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| IALA Guideline |

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The Use of Modern AtoN Equipment in Heritage Lighthouses

Edition 1.0

Document date

Revisions to this IALA Document are to be noted in the table prior to the issue of a revised document.

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# INTRODUCTION

Brief introduction explaining the concept of using modern AtoN equipment on heritage lighthouse sites.

Refer broadly to the considerations required when designing, planning, implementing. This would be explained in more detail in following sections.

Refer to importance of national legislation affecting heritage sites and what this means to installation of AtoN equipment.

# PLANNING & TECHNICAL CONSIDERATIONS

Legacy AtoN requires an Upgrade?

Produce costed options for upgrade

Design (Reference?)

2.3 Liaise with local Heritage Body (if one exists) and Planning Body on permitted extent of changes to legacy structure

2.2 Is there a Heritage Value?

No

Yes

2.4 Design Considerations

2.1 Needs Analysis

## Needs Analysys

In general, there will be many reasons why a particular AtoN is perceived to be in need of an upgrade - This applies equally to AtoN’s with Heritage value as well as those which do not. Such reasons will be:

* Unacceptable availability (reference?)
* Cost of maintenance
* Unacceptable degradation to users
* Changes to Navigation requirements

Any one of these reasons provides justification for investing in an upgrade to the AtoN.

## Heritage Assessment

At an early stage, an assessment will have to made to define whether or not any part of the structure has heritage value to the Lighthouse Authority. That may be a sub unit - for example a rotating lens, or the structure itself - for example a masonry tower. For sub units with heritage value, a new home such as a museum or local heritage association can be talked to with a view to being the new keeper of the heritage object. Liaison with the third party will have to involve:

* Ownership of the heritage object
* Care of the heritage object
* Access by the public to the heritage object
* Making safe – eg removal toxic hazardous material
* The safe archiving of related documents and drawings

## Heritage Body Liaison

Any external body with an interest in Heritage or Planning will have to be engaged in decisions with changes to the structure or disposal of sub units. It would be wise to engage early with these bodies so that their concerns are understood from the beginning of the process and the extent of changes are defined and understood by all parties. Particular areas to discuss are

* Proposed changes and disposals
* Potential physical changes
  + Penetrative works to masonry
  + Cutting of metalworks
  + Degree of sympathy required for additions
* Environmental considerations (needed?)
  + Affect on flora
    - eg…………….?
  + Affect on fauna
    - eg bat colony, nesting birds

Needs analysis and justifications for installation modern AtoN equipment on historical lighthouses. i.e what is the reason? Location? Does the complexities of the install make it financially prohibitive?

Are there any restrictions on structural changes or additions that may relate to heritage / historical status? Are there any organizations or government bodies that should be consulted? Are there processes or procedures that should be followed?

Assessment of the condition, integrity and suitability of the structure. Can equipment be safely installed?

Incorporating power supplies into a heritage structure – storage, mounting. How? Where?

Methods of installation sensors and equipment (brackets / pedestals). How? Where?

Compatibility of installation methods with structure materials, i.e. mounting on masonry, timber etc. How to do it and avoid damaging the structure? How to do it to ensure that equipment is safely installed?

Inter-functionality of systems. Are there multiple systems? Is there equipment that could possibly cause conflict during operation.

Maintaining aesthetics on heritage sites. Need to consider the aesthetic appeal of important heritage lighthouses and ensure this is maintained.

# TYPES OF MODERN AtoN

Brief content on types of Modern Aids to Navigation (AtoN) that can be installed on heritage lighthouse, with some practical considerations – e.g. Installation method, location on structure, OH&S risks, power supplies,

Modern light source in traditional optic. Refer to other IALA Guidelines as necessary.

AIS / VHF?

CCTV?

Radar?

DGNSS?

Meteorological?

Radio comms?

Power supplies.

# MAINTENANCE AND OPERATIONAL CONSIDERATIONS

Processes or procedures specific to the structure and materials, i.e. maintenance of AtoN equipment should be non-intrusive and should not result in risk of degradation or damage to structure.

OH&S / access / stability.

Remote monitoring.

Refer to suitable IALA Guideline

# Acronyms

AIS

AtoN

CCTV

DGNSS

IALA

OH&S

VHF

# REFERENCES

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1. Abcd
2. Efgh
4. EXAMPLE OF AN ANNEX - LANDSCAPE

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1. Example table

| No | Title/Topic | IMO References | Requirements | Possible Audit Questions | Remarks |
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1. EXAMPLE OF AN APPENDIX TITLE
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# front lighthouse of suurupi leading line

Location of Suurupi leading line: <http://xgis.maaamet.ee/xGIS/XGis?app_id=PRIM01&user_id=at&bbox=515427.959621181,6589352.54096559,532841.995562113,6600393.63471263&LANG=1>

Years of construction and major reconstructions: 1859; 1885; 1998

Some historical background: http://www.suurupi.ee/EN/4739



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| Figure 1. Suurupi front lighthouse (<http://www.etts.ee/EE/galerii/pohja-eesti-tuletornid>). Lanterns are on the upper window. | Figure 2. Interior with the old lantern and the window forming the narrow light sector |



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| Figure 3. Position of reserve lantern (left) and new LED-lantern (right) as seen from inside | Figure 4. New LED-lantern (left) and reserve lantern (right) as seen from outside |

# front lighthouse of Tallinn leading line

New solution for sectors of Tallinn front lighthouse designed by Cybernetica Ltd in 2009

Location

<http://xgis.maaamet.ee/xGIS/XGis?app_id=PRIM01&user_id=at&bbox=540890.372569245,6587350.68583374,548105.6957274,6591925.44723165&LANG=1>





Figure 5. View of the lighthouse, lantern room and main and reserve lanterns before modernising



Figure 6. Working sectors of Tallinn front lighthouse (φ white, β green)



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| Figure 5. New lanterns and their beams limited by window frames | Figure 6. Rear view of the positions of the lanterns |



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| Figure 8. Additional white lantern for covering wider area at the near end of the useful segment of the leading line (φ2 in figuure 1) | Figure 9. |

Photos of the new LED –lanterns in positions to come…

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1. PERMITTED COLOUR PALETTE



The IALA colour palette is divided in 3 palettes of different level of hierarchy that has to be respected.

Corporate colours

IALA’s corporate colour palette is directly inspired from the colours in our logotype:

- dark blue

- white

- yellow

- gradient blue

**Primary and secondary colours**

The primary colours are to be applied in complement

with the corporate colours.

This second level of colours gives rhythm and helps

to segment our publications.

The secondary colours are used to highlight

information, titles in a minor proportion only.

**Note: Corporate colours are not shown**

Recommendations

Model Courses

Guidelines