



IALA GUIDELINE

G1016 BILATERAL AGREEMENTS AND INTER-AGENCY MoU ON THE PROVISION OF DGNSS SERVICES IN THE FREQUENCY BAND 283.5 KHZ – 325 KHZ

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CONTENTS

1. INTRODUCTION	4
2. OBJECTIVE	4
3. GENERAL	4
4. DEFINITIONS.....	4
5. ABBREVIATIONS	5
ANNEX A EXAMPLE OF AN AGREEMENT.....	6
APPENDIX 1 SCHEDULE OF DGNSS TRANSMITTING SITES	11
APPENDIX 2 SCHEDULE FOR EXCHANGE OF DGNSS STATIONS OFF-AIR INFORMATION	12
ANNEX B EXAMPLE OF A MEMORANDUM OF UNDERSTANDING	13
APPENDIX 1 SCHEDULE OF DGNSS TRANSMITTING SITES	16
APPENDIX 2 SCHEDULE FOR EXCHANGE OF DGNSS STATIONS OFF-AIR INFORMATION	17

1. INTRODUCTION

Where DGNSS services operating in the frequency band 283.5 kHz – 325 kHz are provided in areas close to the borders of adjacent countries, coordination between the countries concerned is highly desirable in order to:

- provide users with an integrated service;
- minimise costs in the provision of the services; and
- make efficient use of the radio spectrum.

Coordination is particularly desirable with respect to scheduled and unscheduled maintenance of DGNSS stations in order to ensure the maximum availability of DGNSS signals to the mariner for the safety of navigation.

The advantages that can accrue from greater coordination has highlighted the desirability of having a bilateral agreement between the countries concerned or a memorandum of understanding (MoU) between the national operating agencies, as appropriate. Such an Agreement or MoU will provide for the timely and accurate exchange of operational, technical, and user information regarding the provision and operation of the DGNSS service.

2. OBJECTIVE

The objective of this Guideline is to provide examples of bilateral agreements and an inter-agency MoU that set out the responsibilities of the countries and agencies concerned. They also indicate the procedures necessary to maintain the service at the required level of accuracy and availability for use in areas where stations located in two or more countries provide a DGNSS service.

3. GENERAL

Depending upon the circumstances, adjacent countries may decide to use a bilateral agreement or an inter-agency MoU as an instrument to formally co-operate on the provision of DGNSS transmissions using the frequency band 283.5 kHz to 325 kHz. To assist in the development of such instruments, these guidelines contain:

- In annex A, an example of a template for a suitable bilateral agreement
- In annex B, an example of a template for a suitable MoU

It should be recognised that these annexes are *examples only* and may need to be changed to suit national laws and the circumstances that apply in any particular case.

4. DEFINITIONS

The definitions of terms used in this Guideline can be found in the *International Dictionary of Marine Aids to Navigation* (IALA Dictionary) and were checked as correct at the time of going to print. Where conflict arises, the IALA Dictionary should be considered as the authoritative source of definitions used in IALA documents.



5. ABBREVIATIONS

DGNSS	Differential Global Navigation Satellite System
IMO	International Maritime Organization
ITU	International Telecommunication Union
kHz	kilohertz
km	kilometre
MoU	Memorandum of Understanding



ANNEX A EXAMPLE OF AN AGREEMENT

AGREEMENT
BETWEEN THE GOVERNMENT OF
[AAAA]
AND
THE GOVERNMENT OF
[BBBB]
FOR THE ESTABLISHMENT, OPERATION
AND MAINTENANCE OF
DIFFERENTIAL GLOBAL NAVIGATION SATELLITE SYSTEM SERVICES
EFFECTED BY EXCHANGE OF NOTES
ON [DATE]



Terms and Conditions Governing the Establishment, Operation and Maintenance of Differential Global Navigation Satellite System (DGNSS) Services by the Co-operating Agencies of the Government of [AAAA] and the Government of [BBBB].

A.1. CO-OPERATING AGENCIES

The DGNSS services shall be coordinated by Co-operating Agencies designated by each Government. On the part of the Government of [AAAA], the Co-operating Agency will be [Name of Agency], hereinafter referred to as [XXXX], and on the part of the Government of [BBBB], the Co-operating Agency will be [Name of Agency], hereinafter referred to as [YYYY]. Either Government may change the designation of its Co-operating Agency by means of a notice in writing to the other Government.

The Co-operating Agency is normally that operating agency for marine aids to navigation that has established, or plans to establish, a DGNSS service which provides coverage in the area [describe area] from the transmitting sites described in the Schedule.

Subsidiary arrangements for the purpose of implementing this Agreement may be entered into by the Co-operating Agencies. Such subsidiary arrangements may be modified by the Co-operating Agencies as necessary from time to time, within the purposes of the present Agreement.

A.2. TRANSMITTING STATION SITES

As described in the Schedule set out in APPENDIX 1.

A.3. SITE SELECTION, ACQUISITION AND MANAGEMENT

Should it be found necessary, in the future, to jointly extend DGNSS coverage in [state area], the Co-operating Agencies will singly, or jointly, determine the required sites. The land required as sites for stations will be acquired as mutually agreed by the Government of [AAAA] and the Government of [BBBB]. Ownership will be vested in the right of the Government of [AAAA] or the Government of [BBBB], as mutually agreed. Location of the antennas, ground system, and buildings on a selected site will be the responsibility of the Government of [AAAA] or the Government of [BBBB] as mutually agreed.

A.4. CONTROL SITES

Given that coordination between the Co-operating Agencies is desirable with respect to the preventive and unplanned maintenance of their respective DGNSS sites to ensure the widest availability of the DGNSS signal to the mariner in the (given coverage area) for the safety of navigation;

Recognising that the provision of a DGNSS service normally requires the establishment and operation of a DGNSS Control Site, or Control Sites, the Co-operating Agencies shall establish suitable procedures for the timely and accurate exchange of operational, technical and user information as follows:

- establish common understanding of respective nations operational requirements for the service;
- establish methods of contact and communication between control stations;
- exchange of operational status information:
 - notification of users in both countries;
 - Type 7 message information;
 - coverage diagrams;
 - change of characteristics; *



- dates for scheduled maintenance and duration of expected downtime (at least 1 month in advance);*
- unscheduled outages / expected duration (within 1 hour of occurrence). *
- develop standard user notification messages;
- exchange of past performance data for legal purposes;
- alignment of methods of archiving data:
 - how long;
 - what format;
 - how provided.
- alignment of operational alarm thresholds;
- establish points of contact;
- establish terms for frequency coordination.

* An example of a Schedule for the exchange of this information is given at APPENDIX 2.

A.5. OWNERSHIP

As previously identified, this Agreement encompasses the provision of a DGNSS service, consisting of [number] of DGNSS transmitting sites, [number] of DGNSS monitor sites, and [number] of DGNSS control stations. Detailed below are the responsibilities of each Co-operating Agency as they pertain to the ownership and operation of each of the system components. Unless otherwise noted below, each Co-operating Agency owns and is responsible for the operation of equipment internal to their respective international borders.

A.6. SUPPORT LEVELS AND PROCEDURES

Supply support levels and procedures should be agreed upon through contractual arrangements between the Co-operating Agencies. When equipment support is provided from one Co-operating Agency to another, a list of newly developed equipment, and a list of equipment no longer supported, will be provided at no charge between the Co-operating Agencies in the development of appropriate support agreements.

It is agreed upon that, whenever appropriate due to mutual support agreements, each Co-operating Agency will make every available effort to maintain a standard configuration across their borders for equipment relating to the operation of the DGNSS system. Details of all approved equipment modifications and field change kits will be provided to the receiving Co-operating Agency free of charge on a routine basis.

Each Co-operating Agency is responsible for the purchase of spares for their respective DGNSS transmitting sites, DGNSS monitor sites, and DGNSS control stations. Whenever applicable, the Co-operating Agency providing electronics support will act as central stocking point for all spares and account for the sparing of the receiving Co-operating Agency DGNSS transmitting sites in all purchases unless otherwise noted in writing by the receiving Co-operating Agency. Purchase of spares by the receiving Co-operating Agency from the Co-operating Agency providing electronics support will be in the form of a reimbursable agreement. The Co-operating Agency providing electronics support will continue to act as primary purchaser and stocking point until such point as standard configuration across borders is maintained. From that point on, the receiving Co-operating Agency will be responsible for purchasing and stocking for that particular piece of equipment.



A.7. TRAINING

As applicable, training of [XXXX] personnel will be provided by [YYYY] under terms and conditions to be agreed upon. All related costs associated with travel, lodging and meals of [XXXX] personnel will be paid by [XXXX]. [XXXX] civilian personnel will be accorded equivalent [BBBB] Government status when attending [YYYY] training establishments.

A.8. OPERATION AND MAINTENANCE

The DGNSS transmitting sites specified in the Schedule will be operated in accordance with mutually agreed standard operating procedures and techniques, subject to any modifications agreed to after consultation between the Co-operating Agencies. Operating procedures are currently promulgated in [document name(s)].

Operation and maintenance functions of the DGNSS transmitting sites, DGNSS monitor sites and DGNSS control sites and costs associated therewith are to be carried out and paid for by [XXXX] or [YYYY] as mutually agreed. Special provisions may need to be addressed for cross-border communications links.

Depot level maintenance for all applicable electronic equipment will normally be conducted under terms of suitable interagency operating procedures (contracts), as mutually agreed. All items will be allowed duty free access into and out of the respective countries as permitted by national customs procedures. For budget planning purposes, the providing Co-operating Agency will advise the receiving Co-operating Agency, on an annual basis, of the projected cost of repair for major components.

Emergency engineering assistance and advice related specifically to DGNSS systems engineering may, on occasion, be required. All such requests for engineering assistance will be co-ordinated between [XXXX] and [YYYY]. Emergency engineering assistance will be on a cost reimbursable basis or as mutually agreed.

A.9. FREQUENCY ASSIGNMENT

Application for the assignment of operating frequencies for DGNSS transmitting sites shall be the responsibility of the Co-operating Agency of the nation within which the DGNSS transmitting site is located.

A.10. TERMINATION

If either country wishes to terminate this agreement, they should notify the Government of the other country in writing at least [specify time period] prior to termination through proper diplomatic channels.

Equipment owned by [XXXX] that is located in [BBBB] will be returned to [XXXX], if so requested, upon termination of the DGNSS services. Removal or disposal of such equipment shall not be delayed beyond a reasonable time after the date upon which the operation of the DGNSS site has been discontinued. The disposal of [XXXX] owned property located in [BBBB] shall be carried out in accordance with the provisions of the laws of [BBBB].

If either Co-operating Agency wishes to continue operating the DGNSS sites following a decision by the other Co-operating Agency to cease DGNSS operations as specified in the Schedule, the Co-operating Agency wishing to cease operations will favourably consider, where possible, continued operation of the DGNSS sites on a cost reimbursable basis, if so requested.

A.11. TAXES

Each Government shall, to the extent permitted by its Federal legislation, grant relief from all taxes or customs duties on materials and equipment used in the maintenance or operation of DGNSS sites jointly operated in the other nation's territory. In particular, each Government shall grant remission of Customs duties and excise taxes on goods imported and Federal sales and excise taxes on goods purchased specifically for the purpose of these facilities which are to become the property of the Co-operating Agency and are to be used in the maintenance or operation



of these facilities. Each Government shall also grant refund by way of drawback of the Customs duty paid on goods imported by manufacturers specifically for the purpose of these facilities and used in the manufacturing or production of goods purchased by or on behalf of each Government and to become property of the Co-operating Agency in connection with the maintenance and operation of the DGNSS site.

A.12. LIABILITY

The terms of liability for operation of DGNSS sites shall be as mutually agreed by the Governments of [AAAA] and [BBBB] as follows: [The terms to be specified during negotiations on the Agreement.]

A.13. SAFETY STANDARDS

Each Co-operating Agency will provide, on request and without charge, available technical data relating to safety standards for operations and maintenance of DGNSS transmitting sites, DGNSS monitor sites and DGNSS control stations, as applicable.



APPENDIX 1 SCHEDULE OF DGNSS TRANSMITTING SITES

The following DGNSS transmitting sites are the subject of this Agreement:

Country	[AAAA]			
Name of station	Position in degrees and minutes		Range in km	Remarks
	Latitude	Longitude		

Country	[BBBB]			
Name of station	Position in degrees and minutes		Range in km	Remarks
	Latitude	Longitude		



APPENDIX 2 SCHEDULE FOR EXCHANGE OF DGNSS STATIONS OFF-AIR INFORMATION

This schedule sets out the information to be exchanged between neighbouring countries under bi-lateral agreements on Differential GNSS.

Stations covered:

NAME	Latitude (Degrees/Minutes)	Longitude (Degrees/Minutes)	Range (km)
.....			
.....			
.....			

Information to be exchanged:

Timing:

Discontinuation

At least 6 months in advance

Change of characteristics

Dates for scheduled maintenance

At least 1 month in advance

Duration of expected downtime

Unscheduled outages

Within 1 hour of occurrence

Expected duration

Methods of exchange:

Telephone followed up by e-mail and/or telefax (mailed hard copy and/or telex may also be required for legal reasons)

Telephone number(s):

e-mail address(es):

Fax number(s):

Mail address:

Telex No.

Responsible person:

Title:

Organisation:

Acknowledgement:

Responsible person:

Title:

Organisation:



MEMORANDUM OF UNDERSTANDING

**BETWEEN
CO-OPERATING AGENCIES
[XXXX] AND [YYYY]
ON THE
OPERATION AND MAINTENANCE
OF A DGNSS SERVICE**

-
- Memorandum of Understanding made this... day of ... [year] between:

Co-operating Agency [XXXX] and Co-operating Agency [YYYY]



Considering that Co-operating Agencies [XXXX] and [YYYY]:

- are the statutory bodies responsible for providing aids to navigation for the safe and expeditious navigation of all classes of mariners in country [AAAA] and country [BBBB] and the adjacent seas and islands;
- have established a network of Differential Global Navigation Satellite System (DGNSS) services in countries [AAAA] and [BBBB] which provides signal transmissions in the (given sea area) from the stations described in APPENDIX 1 to this MoU.

Recognizing that:

- the Co-operating Agencies are best positioned to promote the provision and use of DGNSS to IMO/ITU standards in co-operation with other relevant Co-operating Agencies;
- coordination between Co-operating Agencies is desirable in respect of the scheduled and unscheduled maintenance of their respective DGNSS sites to ensure the widest availability of the DGNSS signal to the mariner in the [describe area] for the safety of navigation.

It is agreed that:

- 1 The parties will co-operate to provide the timely and accurate exchange of operational, technical, and user information as follows:
 - a formal acknowledgement of agreement to provide and consent to receive provision of DGNSS services to overlapping areas of adjacent countries;
 - b establish common understanding of respective nations operational requirements for the service;
 - c establish Terms of Liability;
 - d exchange of operational status information:
 - i notification of users in both countries;
 - ii Type 7 message information;
 - iii coverage diagrams;
 - iv discontinuation (6 months' advance notification); *
 - v change of characteristics; *
 - vi dates for scheduled maintenance and duration of expected downtime (at least 1 month in advance); *
 - vii unscheduled outages / expected duration (within 1 hour of occurrence). *

* An example of a Schedule for the exchange of this information is given at APPENDIX 2.

- develop standard user notification messages;
- exchange of past performance data for legal purposes;
- alignment of methods of archiving data:
 - how long;
 - what format;
 - how provided.
- alignment of operational alarm thresholds;
- establish points of contact;
 - establish terms for frequency coordination.



- 2 The arrangements under this Memorandum will continue until determined by either party giving the other 3 months' notice in writing.
- 3 All costs incurred in respect of this Memorandum and the actions described in the Schedule in APPENDIX 2 will be the responsibility of the party incurring them.

SIGNED by
FOR AND ON BEHALF OF CO-OPERATING AGENCY [XXXX]

SIGNED by
FOR AND ON BEHALF OF CO-OPERATING AGENCY [YYYY]



APPENDIX 1 SCHEDULE OF DGNSS TRANSMITTING SITES

The following DGNSS transmitting sites are the subject of this Memorandum of Understanding:

Country	[AAAA]			
Name of station	Position in degrees and minutes		Range in km	Remarks
	Latitude	Longitude		

Country	[BBBB]			
Name of station	Position in degrees and minutes		Range in km	Remarks
	Latitude	Longitude		



APPENDIX 2 SCHEDULE FOR EXCHANGE OF DGNSS STATIONS OFF-AIR INFORMATION

This schedule sets out the information to be exchanged between Co-operating Agencies under a Memorandum of Understanding on Differential GNSS.

Stations covered:

NAME	Latitude (Degrees/Minutes)	Longitude (Degrees/Minutes)	Range (km)
.....			
.....			
.....			

Information to be exchanged:

Timing:

Discontinuation

At least 6 months in advance

Change of characteristics

Dates for scheduled maintenance

At least 1 month in advance

Duration of expected downtime

Unscheduled outages

Within 1 hour of occurrence

Expected duration

Methods of exchange:

Telephone followed up by e-mail and/or telefax (mailed hard copy and/or telex may also be required for legal reasons)

Telephone number(s):

e-mail address(es):

Fax number(s):

Mail address:

Telex No.

Responsible person:

Title:

Organisation:

Acknowledgement:

Responsible person:

Title:

Organisation: