



IALA GUIDELINE

G1004

LEVEL OF SERVICE

Edition 3.0

June 2017



DOCUMENT HISTORY

Date	Details	Approval
5 December 1997	1 st issue	Council session 18
7 December 2005	Entire document Reformatted to reflect IALA documentation Hierarchy	Council session 37
31 May 2013	Edition 2.0 Entire document Restructured and refocused to provide clear information on Levels of Service	Council session 55
16 June 2017	Edition 3.0 Restructuring according to new IALA document structure Section 4 from Recommendation O-130 moved to this guideline	Council session 64



CONTENTS

1	INTRODUCTION	4
2	LEVEL OF SERVICE	4
2.1	Description.....	4
2.2	Benefits	4
2.3	Components.....	4
2.3.1	Type	4
2.3.2	Extent	4
2.3.3	Quality	4
3	DEVELOPMENT	5
3.1	Determining the Type	5
3.2	Determining the Extent	5
3.3	Determining the Quality	5
3.4	Consultation and Review	5
3.5	Promulgation	5
4	RISK ASSESSMENT AND DESIGN OF FAIRWAYS.....	5
5	Calculation of Availability	6
6	OTHER CONSIDERATIONS	6
6.1	Responsibility.....	6
6.2	Disclaimer	6
7	EXAMPLE	7
8	ACRONYMS.....	7
9	REFERENCES	7

List of Tables

<i>Table 1</i>	<i>Simplified example of a level of service.</i>	<i>7</i>
----------------	---	----------

List of Equations

<i>Equation 1</i>	<i>Availability expressed as a percentage (%)</i>	<i>6</i>
-------------------	---	----------



1 INTRODUCTION

This Guideline provides level of service information for services provided by Competent Authorities including related description, components and benefits. It also provides guidance on how to develop an appropriate level of service and how to calculate Availability.

2 LEVEL OF SERVICE

2.1 DESCRIPTION

Level of service is the commitment of service by the Competent Authority to mariners who are navigating or operating in an area, as well as clients and/or governments responsible for funding the provision of the relevant service.

Level of service may be articulated through a statement that should be clear, easy to understand and available to all concerned.

2.2 BENEFITS

An established level of service is essential to efficient planning and delivery. It provides users with a clear understanding of the expected services. A level of service also contributes to ensuring that services are delivered in a nationally consistent, integrated, predictable, measurable and fair manner.

2.3 COMPONENTS

A level of service statement should include, at minimum, the following components:

- type;
- extent;
- quality.

It may be beneficial to include an overview and description of the Competent Authorities' objectives and mandate in any statement.

2.3.1 TYPE

The type of service should describe what the Competent Authority will provide. It is a description of the service provided, such as, visual aids to navigation, radionavigation systems, pilotage, Vessel Traffic Service, Maritime Safety Information, etc.

2.3.2 EXTENT

The extent should describe where and why a service will be provided by the Competent Authority.

Most Competent Authorities are bound by the International Convention on the Safety of Life at Sea, 1974 as amended (SOLAS) Chapter 5, Regulation 13, which states that 'Each Contracting Government undertakes to provide, as it deems practical and necessary either individually or in co-operation with other Contracting Governments, such aids to navigation as the volume of traffic justifies [where] and the degree of risk requires [why].'

The extent of service provided may also vary by Competent Authorities for specific areas, category of users, or due to national obligations.

2.3.3 QUALITY

The quality should address to what level the Competent Authority will provide a service. It is a minimum standard at which clients can expect a service to be performed, also known as a performance standard.



A performance standard is a benchmark against which actual performance of a service can be measured. It may be expressed in the form of a target such as percentage of availability of a service or service response times.

3 DEVELOPMENT

3.1 DETERMINING THE TYPE

The type of service provided is primarily determined by identifying the variety of users, meteorological and oceanographic conditions, traffic volume, hydrography, etc. in which navigation occurs. Competent Authorities may also have national obligations to provide a specific type of service.

Other factors may require evaluation in order to select the appropriate service type, such as offshore energy infrastructure, aquaculture, environmental considerations, etc.

3.2 DETERMINING THE EXTENT

The extent of the service provided can be determined by identifying national obligations of the Competent Authority. Obligations may be in the form of legislation, international conventions as well as other priorities defined by the Competent Authority.

Competent Authorities bound by SOLAS should employ risk assessments and other tools to determine the extent of the service provided based on the volume of traffic and the degree of risk.

3.3 DETERMINING THE QUALITY

Competent Authorities must achieve a careful balance between safety of navigation, user requirements and what is reasonably possible given resources and funding when establishing a performance standard to ensure quality. Consideration must also be given to relevant IALA Recommendations and Guidelines.

3.4 CONSULTATION AND REVIEW

Consultations with stakeholders such as users, partners, and personnel are encouraged and can occur at any stage during the development of a level of service.

Stakeholder feedback is an important element. Nonetheless, the consultation process is just one of many elements to consider when establishing or reviewing a level of service.

A periodic review of an established level of service may be required to address changes to user requirements, national obligations, environmental conditions and when new risks are identified.

It is recommended that Competent Authorities put in place procedures to monitor the performance of individual components of the service provided to assist in the review of the level of service.

3.5 PROMULGATION

A formal mechanism for promulgating a level of service and changes thereto, accessible by all potential stakeholders, should be established. Publishing a level of service on the Competent Authority's website may be a useful mechanism to promulgate this information to the appropriate stakeholders.

4 RISK ASSESSMENT AND DESIGN OF FAIRWAYS

Competent Authorities should employ risk assessments and other tools to determine the appropriate type, combination, and quantity of services for a fairway.

IALA Guideline 1018 on Risk Management and IALA Guideline 1078 on the Use of AtoN in the Design of Fairways provide specific guidance for assessing risks and determining the appropriate mix of services within a given fairway. The IALA Risk Toolbox is useful in assessing the risks involved with vessel traffic in specific geographical areas.



Competent Authorities should conduct periodic reviews of fairways to determine the efficiency of the service provided.

5 CALCULATION OF AVAILABILITY

Availability should be calculated using the following equation, with the most accurate time available and is calculated over a continuous three (3) calendar year period and expressed as a percentage:

$$\text{Availability} = \frac{\text{Total Time} - \text{Down Time}}{\text{Total Time}}$$

Equation 1 *Availability expressed as a percentage (%)*

Where:

Total Time is the time that an AtoN or System of AtoN should be performing its specified function.

Down Time is the sum of the periods during which the AtoN or system of AtoN are unable to perform its specific function.

It does not include those periods when the mariner has been notified of a discrepancy by prior publications through a Preliminary Notice to Mariners.¹

The IALA Guideline on Availability and Reliability of Aids to Navigation should be consulted for further information on calculating availability. A failure is the malfunction of an AtoN or system of AtoN to display its proper characteristics or to be on its assigned position for its intended use by the mariner. As such, a failure of a technical function is not necessarily considered an AtoN discrepancy.

For example, if the main power supply has failed but the light continues to function at normal intensity on standby power, this is not considered a failure, since the AtoN continues to provide its characteristics to the mariner. The failure may be caused by equipment malfunction, or scheduled or unscheduled maintenance work.

6 OTHER CONSIDERATIONS

6.1 RESPONSIBILITY

Where the provision of a service is either contracted out or delegated to another level of government, for example to state, territory or local government organizations, or to port, harbour or waterway authorities, or local private groups, responsibility to ensure and enforce a level of service should remain with the Competent Authority concerned.

6.2 DISCLAIMER

Level of service is generally for planning purposes only. It is intended to communicate the service and performance clients can expect from a Competent Authority under normal conditions. In some circumstances, due to factors outside of their control (weather, maritime traffic, unanticipated events, etc.), a Competent Authority may be unable to meet the level of service. A disclaimer to this effect could be included in a level of service statement.

¹ Two months notification, as defined by the International Hydrographic Organization (IHO) Technical resolution



7 EXAMPLE

The Table 1 is intended to illustrate a simple example of a level of service including the recommended components described in this guideline.

Table 1 *Simplified example of a level of service.*

Type of Service	
Provision of a short-range Aids to Navigation system	
Extent of Service	Quality of Service
<p>Short-range Aids to Navigation are provided where the volume of traffic justifies and the degree of risk requires as determined by applying the IALA Risk Management toolbox.</p> <p>Short-range Aids to Navigation must be provided:</p> <ul style="list-style-type: none"> to guide mariners to and from harbours and ports supported by federal funds to allow for re-supply of isolated communities dependent on marine transportation. <p>Short-range Aids to Navigation will not be provided:</p> <ul style="list-style-type: none"> in waters that lack adequate nautical charts or available depth for common use in waters for which this responsibility has been delegated to other authorities through legislation or signed agreements exclusively for the benefit of single or a small number of users, or to mark access to private or municipal facilities. 	<p>The overall level for operational availability for the short-range Aids to Navigation system is 99%, calculated over a three-year period.</p> <p>100% of all short-range Aids to Navigation will be monitored for availability</p> <p>Visual Aids to Navigation are designed to be visible at least 75% of the time during the worst month of the navigation season.</p>

8 ACRONYMS

AtoN	Aid(s) to Navigation
IALA	International Association of Marine Aids to Navigation and Lighthouse Authorities
IWRAP	IALA Waterways Risk Assessment Program
SOLAS	International Convention on the Safety of Life at Sea, 1974 as amended

9 REFERENCES

When developing a level of service, the following IALA Guidelines and Recommendations should be consulted:

- [1] IALA Guideline 1018 on Risk Management
- [2] IALA Guideline 1035 on Availability and Reliability of Aids to Navigation
- [3] IALA Guideline 1052 on Quality Management Systems for Aids to Navigation Service Delivery
- [4] IALA Guideline 1078 on the Use of Aids to Navigation in the Design of Fairways



- [5] IALA Recommendation R0130 (O-130) on Categorisation and Availability Objectives for Short Range Aids to Navigation
- [6] IALA Recommendation R0132 (O-132) on Quality Management for Aids to Navigation Authorities
- [7] IALA Recommendation O-134 on the IALA Risk Management Tool for Ports and Restricted Waterways