HPL-2
AIS-SART (MOB)
AIS & 121,5 Mhz

PLB – **HPL-2**

In use in helicopter transport in Norway from March 2014

Dual functionality

- AIS signals with satellite-positioning
- 121.5 Mhz homing signals

Made to be integrated in antenna-module in SeaAir/ SeaAir Barents helicopter passenger suit

- Water activated

Alarm symbols

INTERNATIONAL MARITIME ORGANIZATION

SN.1/Circ.322
24 June 2013

AIS-SART

5 AIS-SARTs may be indicated on a newer graphical display of AIS by a circle with an "X" inside it, as shown (extract from SN.1/Circ.243/Add.1):

Topic	Symbol
AIS search and rescue transmitter (AIS-SART)	

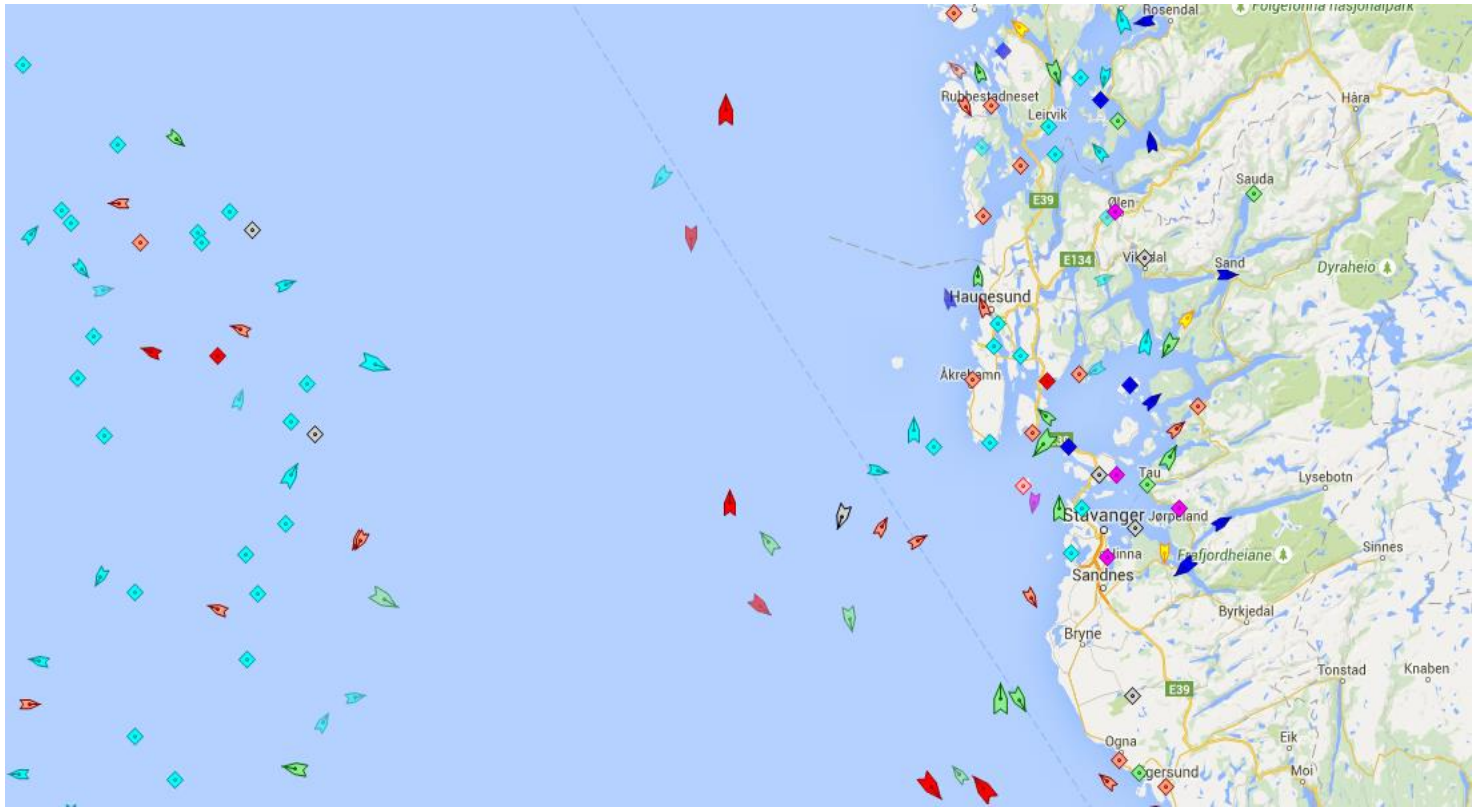
6 Alternatively, the AIS-SART may be indicated on an older graphical display of AIS as a normal (sleeping) AIS target (isosceles triangle), as shown (extract from SN.1/Circ.243), taking into account that the triangle may be oriented by Course over Ground (COG):

Topic	Symbol
AIS Target	

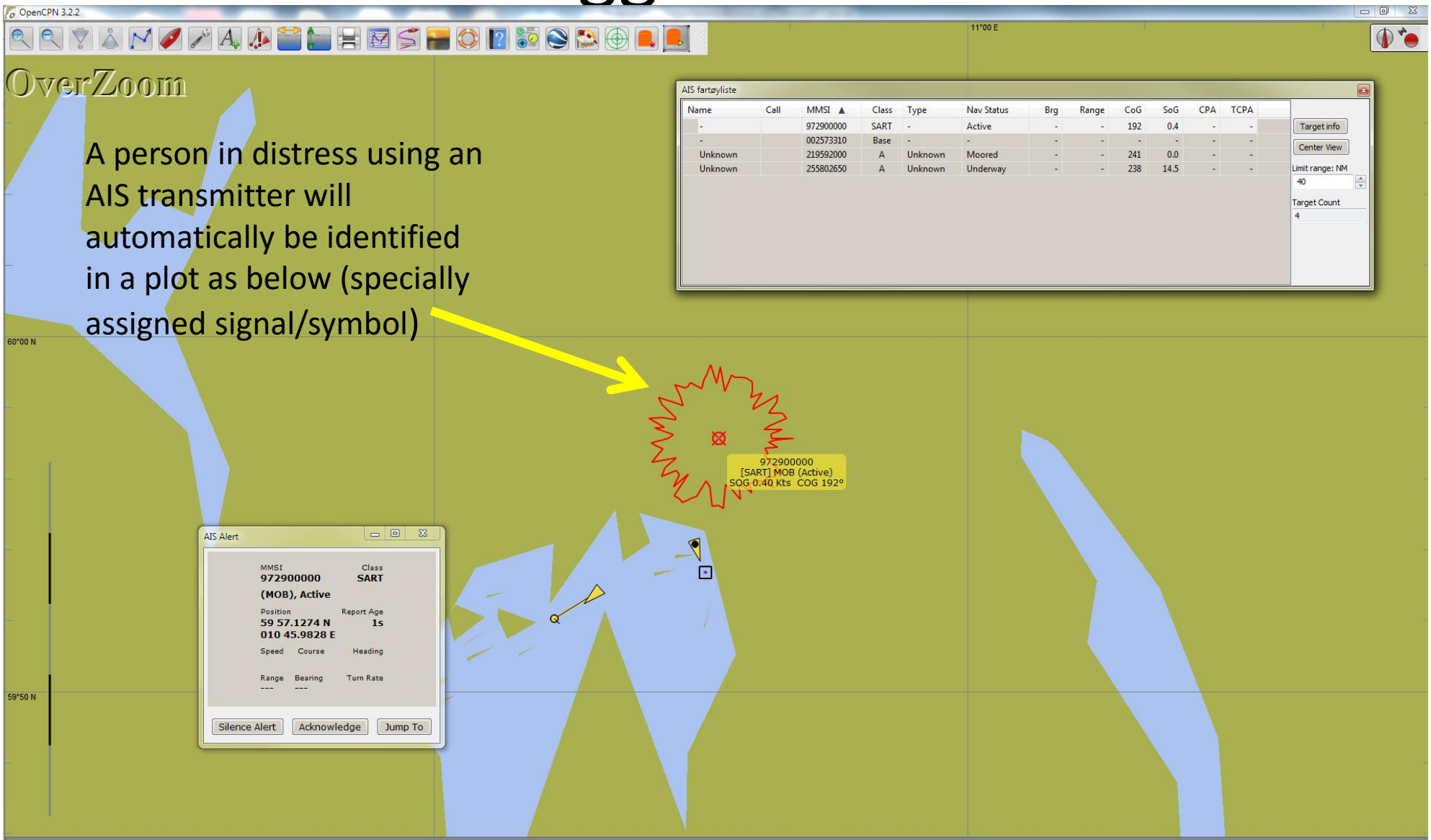
HANSEN PROTECTION

AIS – Automatic Identification System

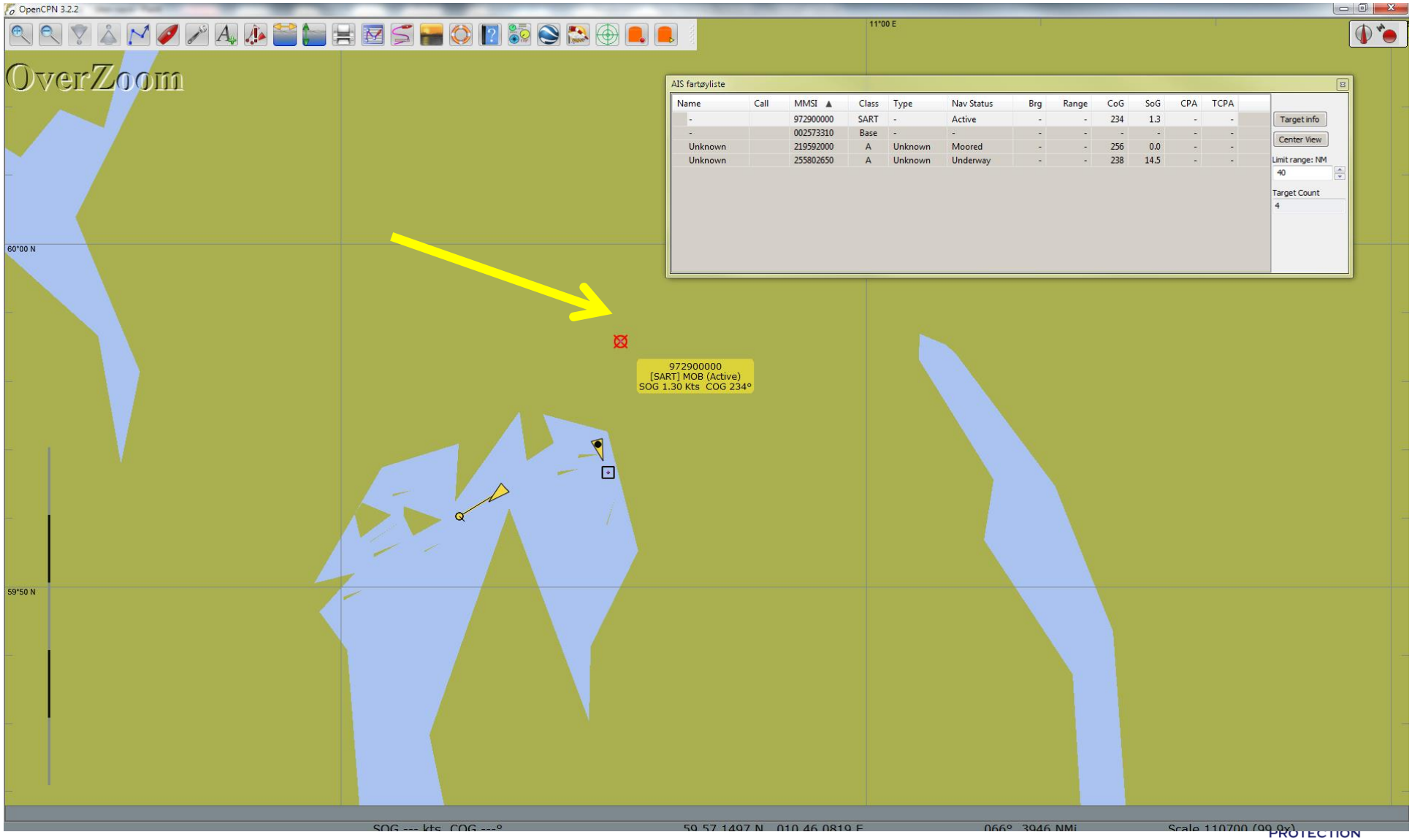
- The Automatic Identification System (AIS) is an automatic tracking system used on ships and by vessel traffic services (VTS) for identifying and locating vessels by electronically exchanging data with other nearby ships



Alarm triggered (on test unit on land)



Alarm acknowledged



Facts about AIS-SART (MOB)

Backside label:

- Positioning data from GPS/GLONASS-networks
- AIS-alert via VHF 161,975/162,025 MHz to vessels and ships (all with GMDSS-units)
- Homing signal on 121,5 MHz VHF
- Individual AIS-ID

HANSEN PROTECTION

AIS-SART background

- The AIS-SART is a self-contained radio device used to locate a survival craft or distressed vessel by sending updated position reports using a standard Automatic Identification System (AIS) class-A position report. The position and time synchronization of the AIS-SART is derived from a built in GNSS receiver (e.g. GPS). Shipboard Global Maritime Distress Safety Systems (GMDSS) installations include one or more search and rescue locating devices. These devices may be either an AIS-SART (MOB) (AIS Search and Rescue Transmitter/Man Over Board device) (from January 1, 2010), or a radar-SART (Search and Rescue Transponder).

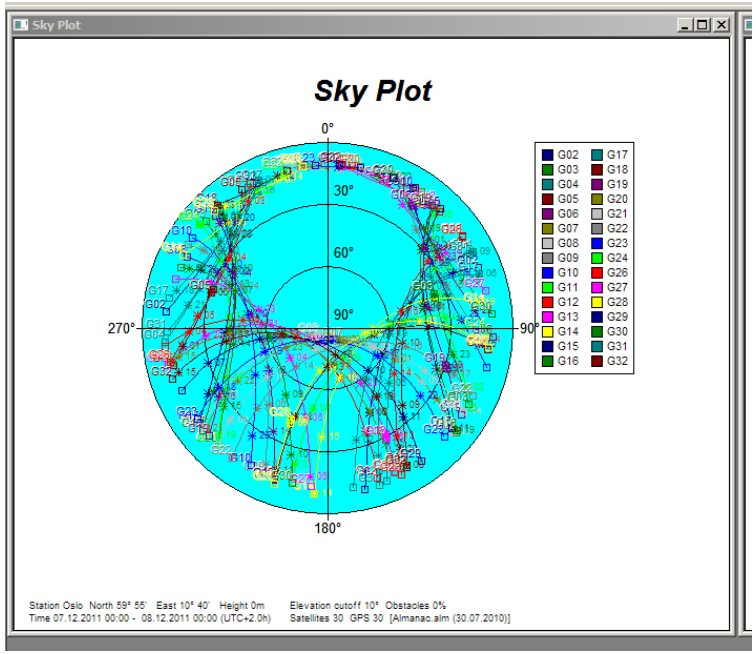
- The AIS-SART derives position and time synchronization from a built in GNSS receiver. Once per minute, the position is sent as a series of eight identical position report messages (four on 161.975 MHz and four on 162.025 MHz). This scheme creates a high probability that at least one of the messages is sent on the highest point of a wave.

Positioning

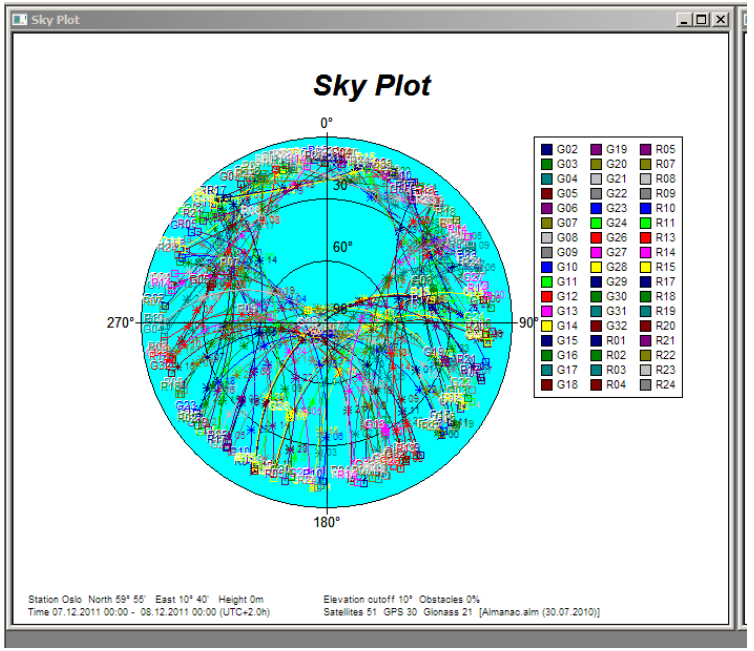
From GPS - to both GPS and Glonass:

- Added no. of satellites to aid positioning
- Glonass – network has better coverage in the north, 10 degrees further north compared to the GPS-network
  => Safer and more precise positioning of people in distress

GPS (US)



Glonass (Russia)



HANSEN PROTECTION

Type approval by Nemko

Nemko

Notified Body Opinion

R&TTE Directive

Issued according to the Radio & Telecommunications Terminal Equipment (R&TTE) Directive 1999/5/EC Annex IV, by Nemko AS (Notified Body Id No. 0470).
In our opinion, the technical file submitted, provides sufficient evidence of conformity with Article 3 of the R&TTE Directive 1999/5/EC.

Document No.: 0470-RTTE-140401

Applicant	Hansen Protection AS Tykkemyr 27 1597 Moss NORWAY
Manufacturer	Simpro AS Industriveien 3 7332 Løkken Verk NORWAY
Product	Personal Locator Beacon
Model	HPL-2
Rating	Internal battery
Additional information	EPIRB / AIS
Brand Name	Hansen Protection
Documentation	TCF from Hansen Protection AS and Simpro AS, version 09.01.2014
Standards applied	**Article 3.1a)** EN 60950-1:2006 +A11:2009 +A1:2010 +A12:2011 EMF evaluation HPL-2.pdf
	Article 3.1b) EN 60945:2002
	Article 3.2) IEC 61097-14:2010 ETSI EN 300 152 V1.2.1
Nemko order number	246197

This document reflects the opinion of this Notified Body. The manufacturer may or may not follow this opinion. The compliance of this product is the sole responsibility of the manufacturer or his European authorized representative.
Provided it is otherwise confirmed that the product also conforms with any other applicable Directives, the manufacturer (or the European authorized representative) may prepare an EC/EEA Declaration of Conformity and affix the below shown CE-marking to each conforming product. Since this technical file has been assessed by Nemko AS, the CE-marking shall be accompanied by the Nemko Notified Body Id number 0470, according to the provisions of Annex VII and Article 12 of the R&TTE Directive 1999/5/EC. For radio transmitters the CE-marking shall also be accompanied by an Equipment Class Identifier given in Annex VII and Article 14 of the R&TTE Directive 1999/5/EC.

Date of issue 2014-01-24

Document revision: 1.0

Jon Fredrik Mo [Notified Body]

CE 0470

CE

Nemko Group
Nemko AS, Gaustadalléen 30, P.O. Box 73 Blindern, 0314 Oslo, Norway
TEL +47 22 96 03 30 FAX +47 22 96 05 50 EMAIL info@nemko.com
EN TERPRISE NUMBER NO 974 404 532

nemko.com.no

Note: This document is no longer valid if any of the reference standards cease to exist or are replaced

HANSEN PROTECTION

Type approval by Nemko II

Nemko

Notified Body Opinion

R&TTE Directive

Annex I (Essential requirements)

Document No.: 0470-RTTE-140401

PASS	**Protection requirements for health and safety - Article 3.1a** The protection of the health and the safety of the user and any other person, including the objectives with respect to safety requirements contained in Directive 2006/95/EC, but with no voltage limit applying.
PASS	**Protection requirements for electromagnetic compatibility (EMC) - Article 3.1b** The protection requirements with respect to electromagnetic compatibility contained in Directive 2004/108/EC.
PASS	**Effective use of the radio spectrum - Article 3.2** Radio equipment shall be so constructed that it effectively uses the spectrum allocated to terrestrial/space radio communication and orbital resources so as to avoid harmful interference.
NA	**Interwork via network - Article 3.3a** The product shall be so constructed that it interworks via networks with other apparatus and that it can be connected to interfaces of the appropriate type througout the Community.
NA	**Harm and misuse of network - Article 3.3b** The product shall be so constructed that it does not harm the network or its functioning nor misuse network resources, thereby causing an unacceptable degradation of service.
NA	**Protect personal data and privacy - Article 3.3c** The product shall be so constructed that it incorporates safeguards to ensure that the personal data and privacy of the user and of the subscriber are protected.
NA	**Avoidance of fraud - Article 3.3d** The product shall be so constructed that it supports certain features ensuring avoidance of fraud.
NA	**Access to emergency services - Article 3.3e** The product shall be so constructed that it supports certain features ensuring access to emergency services.
NA	**Features for disabilitated users - Article 3.3f** The product shall be so constructed that it supports certain features in order to facilitate its use by users with a disability.

PASS = Pass (compliant)
FAIL = Fail (non-compliant)
NA = Not applicable

Nemko Group
Nemko AS, Gaustadalléen 30, P.O. Box 73 Blindern, 0314 Oslo, Norway
TEL +47 22 96 03 30 FAX +47 22 96 05 50 EMAIL info@nemko.com
ENTERPRISE NUMBER NO 974 404 532
nemko.com.no

HANSEN PROTECTION

Approval by Norwegian Post & Tele-communications Authority I

Post- og teletilsynet
Norwegian Post and Telecommunications Authority

Hansen Protection AS
Tykkemyr 27
1597 MOSS

Vår ref.:1102679-11 - 633
Vår dato: 3.4.2014

Deres ref.:
Deres dato:

Saksbehandler: Janne Steen Haugen

Tillatelse til bruk av frekvenser for nødpeilesendere med AIS-funksjonalitet – 121,5 MHz, 161,975 MHz og 162,025 MHz

Post- og teletilsynet (PT) viser til søknad av 5.2.2014 om bruk av utstyr for nødpeilesendere med AIS-funksjonalitet på frekvensene 121,5 MHz, 161,975 MHz og 162,025 MHz.

1. Rett til bruk av utstyr og frekvenser

Med hjemmel i lov 4. juli 2003 nr. 83 om elektronisk kommunikasjon (ekomloven) §§ 6-2 og 6-3 gir PT Hansen Protection AS, organisasjonsnummer 871 200 092, heretter kalt Innehaver, tillatelse til bruk av frekvenser for nødpeilesendere med AIS-funksjonalitet på offshore passasjerflygninger med helikopter.

Tillatelsen gjelder mann-over-bord-utstyr av typen HPL-2 med senderfrekvenser 121,5 MHz, 161,975 MHz og 162,025 MHz i forbindelse med helikoptertransport av offshorepersonell ut fra Sola, Flesland, Florø, Kristiansund, Brønnøysund og Hammerfest heliport.

Frekvensene er i ITU Radio Regulations (RR) allokert til nød- og redningsformål, jf.[1] Article No. **5.200** og Appendix 18 *specific note f).*

2. Forpliktelser som følge av bruken

Innehaver er ansvarlig for at utstyret tilfredsstiller krav i forskrift 20. juni 2000 nr. 628 om EØS-krav til radio- og teleterminalutstyr.

Test, bruk og vedlikehold skal skje i samsvar med fabrikantens brukerveiledning. Utstyret skal oppbevares slik at uvedkommende ikke får tilgang til det.

[1] *Edition 2012*

Post- og teletilsynet
Besøksadresse / Office address:
Nygård 1, Lillesand

Postadresse / Postal address:
Postboks 93
4791 LILLESAND
NORWAY

Tel +47 22 82 46 00
Fax +47 22 82 46 40
firmapost@npt.no

NO 947 446 871
www.npt.no

Documentation HPL-2

July 2014

Item	Data	Comment
General		
Battery Type	Non replaceble, 4x Saft LS-17500/3,6V/3600mAh	
Operating Time	>15000 hours in deep sleep mode (placed in holder), >6 hours 121.5 MHz, >30hours AIS at -20°C longer in warmer conditions	Maximum 6200 activations in antenna-module
Battery Service Life at +20°C	7 years	
Operating Temperature	-20° to +55°C (-4° to +131°F)	
Stowage Temperature	-30° to +70°C (-22° to +158°F)	
Dimensions	23 x 4.5 x 3cm excl. antenna-module	
Weight	206g	
Case	According to IEC 60945. Drop on hard surface, sinusodial vibration, oil resistance, solar radiation, damp heat, dry heat, thermal shock and depth rated to 10 meters for 10 minutes	
Durability	N/A	
Environmental Resistance	IPX8	
Mounting Options	In HPL antenna module mounted on personal equipment	
Compass Safe Distance	0.5m	
Accelerometer	N/A	
Power Saving Mode	**Deep sleep mode:** Senses for water every 10 second. **Low power mode:** Suspends 121.5 MHz transmission 6.5 hours after alarm activation, continues with AIS transmission untill battery is empty >30 hours	

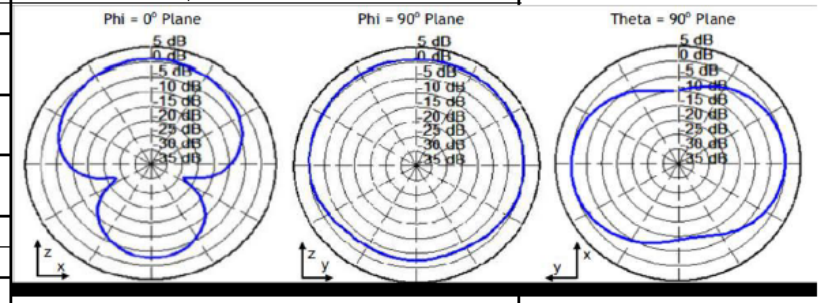
Hansen Protection AS, Tykkemyr 27, N-1597 Moss, Norway tel. +47 69 00 13 00, mail: hpro@hansenprotection.no

HANSEN PROTECTION

Documentation HPL-2

July 2014

Item	Data	Comment
GPS Receiver		Antenna directivity
Channels	99 acqusition/33 tracking	
TTFF (Time to First Fix)	23 seconds (all satellites at -130dBm)	
Antenna	Embedded chip antenna	
GPS Sensitivity	Cold start acquisition at -148 dBM; Tracking and navigation to -165 dBm	
Horizontal Position Accuracy	Position 2.5 m CEP, SBAS: 2.0 m CEP	
GPS Antenna Directivity	> -3dBi in ZY plane	
Bands	GPS 1575 MHz and Glonass 1598 MHz - 1606 MHz	
Transmission Power Output		
AIS	> 0.5 Watt EIRP (According to IEC 601097-14) - requieres antenna module	
121.5 MHz	> 25 mW EIRP (According to ETSI EN 300 152 V1.2.1) - requieres antenna module	
VHF Transmitter Package		
Carrier Frequency	121.5 MHz, 161.975 MHZ and 162.025 MHZ	
Carrier Frequency Error	<±0.2 kHz @ 162 MHz and <±0.15 kHz @121.5 MHz	
Maximum Power Output	N/A	
Emergency Signalling		
Alerting Radius	Up to 5NM surface to surface, up to	Theoretical distances according to tests performed



Hansen Protection AS, Tykkemyr 27, N-1597 Moss, Norway tel. +47 69 00 13 00, mail: hpro@hansenprotection.no

HANSEN PROTECTION

Documentation HPL-2

July 2014

Item	Data	Comment
AIS		
Timing	One burst of 8 transmissions every minute	
Initial Alert	Within 60 seconds after activation. Activation takes >= 60 seconds	Detection of water takes place over a period of about 5 minutes. This should be measured approximately every second after water is detected first time. 5 minutes equals 300 seconds or 296 measurements.
Second Alert (GPS Positioning Data)	Once GPS lock is acquired, within 15 minutes	
Subsequent Alerts	Bursts once pr minute according to IEC 61097-14	
121.5 MHz		
Activation	Immediately after activation Activation takes >= 60 seconds	Detection of water takes place over a period of about 5 minutes. This should be measured approximately every second after water is detected first time. 5 minutes equals 300 seconds or 296 measurements.
Compliances		
AIS-SART	IEC 61097-14:2010	
121.5 MHz	ETSI EN 300 152 V1.2.1	
Safety	EN 60950-1:2006+A11:2009+A1:2010+A12:2011 EN 60945:2002	
Other	CE approved by Nemko	

Hansen Protection AS, Tykkemyr 27, N-1597 Moss, Norway tel. +47 69 00 13 00, mail: hpro@hansenprotection.no

HANSEN PROTECTION