



# Maintaining Service Potential of AtoN

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### Document History 2007 - 2010

Date	Action (approve/review)	Details of action
6/08/2007	Original Version	Establishment of Policy by Maritime Services Branch
24/05/2010	Amendment	Amended to include information about scheduled servicing and emergent maintenance of AtoN.

### 2011

Date	Action (approve/review)	Details of action
16/03/2012	Amendments	Amendments to: <ul style="list-style-type: none"> <li>Section 3.0 Definitions - to include a definition of a secondary water AtoN</li> <li>Section 4.2 Inspection, Servicing and Maintenance - to include visual inspection of AtoN</li> </ul>
17/05/2013	Review	Reflect Machinery of Government changes and revised maintenance schedules.

## 1.0 Introduction

1.1 Maritime Safety Queensland (MSQ) will minimise the risk of marine incidents in Queensland waters through the development, implementation, management and maintenance of a consistent system of aids to navigation (AtoN) in accordance with best practice and conforming, where workable, with international conventions, guidelines and Australian standards.

- 1.2 The efficient navigation of ships through Queensland waterways is assisted by a system of marine AtoN which accurately and reliably indicates the safest navigable waters for mariners.
- 1.3 This standard relates to all structures, marine signs, lights, RACONs and associated equipment owned or managed by MSQ.

## 2.0 Purpose and scope of this standard

- 2.1 The purpose of this document is to outline the minimum levels of availability, and frequency of scheduled servicing and emergent maintenance of AtoN by MSQ, in meeting its obligation of providing an accurate and reliable marine AtoN system for Queensland waterways.
- 2.2 This standard supports MSQ's policy for vessel traffic management (VTM) in Queensland.
- 2.3 This standard reflects:
  - The availability objectives of the International Association of Marine Aids to Navigation and Lighthouse Authorities (IALA) NavGuide; and
  - MSQ's minimum schedule periods for servicing and maintenance of AtoN.
- 2.4 This standard is aligned with the current MSQ Key Outcomes by providing a framework for the delivery of VTM in Queensland, of which AtoN is a component, which enhances the safety of ships movements and consequently, the prevention of ship-sourced marine pollution.
- 2.5 This standard and related documents apply to all MSQ personnel associated with the management, delivery and maintenance of MSQ's marine AtoN system.

## 3.0 Definitions

Terms, abbreviations and acronyms	Meaning
ANAMS	Aids to Navigation Asset and Maintenance System
Contracting party	Local government, port authority, owner or developer contacting the services of MSQ to establish, maintain, replace or upgrade AtoN.
Deed of Agreement	The written agreement between the State of Queensland, acting through MSQ and the contracting party.
IALA	International Association of Marine Aids to Navigation and Lighthouse Authorities
Lights	Low voltage and/or mains powered leading lights, marine signal lanterns assemblies and associated equipment.
AtoN	Any device or system, external to a vessel, which is provided to help a mariner determine position and course, to warn of dangers or of obstructions, or to give advice about the location of a best or preferred route. (Definition: IALA Navguide 2010 edition)
Marine signs	Public information symbol or water safety advisory/regulatory signage.

MSQ	Maritime Safety Queensland
RACON	RADar beaCONs, also called radar responder or transponder beacons, are receiver and transmitter devices used as an AtoN to identify landmarks or buoys on a marine radar display.
Secondary waterways	A coastal area with no facility for deep draft trading ships including rivers, lakes, creeks, canals and dams that form part of Queensland waters as defined by the <i>Transport Operations (Marine Safety) Act 1994</i> . Generally, the smooth and partially smooth waters defined by the <i>Transport Operations (Marine Safety) Act 1994</i> and used by small Queensland and visiting recreational and commercial (passenger and fishing) ships.  Secondary water AtoN are those that are not identified in ANAMS as 'Conservancy/Commercial'.
SECURITE message	Radio message prefixed with the word SECURITE. Indicates that the station is about to transmit a message concerning the safety of navigation or giving important meteorological warnings.
Visual Marine Aids to Navigation	Purpose-built facilities that communicate information to a trained observer on a vessel for the purpose of assisting the task of navigation, eg lighthouses, beacons, leading lines, buoys, daymarks and traffic signals.

## 4.0 Standard

4.0.1 Marine AtoN are intended to, collectively, provide sufficient and timely information to ships to assist their navigation within and through a waterway. The probability that an AtoN is performing its specified function at any randomly chosen time is expressed as a percentage of total time that a marine AtoN should be performing a specified function, measured over a 3 year period. (IALA NavGuide)

### 4.1 Availability and Response Priority

4.1.1 MSQ will initiate action to repair any malfunction causing unavailability within designated response time frames.

**Note:** Response means that action has been initiated within the nominated time frame.

4.1.2 As a minimum, MSQ will achieve levels of availability relevant to the category and navigational significance of an AtoN. They include:

Category 1 - Vital Navigational Significance

**Note:** A 'Response' means some sort of action has been initiated within the nominated time frame and not that the fault has been rectified.

IALA Category 1	MSQ Priority Classification & Response Time	Actions	Availability
An AtoN or a system of AtoN considered by MSQ to be of <b>vital navigational</b>	<b>A (immediate)</b> Response within 4 hours of report.	- A 'SECURITE' message is to be broadcast immediately by the relevant VTS;	<b>At least 99.8 %</b> In accordance with IALA standards the

<p><b>significance.</b></p> <p>Example: Lighted AtoN and RACONs that are considered essential for marking landfalls, primary routes, channels, waterways or dangers.</p>	<p>Examples: - Main leads; - Sector lights; and - Critical main channel structures.</p>	<ul style="list-style-type: none"> <li>- A Notice to Mariners is to be issued as soon as practicable;</li> <li>- The Manager, Pilotage Service is to be notified;</li> <li>- The relevant Area Manager is to be notified of the fault so that action to repair the AtoN can be coordinated; and</li> <li>- The fault is to be rectified within 12 hours of an initiated response (location, weather, and time permitting).</li> </ul>	<p>percentage is the maximum outage time allowable for a Priority A navigational aid, which is 2 days over 3 years.</p>
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Category 2 - Important Navigational Significance

**Note:** A 'Response' means some sort of action has been initiated within the nominated time frame and not that the fault has been rectified.

IALA Category - 2	MSQ Priority Classification & Response Time	Actions	Availability
<p>An AtoN or an AtoN system considered by MSQ to be of <b>important navigational significance.</b></p> <p>Example: It may include any lighted AtoN and RACONs that mark secondary routes and those used to supplement the marking of primary routes.</p>	<p><b>B (same/next day)</b> Response within 24 hours.</p> <p>Examples: - Main leads; - Sector lights; and - Main channel structures not referred to in priority A</p>	<ul style="list-style-type: none"> <li>- A 'SECURITE message' is to be broadcast immediately by the relevant VTS;</li> <li>- A Notice to Mariners is to be issued as soon as practicable;</li> <li>- The Manager, Pilotage Service is to be notified;</li> <li>- The relevant Area Manager is to be notified of the fault so that action to repair the AtoN can be coordinated; and</li> <li>- The fault is to be rectified within 12 hours of an initiated response (location, weather, and time permitting).</li> </ul>	<p><b>At least 99.0 %</b></p> <p>In accordance with IALA standards the percentage is the maximum outage time allowable for a Priority B navigational aid, which is 10 days over 3 years.</p>

Category 3 - Necessary Navigational Significance

**Note:** A 'Response' means some sort of action has been initiated within the nominated time frame and not that the fault has been rectified.

IALA Category - 3	MSQ Priority Classification &	Actions	Availability
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	Response Time		
An AtoN or an AtoN system considered by MSQ to be of <b>necessary navigational significance</b>	<p><b>C (next working day)</b> Response within 72 hours.</p> <p>Examples: - Intermediate channel structures, and - Locations of restricted access that require special transport.</p>	<ul style="list-style-type: none"> <li>- A Notice to Mariners is to be issued if vessel safety is a concern;</li> <li>- The Manager, Pilotage Service is to be notified where applicable</li> <li>- The relevant Area Manager is to be notified of the fault so that action to repair the AtoN can be coordinated.</li> <li>- The fault is to be rectified within 72 hours of initiated response (location, weather, and time permitting)</li> </ul>	<p><b>At least 97.0 %</b></p> <p>In accordance with IALA standards the above percentage is the maximum outage time allowable for a Priority C navigational aid, which is 30 days over 3 years.</p>
	<p><b>D (as soon as practicable)</b> Response as soon as practicable</p> <p>Examples: - Recreational and commercial use other than main shipping; and - Minor channels and areas that have limited public use</p>	<ul style="list-style-type: none"> <li>- A Notice to Mariners is to be issued if vessel safety is a concern</li> <li>- The relevant Area Manager is to be notified of the fault so that action to repair the AtoN can be coordinated</li> <li>- The fault is to be rectified as soon as practicable (location, weather, time permitting)</li> </ul>	

**Note:** Prioritisation of an AtoN in this document is given as a guide only. Because of the nature of a fault it may be necessary to upgrade a prioritisation i.e. If a Priority D classification AtoN has been damaged and threatens safe navigation it may be necessary to upgrade the response to a Priority B classification.

- 4.1.3 The availability of marine AtoN in Queensland should not fall below 95% (IALA Recommendation O-130). Where the availability of an individual AtoN consistently falls below 95%, MSQ will consider downgrading, replacing or discontinuing that AtoN. Refer MSQ Standard - Managing AtoN in Queensland
- 4.1.4 The effectiveness of some AtoN may be dictated by local conditions. In such cases, to ensure a safe maritime environment, the frequency of servicing/maintenance may need to be greater than outlined in this standard.

**4.2 Inspecting, Servicing and Maintenance**

4.2.1 As a minimum MSQ will carry out routine servicing and maintenance of all AtoN as follows:

AtoN	Scheduled Maintenance Period not less than once.....
Non-LED Lights, RACONS and associated	Every 12 months

equipment	
LED lights, major structures (fixed and floating)	Every 24 months
800mm and 150mm modular beacons, including all daymarks, IALA marks, brackets and lights and smaller aluminium/plastic buoys (where applicable)	
Marine signs	Every 60 months

4.2.2 MSQ will initiate action to repair any malfunction causing unavailability of an AtoN within the designated response priority.

4.2.3 All details of inspection/servicing/maintenance of marine AtoN are to be promptly and accurately recorded by the relevant MSQ regional office. As much information as possible is to be recorded in ANAMS. Refer: MSQ Standard: Managing AtoN in Queensland  
**Note:** DGPS coordinates of all AtoN must be accurately recorded.

### 5.0 Relevant documents and/or references

International Association for Marine Aids to Navigation and Lighthouse Authorities recommendations, guidelines and manuals.  
<http://www.iala-aism.org/>

- Naviguide 2010;
- MSB (Maritime Buoyage System);
- Recommendation O-130 Categorisation and Availability Objectives for Short Range Aids to Navigation;
- Guideline No.1035 on Availability and Reliability of Aids to Navigation; and
- Guideline No.1077 on Maintenance of Aids to Navigation Edition 1, Dec 2009

Transport Operations (Marine Safety) Act 1994  
<http://legislation.govnet.qld.gov.au/LEGISLTN/CURRENT/T/TranstOpMSA94.pdf>

Transport Operations (Marine Safety) Regulation 2004  
<http://www.legislation.qld.gov.au/LEGISLTN/CURRENT/T/TranstOpMSyR04.pdf>

The current Maritime Safety Queensland Key Outcomes

Maritime Safety Queensland Documents:

- Standard: Managing AtoN in Queensland
- Standard: Managing AtoN in Secondary Navigable Waters in Queensland

### 6.0 Stakeholders

Stakeholder Area	Stakeholder Representative	Responsibility
MSQ	General Manager	Delivery of MSQ services.
Maritime Services	Executive Director	Developing, and maintaining policies, standards, guidelines and procedures in relation to MSQ's AtoN system.

MSQ Regions	Regional Harbour Masters	Delivering an accurate and reliable system of AtoN in accordance with MSQ's policies, standards, guidelines and procedures.
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Attachments ->