|  |
| --- |
| IALA Guideline |

Gnnnn

Management Of Maritime Resource Name OrganiSation Identifiers

Edition 0.0

Spring 2021

urn:mrn:iala:pub:gnnnn

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

|  |  |  |
| --- | --- | --- |
| Date | Details | Approval |
| XXXX 2021 | First Issue | Council XX |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

1. INTRODUCTION 6

1.1. Related Documents 6

2. BACKGROUND 6

3. REQUIREMENTS FOR OID NAMESPACES 6

3.1. Requirements for OIDs 7

4. DISCUSSION 7

5. aPPLICATION PROCEDURES 7

6. IMPLEMENTATION 9

6.1. Necessary Restrictions 9

6.2. Cyber-Security and Risk Management 10

6.3. Other Implementation Notes 10

7. DEFINITIONS 10

8. ABBREVIATIONS 10

9. APPLICATION TEMPLATE 12

10. Further reading 15

List of Figures

Figure 1 OID Submission and Approval Process 10

# INTRODUCTION

The use of unique identifiers is a necessary development of e-Navigation. To answer this need, IALA has obtained the Maritime Resource Name (MRN) as a method of utilising unique identifiers within the maritime domain. Use of MRN within IALA’s remit is outlined in IALA Guideline G1143.

To promote harmonisation among identifiers for maritime resources, IALA has provisioned the MRN, a subpart of Uniform Resource Name (URN), for use across the maritime domain. Where usage and objects fall within the Aids to Navigation and other appropriate categories, IALA has outlined guidance procedures in IALA Guideline G1143. However, IALA is also cognizant that MRN can and should be applied to maritime resources beyond IALA’s guidance.

This Guideline discusses procedures for IALA to process requests for Organisational Identifiers (OID) and related namespaces within the MRN construct.

## RELATED DOCUMENTS

G1143 Unique Identifiers for Maritime Resources Ed2.0 December 2020

IALA Basic Documents Ed5.0 December 2020

RFC 2141 – URN Syntax (<https://www.ietf.org/rfc/rfc2141.txt>)

RFC 5234 – Augmented BNF for Syntax Specifications: ABNF (<https://tools.ietf.org/html/rfc5234>)

RFC 8141 – Uniform Resource Names (URNs) (<https://tools.ietf.org/html/rfc8141>)

ISO 3166-1 alpha-3

# BACKGROUND

The MRN concept was born out of an identified need for persistent unique identifiers for aids to navigation. In assessing this need, IALA Committees introduced the concept of a unique identifier which could be used beyond the area of Marine Aids to Navigation.

IALA has taken the lead to obtain the MRN namespace, defined as “urn:mrn:”. IALA has also decided to make portions of the namespace available to interested parties, by defining Organizational Identifier (OID) as a necessary component to all MRNs, written as “urn:mrn:oid:”.

G1143 is the Guideline that addresses IALA’s use of MRN within its namespace; any other organisations seeking to apply MRN in their own namespace should adopt a similar guideline for their namespace to explain its use. It is recommended that OID guidelines follow a similar structure to IALA G1143 to facilitate the greatest possible harmonisation between MRN namespaces.

# REQUIREMENTS FOR OID NAMESPACES

This section defines requirements for the operationalisation of MRNs. Specifically, these requirements are related to the definition of OID namespace schemes. OID namespace schemas refer to the structure of the Organisation-specific namespace string (OSNSS). The requirements are based on the basic idea and concept of MRN and should facilitate interoperability of harmonisation of independently managed OID namespaces.

* URN Compliance:

As MRN is a subset of URN, all active URN documentation must be followed in the creation of MRNs, regardless of OID ownership. OID Owners should specify and document additional parameters (such as those documented in G1143). Such documentation should be available to any users implementing MRN within the OID.

* Uniqueness:

An ID within the MRN namespace is never assigned to more than one resource and never re-assigned to a different resource. Ensuring uniqueness within an OID namespace is the responsibility of the respective OID Owner. Uniqueness should prevail over other ‘nice to have’ aspects of the MRN.

* Decentralisation:

OID Owners may define further sub-namespaces inside of the Organisation-specific namespace string (OSNSS) for representing further internal hierarchies and decentrally organise the assignment of MRN in these sub-spaces.

Within the IALA OSNSS, G1143 documents the use of MRN. Another example can be found in Maritime Connectivity Platform Identity Providers, see MCP MRN Specification: <https://maritimeconnectivity.net/docs/mcp-idsec-2-ID.docx>

* Forward compatibility:

OID namespaces shall be designed for evolution enabling the addition of new naming schemes for new resources in the future.

* Flexibility:

OID namespaces should be used with maximum capacity and flexibility; the schemes should allow for identification of many types of resources relevant to the OID. It is not necessary to request multiple OIDs in order to identify multiple resources.

There are also a few properties that are ‘nice to have’ for an OID namespace scheme:

* Human readability:

A naming scheme should be readable by humans in such a way that identifiers can be entered in forms and documents. The human-readability aspect should not be read as a requirement to conform to specific language requirements. The human-readability aspect should not interfere with the uniqueness aspect of the identifier (see above). In cases where multiple languages may be used, it is not recommended to create an MRN in every language.

* Contextual:

A naming scheme should provide information on the type of resource that a particular identifier refers to, such as a vessel, mariner, AtoN, port or VTS centre.

* Backward compatibility:

Creation and implementation of new MRN schemes does not necessarily constitute a re-configuring of existing naming or numbering schemes. The MRN concept allows for inclusion of a variety of schemes that already exist, and an OSNSS can allow integration with existing schemes so they can continue to be used. For instance, existing IALA Guidance Document numbers have been incorporated into MRN as follows:

IALA G1143 urn:mrn:iala:pub:g1143

## REQUIREMENTS FOR OIDS

* OIDs must comply with IETF documentation for all URNs, specifically RFC 2141, RFC 5234, and RFC 8141.
* All OIDs must contain a minimum of three lower case alphanumeric characters. These characters are defined in RFC 2141.
* OIDs must not contain any characters identified as “reserved” by RFC 2141.
* OIDs must not use ISO 3166-1 alpha-3 country codes as written. This does not prevent any particular sequence of letters that may be an ISO 3166-1 alpha-3 code to be used as part of an OID. For instance, “nam” cannot be an OID as it is an existing ISO 3166-1 alpha-3 code, but “namea” could be requested and used as an OID.

# DISCUSSION

The MRN is intended to be an extendable mechanism across the maritime domain. IALA does not have the capacity to govern MRN implementation in all instances. IALA makes the MRN namespace available to all interested users in the maritime domain with limited interference, to the purposes of harmonisation and cooperation.

* Authoritative – IALA makes MRN OIDs available to authoritative entities, but not to individuals or individual governments.
* Decentrally Managed – IALA’s role in MRN Management is to make MRN available for applicants. IALA does not impose specific guidance on the application of MRN namespace outside of IALA’s namespace but recommends anyone using the MRN namespace does so in harmony with G1143. For example, following a similar structure of sub-namespaces such as <type> and <country codes>.
* URN-compliant – as MRN is a subset of URN, all active URN documentation must be followed in the creation of MRNs, regardless of the overseeing authority. Authorities should specify and document additional parameters (such as those documented in G1143). Such documentation should be available to any users implementing MRN within the OID.
* Publicly-available – IALA will publish all assigned MRN OIDs, as well as OID Owner information. Points of Contact will be published.

# APPLICATION PROCEDURES

All applications for MRN OID namespaces are subject to review and acceptance by the IALA Secretariat.

Applications must specify the entity who will be the OID Owner (typically, an organisation or project, but not an individual government or state) with a point of contact. Contact information must include name, title, and email address. Multiple individuals may be identified as points of contacts if needed. Applications must also specify if the OID Owner will be different from the OID Applicant.

All applications must include a statement of intended use within the maritime domain. Applicants must demonstrate a need for an OID.

All applications must be sponsored by two IALA National Authorities (National Authorities are defined in IALA Basic Documents). A statement of sponsorship from the National Authorities must accompany the application. The Secretariat may require an application to be reviewed by a National Authority (as defined in IALA Basic Documents) of the intended area where the applicant carries out their activities or has their principal place of business, if such National Authority has not sponsored the application. Contact information for the sponsoring National Authorities must be included. IALA Secretariat may contact National Authority representatives to verify the accuracy of the sponsorship and/or application.

Applicants should specify the OID being requested. All OIDs must contain a minimum of three lower case alphanumeric characters, as defined in RFC 2141. OIDs must not contain any characters identified as “reserved” by RFC 2141. OIDs, like all MRN, are case-insensitive, meaning that “urn:mrn:exp:” is the same as “urn:mrn:EXP:”. IALA encourages OID Applicants to choose OIDs that are human-readable and contextual; however, this may not always be possible. IALA reserves the right to reject any submissions not meeting requirements or otherwise found objectionable.

Note: OIDs must not use ISO 3166-1 alpha-3 country codes. This does not preclude ISO 3166 country codes from being utilised elsewhere within the namespace.

Applicants must consent to the publication of the OID, OID Owner information, and statement of intended use, via the IALA MRN website or another place of IALA’s choosing.

IALA will make every effort to respond to applications within 90 days of receipt. OID applications are accepted, reviewed, and adjudicated by IALA Secretariat on a rolling basis throughout the calendar year.

Applications are subject to human review; the process is not automated.

In the event of rejection, IALA will provide the OID Applicant with the cause for the rejection. An OID Applicant may resubmit an application if desired.

Figure 1 illustrates the MRN OID submission and approval process.

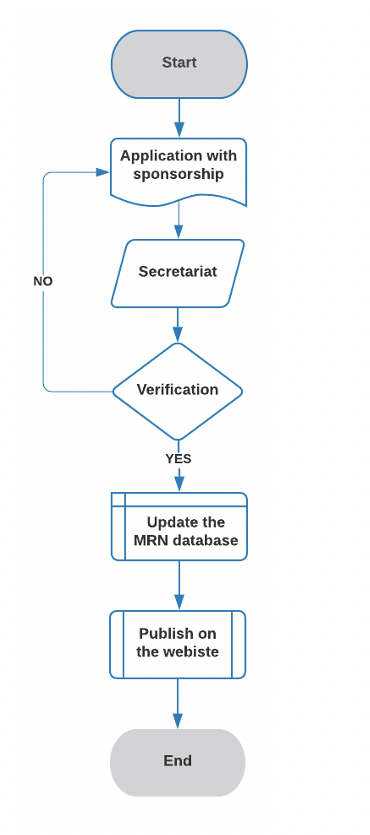


Figure 1: OID Submission and Approval Process Diagram

# IMPLEMENTATION

To provide maximum flexibility for OID Owners, IALA intends to impose only necessary restrictions on MRN implementation. Because of this, care and good faith should be taken to ensure utilisation of MRN in appropriate contexts, where persistent unique identifiers are needed.

## NECESSARY RESTRICTIONS

Necessary restrictions are:

* All OID namespaces must follow rules that apply to all MRN namespaces.
* OIDs (but not their documentation or implementation results) must be published and widely-available through IALA websites or other means.
* OIDs must not use 3-letter country codes defined in ISO 3166-1 alpha-3.
* All OID assignments are to be considered permanent.
  + Should an organisation change name or in another such situation, an OID may be transferred between entities with an understanding of continuity of operations and MRN application.
* Once an OID is assigned, it will never be removed from use and subsequently re-assigned to another entity.

OIDs must contain a minimum of three lower case alphanumeric characters, and must not utilise any “reserved” characters, as defined in RFC 2141. OIDs must comply with IETF documentation for all URNs, specifically RFC 2141, RFC 5234, and RFC 8141.

## CYBER-SECURITY AND RISK MANAGEMENT

While MRN and OID assignments are publicly available information, and thereby not confidential, there are several suggestions with regards to risk and (cyber) security

* An OID may represent a critical AtoN or a confidential document. Always be aware that information disclosed in the publication of the MRN and its OID could eventually impact the integrity or reliability of that object when used with bad intentions. This is also valid for related OID’s; e.g. the publication of a set of OID’s compromising one AtoN may provide useful information for activists or terrorists on the best way to damage that AtoN.
* The authority of organisation managing OID assignments should take appropriate measures to ensure the integrity and availability of the administrative system for the registration of OID’s. Keywords are regular backups, proper authorisations for altering the registration and preventive technical (IT security-) measures.
* Periodic checks or audits should be performed to verify the integrity of the MRN registration and if the (public) registration does not contain any unnecessary sensitive information.

## OTHER IMPLEMENTATION NOTES

Procedures set forward in this document will not be retroactively applied to established MRN OIDs in use at the time of adoption.

However, in the interest of compatibility, it may, in the future, become necessary to recommend action by established users. IALA will request comment on administrative burdens and implications of any such recommendations prior to releasing them.

# DEFINITIONS

MRN Owner IALA is the MRN Owner. The IALA Secretariat is tasked with administering MRN.

OID Applicant The OID Applicant is the organisation who submits an OID Application for review by the IALA Secretariat.

OID Owner An OID Owners is the organisation who will administer the assignment of MRNs within an assigned OID.

Resource A resource is any entity that can be named, numbered, or otherwise identified. Within different contexts, a resource may refer to singular or plural entities (e.g. a group of buoys in a channel may be one resource).

# ABBREVIATIONS

**ABNF** Augmented Backus-Naur Form

**AtoN** Marine Aid(s) to Navigation

**IALA** International Association of Marine Aids to Navigation and Lighthouse Authorities

**ID** Identification / Identity / Identifier

**IETF** Internet Engineering Task Force

**ISO** International Organization for Standardisation

**MRN** Maritime Resource Names

**OSNSS** Organization-specific namespace string

**RFC** Request for Comments (IETF)

**URN** Uniform Resource Name(s)

# APPLICATION TEMPLATE

Application for Maritime Resource Name (MRN) Organization Identifier (OID)

OID Applicant: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Description of Applicant or Project: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Website where information on Applicant or Project can be found: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\*OID Owner (If different from OID Applicant): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\*Point of Contact Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Title/Position: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\*\*Email: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\*Statement of intended use within the maritime domain: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\*Requested OID: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Region of Operation/Implementation: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Sponsoring IALA National Authority: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

(Statement must be included.)

Sponsoring IALA National Authority: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

(Statement must be included.)

\*Items will be published on IALA’s MRN Registry Website and are publicly-available.

IALA complies with the General Data Protection Regulations of the EU. Any applicant who wishes to remove their contact details should advise the IALA Secretariat.

\*\* Personal email addresses should be avoided and a generic address is recommended.

STATEMENT OF SPONSORSHIP FROM IALA NATIONAL AUTHORITY (1)

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

National Authority: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Point of Contact Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Title/Position: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Email: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

STATEMENT OF SPONSORSHIP FROM IALA NATIONAL AUTHORITY (2)

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

National Authority: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Point of Contact Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Title/Position: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Email: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

# FURTHER READING

A good explanation of Uniform Resource Names can be found at: https://en.wikipedia.org/wiki/Uniform\_Resource\_Name