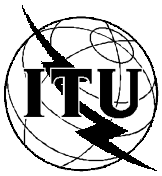

INTERNATIONAL TELECOMMUNICATION UNION

CCITT

THE INTERNATIONAL
TELEGRAPH AND TELEPHONE
CONSULTATIVE COMMITTEE

X.665

(09/92)

DATA COMMUNICATION NETWORKS

INFORMATION TECHNOLOGY – OPEN SYSTEMS INTERCONNECTION – PROCEDURES FOR THE OPERATION OF OSI REGISTRATION AUTHORITIES: APPLICATION PROCESSES AND APPLICATION ENTITIES

Recommendation X.665

Foreword

ITU (International Telecommunication Union) is the United Nations Specialized Agency in the field of telecommunications. The CCITT (the International Telegraph and Telephone Consultative Committee) is a permanent organ of the ITU. Some 166 member countries, 68 telecom operating entities, 163 scientific and industrial organizations and 39 international organizations participate in CCITT which is the body which sets world telecommunications standards (Recommendations).

The approval of Recommendations by the members of CCITT is covered by the procedure laid down in CCITT Resolution No. 2 (Melbourne, 1988). In addition, the Plenary Assembly of CCITT, which meets every four years, approves Recommendations submitted to it and establishes the study programme for the following period.

In some areas of information technology which fall within CCITT's purview, the necessary standards are prepared on a collaborative basis with ISO and IEC. The text of CCITT Recommendation X.665 was approved on 10th of September 1992. The identical text is also published as ISO/IEC International Standard 9834-6.

CCITT NOTE

In this Recommendation, the expression "Administration" is used for conciseness to indicate both a telecommunication administration and a recognized private operating agency.

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Contents

1 Scope 1

2 Normative references 1

2.1 Identical Recommendations | International Standards 1

2.2 Paired Recommendations | International Standards equivalent in technical content 1

2.3 Additional references 2

3 Definitions 2

4 Symbols and abbreviations 3

5 General considerations 3

5.1 Introduction 3

5.2 Requirements for registration authorities 4

6 Registration procedures 4

6.1 AP registration procedures 4

6.2 AE registration procedures 5

7 Minimum information requirements 5

8 Technical role 5

9 Maintenance procedures 5

Annex A AE-title generation 6

Introduction

This Recommendation | International Standard identifies an administrative role for Registration Authorities for application-process-titles and application-entity qualifiers, based on the procedures for the operation of OSI registration authorities contained in CCITT Rec. X.660 | ISO/IEC 9834-1. No technical role is defined.

Subclause 13.1 of CCITT Rec. X.650 | ISO 7498-3:1989 specifies the need to assign globally unambiguous names to application-processes and application-entities. The syntactic forms of these titles are specified in CCITT Rec. X.227 | ISO/IEC 8650.

CCITT Study Group VII and ISO/IEC JTC1/SC 21 are jointly responsible for the syntactic definition of application-processes and application-entities.

INTERNATIONAL STANDARD

CCITT RECOMMENDATION

INFORMATION TECHNOLOGY – OPEN SYSTEMS INTERCONNECTION – PROCEDURES FOR THE OPERATION OF OSI REGISTRATION AUTHORITIES: APPLICATION PROCESSES AND APPLICATION ENTITIES

1 Scope

This Recommendation | International Standard specifies the procedures applicable to the registration of application-processes and application-entities.

No requirement for an international registration authority has been identified; therefore these procedures apply to registration at or below the nodes for countries or ICDs.

This Recommendation | International Standard does not cover the registration of application-process types or application-entity types. No requirement for such registration has been identified.

2 Normative references

The following CCITT Recommendations and International Standards contain provisions which, through reference in this text, constitute provisions of this Recommendation | International Standard. At the time of publication, the editions indicated were valid. All Recommendations and International Standards are subject to revision, and parties to agreements based on this Recommendation | International Standard are encouraged to investigate the possibility of applying the most recent editions of the Recommendations and Standards listed below. Members of IEC and ISO maintain registers of currently valid International Standards. The CCITT Secretariat maintains a list of currently valid CCITT Recommendations.

2.1 Identical Recommendations | International Standards

– CCITT Recommendation X.660 (1992) | ISO/IEC 9834-1:1993, *Information technology – Open Systems Interconnection – Procedures for the operation of OSI Registration Authorities: General procedures.*

2.2 Paired Recommendations | International Standards equivalent in technical content

– CCITT Recommendation X.200 (1988), *Reference Model of Open Systems Interconnection for CCITT applications*.

ISO 7498:1984, *Information processing systems – Open Systems Interconnection – Basic Reference Model*.

– CCITT Recommendation X.208 (1988), *Specification of Abstract Syntax Notation One (ASN.1)*.

ISO/IEC 8824:1988, Information technology – *Open Systems Interconnection – Specification of abstract Syntax Notation One (ASN.1)*.

– CCITT Recommendation X.227 (1992), *Information technology – Open Systems Interconnection – Protocol Specification for the association control service element*.

ISO 8650:1988, *Information processing systems – Open Systems Interconnection – Protocol specification for the Association Control Service Element*.

– CCITT Recommendation X.501 (1988), *The Directory – Models.*

ISO/IEC 9594-2:1990, *Information technology – Open Systems Interconnection – The Directory – Part 2: Models*.

– CCITT Recommendation X.650 (1992), *Open Systems Interconnection (OSI) – Reference Model for naming and addressing.*

ISO/IEC 7498-3:1989, *Information processing systems – Open Systems Interconnection – Basic Reference Model – Part 3: Naming and addressing*.

2.3 Additional references

– ISO 6523:1984, *Data interchange – Structure for the identification of organizations*.

– ISO/IEC 9545:1989, *Information technology – Open Systems Interconnection – Application Layer structure*.

3 Definitions

3.1 The following terms are used in this Recommendation | International Standard, and are defined in CCITT Rec. X.200 | ISO 7498-1:

a) application-entity;

NOTE – The definition of this term in the current edition of CCITT Rec. X.200 | ISO 7498-1 is different from that in CCITT Rec. X.650 | ISO 7498-3. The definition in CCITT Rec. X.650 | ISO 7498-3 is the definitive one and will be moved to CCITT Rec. X.200 | ISO 7498-1 to replace the existing definition in the revision of CCITT Rec. X.200 | ISO 7498-1 which is currently being prepared.

b) application-entity-type;

c) application-process;

d) Open Systems Interconnection environment.

NOTE – This term is not formally defined in the current edition of CCITT Rec. X.200 | ISO 7498-1. A definition will be given in the revision which is currently being prepared.

3.2 The following terms are used in this Recommendation | International Standard, and are defined in CCITT Rec. X.650 | ISO/IEC 7498-3:

a) application-entity:

NOTE – The definition of this term in the current edition of CCITT Rec. X.200 | ISO 7498-1 is different from that in CCITT Rec. X.650 | ISO 7498-3. The definition in CCITT Rec. X.650 | ISO 7498-3 is the definitive one and will be moved to CCITT Rec. X.200 | ISO 7498-1 to replace the existing definition in the revision of CCITT Rec. X.200 | ISO 7498-1 which is currently being prepared.

b) application-entity-title;

c) application-process-title.

3.3 The following terms are used in this Recommendation | International Standard, and are defined in CCITT Rec. X.660 | ISO/IEC 9834-1:

a) international registration authority;

b) registration;

c) registration authority;

d) registration-hierarchical-name;

e) registration-hierarchical-name-tree;

f) Sponsoring authority.

3.4 The following terms are used in this Recommendation | International Standard, and are defined in CCITT Rec. X.501 | ISO/IEC 9594-2:

a) distinguished-name;

b) relative-distinguished-name.

3.5 The following terms are used in this Recommendation | International Standard, and are defined in ISO/IEC 9545:

a) application-entity-qualifier;

b) application-process-type.

3.6 The following term is used in this Recommendation | International Standard, and is defined in CCITT Rec. X.208 | ISO/IEC 8824:

– object identifier.

4 Symbols and abbreviations

AE	Application-entity
AE-qualifier	Application-entity-qualifier
AE-title	Application-entity-title
AP	Application-process
AP-title	Application-process-title
ICD	International Code Designator (as defined in ISO 6523)
OSIE	Open Systems Interconnection environment
RH-name	Registration hierarchical name

5 General considerations

5.1 Introduction

5.1.1 CCITT Rec. X.660 | ISO/IEC 9834-1 defines general procedures for registration that are independent of the object involved. It allows for other Recommendations | International Standards that define procedures that are specific to particular types of objects. This Recommendation | International Standard is concerned with the registration procedures for APs and AEs. All of the clauses of CCITT Rec. X.660 | ISO/IEC 9834-1 apply to the specification of this Recommendation | International Standard with the exception of clause 7 (International registration authorities). Clause 7 does not apply because this Recommendation | International Standard does not address registration at the international level.

5.1.2 An AP is identified by an AP-title. An AP-title is a name that is unambiguous throughout the OSIE. The registration of an AP involves the assignment of an AP-title. The procedures defined herein enable the assignment of AP-titles that are unambiguous throughout the OSIE.

5.1.3 Within an AP, an AE is identified by an AE-qualifier. An AE-qualifier is unambiguous within the scope of its AP. The registration of an AE involves the assignment of an AE-qualifier. The procedures defined herein enable the assignment of AE-qualifiers that are unambiguous within the scope of a particular AP.

NOTE – Within the OSIE an AE is identified by an AE-title. An AE-title consists of an AP-title and an AE-qualifier. The registration of an AE does not involve the assignment of its AE-title. Annex A describes how an AE-title is formed from its constituent parts.

5.1.4 This Recommendation | International Standard contains no explicit provisions for the generation of AE-titles (see Annex A). However, an AE-title may be generated by the combination of an AP-title and an AE-qualifier, provided that these components have been assigned in accordance with the rules defined herein. An AE-title generated according to these rules is an instance of an RH-name.

5.1.5 The rules defined in this Recommendation | International Standard apply to registration authorities for (and within) countries and internationally recognized organizations (the later are organizations which have been assigned an ICD). These rules describe an administrative role for such registration authorities.

NOTES

1 No requirement has been identified either for a registration authority at the international level or for registration within International Standards.

2 The abstract syntaxes of AP-titles, AE-qualifiers and AE-titles are defined in CCITT Rec. X.227 | ISO 8650. It defines two syntactic forms for each type of name: an object identifier form and a directory name form. The provisions of this Recommendation | International Standard are aligned with the definitions contained in CCITT Rec. X.227 | ISO 8650.

5.2 Requirements for registration authorities

NOTE – This subclause describes general requirements applying to registration authorities that are responsible for the registration of either or both AP-titles and AE-qualifiers.

5.2.1 A registration authority which performs the registration of either or both AP-titles and AE-qualifiers in accordance with the procedures in this Recommendation | International Standard shall be either:

a) a member of a set of registration authorities that assign object identifiers in accordance with the provisions of CCITT Rec. X.660 | ISO/IEC 9834-1 Annex A, and also a member of a set of registration authorities that assign directory names in accordance with the provisions of CCITT Rec. X.660 | ISO/IEC 9834-1, Annex B; or

b) a member of a set of registration authorities that assign both object identifiers and directory names in accordance with the provisions of CCITT Rec. X.660 | ISO/IEC 9834-1, Annex C.

5.2.2 A registration authority for the registration of an AP may also be responsible for the registration of AE-qualifiers of the AP; however, the latter responsibility may be delegated to subordinate registration authorities.

6 Registration procedures

6.1 AP registration procedures

6.1.1 To register an AP, a registration authority shall assign both an object identifier form and a directory name form of AP-title. The applicant is given the assigned name forms. The registration authority places these names together with additional information as the AP register entry for this AP (see 7.1). This Recommendation | International Standard does not place any requirement on the applicant or the registration authority for propagating or notifying the existence of the register entry.

6.1.2 A registration authority shall assign the object identifier form of AP-titles in accordance with the following rules:

a) the general provisions for the management of an RH-name-tree which are defined in CCITT Rec. X.660 | ISO/IEC 9834-1;

b) the specific provisions for the assignment of object identifiers corresponding to an RH-name-tree which are defined in CCITT Rec. X.660 | ISO/IEC 9834-1, Annex A.

NOTE – A registration authority shall assign one (or more) object identifier components which, in combination with object identifier components assigned by superior registration authorities, form the object identifier component list for an AP-title.

6.1.3 A registration authority shall assign the directory name form of AP-titles in accordance with the following rules:

a) the general provisions for the management of an RH-name-tree which are defined in CCITT Rec. X.660 | ISO/IEC 9834-1;

b) the specific provisions for the assignment of directory names corresponding to an RH-name-tree which are defined in CCITT Rec. X.660 | ISO/IEC 9834-1, Annex B.

NOTE – A registration authority shall assign a relative distinguished name which, in combination with the set of relative distinguished names assigned by superior registration authorities, forms a directory name for an AP-title.

6.2 AE registration procedures

6.2.1 To register an AE, the AP that contains the AE must previously have been registered.

6.2.2 The AE registration authority shall assign both an object identifier component and a relative distinguished name form of AE-qualifier. The applicant is given the assigned name forms. The registration authority places these names together with the previously registered AP-title and additional information as the AE register entry for this AE (see 7.2). This Recommendation | International Standard does not place any requirement on the applicant or the registration authority for propagating or notifying the existence of the register entry.

6.2.3 A registration authority shall assign an object identifier component for an AE-qualifier by assigning an integer value, unambiguous within the scope of the associated application process: this integer value constitutes the object identifier component.

6.2.4 A registration authority shall assign a relative distinguished name form for an AE-qualifier, unambiguous within the scope of the associated application process.

7 Minimum information requirements

7.1 The following information is required for the registration of an application-process:

a) identifier assigned to the application-process, as in clause 6;

NOTE – This is the AP-title.

b) name of applicant;

c) date of registration;

d) references to documentation of the application-process;

e) optionally, cross references to supporting AEs.

7.2 The following information is required for the registration of an application-entity:

a) AP-title, as in 7.1, for the AP to which the AE-qualifier applies;

b) qualifier assigned to the AE, as in clause 6;

NOTE – The AE-title is constructed from these two elements as specified in Annex A.

c) name of applicant;

d) date of registration;

e) references to documentation of the AE.

NOTE – The items in 7.1 and 7.2 express the logical requirements separately for clarity. The format of any actual register entry will be defined by the responsible registration authority. Registration authorities may create entries which combine the AP entry with those of all related AEs.

8 Technical role

No technical role is defined.

9 Maintenance procedures

No maintenance procedures have been identified at the international level.

NOTE – Such procedures will be included in the administrative arrangements required locally at or below the level of country or ICD nodes. Since globally unique identifiers may not be re-assigned, even when the associated entity becomes unused, the requirement for maintenance will be limited. Some examples of updating may be cross references between APs and new or discontinued AEs.

Annex A
AE-title generation

(This annex does not form an integral part of this Recommendation | International Standard)

A.1 This Recommendation | International Standard contains no explicit provisions for assignment of AE-titles. An AE-title is generated by the combination of an AP-title and an AE-qualifier, provided that both of these components have been assigned in accordance with the procedures defined herein.

A.2 An object identifier form of AE-title may be constructed by appending the object identifier component form of AE-qualifier (an integer) to the sequence of object identifier components that comprise the object identifier of the associated AP-title. This extended sequence of object identifier components forms the object identifier component list of an object identifier for the AE-title.

A.3 A directory name form of AE-title may be constructed by appending the relative distinguished name form of AE-qualifier to the directory name of the associated AP-title.

A.4 For both forms, an AE-title can be decomposed in to its AP-title and AE-qualifier. The final component of an AE-title is equal to the AE-qualifier; the remaining components of the AE-title form the AP-title.