Sjøfartsdirektoratet
Norwegian Maritime Directorate

Sikkerhetsmelding AIS

Safety message recipients: (check box)

- ☒ Sdir : Norwegian Maritime Directorate
- ☐ A: 16 specially authorized employment offices
- ☐ U: Selected Foreign Service stations
- ☐ P: Equipment manufacturers, any subgroups
- ☐ O: Offshore companies / platform managers / operators
- ☒ H: Main organizations
- ☒ Kl.s. DNV, LR , BV, GL , ABS Norge
- ☐ Others:

No.: SM Nr. 10 /2005

Date: 29. oktober 2005

Journal no.: 200512302-2

Automatic Identification System – AIS
Problemer med tidsberegning i Saab AIS R3- og R4-transceivere

Sjøfartsdirektoratet er gjort oppmerksom på at tidsberegningen i Saab AIS R3- og R4-transceivere har ett sekunds feilvisning. Dette kan forårsake interferens med andre mobile AIS-tranceivere. Signaler fra en Saab AIS R3- og R4-transceiver vil til tider ikke bli mottatt av andre AIS-transceivere. I områder med tett skipstrafikk kan denne forstyrrelsen (interferens) forårsake at kvaliteten på AIS-informasjon mottas med redusert kvalitet.
Feil tidsberegning er en sikkerhetsrisiko

Bakgrunn
Fra midnatt 31. desember 2005 vil UTC-tiden bli justert med ett sekund. Denne informasjonen ble kringkastet i GPS-systemet allerede i juli dette år. GPS-mottakerne i Saab AIS R3- og R4-transpondere foretok denne justeringen straks, og forårsaket derved en uriktig tidsberegning. Den uriktige tidsberegning vil imidlertid opphøre ved midnatt 31. desember 2005.

Normalt strekker en AIS-sending seg over én tidsluke. Men, på grunn av den uriktige tidsberegningen kan sendinger fra en Saab AIS R3- og R4-transceiver strekke seg over to tidsluker og derved forårsake kollisjon med sendinger fra andre AIS-enheter. Hvor ofte dette kan oppstå, avhenger av tettheten i skipstrafikken i området. Noen AIS-transpondere vil ikke kunne motta sendinger basert på uriktig tidsberegning.

Anbefalinger
Frem til 31. desember 2005, da UTC-tiden vil bli justert med ett sekund, anmoder Sjøfartsdirektoratet vaktansvarlige navigatører å ta hensyn til dette problemet, spesielt i områder med tett skipstrafikk.

Vedlagt finnes kopi av annonse fra Saab TransponderTech AB om tidsberegningsproblemet som har oppstått i deres R3- og R4-transpondere.

Sigurd Gude
ass. sjøfartsdirektør

Per Magne Indreeide
avdelingsdirektør

Vedlegg

Announcement

Document Class
N/A

Document Id	Version	Date
PT-05-0078	A	2005-09-09

Saab TransponderTech AB

Issued by
Mikael Pettersson

Approved by
Gunnar Mangs

Timing problem in the R3 and R4 Transponder

A problem with the UTC time has recently occurred in our R3 and R4 transponder products. This causes a functional problem in our transponders which will remain until the end of 2005. The problem can be removed with a software upgrade that is available through our Service Network.

1.1 Background

UTC time is used as the time base in the AIS system. A leap second will be introduced in UTC time at midnight, 31st December 2005. Announcement on the upcoming change in UTC has been broadcast in the GPS system since early July this year.

An error has been observed in the internal GPS receiver in the R3 and R4 transponders. The GPS receiver introduced this leap second immediately, when the announcement was received. The result is that the timing in the transponder is incorrect and will be incorrect until 31st December 2005. There is a slight risk that some messages from the transponder may collide with transmissions from other AIS units. How often this may occur depends on the density of ships in the area. Additionally we understand that there are some AIS transponders which will not be able to receive such incorrectly timed messages.

It should be noted that users so far have not reported this as a problem, not even in the busiest traffic areas.

1.2 Recommendations

We recommend the users of the R3 and R4 transponder products to contact their dealer for a software upgrade. Until such upgrade is done, all users should be cautioned that not all ships may receive their AIS transmissions.

NOTE: The software upgrade will have no effect after 2005, when the internal GPS receiver itself will provide correct UTC time.

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Sjøfartsdirektoratet
Norwegian Maritime Directorate

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No.: SM No.10 /2005

Date: 28 October 2005

Journal no.: 200512302-2

Automatic Identification System – AIS
Timing problem in Saab R3 and R4 AIS tranceivers

It has come to the attention of the Norwegian Maritime Directorate that the timing in the Saab R3 and R4 AIS transceivers are incorrect, caused by a leap second. The timing problem may cause increased interference with other mobile AIS transceivers. Signals from a Saab R3 and R4 may sometimes not be received by other AIS transceivers at all. In areas with heavy ship traffic the interference may reduce the quality of AIS communication.
This timing problem creates a safety risk.

Background:
A leap second will be introduced in UTC time at midnight 31 December 2005. This information has been broadcast in the GPS system since early July this year. The GPS receiver in the Saab R3 and R4 transponders introduced this leap second immediately, causing incorrect timing in the transponders. The incorrect timing will, however, cease at midnight 31 December 2005.

Normally, an AIS transmission uses one time slot. Transmission from R3 and R4, however, may use two time slots, if the transmission begins in the middle, instead at the beginning of the time slot. There is therefore a risk that messages fro the R3 and R4 transponders will collide with transmissions from other AIS units. How often it will occur depends on the density of ships in the area. In addition some AIS transponders may not receive messages incorrectly timed at all.

Recommendations
Until 31 December 2005, when the leap second is introduced in UTC time, the Norwegian Maritime Directorate recommends officers in charge of a navigational watch to pay special attention to the problem mentioned, especially in areas with heavy ship traffic.

A copy of the announcement from Saab TransponderTech AB about the timing problem is enclosed.

Sigurd Gude
Assistant Director General

Per Magne Indreeide
Director of Department

Enclosure

Announcement

Document Class
N/A

Document Id	Version	Date
PT-05-0078	A	2005-09-09

Saab TransponderTech AB

Issued by
Mikael Pettersson

Approved by
Gunnar Mangs

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It should be noted that users so far have not reported this as a problem, not even in the busiest traffic areas.

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