

12th Mediterranean AIS Expert Working Group
Rome, 22nd October 2014

MAREΣ 12/4/2
26 August 2014

MAREΣ network activity and monitoring report
AIS data quality
Submitted by EMSA and Italy

<i>Executive summary</i>	The document presents the AIS data quality.
<i>Action to be taken</i>	As per paragraph 3.
<i>Related documents</i>	a) 11 th Mediterranean AIS EWG report b) Document MAREΣ 12/4/1

1. Background information

Article 6a "Use of automatic identification systems (AIS) by fishing vessels" of the Directive 2002/59/EC (as amended), states that any fishing vessel with an overall length of more than 15 meters shall be fitted with AIS equipment (class A), in accordance with the timetable set out in Annex II of the Directive:

- Fishing vessels of overall length 24 meters and upwards but less than 45 meters: not later than 31 May 2014;
- Fishing vessels of overall length 18 meters and upwards but less than 24 meters: not later than 31 May 2013;
- Fishing vessels of overall length exceeding 15 meters but less than 18 meters: not later than 31 May 2014.

The same Article requires that fishing vessels equipped with AIS shall maintain it in operation at all time (with some exceptions).

2. Data quality statistics

To assess the AIS data quality, the AIS data transmitted by the fishing vessels were analysed. The analysis covers the period from January 2014 to June 2014 and refers to the Mediterranean AIS Regional server area.

This AIS data quality report presents the following statistical information about the AIS messages sent by fishing vessels:

- Shipping activities

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- Monitoring statistics
- Transmission observations
- Invalid MMSI
- Invalid IMO and MMSI (both)

The analysis shows that within the MAREΣ region the shipping activity in general and for the fishing vessels in particular, presents a strong seasonal influence as indicated in presented in Figures 1 and 2 below:

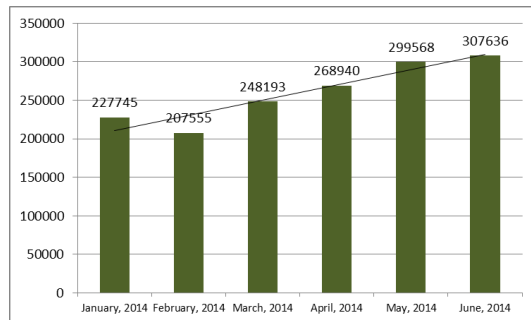


Figure 1: Shipping activity in area

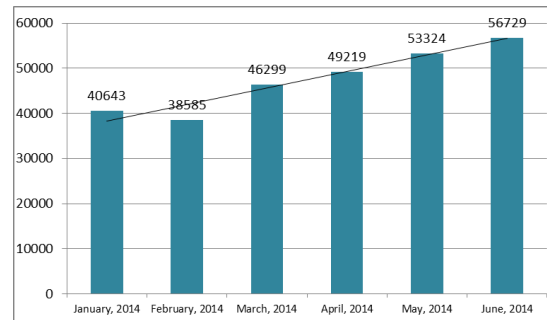


Figure 2: Fishing vessels activity

In accordance with the MAREΣ statistics, the total number of vessels monitored during the reference period was 1.559.637, and 284.799 (16.77%) of these were fishing vessels. A further analysis showed that fishing vessels transmitting both the IMO and MMSI numbers represent only 8.16% (23.244 out of 284.799).

Figure 3 shows the percentage of the fishing vessels in relation to the other type of ship types while Figure 4 shows the percentage of the fishing vessels with IMO number:

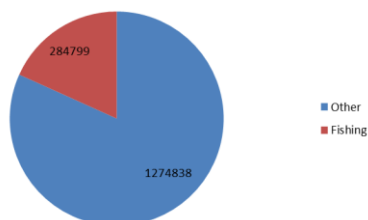


Figure 3: Fishing vessels monitored

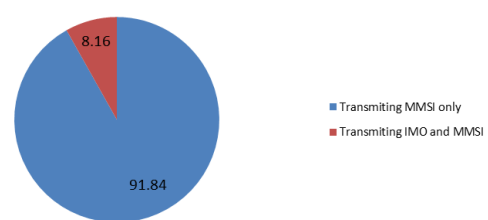


Figure 4: AIS data transmission by fishing vessels

The detected invalid AIS data were sorted by the following categories: "invalid MMSI" and "invalid both: IMO and MMSI". A relatively low number of monitored fishing vessels (455 or 0.16%) of the monitored (284.799) were transmitting invalid data.

The analysis indicated that:

- 448 fishing vessels (or 0,16 % of type) were transmitting invalid MMSI numbers;
- 7 fishing vessels (0.002% of type) were transmitting invalid both MMSI and IMO numbers.

Concluding, the number of invalid AIS data transmissions from fishing vessels is relatively low. However there also was no a constant improvement in data quality over the observed period (see fig. 5 below).

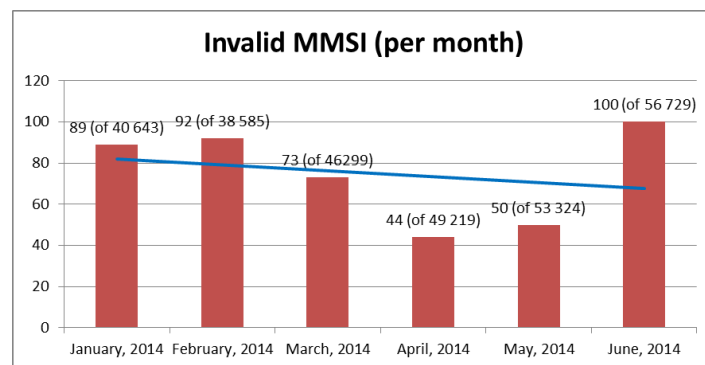
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Figure 5: Data quality: possible improvement

The summary of analysed data is provided Table 1 below:

<i>Mediterranean region: Fishing vessels</i>											
Date	Number of ships found	Number of F/V found	% (F/V)	Observations				Ship detected transmitting false ship particulars			
				Transmitting MMSI only		Transmitting IMO and MMSI		Invalid MMSI		Invalid both: IMO and MMSI	
				No.	% (from Total)	No.	% (from Total)	No.	% (from Total)	No.	% (from Total)
January, 2014	227745	40643	17.85	37042	91.14	3601	8.86	89	0.22	2	0.005
February, 2014	207555	38585	18.59	35422	91.80	3163	8.20	92	0.24	0	0.000
March, 2014	248193	46299	18.65	42687	92.20	3612	7.80	73	0.16	3	0.006
April, 2014	268940	49219	18.30	45259	91.95	3960	8.05	44	0.09	2	0.004
May, 2014	299568	53324	17.80	48916	91.73	4408	8.27	50	0.09	0	0.000
June, 2014	307636	56729	18.44	52229	92.07	4500	7.93	100	0.18	0	0.000
Total	1559637	284799	16.77	261555	91.84	23244	8.16	448	0.16	7	0.002
Avarage	259940	47467	18.26	43593	91.84	3874	8.16	75	0.16	1	0.002

Table 1: Summary of analyses

3. Action required

Participating States are invited to note the information and to take the necessary measures for monitoring and reducing the numbers of invalid/inaccurate data.