MASTER LIST OF DGNSS REFERENCE AND TRANSMITTING STATIONS IN THE MARITIME RADIONAVIGATION (RADIOBEACON) BAND (283.5-315 kHz Region 1, 285-325 kHz, REGIONS 2 & 3

(Issue 4 - January 1996)

1. Introduction

The Master List contains details of the DGNSS services provided by member authorities.

The List includes identification numbers for the reference stations from which the corrections are derived as well as the transmitting stations which broadcast the information. The reference station numbers are included in the header of every Type 1 or Type 9 message. The transmitting station numbers are included in Type 7 messages.

The List also includes details of the message type numbers which may be transmitted from each station. The titles of the message types are:

GPS message type number	Title	GLONASS message type number
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Notes:

1. This Master List of DGNSS reference and transmitting stations contains information provided by Authorities on the DGNSS services they operate and is collated and published by IALA.
2. The nominal range given in the List represents the reliable DGNSS operating range at the given field strength.
3. Frequencies must be coordinated with neighbouring Authorities.
4. Integrity monitoring provides an indication within the header of a Type 1 or Type 9 message that the reference station is healthy, unhealthy or unmonitored.

2. Index of countries

The table contains information on the DGNSS services in the following countries :

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Table of DGNSS Stations **Country : A U S T R A L I A** **Date of issue : July 1995**

Station name	Id Nos. of		Geogr. Pos. Latitude Longitude	Nominal range (km) based on 50 µV/m	Usable range (km) based on 20 µV/m	Station in operation	Transmitted message types	Frequency (kHz)	Bitrate (bit/s)	Remarks
	Reference station(s)	Transmit. station								
Cape Schanck	000	700	38°30'S 144°53'E	280		June 1994	1 16	314	100	1) 2) 3) 4)
Karratha	001	701	20°45'S 116°27'E	230		Dec. 1994	1 16	304	100	1) 2) 3) 4)
Horn Island	002	702	10°36'S 142°17'E	200		Planned (Oct. 1995)	9 16	320	200	1) 2)

Remarks :

1) Test operation, with integrity monitoring
2) Nominal range value is provisional only
3) Type 9 message to replace type 1 message in November 1995
4) Bitrate to be changed to 200 bit/s in November 1995

AISM / IALA
20 ter rue Schnapper
78100 Saint Germain en Laye
FRANCE

Table of DGNSS Stations **Country : B E L G I U M** **Date of issue : April 1994**

Station Name	Identification numbers		Geogr.Pos Latitude Longitude	Nominal Range (km) based on 50 µV/m	Range (km) based on 20 µV/m	Station in operation	Transmitted Message Types	Frequency (KHz)	Bitrate (Bit/s)	Remarks
	Ref. station (s)	Trans. station								
Oostende			51°14' N 02°55' E	70	155	Spring 1995	1 2 3 6 7 16	311.50	100	1)

Remarks

1) Additionally the transmission of message types 5 and 9 is planned

Table of DGNSS Stations **Country : B E R M U D A** **Date of issue : January 1995**

Station name	Id Nos. of		Geogr. Pos. Latitude Longitude	Nominal range (km) based on 50 μV/m	Usable range (km) based on 20 μV/m	Station in operation	Transmitted message types	Frequency (kHz)	Bitrate (bit/s)	Remarks
	Reference station(s)	Transmit. station								
St. Davids Head		950	32°22'N 64°38'W	320		yes	1 3 5 7 16	323	100	

Table of DGNSS Stations **Country: C A N A D A** **Date of issue: January 1995**

Station Name	Id Nos of Ref station(s)	Id Nos of Trans station	Geogr. Pos Latitude Longitude	Nominal Range (km) based on 75 uV/m	Usable Range (km) based on 20 uV/m	Station in operation	Transmitted Message Types	Frequency (KHz)	Bitrate (Bit/s)	Remarks
Alert Bay BC.	300, 301	909	50°35'N 125°55W	450		mid 1996	3 5 6 7 9 15 16	TBA	100	2) 4)
Tofino B.C.	304, 305	908	48°55'N 125°32'W	350		mid 1996	3 5 6 7 9 15 16	TBA	200	2) 4)
Point Atkinson B.C.	302 302, 303	902 902	49°19'N 123°15'W	90 170		yes mid 1996	1 3 3 5 6 7 9 15 16	320	100 200	1) 4) 2) 4)
St.Jean Richelieu QUE	312, 313	929	46°19'N 73°18'W	200 330		yes mid 1996	1 2 3 7 16 3 5 6 7 9 15 16	308	100 200	1) 3) 2) 4)
Trois-Rivières QUE	314, 315	928	46°23'N 72°27'W	115 170		yes mid 1996	1 2 3 7 16 3 5 6 7 9 15 16	321	100 200	1) 3) 2) 4)
Lauzon QUE	316, 317	927	46°48'N 71°09'W	200 330		yes mid 1996	1 2 3 7 16 3 5 6 7 9 15 16	314	100 200	1) 2) 3)
Partridge Island N.B.	326, 327	939	45°14'N 66°03'W	90 300		yes mid 1996	1 3 5 6 7 9 15 16	311	100 100	1) 2) 4) 2) 4)
Cardinal ON.	308, 309	919	44°47'N 75°25'W	300		mid 1996	3 5 6 7 9 15 16	TBA	200	2) 4)

Remarks

1) Test station
2) No DF identifier
3) Range based on field strength measurement
4) Planned or estimated range
5) Not part of proposed DGPS operational network

Station Name	Id Nos of Ref station(s)	Id Nos of Trans station	Geogr.Pos Latitude Longitude	Nominal Range (km) based on 75 uV/m	Usable Range (km) based on 20 uV/m	Station in operation	Transmitted Message Types	Frequency (KHz)	Bitrate (Bit/s)	Remarks
Halifax NS	328, 329	938	44°40'N 63°36'W	180		mid 1996	3 5 6 7 9 15 16	TBA	200	2) 4)
East Point PEI	330, 331	937	46°27'N 61°58'W	300		mid 1996	3 5 6 7 9 15 16	314	100	2) 4)
Cape Race NFLD	338 338, 339	940 940	46°39'N 53°04'W	310 525		yes mid 1996	1 3 7 16 3 5 6 7 9 15 16	288	100 200	1) 2) 4) 2) 4)
Wiarton ON.	310, 311	918	44°42'N 81°08'W	250		1997	3 5 6 7 9 15 16	TBA	100	2) 4)
Rivière du Loup QUE	318, 319	926	47°45'N 69°36'W	300		1997	3 5 6 7 9 15 16	TBA	100	2) 4)
Moisie QUE	320, 321	925	50°12'N 66°7'W	300		1997	3 5 6 7 9 15 16	TBA	100	2) 4)
Pt. Escuminiac N.B.	332, 333	936	47°4'N 64°47'W	300		1997	3 5 6 7 9 15 16	TBA	200	2) 4)
Western Head NS	334, 335	935	43°59'N 64°39'W	110 300		yes 1997	1 3 5 6 7 9 15 16	296	100 200	1) 2) 4) 2) 4)
Cranberry Island NS	336, 337	934	45°19'N 60°55'W	300		1997	3 5 6 7 9 15 16	286	100	2) 4)
Port aux Basques NFLD	340, 341	941	47°34'N 59°09'W	170 350		Yes 1997	1 3 7 16 3 5 6 7 9 15 16	290	100 200	1) 2) 4) 2) 4)

Remarks

1) Test station
2) No DF identifier
3) Range based on field strength measurement
4) Planned or estimated range
5) Not part of proposed DGPS operational network

Station Name	Id Nos of		Geogr.Pos Latitude Longitude	Nominal Range (km) based on 75 uV/m	Usable Range (km) based on 20 uV/m	Station in operation	Transmitted Message Types	Frequency (KHz)	Bitrate (Bit/s)	Remarks
	Ref station(s)	Trans station								
Rigolet NFLD	348, 349	947	54°15'N 58°30'W	300		1997	3 5 6 7 9 15 16	TBA	100	2) 4)
Bella Bella BC	305, 306	906	52°5N 128°W	300		1997	3 5 6 7 9 15 16	TBA	100	2) 4)
Cap des Rosiers QUE	322, 323	924	48°51'N 64°12'W	300		1997	3 5 6 7 9 15 16	TBA	100	2) 4)
La Romaine QUE	324, 325	923	50°12'N 60°41'W	300		1997	3 5 6 7 9 15 16	TBA	100	2) 4)
Devil's Head NFLD	344, 345	946	49°7'N 58°24'W	300		1997	3 5 6 7 9 15 16	TBA	100	2) 4)
Pistolet Bay NFLD	342 342, 343	944 944	51°29N 55°48'W	310 350		yes 1997	1 3 7 16 3 5 6 7 9 15 16	317	100 100	1) 2) 4) 2) 4)
Cape Bonavista NFLD	346, 347	943	48°42'N 53°05'W	200		1997	3 5 6 7 9 15 16	TBA	100	2) 4)
Race Rocks BC			48°18'N 123°32'W	75		yes	1 3	309	100	1) 4) 5)
Triple Island BC			54°17'N 130°52'W	90		Yes	1 3 16	308	100	1) 4) 5)
Point Petrie ON			43°50'N 77°09'W	115		yes	1	303	100	1) 2) 4)

Remarks

1) Test station
2) No DF identifier
3) Range based on field strength measurement
4) Planned or estimated range
5) Not part of proposed DGPS operational network

Station Name	Id Nos of		Geogr.Pos Latitude Longitude	Nominal Range (km) based on 75 uV/m	Usable Range (km) based on 20 uV/m	Station in operation	Transmitted Message Types	Frequency (KHz)	Bitrate (Bit/s)	Remarks
	Ref station(s)	Trans station								
Port Weller ON			43°15'N 79°13'W	30		yes	1 2 6 9	302	100	1) 4) 5)
Sombra ON			42°43'N 82°29'W	32		yes	1	306	100	1) 2) 3)

Remarks

1) Test station
2) No DF identifier
3) Range based on field strength measurement
4) Planned or estimated range
5) Not part of proposed DGPS operational network

Table of DGNSS Stations **Country:DENMARK/FAROE ISLANDS/GREENLAND** **Date of issue: April 1994**

Station Name	Identification numbers		Geogr. Pos Latitude Longitude	Nominal Range (km) based on 50 µV/m	Range (km) based on 20 µV/m	Station in operation	Transmitted Message Types	Frequency (kHz)	Bitrate (Bit/s)	Remarks
	Ref station (s)	Trans station								
Hammer Odde	700 701	451	55°18' N 14°46' E	90	180	Yes	1 2 3 6 7 16	289.00	100	1) 2) 3) 4) 5)
Skagen	710 711	453	57°45' N 10°35' E	90	180	Yes	1 2 3 6 7 16	298.00	100	1) 2) 3) 4) 5)
Blaavandshuk	705 706	452	55°34' N 08°05' E	90	180	Yes	1 2 3 6 7 16	296.50	100	1) 2) 3) 4) 5)

Remarks

1) Test operation without 24 hours integrity monitoring and remote control
2) Message Type 9 will be transmitted instead of Message Type 1+2 if
   (1) CCIR Rec 823 is amended appropriately
   (2) DGPS equipment is available or modified
   (3) there is an international agreement, if necessary, about a coordinated switchover
3) Ranges are based on the RMA Plan of 1992. A fieldstrength of 20 µV/m at the edge of the coverage results in an availability of approx. 97% depending on the atmospheric and man made noise level and the receiver performance.
4) Actual range will be verified by fieldstrength measurements
5) It is anticipated that the Danish DGPS system is completed and 24 hours integrity monitored Fall 1994.

Faroe Islands : 1 DGPS station, planned in distance future
Greenland : 5 DGPS stations, planned in distance future.

Table of DGNSS Stations **Country : FINLAND & ESTONIA** **Date of issue : November 1994**

Station name	Identification numbers		Geogr. Pos. Latitude Longitude	Nominal range (km) based on 50 µV/m	Range (km) based on 20 µV/m	Station in operation	Transmitted message types	Frequency (kHz)	Bitrate (bit/s)	Remarks
	Reference station(s)	Transmit. station								
Ristna (Estonia)	840	530	58°56'N 22°04'E	90	180	Dec 94	1 2 3 6 7 (9) 16	307	100	1) 2) 3)
Porkkala (Finland)	600	400	59°58'N 24°23' E	90	180	Yes	1 2 3 6 7(9) 16	285	100	1) 2) 3)
Mäntyluoto (Finland)	601	401	61°36'N 21°28' E	90	180	Yes	1 2 3 6 7(9) 16	298	100	1) 2) 3)
Puumala (Finland)	602	402	61°24'N 28°14'E	90	180	Yes	1 2 3 6 7 (9) 16	301.50	100	1) 2) 3)
Outokumpu (Finland)	603	403	62°41'N 26°01'E	90	180	Dec 94	1 2 3 6 7 (9) 16	293.50	100	1) 2) 3)

Remarks

1) Test operation without integrity monitoring and remote control
2) Message type 9 will be transmitted instead of Message type 1 if
   (1) CCIR Rec 823 is amended appropriately
   (2) DGPS equipment is available or modified
   (3) there is an international agreement, if necessary, about a coordinated switchover
3) Ranges are largely estimated at this time. Accurate ranges are going to be measured during 1995.

Table of DGNSS stations **Country : F R A N C E** **Date of issue : April 1994**

Station name	Identification numbers		Geogr. Position Latitude Longitude	Nominal Range (km) based on 50 µ V/m	Range (km) based on 20 µ V/m	Station in operation	Transmitted Messages types	Frequency (KHz)	Bit rate (Bit/s)	Remarks
	Ref. station (s)	Trans station								
Gatteville	460	330	49°42'N 01°16W	75		yes	1, (9)	297.500	100	
Echmuhl	462	332	47°15'N 04°23'W	75		planned 1995/1996		312,500	100	
Les Baleines	464	334	46°15'N 01°34'W	75		planned in 1994		299,500	100	
Cap Ferret	466	336	44°39'N 01°15W	75		planned 1995/1996		287,00	100	
Cap Bear	468	338	42°3'N 03°08'W	110		planned 1995/1996		313,00	100	1)
La Revellatta	469	339	42°35'N 08°44'W	110		planned 1995/1996		294,500	100	

Remarks:

1) Frequency will be changed because of the RANA system operating on the same frequency

Table of DGNSS Stations **Country : G E R M A N Y** **Date of issue : April 1994**

Station name	Identification numbers		Geogr. Pos. Latitude Longitude	Nominal range (km) based on 50 µV/m	Range (km) based on 20 µV/m	Station in operation	Transmitted message types	Frequency (kHz)	Bitrate (bit/s)	Remarks
	Reference station(s)	Transmit. station								
Wustrow		491	54°20'N 12°23'E	90	190	April 94	1 3 6 7(9) 16	314.50	200	1) 2) 3)
Helgoland		492	54°11'N 07°53'E	130	260	Dec. 94	1 3 6 7(9) 16	313.00	200	1) 2) 3)

Remarks

1) Test operation without integrity monitoring and remote control
2) Message type 9 will be transmitted instead of Message type 1 if
   (1) CCIR Rec 823 is amended appropriately
   (2) DGPS equipment is available or modified
   (3) there is an international agreement, if necessary, about a coordinated switchover
3) Ranges are based on the EMA Plan of 1992. A fieldstrength of 20 µV/m at the edge of the coverage results in an availability of approx. 97% depending on the atmospheric and man-made noise level and the receiver performance. An availability of this value is considered insufficient for certain applications.

Table of DGNSS Stations **Country : I C E L A N D** **Date of issue : December 1994**

Station name	Identification numbers		Geogr. Pos. Latitude Longitude	Nominal range (km) based on 50 µV/m	Range (km) based on 20 µV/m	Station in operation	Transmitted message types	Frequency (kHz)	Bitrate (bit/s)	Remarks
	Reference station(s)	Transmit. station								
Reykjanes	622 623	411	63°49'N 22°42'W	310	430	Dec. 92	1 2 3 7 16	292.50	100	1) 2) 3) 5)
Bjargtangar	624 625	412	65°30'N 24°32'W	200	350	Oct. 94	1 2 3 7 (9) 16	289	100	1) 2) 4) 5)
Skagatá	626 627	413	66°07'N 20°06'W	200	350	Oct. 93	1 2 3 7 16	304.50	100	1) 2) 3) 5)
Raufarhofn	628 629	414	66°27'N 15°57'W	200	350	Feb. 94	1 2 3 7 16	301.50	100	1) 2) 3) 5)
Djupivogur	630 631	415	64°39'N 14°17'W	200	350	Jul. 94	1 2 3 7 16	295.50	100	1) 2) 4) 5)
Skardsfjara	632 633	416	63°31'N 17°59'W	200	350	Aug. 93	1 2 3 7 16	313	100	1) 2) 4) 5)

Remarks

1) Test operation with limited integrity monitoring and remote control
2) Message, type 9, will be transmitted instead of type 1 if internationally agreed
3) Range based on field measurement
4) Expected range
5) Ref. st. ID is the same as Broadc. st. ID for the time being.

Table of DGNSS Stations **Country : THE NETHERLANDS** **Date of issue : April 1994**

Station name	Identification numbers		Geogr. Pos. Latitude Longitude	Nominal range (km) based on 50 µV/m	Range (km) based on 20 µV/m	Station in operation	Transmitted message types	Frequency (kHz)	Bitrate (bit/s)	Remarks
	Reference station(s)	Transmit. station								
Hoek van Holland			51°59'N 04°07'E	88	163	Yes	1 3 5 7 (16)	287.50	100	1)
Ameland			53°27'N 05°37'E	92	198	enf of 1996	1 3 5 7	299.50	100	

Remark

1) Message type 16 will be transmitted after the end of 1994 with hydrodata

Table of DGNSS Stations **Country: N O R W A Y** **Date of issue: November 1994**

Station Name	Identification numbers		Geogr.Pos Latitude Longitude	Nominal Range (km) based on 50 µV/m	Range (km) based on 20 µV/m	Station in operation	Transmitted Message Types	Frequency (KHz)	Bitrate (Bit/s)	Remarks
	Ref. station(s)	Trans. station								
Faerder		500	59°01' N 10°31' E	70	160	Oct. 93	1 2 3 5 7	288.00	100	1) 2)
Lista		503	58°06' N 06°34' E	70	160	Oct. 94	1 2 3 5 7	301.00	100	1) 2)
Utsira		505	59°18' N 04°52' E	70	160	Oct. 92	1 2 3 5 7	307.00	100	1) 2)
Utvaer		507	61°02' N 04°30' E	70	160	Oct. 93	1 2 3 5 7	300.00	100	1) 2)
Svinoey		508	62°19' N 05°16' E	70	160	Sept. 93	1 2 3 5 7	293.50	100	1) 2)
Halten		510	64°10' N 09°24' E	70	160	Sept. 93	1 2 3 5 7	313.50	100	1) 2)
Skomvaer		513	67°24' N 11°52' E	70	160	Sept. 93	1 2 3 5 7	300.00	100	1) 2)
Vardo		520	70°23' N 31°09' E	70	160	Oct. 94	1 2 3 5 7	307.00	100	1) 2)

Remarks

1) Test operation without 24 hours integrity monitoring and remote control

2) Actual range will be verified by fieldstrength measurements

Table of DGNSS Stations **Country : P O L A N D** **Date of issue : November 1994**

Station name	Id Nos. of		Geogr. Pos. Latitude Longitude	Nominal range (km) based on 50 μV/m	Usable range (km) based on 20 μV/m	Station in operationó	Transmitted message types	Frequency (kHz)	Bitrate (bit/s)	Remarks
	Reference station(s)	Transmit. station								
Dziwnów		481	54°01'N 14°44'E	130		1995	1 2 3 7 15 (5) (9)	288	100	Test operation
Rozewie		482	54°49'N 18°20'E	130		1995	1 2 3 7 16 (5) (9)	311	100	Test operation

Table of DGNSS Stations **Country: S W E D E N** **Date of issue: April 1994**

Station Name	Identification numbers		Geogr.Pos Latitude Longitude	Nominal Range (km) based on 50 µV/m	Range (km) based on 20 µV/m	Station in operation	Transmitted Message Type	Frequency (KHz)	Bitrate (Bit/s)	Remarks
	Ref. station(s)	Trans. station								
Bjurökhubb		461	64°29'N 21°35'E	103	217	May 94	1 3 6 7 (9) 16	303.50	100	1) 2) 3) 4)
Skags Udde		462	63°11'N 19°01'E	103	217	June 94	1 3 6 7 (9) 16	306.50	100	1) 2) 3) 4)
Örskär		463	60°32'N 18°23'E	74	164	April 94	1 3 6 7 (9) 16	291.50	100	1) 2) 3) 4)
Almagrundet		464	59°09'N 19°10'E	88	191	Jan. 94 *	1 3 6 7 (9) 16	287.00	100	1) 2) 3) 4)
Hoburg		465	56°55'N 18°09'E	74	164	Feb. 94 *	1 3 6 7 (9) 16	302.00	100	1) 2) 3) 4)
Kullen		466	56°18'N 12°27'E	103	217	Jan. 94 *	1 3 6 7 (9) 16	293.50	100	1) 2) 3) 4)
Hjortons Udde		467	58°38'N 12°40'E	74	164	Jan. 94 *	1 3 6 7 (9) 16	297.00	200	1) 2) 3) 4)

Remarks:

1) Test operation without integrity monitoring and remote control
The system is supposed to be operational 31 Dec 1995
2) Message type 9 will be transmitted instead of type 1 if further test show favorable result
3) Ranges are according to IALA plan from 92 and have to be further studied
4) Bitrates of 200 bits/sec. will be transmitted if further tests show favourable results

** Time when new equipment was installed*

Table of DGNSS Stations **Country : UNITED KINGDOM + IRELAND** **Date of issue : January 1995**

Station name	Identification numbers		Geogr. Pos. Latitude Longitude	Nominal range (km) based on 50 µV/m	Range (km) based on 20 µV/m	Station in operation	Transmitted message types	Frequency (kHz)	Bitrate (bit/s)	Remarks
	Reference station(s)	Transmit. station								
Lizard	681	441	49°57'N 05°12'W	129		Yes	1	284.00	100	Encrypted
St. Catherines	680	440	50°34'N 01°17'W	129		Yes	1	293.50	100	Encrypted
N'Foreland	688	448	51°22'N 01°26'E	129		Yes	1	310.50	100	Encrypted
Flamborough	687	447	54°06'N 00°04'W	129		Yes	1	302.50	100	Encrypted
Girdleness	686	446	57°08'N 02°03'W	129		Yes	1	311.50	100	Encrypted
Rinns of Islay	683	443	55°40'N 06°31'W	129		Yes	1	293.50	100	Encrypted
Butt of Lewis	684	444	58°31'N 06°16'W	129		Yes	1	289.50	100	Encrypted
Sumburgh	685	445	59°51'N 01°16'W	129		Yes	1	304.50	100	Encrypted
Point Lynas	682	442	53°24'N 04°17'W	129		Yes	1	304.50	100	Encrypted
Tory Island	670	435	55°16'N 08°15'W	129		Yes	1 3 5	313.50	100	Encrypted
Mizen Head	660	430	51°27'N 09°49'W	129		Yes	1 3 5	300.50	100	Encrypted

Table of DGNSS Stations **Country: U. S. A.** **Date of issue: April 1994**

Station Name	Identification numbers		Geogr.Pos Latitude Longitude	Nominal Range (km) based on 75 µV/m	Range (km) based on 20 µV/m	Station in operation	Transmitted Message Types	Frequency (KHz)	Bitrate (Bit/s)	Remarks
	Ref station(s)	Trans. station								
Wisconsin Pt, WI			46°43'N 92°00'W	65		1995	3 5 6 7 9 15 16	296	100	
Upper Keweenaw MI			47°14'N 88°38'W	210		1995	3 5 6 7 9 15 16	298	100	
Whitefish Pt. MI			46°46'N 84°57'W	160		Yes	1 2 6 7 16	318	100	1) 2)
Neebish Is. MI			46°19'N 84°09'W	100		1995	3 5 6 7 9 15 16	309	200	3)
Sturgeon Bay, WI			44°48'N 87°19'W	175		1995	3 5 6 7 9 15 16	322	100	
Cheboygan, MI			45°37'N 84°14'W	130		1995	3 5 6 7 9 15 16	293	200	3)
Saginaw, MI			43°39'N 83°53'W	140		1995	3 5 6 7 9 15 16	301	100	
Milwaukee, WI			43°02'N 87°53'W	225		1995	3 5 6 7 9 15 16	298	100	
Detroit, MI			42°20'N 82°58'W	160		1995	3 5 6 7 9 15 16	319	200	3)

Remarks

1) Test operation without integrity monitoring and remote control
2) Message types will change to 3 5 6 7 9 15 16 at a later date
3) Nominal range based on 100 µV/m

Station Name	Identification numbers		Geogr.Pos Latitude Longitude	Nominal Range (km) based on 75 µV/m	Range (km) based on 20 µV/m	Station in operation	Transmitted Message Types	Frequency (KHz)	Bitrate (Bit/s)	Remarks
	Ref station(s)	Trans. station								
Buffalo, NY			45°--'N 78°--'W	240		1995	3 5 6 7 9 15 16	322	100	
Bass Harbor, ME			44°--'N 68°--'W	160		1995	3 5 6 7 9 15 16	316	100	
Portsmouth, NH			43°04'N 70°43'W	160		Yes	1 2 6 7 16	288	100	1) 2)
Chatham, MA			41°40'N 69°57'W	155		1995	3 5 6 7 9 15 16	304	200	3)
Montauk Pt, NY			41°04'N 71°52'W	210		Yes	1 2 6 7 16	293	100	1) 2)
Sandy Hook, NJ			40°28'N 74°00'W	160		1995	3 5 6 7 9 15 16	286	200	3)
Cape Henlopen, DE			38°47'N 75°05'W	290		Yes	1 2 6 7 16	298	100	1) 2)
Cape Henry, VA			36°56'N 76°00'W	210		Yes	1 2 6 7 16	289	100	1) 2)
Fort Macon, NC			34°42'N 76°41'W	210		1995	3 5 6 7 9 15 16	294	100	
Charleston, SC			32°45'N 79°51'W	240		1995	3 5 6 7 9 15 16	298	100	

Remarks

1) Test operation without integrity monitoring and remote control
2) Message types will change to 3 5 6 7 9 15 16 at a later date
3) Nominal range based on 100 µV/m

Station Name	Identification numbers		Geogr.Pos Latitude Longitude	Nominal Range (km) based on 75 µV/m	Range (km) based on 20 µV/m	Station in operation	Transmitted Message Types	Frequency (KHz)	Bitrate (Bit/s)	Remarks
	Ref station(s)	Trans. station								
Cape Canaveral, FL			28°28'N 80°33'W	400		1995	3 5 6 7 9 15 16	289	100	
Miami, FL			25°44'N 80°10'W	195		1995	3 5 6 7 9 15 16	322	100	
Key West, FL			24°--'N 82°--'W	175		1995	3 5 6 7 9 15 16	286	100	
San Juan, PR			18°--'N 66°--'W	200		1995	3 5 6 7 9 15 16	295	100	
Egmont Key, FL			27°36'N 82°46'W	340		Yes	3 5 6 7 9 15 16	312	100	
Mobile Pt, AL			30°14'N 88°01'W	275		1995	3 5 6 7 9 15 16	300	100	
English Turn, LA			29°53'N 89°56'W	275		Yes	1 2 6 7 16	293	200	1) 2) 3)
Galveston, TX			29°20'N 94°44'W	290		Yes	1 2 6 7 16	296	100	1) 2)
Aransas Pass, TX			27°50'N 97°04'W	290		Yes	1 2 6 7 16	304	100	1) 2)
Cape Hinchenbrook, AK			60°14'N 146°39'W	290		1995	3 5 6 7 9 15 16	292	100	

Remarks

1) Test operation without integrity monitoring and remote control
2) Message types will change to 3 5 6 7 9 15 16 at a later date
3) Nominal range based on 100 µV/m

Station Name	Identification numbers		Geogr.Pos Latitude Longitude	Nominal Range (km) based on 75 µV/m	Range (km) based on 20 µV/m	Station in operation	Transmitted Message Types	Frequency (KHz)	Bitrate (Bit/s)	Remarks
	Ref station(s)	Trans. station								
Potato Pt., AK			61°04'N 146°42'W	160		1995	3 5 6 7 9 15 16	298	100	
Nikishka, AK			60°44'N 151°22'W	275		1995	3 5 6 7 9 15 16	310	100	
Cape Chiniak, AK			57°37'N 152°10'W	290		1995	3 5 6 7 9 15 16	313	100	
Cold Bay, AK			55°18'N 162°47'W	290		1995	3 5 6 7 9 15 16	289	100	
Yakutat, AK			59°33'N 139)44'W	290		1995	3 5 6 7 9 15 16	TBD	100	
King Salmon, AK			58°42'N 156°40'W	275		1995	3 5 6 7 9 15 16	TBD	100	
Gustavus, AK			58°26'N 135°42'W	275		1995	3 5 6 7 9 15 16	TBD	100	
Biorka Is., AK			56)51'N 135)32'W	290		1995	3 5 6 7 9 15 16	TBD	100	
Level Is., AK			56°28'N 133°06'W	275		1995	3 5 6 7 9 15 16	TBD	100	
annette Is., AK			55°04'N 131°37'W	275		1995	3 5 6 7 9 15 16	TBD	100	

Remarks

1) Test operation without integrity monitoring and remote control
2) Message types will change to 3 5 6 7 9 15 16 at a later date
3) Nominal range based on 100 µV/m

Station Name	Identification numbers		Geogr.Pos Latitude Longitude	Nominal Range (km) based on 75 µV/m	Range (km) based on 20 µV/m	Station in operation	Transmitted Message Types	Frequency (KHz)	Bitrate (Bit/s)	Remarks
	Ref station(s)	Trans. station								
Upolu Pt., HI			20°15'N 155°53'W	275		1995	3 5 6 7 9 15 16	285	100	
Kokole Pt., HI			22°04'N 159°47'W	485		1995	3 5 6 7 9 15 16	TBD	100	
Whidbey Is., WA			48°19'N 122°42'W	145		1995	3 5 6 7 9 15 16	302	100	
Robinson Pt., WA			47°23'N 122°22'W	95		1995	3 5 6 7 9 15 16	323	200	3)
Fort Stevens, OR			46°12'N 123°57'W	290		1995	3 5 6 7 9 15 16	287	100	
Cape Mendocino, CA			40°26'N 124°24'W	290		1995	3 5 6 7 9 15 16	292	100	
Pigeon Pt., CA			37°11'N 122°24'W	290		1995	3 5 6 7 9 15 16	287	100	
Pt. Blunt, CA			37°51'N 122°25'W	95		1995	3 5 6 7 9 15 16	310	200	3)
Pt. Arguello, CA			34°35'N 120°39'W	290		1995	3 5 6 7 9 15 16	321	100	
Pt. Loma, CA			32°40'N 117°15'W	290		1995	3 5 6 7 9 15 16	302	100	

Remarks

1) Test operation without integrity monitoring and remote control
2) Message types will change to 3 5 6 7 9 15 16 at a later date
3) Nominal range based on 100 µV/m