International Code Designator for Amateur Radio

J. Gordon Beattie, Jr., N2DSY

Thomas A. Moulton, W2VY

The Radio Amateur Telecommunications Society

206 North Vivyen Street

Bergenfield, New Jersey 07621

Abstract

Amateur Radio **now** has **an International Code Designator (ICD)** assigned by the International Organization for Standardization **(ISO)** to identify Amateur Radio organizations, network components and applications in Open Systems. Open Systems are defined by their use of the communications protocols of IS0 and the International Consultive Committee for Telephone and Telegraph (CCITT) and their national member bodies. The architecture has been defined by these bodies as a model called **the Open Systems Interconnection Reference Model (OSI-RM)** to facilitate communications between applications using different computers and operating systems.

1. Introduction

The International Code Designator (ICD) for OSI based Amateur Radio Systems, Network Elements and Applications was assigned to the Radio Amateur Telecommunication Society **(RATS)** on behalf of the global Amateur Radio community. RATS is responsible for the establishment of a basic information framework for OSI-based, Amateur Radio systems. This framework will develop during the next few years, but some initial elements are needed for immediate use. The high level portions of the framework have been defined. The initial information framework includes the specification of:

- Domains, including:
  - Nations
  - Individual Amateur Radio stations/operators;
  - National Amateur Radio bodies;
  - Other Amateur Radio bodies.
- OSI Network Service Address Point Identifier (NSAP-ID).

These items are described in the remaining sections of this document.

Future additions will include data elements which are needed in Application Messages, including:

- Interpersonal Mail;
- Bulletins;
- Conferences;
- Files
- Remote Execution.

These items will be described in future documentation.

The next section provides an overview of the ICD. it was obtained. The third section describes the Information Framework. The next section outlines the initial objects in the information tree. These objects are in the branch which defines "domains". The last section describes the Network Service Access Point Identifier which is based on the domains described in the previous section.

2. International Code Designator

The International Code Designator (ICD) for the global Amateur Radio community was issued in April of 1988. The highlights of the request/issue are provided below.

- Name of the Coding System:

  International Code Designator for the Identification of OSI-based, Amateur Radio Organizations, Network Objects and Application Services

- Structure of the code:

  Class Instance

  — The Class is a field which indicates the general category of object such as the identified organization, network element or application service.

  — The Instance is a field which indicates the specific instance of the organization, network element or application service.

- Display requirements:

  The "Class" and "Instance" fields combine to uniquely identify the a particular organization, network element or application service.

- Description of the organizations covered by the coding system:

  Amateur Radio groups which wish to participate in the OSI-based networks.

- The ICD assigned to the global Amateur Radio community:

  0 0 1 1 (Decimal)

3. Information Framework

The Information Framework is a tree-like structure which is designed to distribute the assignment authority for identified organizations, network elements and application services. The peak of the information framework tree is the **"root"** This Information Framework contains objects which are organized into classes and subclasses. These **Object Classes** have **attributes** which may be other classes (subclasses) or parameters. Some attributes of an object are used to unambiguously identify a specific instance within an Object Class. Other attributes provide information found to be useful when referencing an object.

4. Objects in the Amateur Radio OSI Information Tree

The initial branch in the Amateur Radio OSI Information Tree is the domain. The establishment of this object and its attributes will allow for the immediate delegation of assignment authority to groups and individuals within the community. It will also provide a mechanism for the definition of network addresses.

Domains = [0]

An domain is one in which a body such as a country, an amateur radio society or an individual radio amateur defines the components and systems under their authority. The following are defined for the OSI -based Amateur Radio community:

. **National Domains = [0]**

Amateur Radio is administered on a national basis. The values used to indicate a specific country will be derived from the three digit Data Country Codes in CCITT X. 121 (1988).

. **Individual Amateur Radio Stations/Operators = [1]**

This subclass includes amateur stations/operators. Assignment of values is implicit because the domain identifier consists of the national regulatory authority (PTT or equivalent) assigned station callsign.

. **National Amateur Radio Bodies = [2]**

This subclass includes IARU member bodies. Values will be assigned to each body shortly.

• **Other Amateur Radio Bodies = [3]**

This subclass includes international and local amateur radio societies. The IARU has been assigned the first value in this subclass. Other groups will be assigned values upon request.

5. OSI Network Service Address Point Identifier (NSAP-ID)

The Network Service Access Point ID is used in OSI-based networks to identify the OSI network subdomain and system. The callsign is derived from the Individual Amateur Radio Station/Operator Domain. The Data Country Code is derived from the national domain. Values are encoded as follows:

NSAP-ID Encoding	
Value	Definition
47H	Authority and Format Identifier - ISO, Binary
00H	Initial Domain Identifier (two octets, BCD encoded)
11H	Initial Domain Identifier = Amateur Radio
ii	Length Indicator for Callsign (Binary encoded)
cc	Callsign octets
-	(up to 9 octets, BCD encoded)
cc	
dd	Data Country Code + 0 (two octets, BCD encoded)
dd	
nn	National Number (up to 5 octets, BCD encoded)
nn	

6. Conclusion

The development: of OSI-based Amateur Radio Systems has progressed significantly in the last several years. This is consistent with its growth in the commercial telecommunications industry. Public domain software exists at all seven protocol layers for MS-DOS, Unix and other operating systems. Initial applications include message handling (CCITT X.400), file transfer (FTAM), and directory services (CCITT X.500). These applications and those under development will need an expanded information framework upon which Open Systems can grow. Those interested in participating in this process should contact one of the authors.