = N/A (default)
Wave Height	255	m , 251 = height >= 25.1m, 255 = N/A (default)
Wave Period	63	s , 63 = N/A (default)
Wave Direction	360	degree(s), 360 = N/A (default)
Swell Height	255	m, 251 = height >= 25.1m, 255 = N/A (default)
Swell Period	63	s, 63 = N/A (default)
Swell Direction	360	degree(s), 360 = N/A (default)
Sea State	1	Beaufort , Beaufort scale
Water Temperature	10.9	degree(s) Celsius - 501 = N/A (default)
Precipitation	7	0=Reserved; 1=Rain; 2=Thunderstorm; 3=Freezing rain; 4=Mixed/ice; 5=Snow; 6=Reserved; 7=N/A (default)
4	l.	

The decoded Msg8 format is the new format defined by the IMO in circular 289 and can contain up to 31 weather and hydrographic parameters.

This environmental data must be recorded by sensors external to the AIS-AtoN equipment and depending on the sensors, the message will contain more or less valid data that will be highlighted in gray in the detail table. The gray data corresponds to default parameters of which a sensor connected to the AIS AtoN is not available.

