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| IALA Guideline |

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Quality control of 3rd party AtoN service Providers

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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|  |  |  |
|  |  |  |

1 INTRODUCTION 6

2 Purpose 6

3 Contractor prequalification and selection 7

3.1 Basis for selection 7

3.1.1 Capabilities 7

3.1.2 Track record / Experience 7

3.1.3 Capacity 7

3.1.4 Qualifications of staff 7

3.1.5 Works Schedule 7

3.1.6 ISO Certification / Quality Control 8

3.1.7 Financial undertaking and viability 8

3.1.8 Appropriate Insurance Cover and Safety at Work 8

4 Control of construction and maintenance activities and processes 8

5 contractor performance monitoring 10

5.1 Management Plans 11

5.1.1 Communications plan 11

5.1.2 Risk Management Plan 11

5.1.3 Environmental Management Plan 11

5.1.4 Quality Management Plan 12

5.2 Reporting 12

5.3 Inspections and Audits 13

5.4 The use of Key Performance Indicators (KPIs) 13

6 Information Management and Quality Records 14

7 Examples 16

8 DEFINITIONS 17

9 ACRONYMS 17

10 REFERENCES 17

ANNEX A EXAMPLE OF AN ANNEX - LANDSCAPE 18

ANNEX B EXAMPLE OF AN ANNEX - LANDSCAPE 22

List of Tables

Table 1 Sample Inspection and Test Plan 19

Table 2 Buoy Services QC Form 22

List of Figures

***No table of figures entries found.***

List of Equations

**No table of figures entries found.**

# INTRODUCTION

Many National Authorities, States and Local Governments, and Facility Operators contract out all or a portion of their Aids to Navigation (AtoN) services. As part of contacting to third parties it is important to ensure that the contractor is fit for purpose and there is oversight and control. This includes appropriate conditions, measures and reporting in the contract documents to ensure the AtoN owner has confidence that the third party provider meets or exceeds the expectations set out in the contract, ensuring the AtoN owner fulfils their international and national responsibilities.

Contracting to third parties can range from the complete AtoN service, a portion of the AtoN service, to a specialised one off projects. Depending on the level of services being outsources to third parties, the AtoN owner will still need to meet their obligations under:

* SOLAS Chapter V regulation 13 - Establishment and operational of Aids to Navigation: This regulation ensures that contracting governments implement aids to navigation that meet the volume of traffic and degree of risk, AtoN installation and management is in accordance with IALA standards, Recommendations and Guidelines (IMO SN.1/Circ.297), and arrange for information relating to AtoNs to be made available to all concerned – This is the high level obligation that sets the framework for how a national authority deliveries services from the establishment of AtoN, the buoyage system used to the approval and notification of its AtoN.
* SOLAS Chapter V regulation 4 – Navigational Warnings: This ensures that contracting governments promulgate navigational warnings to all concerned (IMO resolution A.706) – The AtoN owner or the third party may issues the warnings, if this is provided by third parties the AtoN owner may consider notifications of warnings, fault reporting and service releases for planned work.
* National and Local legislation: These include provisions for AtoN, but also set National responsibilities for construction, health and safety, heritage and utility services that may apply to an AtoN service or project – This legislation will identify the chain of responsivities and milestones that may also need to be included in third party agreements.
* Standards and Codes: These include the IALA standards, Recommendations and Guidelines, including the IALA Maritime Buoyage System. But may also include construction and safety standards and codes depending on the project - These will provided guidance on availability, design and best practice for third part agreements, and may also include

Contracting services to third parties can deliver greater efficiencies and allow access to specialised services, but as the AtoN owner it is important to ensure the correct contract model is used for the task, the contract expectations are clear, and the contract includes targets and reporting to ensure the AtoN owner able to meet their International and/ or National responsibilities.

# Purpose

The purpose of this new guideline is to provide authorities with guidance on a framework for ensuring that 3rd party contractors that are delivering engineering and maintenance services for aids to navigation and deliver the services to an acceptable standard.

AtoN maintenance activities included and broad range of activities that may include:

* Supply, installation and commissioning of AtoN equipment and systems
* Maintenance of AtoN equipment and systems
* Major repairs and maintenance of supporting AtoN infrastructure, buildings, towers etc
* Deployment and retrieval of floating AtoN
* Construction of AtoN infrastructure

# Contractor prequalification and selection

## Basis for selection

Competent Authority (CA) should consider appropriate review arrangements to ensure that its requirements can be met by a potential Contractor. The recommended review areas should include:

* Capability
* Track Record / Experience
* Capacity
* Qualifications of staff
* ISO Certification / Quality Control
* Financial undertaking and viability
* Appropriate Insurance Cover and Safety at Work

### Capabilities

The CA should request the Contractor, at its own expense, to prepare and conduct, demonstrations or presentations to substantiate the Contractor’s capabilities to fulfil their obligations. All necessary information and equipment to demonstrate the capability should be also made available.

### Track record / Experience

The Contractor should provide evidence of their relevant expertise, experience and track record in providing the service. A list of contacts for reference should also be provide so that the CA is able to gather feedback on the quality of works performed by the Contractor.

### Capacity

The Contractor should be familiar with all aspects of the works involved. He should possess a good management team, experienced site supervisors, technicians and skilled workforce to carry out the repairs to the requirements of the specifications, technical documents and schedules and to the satisfaction of the CA.

### Qualifications of staff

The Contractor should supply a sufficient number of qualified and competent personnel for the satisfactory execution of any repair and maintenance works. All personnel supplied by the Contractor for the execution of works in this Contract must be qualified in the relevant field of works and have demonstrated relevant experience. Copies of the certificates or list of relevant experience should be submitted to the CA when requested. The Contractor shall at all reasonable times keep a competent supervisor-in-charge of the works.

### Works Schedule

The Contractor shall propose and submit a Works Schedule to carry out the necessary works. The schedule shall take into account of required equipment, personnel and transportation requirements. The Contractor shall prepare a checklist of each item of repair for approval by the CA’s representative. Once approved, the Contractor shall arrange with the representative who would review the repair works performed, whether physically or via documentation. The Contractor shall carry out acceptance trials/tests and make good all defects to the satisfaction of the CA’s representative.

### ISO Certification / Quality Control

The Contractor should either have relevant ISO certifications, or equivalent management systems. These ISO certifications and/or management systems should be provided to the CA for considerations. The approved works comprised in the Contract must be programmed in accordance with the relevant agreed management systems.

### Financial undertaking and viability

If the financial risk of a contract is deemed as high, or the cash flow of a contractor to support works is in question, the CA should consider a financial viability assessment of the Contractor prior to contracting the works. The CA may request the Contractor’s past 3 years of financial statement. The assessor should do their due diligence to assess if the Contractor is in a stable financial position and is well positioned to fulfil his commitment to the contract. Some of the indicators to look for are: shareholder's equity/contract sum ratio, gearing ratio and current ratio.

### Appropriate Insurance Cover and Safety at Work

The Contractor should take full responsibility for the adequacy, stability and safety of all site undertakings and method of operations. The Contractor should provide adequate supervisory staff and competent personnel at all times to ensure that the Contractor’s obligations are carried out smoothly and that the workmen give a good and sufficient standard of performance on all aspects of safety and on the proper system of work.

The Contractor should report to the Authority all accidents, including those that do not involve injuries to persons. The Contractor should also report accidents to the relevant authority(ies). The Contractor should undertake to arrange for his personnel to assist in investigations into accidents and or infringements of safety rules and regulations.

The Contractor should ensure that its employees and temporary personnel are informed of the safety rules requirements and instructions and that all instructions, advice, rules, regulations whether of the CA or of any other body or organisation, government or otherwise on safety at work are followed and strictly adhered to.

The Contractor should be responsible for safety at work and shall maintain a safe system of work at all times and in addition shall ensure that all its employees and temporary personnel comply with whatever safety rules and regulations that may be laid down by the CA from time to time whether or not set out in the terms and conditions of contract hereof.

The Contractor should provide its employees and temporary personnel with the appropriate clothing and personal protective equipment such as but not limited to safety helmets, reflective lifejackets, safety shoes, hand gloves and eye goggles and ensure that all such employees and temporary workers use such protective equipment in the proper manner while at work.

# Control of construction and maintenance activities and processes

Controlling the performance and quality of maintenance and construction activities performed by a contractor must start by clearly defining the expectations and requirements that the Competent Authority has of the contractor. These expectations should be laid out clearly as a Scope of Works.

A clear and accurate SoW that has been agreed between the contracting parties plays a significant role in the avoidance of confusion and disagreement between the parties. Poorly defined SoW’s can often result in conflict and disagreement and lead to unexpected costs on both sides. A clearly defined Scope of Works provides both the contractor and competent authority with clarity on costs, resourcing, and expected outcomes. As an example, a 5 year maintenance contract could contain a scope that states:

* Perform annual servicing and maintenance of XYZ AtoN

Whilst this states the work required under the contract, it leaves a lot of ambiguity. A better SoW would read:

* Perform annual servicing and maintenance of AtoN XYZ including:
* Lantern
* Batteries
* Solar panels
* Paint system
* Glazing
* Concrete footings

This SoW provides detail of the items that require maintenance, however does not clearly define the standard required; a better still scope would read:

* Perform annual servicing of AtoN including:
* Lantern
* Remove all bird fouling and clean lantern
* Service in accordance with manufacturer’s recommendations
* Check Flash Character and test operation
* Batteries
* Check battery voltages
* Clean any terminal corrosion and check connections
* Replace any failed batteries
* Solar panels
* Remove all bird fouling and clean panels
* Check all cable connections
* Perform maintenance of structure including:
* Paint system
* Identify and remove any corrosion found on the structure
* Repair coating system in accordance with paint specification XYZ
* Provide coating records
* Glazing
* Replace any damaged glazing panes
* Check all glazing seals for water ingress
* Concrete footings
* Check concrete for any spalling or drummy patches
* Repair concrete using concrete repair specification XYZ

As can be seen, the further the SoW is broken down into the required elements, the clearer the expectations are.

The SoW should reference any documents, deliverables, or other information that form an expectation or requirement of the construction or maintenance contract (either to be provided by the Competent Authority, or required from the contractor), some examples might include:

* Specifications that work must be carried out to, e.g.
* Coating specification
* Product specifications, e.g. lanterns, AIS equipment, RACONS.
* Electrical specification
* Drafting specification
* Forms that information must be provided on
* Inspection forms
* Coating records
* Sector check forms
* Procedures that the contractor must follow or develop
* Change procedure
* Repair procedures
* Reports that the contractor must provide
* Inspection reports
* Daily/weekly/monthly/quarterly/annual reports
* Schedules and programmes that the contractor must follow
* Maintenance schedule
* Component replacement programme, e.g lanterns, buoy moorings
* Inspection and Test Plans (ITP’s)
* Information documents that assist the contractor in assessing the site
* AtoN site information
* Heritage reports
* Safety and environmental documents that the contractor must provide or abide by
* Risk assessments
* SWMS

The extent and detail of the scope and documentation depends heavily on the requirements and expectations of the contract and the ability of the Competent Authority to oversee the contractor.

Whilst the above is the traditional model for defining a maintenance or construction Scope of Work, it should also be noted that other possibilities exist, such as models based on KPIs or availability targets only, without prescriptive requirements.

# contractor performance monitoring

It is important that there are established mechanism for monitoring the performance of any 3rd party AtoN service provider, for a multitude of reasons, whether for compliance to contractual obligations, technical specifications, conformity to legislative requirements or to drive the cycle of continual improvement.

The type, method, duration, and frequency of performance monitoring should be established by the Competent Authority, or the AtoN provider that has engaged the 3rd Party, and should be primarily based on their own applicable requirements, to ensure all services are delivered to the correct standard.

Performance monitoring requirements should be stated, and wherever possible, built into contractual arrangements, to ensure all parties are aware of their obligations. It should be as descriptive as the scope of work to which it applies, and should be both high-level, and task-descriptive.

Some examples of performance monitoring methods are shown in the following sections.

## Management Plans

Management plans are critical in establishing the processes by which the services are provided to ensure they meet the required standards, have minimal environmental impact, identify and mitigate all risk and ensure workplaces and worksites are safe.

They are also an ideal, high level document that can be used to identify the processes for monitoring of performance, along with measurable indicators that allow for assessment and identification of non-conformity or lapses in performance.

There is no standard requirement or framework for management plans and how they are developed is largely dependent on the compliance backdrop to which the AtoN services are being delivered.

There are various recognized international standards, such as ISO9001:2015 Quality Management Systems, ISO14001:2015 Environmental Management Systems, ISO31000:2018 Risk Management and ISO45001:2018 Occupational Health and Safety Management Systems, which provide a common approach to these issues. In some cases, independent external accreditation to the ISO standards may require that management plans are based on the basic framework provided by accreditation standard, but then developed in further detail to suit the scope of the AtoN services being provided.

However, Management Plans may also follow requirements that align with the AtoN provider’s own systems and mandates. Some examples of management plans are shown following:

### Communications plan

A Communications Plan can be used to outline the communication processes required to ensure that there is regular dialogue maintained and that records are kept and stored. A Communications Plan may include requirements for formal correspondence, meeting frequency and records and reporting.

Having a matrix of communication requirements clearly outlined, will allow for monitoring of performance of a 3rd party’s ability to record and communicate key information and data.

### Risk Management Plan

A Risk Management Plan can be established to identify and assess all risks that may impact delivery of 3rd party AtoN services. A Risk Management Plan will generally also identify the risk mitigation measures required to minimize the potential impact of those risks on AtoN operation but also the standard to which the services are delivered.

A Risk Management Plan may include a simple performance mechanism such as a regular review of the risk matrix to ensure that the identified risks are relevant and current and adapted to changing circumstances.

### Environmental Management Plan

Refer R1004 – Sustainability in the Provision of Marine Aids to Navigation

Refer G1036 – Environmental Management in Aids to Navigation

An Environmental Management Plan is an effective mechanism for managing environmental impact. EMPs can be tailored to identify and control environmental risks to a project / activity level. EMPs are usually developed to respond to environmental requirements at a legislative level, but also to policies and systems at an organizational level.

An EMP should formally identify all environmental risks, assess the level of impact, highlight environmental risks that are considered significant, and provide guidance on the necessary mitigation measures required to reduce all risks to the lowest acceptable level.

For Competent Authorities and 3rd party AtoN providers, the EMP, and particularly risk matrixes, can also be used to identify the mechanisms by which environmental performance is measured and monitored.

This can include audits of environmental systems, formal recording and review of environmental incidents, regular reviews of risk matrixes, the introduction of environmental innovations and sustainable practices.

### Quality Management Plan

A Quality Management Plan is an effective method of setting out work processes, monitoring and testing requirements, responses to non-conformity and in general providing a documented system to ensure that all 3rd party AtoN services are being delivered to the appropriate standards and that a cycle of constant improvement is adopted.

Whilst the ISO9001:2015 Standard provides a universally accepted framework for the establishment of a quality management system or plan, the format and content can be adjusted to respond to the requirements of the services being delivered.

The QMP also provides a clear formwork for performance monitoring. Methods of performance monitoring that may incorporated into a QMP include the following:

* A Project Plan or other method of formally tracking performance and delivery against a formal schedule.
* Inspection Test Records (ITR) which identify and document the types, frequencies and level of inspections and testing for services delivered. Hold Points and Witness points introduce stages of the works at which these activities must be carried out and are generally related to ensure the quality of the work meets the standards to which it applies.
* Equipment calibration which ensures all key equipment used is calibrated, tested where necessary, and able to ensure the quality of the services delivered.
* Training plans which identify the minimum competencies required for personnel delivering all levels of services, which can be regularly reviewed and audited. This is critical in the performance of 3rd party service provision as it ensures there is sufficient competency and expertise at all levels of the organization.
* Commissioning plans or procedures, documenting the method by which AtoN equipment is commissioned, and allows the Competent Authority to measure performance in such a key phase of AtoN delivery.

## Reporting

Reporting is a key requirement in any contract, as it allows for the development and collection of records that relate to the work being carried out, or the services being delivered.

The type and frequency of reporting is dependent on the complexity of the work and may also be related to systems, asset management systems or other management mechanisms that the Competent Authority has in place.

Some of the reporting types which may be considered are:

* Weekly Work Reports.
* AtoN Site Inspections.
* Maintenance Reports.
* Commissioning Reports.
* Monthly, Quarterly or Annual Progress Reports.
* Failure Response Reports.
* Incident Reports.
* Other reports as required by the applicable Management Plans in place.

## Inspections and Audits

Inspections and audits are a necessary mechanism to have in place, as it allows a Competent Authority to physically verify that works are completed, or services delivered in compliance with their stated requirements. The scope and scheduling of inspections and audits can vary widely and are often aligned with the requirements of established management plans, contractual requirements, or technical specifications. An example of inspection and audit types are shown following:

* Audits of records.
* Site inspections of completed work.
* Site inspections and audits of work being carried out.
* Independent audits of AtoN sites.
* Annual audits of 3rd party facilities.
* Environmental audits.
* Workplace safety audits.
* Quality audits.
* Factory Acceptance Tests or pre-installation inspections.

## The use of Key Performance Indicators (KPIs)

The use of Key Performance Indicators (KPIs) is an effective method of monitoring contractual performance, across a wide range of different areas. They are quantifiable, outcome-based statements that are incorporated into a contract, which are used to measure performance.

The type of KPIs used will be directly related to the main scope of the contract, the key deliverables but also other high-level requirements that may be stated in management plans or other key documents. A Competent Authority should choose the KPIs as suited to the scope of services being delivered.

A common practice in some outsourcing arrangements is to tie KPI performance to a set percentage or portion of the contract payments, as a type of security against 3rd party service provider performance. This can act as a commercial incentive to ensure delivery of services is to the highest possible standard.

KPIs that may be considered for use in AtoN deliver are shown following:

* Availability objectives to ensure the 3rd party AtoN provider is maintain AtoN assets in compliance with IALA Recommendation O-130 and IALA Guideline 1035.
* Mean Time to Repair.
* Number of environmental or safety incidents.
* Number of Sustainability initiatives introduced.
* Number of Non Conformances.
* Stakeholder engagement.
* Reporting requirements met.
* Number of innovations introduced.
* Number of faults or failures.
* Compliance with work programs and schedules.
* ISO or other industry related accreditations and memberships (IALA).

# Information Management and Quality Records

The Competent Authority / responsible party should maintain a system for the management of information, data and records pertaining to the services being delivered by the 3rd party.

An effective way of achieving this is through the utilisation of a Quality Management System (QMS) as defined in IALA G1052 Quality Management Systems for AtoN System Delivery. A QMS will allow the CA / responsible party to administer documentation, information and data associated with the provision of any AtoN service.

The CA / responsible party, is advised to retain ownership of all documentation, data and records associated with their AtoN, and allow access (of the information) to any 3rd party service provider engaged to deliver engineering and maintenance services on those AtoN.

All works undertaken should comply with national standards and regulations and the 3rd party service provider will need to demonstrate this to the CA/ responsible party in their documentation and certification supplied under any agreed processes and procedures. These documents and certificates should be retained in a document management system as necessary.

The CA/ responsible party in conjunction with the 3rd party service provider should agree the method of sharing AtoN information to ensure that all documentation is up to date and accessible as necessary. This may include the use of a QMS as detailed above to retain documentation as follows:

* Operation and Maintenance manuals
* Equipment manuals (Installation/ Operation)
* Site drawings, including as-built modifications and the reasoning for any alterations
* Software for specific equipment and associated configurations or setup/ settings, including programming manuals
* Storage of software configuration files and where necessary a file naming scheme to be able to identify between different versions
* Remote Monitoring system access details/ login
* Floating AtoN/ Buoy wiring diagrams
* RAL colours of AtoN
* AtoN List (names, positions, ALLFS No’s, Category, Character, Range, Colour, MMSI, Racon Code etc…)
* Navigation Charts of the AtoN
* Issued Notice to Mariners and Radio Navigation Warning
* Monthly/ Quarterly/ Annual reporting of AtoN Availability figures by Category and or AtoN
* Contact details (Competent Authority/ responsible party and 3rd party provider – possible Data Protection issues??)
* Communication methods and systems (i.e. phone in on arrival/ departure form site)
* Site access requirements (neighbour notification, public access site, method of access – drive, walk, boat, helicopter, type of key….)
* Health and Safety documentation (including reporting of incidents and near misses)
* Hazard awareness
* Risk Assessments
* Record and retain all Tool Box Talks as defined by Health and Safety legislation
* Environmental issues (flora, fauna considerations)
* Hazardous substances record (mercury, asbestos, lead….)
* Electrical standards certification/ test and inspection records (as required by National legislation)
* Equipment calibration certification
* Safety equipment records (i.e. harness, lifejacket, Personal Locator Beacon, Survival suit, defibrillator, sat phone/ comms equip etc)
* Building Control permissions (Planning Permission, Listed Building Consents)
* Statutory Approvals for the placement of the AtoN (? Statutory Sanction process)
* Radio Licences (Racon, AIS, DGNSS, Telemetry links, TV licence!)

Particular care should be given to the process required to ensure alterations and updates to AtoN systems and equipment are captured in a timely manner and notified to all concerned. It is important to capture the originator of any alterations to ensure traceability of the actions. This process should be agreed between the CA/ responsible party and the 3rd party service provider and may include the following:

* As-built drawings
* Alterations to equipment/ wiring on site
* Alteration or adjustment of equipment programming or configuration/ set up
* Replacement of legacy equipment such as chargers, solar panels or batteries
* Substitution of equipment (i.e. components such as relays etc)
* Temporary repairs and remedial action plan
* Buoy moves due to bathymetric surveys and subsequent chart updates (and NtM’s)
* Serial numbers of replaced equipment (both removed and installed)
* Storage of software configuration files, and where necessary, a file naming scheme to be able to identify between different versions

The use of commercially available computerised maintenance management systems is encouraged and are designed to help schedule, plan, manage and track maintenance activities and keep historical records of work performed. Tasks that the above systems will be able to record and track include the following (this list is not exhaustive):

* Annual/ Biannual maintenance schedule and tasks to be performed
* Work Instructions/ procedures
* Overdue work/ maintenance
* On site equipment list
* Spares held on site or off site
* Spares required to be taken to site, i.e. demineralised water, lamps, batteries
* Details of the current drawings for each site (where they are available; on site or to be taken to site – hard copy or soft copy)
* History of recent visits
* History of outages
* Outage/ repair reports
* Remote Monitoring System data and access to perform analytical tasks
* Requirement for specialised tools
* Requirement for specialised software / programs, leads, dongles and associated configuration files or setup
* Requirement for specific Personal Protective Equipment
* Tool box talk – pre visit discussion of jobs to be undertaken, documentation to be retained
* Daily Tool box talk and sign off of any necessary paperwork
* Inspection records detailing condition of AtoN (structural, electrical)
* Seaward Inspection of AtoN for the published character and range both day and night
* Photographic (including video) evidence of the condition of the AtoN (before, during, after visit/ works)
* Floating AtoN service/ casualty forms
* Floating AtoN off position reports
* Portable Appliance testing records and schedule
* Test and Inspection of Electrical Installations as required by national legislation
* Pressurised vessels test and inspection
* Fall arrest system test and inspection
* Lifting equipment certification and inspection
* Fire suppression system test and inspection
* Fire extinguishers test/ inspection/ replacement

\*\*Other things to consider associated with information management and quality records\*\*

* Document retention policy?
* Availability of paper records converted to electronic for historic reference – how far do you go back?
* Personnel training records or licences to perform certain tasks?
* Personnel competency levels?
* Data protection legislation?
* Use of IALA documentation in decision making and information management?
* Awareness of documents such as the Navguide?
* Question – Is the term “responsible party” appropriate for a non-CA AtoN owner? If this isn’t defined in the IALA Dictionary – should it be?

# Examples

Examples include aspects a Competent Authority (CA) might consider to control the quality, safety and environmental outcomes for project works. Examples are included in Annexure A and include the following:

* AtoN equipment and electrical installation
* Building repairs and repainting
* Floating AtoN installation
* Maintenance of AtoN equipment and infrastructure

# DEFINITIONS

*Suggested text:* The definitions of terms used in this IALA Guideline can be found in the International Dictionary of Marine Aids to Navigation (IALA Dictionary) at <http://www.iala-aism.org/wiki/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.

# ACRONYMS

IMO International Maritime Organization (Acronym style)

# REFERENCES

1. Abcd
2. Efgh
4. EXAMPLE OF AN ANNEX - LANDSCAPE
5. Quality Control for 3rd party building repairs and repainting

The following example shows an example of a possible approach for quality control of a project being undertaken by a 3rd party for building repairs and repainting of a heritage lighthouse.

* 1. Structure Details

Type: Traditional lighthouse built in 1895, 30m tall, heritage listed.

Material: masonry block tower, chance brothers lantern room, internal steel stairway and platforms.

* 1. Scope of Works

The Scope of Works (SOW) is as follows:

* Develop work methods including quality, safety and environmental plans

Detail a repair plan

* Removal of existing paint and repaint of all surfaces internal and external
* Repair of corrosion where required
* Stairways
* floor beams where interfacing walls
* platform floor plates
* lantern room components
* Reglazing of the lantern room with new glazing panes
* Repair of any deterioration to the stonework and repointing where required
* Installation of temporary AtoN for the duration of works
* Removal and reinstatement of the AtoN equipment and power supply and upgrade in accordance with an electrical standard

Provision of completion documentation

* 1. PREQUALIFICATION

From the SOW skills and experience that the contractor, and or subcontractors need to prequalify in are:

* Management systems to control quality, safety and environment
* Industrial coatings, including the potential of lead paint removal
* General building repairs
* Work on heritage buildings
* Glazing works
* Electrical works
* AtoN and electrical installation and commissioning, and
* Documentation

During a tender period the CA should request tenderers detail their, and/or their nominated subcontractor’s skills and experience in the areas noted above and apply appropriate weighting.

Note: It is important that subcontractors work under the main contractor’s management systems to ensure management of all works in managed consistency.

* 1. contractor performance monitoring

Aspects which could be considered in monitoring contractor performance are the following:

* Process audit – audit of contractor’s processes prior to undertaking the works.
* Onsite audit – audit of onsite work activities and compliance with agreed processes, plans and standards.
* Clearly defined client Inspection test plan, during the contract development it is important to determine and document the level of interaction the CA is to be undertaking, as detailed below.

1. Sample Inspection and Test Plan

| **Project: Lighthouses Repaint** | | | | **Contractor: xxxxx** | |
| --- | --- | --- | --- | --- | --- |
| Inspection / review point | Type of acceptance | Location | Transport required to site | | Acceptance Criteria |
| Acceptance / inspection: D=Document Review, W=Witness, H=Hold Point, M=Monitor, MP=Linked to milestone payment | | | | | |
| Project management plan | D, H | N/A | N/A | | * Review/approval of Project Management Plan by CA; * Review/approval of environmental, safety and quality management plans; |
| Design and procurement | D, H | N/A | N/A | | * Electrical and AtoN design inline with applicable standards; * AtoN equipment procured includes relevant QA documentation regarding IALA compliance; |
| Heritage approvals and repair procedures | D, H | N/A | N/A | | * Heritage approvals * Approving colour schemes * Qualifications of surface preparation techniques for heritage substrates |
| Plant and vessel (if applicable) prior to mobilisation | W, D | Mobilisation port | N/A | | * Cleanliness of equipment and materials; * Any prefabricated items; * Storage of coating materials, fuels, oils etc; |
| Site establishment | W,D, MP | Lighthouse | Contractor to provide transport for CA inspector. | | Work site established with the following items completed or in place:   * scaffolding/encapsulation erected; * dust extraction installed; * temporary AtoN established; * all equipment on site; * first aid and environmental equipment at site and established; * coating materials at site;   CA to review:   * encapsulation system and extraction; * first aid preparedness; * SWMS implementation and induction of personnel; * Storage of coating materials, fuels, oils etc; * Bunding arrangements for equipment refuelling; * QA procedures, equipment and equipment calibration; * Worksite accommodation: |
| Completion of surface preparation | W, D, MP | Lighthouse | Contractor to provide transport for CA inspector. | | * surface preparation meets requirement of The Coating Specification; * QA documentation; * photographic record of works; * safety/environmental documentation and implementation of control measures including asbestos removal; * requirement for any corrosion and timber rot repairs; * review of The Coating Specification if required; |
| Application of prime coat | W, D | Lighthouse | Contractor to provide transport for CA inspector. | | * Stripe coat application; * Workmanship of applied coatings; * Coating thickness meets requirements of The Coating Specification; * QA documentation; * photographic record of works; * safety/environmental documentation and implementation of control measures including asbestos removal; * review of The Coating Specification if required; |
| Application of intermediate coat | W, D | Lighthouse | Contractor to provide transport for CA inspector. | | * sealing of crevices * Stripe coat application; * Workmanship of applied coatings; * Coating thickness meets requirements of The Coating Specification; * QA documentation; * photographic record of works; * safety/environmental documentation and implementation of control measures including asbestos removal; * review of The Coating Specification if required; |
| Application of finish coat | W, D | Lighthouse | Contractor to provide transport for CA inspector. | | Inspection on completion of application of finish coat, CA to review:   * Stripe coat application; * Workmanship of applied coatings; * Coating thickness meets requirements of The Coating Specification; * QA documentation; |
| AtoN and electrical works /completion of works | W, D | Lighthouse | Contractor to provide transport for CA inspector. | | * Electrical installation meets requirements of the specification and Electrical Standard; * Electrical installation workmanship; * Antenna and other equipment in correct location and orientation; * AtoN and solar power supply have been commissioned and operating appropriately; * Environmental inspection; * Photographic record of works; |
| Completion Report | D, MP | N/A | N/A | | Review/acceptance of Contractors completion reports. |

1. EXAMPLE OF AN ANNEX - LANDSCAPE
2. Quality Control for 3rd party buoy services

Add supporting text relating to example document provided.

* 1. Structure Details

Add supporting text.

* 1. Scope of Works

Add supporting text.

* 1. PREQUALIFICATION

Add supporting text.

* 1. contractor performance monitoring
* Add supporting text and refer to the document below.

1. Buoy Services QC Form

**BUOY DATABASE FORM**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **TO BE COMPLETED BY SHORE BASE** | | | | | |
| **LOCATION (Name):** | Outfall Buoy No 1 | | | **AREA:** | Anytown |
| **COMPETENT AUTHORITY OR CONTRACT:** | Contract | | | **CONTRACT** | Water Company |
| **TYPE OF BUOY:** | Special Mark | | | **CLASS:** | 4 |
| **TYPE OF SERVICE:** | Renewal | Casualty | Service | **SERVICE/REPLACE SCHEDULE** | Annual/Water Company dependant |
| **TOP MARK FITTED:** | Yes | | | **NEXT REPLACE DATE:** | N/A |
| **BUOY SUPERSTRUCTURE NO** | N/A | | | **BUOY BODY NO** | N/A |
| **RADAR REFLECTOR:** | No | | | **LUGS TESTED:** | N/A |
| **LIGHT BATTERY TYPE & QTY:** | Self-Contained Lantern | | | **RACON BATT TYPE & QTY:** | N/A |
| **BATTERY ID NO'S:** | Self-Contained Lantern | | | | |
| **SOLAR PANEL NO'S:** | Self-Contained Lantern | | | | |
| **SOLAR PANEL WATT:** | 4 x 5W | | | **LANTERN NO:** | Unknown |
| **LANTERN TYPE:** | *BRIGHTLIGHT* Self contained | | | **BLUETOOTH:** | NO |
| **CHARACTER:** | Fl.Y.5s | | | **RACON FITTED:** | NO |
| **AIS FITTED:** | NO | | | **RACON SERIAL NO:** | N/A |
| **MONITORING FITTED** | NO | | | **RACON CHARACTER:** | N/A |
| **MMSI NUMBER:** | N/A | | |  |  |
| **TO BE COMPLETED BY BUOY TENDER** | | | | | |
| **VESSEL:** | Buoy Tender Star | | | **DATE OF VISIT:** | 05-05-2020 |
| **MASTER:** | Capt. Smith | | | **2/O:** | D. Jones |
| **POSITION VERIFIED** | Yes | | | **CHART NUMBER:** | 3126, 3220 |
| **LATITUDE WGS84:** | 25° 36.936’N | | | **LONGITUDE WGS84:** | 025° 45.283’W |
| **CLEANED LANTERN** | Yes | | | **CLEANED BUOY:** | Yes |
| **WEIGHTED SKIRTS FITTED:** | No | | | **BRIDLE:** | 2M Y |
| **CHAIN SIZE & LENGTH** | 25mm x 50M | | | **DEPTH IN METRES:** | 17.4M |
| **SINKER:** | 1T | | | **DATE SINKER EXAMINED:** | 05/05/20 |
| **WORKING PART :** | 19mm | | | **AIS/RACON OPERATIONAL:** | N/A |
| **SOLAR PANEL NO'S:** | Self-Contained Lantern | | | | |  |  |  |  |  |
| **SOLAR PANEL VOLTAGE:** | Self-Contained Lantern | | | | |  |  |  |  |  |
|  |  | | | **LIGHT BATTERY VOLTAGE:** | Self-Contained. |
| **DATE LAST REPLACED:** | N/A | | | **NEXT SERVICE DATE:** | 05/2021 |
| **DATE LAST SERVICED:** | 05/05/20 | | |  |  |
| **TO BE COMPLETED IN EVENT OF CASUALTY** | | | | | |
| **DATE/TIME REPORT RCV'D:** |  | | | **CASUALTY TYPE:** |  |
| **SOURCE OF CASUALTY:** |  | | | | |
| **DATE/TIME RECTIFIED / REPORTED TO** |  | | | | |
|
| **PROCUREMENT SYSTEM STOCK NO ISSUED:** | N/A | | | | |
| **GENERAL COMMENTS; (e.g. Amount of chain clenched into the mooring, No. of shackles & pins used etc.)** | | | | | |
| 0820 Buoy Tender Star arrived on station.  0826 Buoy decked for annual service.  Service completed. Buoy cleaned & electrics tested & found in good order.  0850 Buoy re-laid in Charted Position  1 x Forelock used from ships stores (No Stock Number) | | | | | |
|
|
| **FAULTS/DEFECTS FOUND DURING SERVICING; (e.g. defective solar panel).** | | | | | |
| N/A | | | | | |
|

**CONTRACT BUOYWORK CHECKLIST  
Only to be completed when Contract buoyage is carried out**

The following checklist is to be completed during the servicing of all contract buoys and signed off by the Second Officer on completion of service.

|  |  |
| --- | --- |
| **Lantern and Solar Panels** | |
| 1. Does the lantern show any signs of damage | No |
| 1. Are the cable glands and seals in good order | N/A |
| 1. Is the flasher character as charted | Yes |
| 1. Is the flasher unit in good order with no sign of dampness | Yes |
| 1. Is all the connectors and cabling in good order | Connections are internal |
| 1. Was a new bulb fitted (if applicable) | N/A |
| 1. Do the solar panels show any sign of damage | No |
| **Buoy Body and Superstructure** | |
| 1. Is the buoy body in good condition | Yes |
| 1. Are the lifting eyes and mooring eyes in good condition | Yes |
| 1. Is the superstructure securely attached to the buoy body (if applicable) | Yes |
| 1. Are the daymark panels securely attached and free from damage | Yes |
| 1. Several photos should be taken of all commercial buoys whether client or Competent Authority owned as part of information sent to Contract Manager | OK |
| I certify that the above checklist has been completed and full details of the work carried out along with photographs and any remedial actions undertaken and future recommendations are contained in the enclosed report. | |
| Second Officer: D. Jones | |

**PHOTOS FOR CONTRACT BUOYS**

|  |  |
| --- | --- |
| C:\Users\bridgeps\Desktop\IMG_4759.JPG | **C:\Users\bridgeps\Desktop\Irvine Buoy 05.05.20\Final\IMG_4772.JPG** |
| **C:\Users\bridgeps\Desktop\Irvine Buoy 05.05.20\Final\IMG_4781.JPG** | **C:\Users\bridgeps\Desktop\Irvine Buoy 05.05.20\Final\IMG_4790.JPG** |
| **C:\Users\bridgeps\Desktop\Irvine Buoy 05.05.20\Final\IMG_4794.JPG** | **C:\Users\bridgeps\Desktop\Irvine Buoy 05.05.20\Final\IMG_4797.JPG** |
| **C:\Users\bridgeps\Desktop\Irvine Buoy 05.05.20\IMG_4803.JPG** | **C:\Users\bridgeps\Desktop\Irvine Buoy 05.05.20\IMG_4813.JPG** |
| **C:\Users\bridgeps\Desktop\Irvine Buoy 05.05.20\Final\IMG_4809.JPG** | **C:\Users\bridgeps\Desktop\Irvine Buoy 05.05.20\IMG_4822.JPG** |