INTERNATIONAL TELECOMMUNICATION UNION

ITU-T Q.708

TELECOMMUNICATION
STANDARDIZATION SECTOR
OF ITU

(03/99)

SERIES Q: SWITCHING AND SIGNALLING

Specifications of Signalling System No. 7 – Message transfer part (MTP)

Assignment procedures for international signalling point codes

ITU-T Recommendation Q.708

(Previously CCITT Recommendation)

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ITU-T RECOMMENDATION Q.708

ASSIGNMENT PROCEDURES FOR INTERNATIONAL SIGNALLING POINT CODES

Summary

This Recommendation describes the format of the code used to identify international signalling points in the international Signalling System No. 7 network which is identified by the Network Indicator NI=00. This Recommendation, additionally, includes principles and procedures for the assignment of Signalling Area/Network Codes and International Signalling Point Codes.

Source

ITU-T Recommendation Q.708 was revised by ITU-T Study Group 11 (1997-2000) and was approved under the WTSC Resolution No. 1 procedure on the 15th of March 1999.

FOREWORD

ITU (International Telecommunication Union) is the United Nations Specialized Agency in the field of telecommunications. The ITU Telecommunication Standardization Sector (ITU-T) is a permanent organ of the ITU. The ITU-T is responsible for studying technical, operating and tariff questions and issuing Recommendations on them with a view to standardizing telecommunications on a worldwide basis.

The World Telecommunication Standardization Conference (WTSC), which meets every four years, establishes the topics for study by the ITU-T Study Groups which, in their turn, produce Recommendations on these topics.

The approval of Recommendations by the Members of the ITU-T is covered by the procedure laid down in WTSC Resolution No. 1.

In some areas of information technology which fall within ITU-T's purview, the necessary standards are prepared on a collaborative basis with ISO and IEC.

NOTE

In this Recommendation the term *recognized operating agency (ROA)* includes any individual, company, corporation or governmental organization that operates a public correspondence service. The terms *Administration, ROA* and *public correspondence* are defined in the *Constitution of the ITU (Geneva, 1992)*.

INTELLECTUAL PROPERTY RIGHTS

The ITU draws attention to the possibility that the practice or implementation of this Recommendation may involve the use of a claimed Intellectual Property Right. The ITU takes no position concerning the evidence, validity or applicability of claimed Intellectual Property Rights, whether asserted by ITU members or others outside of the Recommendation development process.

As of the date of approval of this Recommendation, the ITU had not received notice of intellectual property, protected by patents, which may be required to implement this Recommendation. However, implementors are cautioned that this may not represent the latest information and are therefore strongly urged to consult the TSB patent database.

CONTENTS

Introduction

The worldwide signalling network has two functionally independent levels: the international level and the national level. This provides for a clear division of responsibility for signalling network management and allows identification plans of signalling points in the international network and the different national networks to be independent of one another. Within the international Signalling System No. 7 network a signalling point is identified by an International Signalling Point Code (ISPC). The use of an ISPC within a signalling message and the technical aspects of the signalling network are described in Recommendations of the Q.7xx series.

Recommendation Q.708

ASSIGNMENT PROCEDURES FOR INTERNATIONAL SIGNALLING POINT CODES

(revised in 1999)

1 Scope

This Recommendation describes the format of an ISPC in the international Signalling System No. 7 network identified by the Network Indicator NI=00. Additionally, it provides principles and procedures for the assignment of both Signalling Area/Network Code (SANCs) and ISPCs.

2 References

The following ITU-T Recommendations and other references contain provisions which, through reference in this text, constitute provisions of this Recommendation. At the time of publication, the editions indicated were valid. All Recommendations and other references are subject to revision; all users of this Recommendation are therefore encouraged to investigate the possibility of applying the most recent edition of the Recommendations and other references listed below. A list of the currently valid ITU-T Recommendations is regularly published.

[1] ITU-T Recommendation Q.700 (1993), *Introduction to CCITT Signalling System No. 7*.

3 Definitions

This Recommendation defines the following terms:

3.1 signalling point: A node in a signalling network that originates and receives signalling messages, or transfers signalling messages from one signalling link to another, or both.

3.2 signalling relation: An association between two signalling points that allows interexchange of Signalling System No. 7 messages.

3.3 signalling point code: A code used to identify a signalling point and processed within the Message Transfer Part (MTP) of each signalling point and within users of the MTP.

3.4 international signalling point code (ISPC): A signalling point code with a unique 14-bit format used at the international level for signalling message routing and identification of signalling points involved. The ISPC is used in signalling messages containing the Network Indicator NI=00.

4 Abbreviations

This Recommendation uses the following abbreviations:

GMSC Gateway Mobile Switching Centre

ISC International Switching Centre

ISPC International Signalling Point Code

ITU International Telecommunication Union

ITU-T International Telecommunication Union – Telecommunication Standardization Sector

LR Location Register

MTP Message Transfer Part

NI Network Indicator
NMC Network Management Centre
OMC Operation and Maintenance Centre
SANC Signalling Area/Network Code
SCCP Signalling Connection Control Part
SCP Service Control Point
SEP Signalling End Point
SP Signalling Point
SSP Service Switching Point
STP Signalling Transfer Point
TSB Telecommunication Standardization Bureau

5 Format of the ISPC

5.1 The format of the 14-bit binary code used for the identification of international signalling points is illustrated in Figure 1. The binary code is represented by three (3) decimal numbers: the first indicating the three (3) most significant bits (NML), with a range of 0 to 7; the second indicating the following eight (8) bits (K-D), with a range of 000 to 255; and the third consisting of the three (3) least significant bits (CBA), with a range of 0 to 7. The combination of the fields containing bits NML and bits K-D is regarded as the SANC. The three (3) bits (CBA) identify a specific signalling point which when combined with the SANC forms the 14-bit ISPC (e.g. 2-068-1).

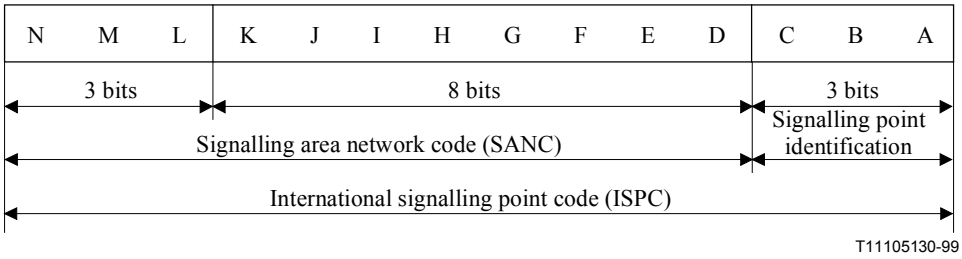

Figure 1/Q.708 – Format of the International Signalling Point Code (ISPC)

5.2 The fields within the format of the ISPC have only an administrative use and are not to be used individually in any way by the protocol or signalling functions.

6 General principles

6.1 The SANC/ISPC resource should be managed in such a manner as to ensure adequate capacity to meet the demand for the resource. The need for conservation of the resource is not a reason in itself to deny an application for the assignment of the resource.

6.2 SANC/ISPC resources should be efficiently utilized and managed (e.g. only a single ISPC is to be assigned to a signalling point).

6.3 SANC/ISPC resources are to be assigned with fairness and equity.

6.4 Assignment confers use of the SANC and ISPC resource but does not imply ownership by the Member State and signalling point operator, respectively.

6.5 Signalling point codes for the national level and the international level are assigned separately. The assignment of a point code in a national network does not automatically entitle the code holder to an ISPC.

7 Assignment procedures

7.1 SANCs shall be assigned by the Director of the TSB to a Member State[1, 2], Country (or geographical area).

7.2 A single SANC is to be initially assigned to a new Member State. The SANC is combined with eight signalling point identifications to create eight ISPCs.

7.3 An ISPC(s) is to be assigned, as required, to signalling point operators by each Member State's designated Administrator[3] in accordance with the rules and procedures of the Member State and this Recommendation. ISPC assignments will be on an individual ISPC basis and not on a SANC basis. The Administrator will notify the Director of the TSB of the assignment.

7.4 The SANC ranges beginning with 0 and 1 (identified by bits NML in Figure 1) are reserved for future use.

7.5 Assignment of a SANC(s) to a Member State will be made from spare SANCs within the same range from which SANCs have been currently assigned to that Member State. If there are no available spares within this range, the TSB will assign a SANC(s) from available spare(s) in another range.

7.6 A signalling point[4] is assigned only one ISPC.

7.7 An ISPC(s) may be assigned by the Administrator for test purposes. However, this assignment should not be considered a permanent one and may be subject to reassignment as necessary.

7.8 An ISPC derived from a SANC assigned to a Member State is expected to be used within the territory of that Member State.

7.9 In exceptional cases, an ISPC derived from a SANC assigned to one Member State may be used in another Member State with the agreement of the Administrations of both Member States (see 9.7).

7.10 ISPCs are not transferable between signalling point operators. ISPCs may not be sold, licensed or traded by the signalling point operators. ISPCs may not be transferred, except in the case of a merger, acquisition, divestiture, or joint venture. The Administrator(s) shall be notified of any such transfer by the signalling point operators.

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1 The terms "Member State", "Country" (or geographical area), and/or "Administration" shall be considered to have the same meaning for purposes of this Recommendation.

2 For purposes of this Recommendation, Intergovernmental Organizations Operating Satellite Systems may be assigned SANCs.

3 The term "Administrator" is to be used hereafter to indicate a Member State's/Administration's designated Administrator for the purpose of requesting SANCs or assigning ISPCs.

4 A signalling point being a part of more than one signalling network, e.g. when serving as an international gateway, should be assigned a signalling point in each signalling network.

8 Criteria for the assignment of a SANC

8.1 A request for a SANC(s) is to be made by the Administration in writing to the Director of the TSB.

8.2 In order to request an additional SANC(s) an Administration must provide the Director of the TSB notification (see 11.2) of the current assignment of ISPCs by that Administration.

8.3 Assignment of an additional SANC(s) requires assignment of 75 percent of the ISPCs in all SANCs previously assigned to the Administration concerned[5].

9 Criteria for the assignment of an ISPC

The criteria listed below are provided as a guideline to assist Administrations in assigning and administering assignments for an ISPC.

9.1 The signalling point operator[6] is to apply in writing to the Administrator.

9.2 The signalling point operator is to certify conformance to the laws and regulations of the Member State in which the ISPC will be used.

9.3 The signalling point operator has put into service or is about to put into service a signalling point having at least one MTP signalling relation in the international signalling network.

9.4 The signalling point operator is to comply with relevant ITU-T Recommendations (e.g. Q.7xx).

9.5 The signalling point operator is to provide the Administrator with the information required in 11.2 as a minimum. The Administrator may require additional information, such as:

- Contact person;
- Nature of use in the network (more than one function may apply):
  - STP,
  - SEP (SP without STP function),
  - SCCP relay,
  - ISC,
  - GMSC,
  - LR,
  - OMC,
  - SCP,
  - SSP,
  - Other;
- Signalling point manufacturer/type;
- Physical address of the signalling point;
- In-service date of the signalling point (month/year);
- Identification of at least one planned MTP signalling relation:
  - name and address of distant signalling point,

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5 This may be on a per country or dependent territory basis.

6 The term "signalling point operator" is used even if an applicant has not yet any signalling point in operation.

- location of distant signalling point,
- ISPC of distant signalling point, if known.

9.6 The signalling point operator is to confirm that the requested ISPC shall be placed in service within the period defined by the Administration (e.g. 12 months starting from the date of the assignment)**.**

9.7 The signalling point operator applying for an ISPC assignment under the provisions of 7.9 will request permission in writing (attaching the proposed form in Annex B) from the Administration of the Member State where the ISPC will be put into service. The signalling point operator will apply to its Administration (attaching the completed proposed form in Annex B obtained above) for an ISPC assignment.

10 Responsibilities of the Director of the TSB

10.1 The Director of the TSB shall assign an initial SANC or additional SANC(s) in accordance with the Assignment procedures (clause 7) and Criteria (clause 8) in response to a request from an Administration.

10.2 Assignments shall be made, normally, within one calendar month from receipt of the request; if not, the requesting Administration is to be notified as to why the assignment has not been made [e.g. that the request does not meet the Assignment procedures (clause 7) and/or Criteria (clause 8), indicating the relevant clause or other reasons].

10.3 The Director of the TSB will notify the Chairman of the Study Group responsible for this Recommendation if the content of this Recommendation does not provide the TSB with sufficient direction to fulfill an application for a SANC(s) from an Administration.

10.4 The TSB will publish in the Operational Bulletin the notification of assigned ISPCs as received from Administrations on the form in Annex A. Complete lists of the ISPC and SANC assignments will be published (at least annually) as annexes to the Operational Bulletin. In addition, the lists will be made available electronically for remote access (update every three months). The annexes will contain three lists as follows:

1) a list of SANCs in numerical order and the country to which each SANC has been assigned;
2) a list of the countries in alphabetical order and of the SANCs in numerical order assigned to each country;
3) a list of the countries in alphabetical order where each country name is followed by a list of ISPCs in numerical order reported by the country. The entry for each ISPC contains the name of the signalling point operator, the unique name of the signalling point, and the country where the signalling point has been, or is to be put into service if it is not used in the country to which the SANC was assigned.

11 Responsibilities of the Administration

The following items of responsibility are being provided as a guideline to assist Administrations in developing their own procedures:

11.1 Assign or withdraw an ISPC(s). Notify the Director of the TSB of the assignment/withdrawal within 90 days, using the form in Annex A. The Administration is encouraged to respond to a request for an ISPC within 90 days from receipt of the request.

11.2 Provide the following information to the Director of the TSB on signalling point assignments or withdrawals:

– ISPC assigned or withdrawn;

– unique name of signalling point that may include location (city/town);

– name of (former) signalling point operator;

– Member State where signalling point will be put into service (if assigned under 7.9).

11.3 When an assignment of an ISPC is made under the provisions of 7.9, the Administration of the territory within which the ISPC is to be used will note on the proposed Annex B form its concurrence with the agreement. The proposed Annex B form shall accompany the Annex A form when the Administration assigning the point code informs the TSB of the assignment.

11.4 An ISPC assignment should be withdrawn if the signalling point operator to whom the ISPC was assigned has not placed the ISPC into service within the period as established in accordance with 9.6. However, there may be extenuating circumstances (e.g. the vendor missed installation date, the distant end was not ready, etc.) in which case the Administrator should be contacted to establish a new in-service date or other resolution.

11.5 Notify the Director of the TSB, preferably within 90 days, of any change in the published information provided in accordance with 11.2.

11.6 Administrations should publish their rules for use of, application for, and assignment of, ISPCs. Such rules should also include a rationale for withdrawal of ISPCs for other than a missed timeframe, e.g.:

– ISPC is being used in a different way from that for which it was assigned.

– Resource is being used by a signalling point operator other than the one to whom the ISPC was assigned (i.e. a transfer was made without the Administrator's knowledge).

– Assigned ISPC is no longer in use or required by the signalling point operator.

11.7 ISPCs which have been withdrawn should have an adequate ageing period before becoming available for reassignment. (It is recommended that the ageing period be between 6 and 18 months.)

12 Signalling point operator responsibilities

Some responsibilities are listed below. These are provided as a guide to assist Administrations in developing their own requirements and procedures. Additional responsibilities may be derived from the criteria in clause 9.

12.1 The signalling point operator should inform its Administrator of any change of information that was requested by that Administrator under the terms of 9.5.

12.2 Additionally, if not specifically required under the terms of 9.5, the signalling point operator should inform its Administrator about any changes such as its name, its registered office, the name of its contact person or the location where the signalling point is in operation, etc.

12.3 If the procedure in 7.9 is to be invoked, then the signalling point operator will be responsible for contacting both Administrations and for obtaining their agreement.

13 Expansion of the ISPC resource

Given the rapid increase in the size and use of the current Signalling System No. 7 network, it is difficult to forecast the potential demand for ISPCs. An expansion plan is presented as the basis for ongoing work with regard to increasing the availability of the ISPC resource. In order to meet future requirements, a phased plan is proposed to remove the constraints on the use of specific ranges and to change the management of the resource.

The plan proposes and encourages continued close cooperation and collaboration between the TSB and the entities responsible for assigning and for monitoring the assignment of the ISPC resource.

13.1 Figure C.1 provides an outline of the procedure for the TSB to monitor the assignment of the current SANC resource and to trigger actions to ensure that there is sufficient resource to meet future needs.

13.2 The TSB will monitor the assignment of the available SANC resource and inform the Study Group responsible for this Recommendation with regard to the assignment situation as appropriate.

13.3 When 70% of the available SANC resource from ranges 2-7 (identified by bits NML) has been assigned, the Study Group responsible for this Recommendation will commence studies on alternative solutions to provide additional SANC/ISPC resource. Once the Study Group has commenced its studies, the TSB will report at each Study Group meeting on the SANC assignment situation.

13.4 When 95% of the available SANC resource from ranges 2-7 (identified by bits NML) has been assigned, the TSB will notify the Study Group. If the Study Group has not yet agreed on an alternative solution, the Study Group should make the SANC range 1 available to the TSB for assignment.

13.5 When 90% of the available SANC resource from ranges 1-7 (identified by bits NML) has been assigned, the TSB will notify the Study Group. If the Study Group has not yet agreed on an alternative solution, then the Study Group should make the SANC range 0 available to the TSB for assignment. Caution is recommended with regard to the use of zero in all fields of an ISPC.

13.6 Similarly, when 80% of the total available SANC resource from ranges 0-7 (identified by bits NML) has been assigned, and if the study of alternative solutions has not yet provided an agreed-upon solution, then it is proposed that the TSB in consultation with the Study Group responsible for this Recommendation should consider the establishment of a centralized resource pool of all the ISPCs not assigned at that time. This means that ISPCs not yet assigned from SANCs already assigned to Member States will be returned to the TSB for centralized management. The TSB will then assume responsibility for the assignment and management of ISPCs.

13.7 It is desirable that before 90% of the total ISPC resource pool has been assigned, the new procedure for the provision of ISPCs be made available for implementation.

ANNEX A

Notification of Assignment or Withdrawal of International Signalling Point Codes (ISPC) for Signalling System No. 7

To be returned to ITU/TSB Fax No.: +41 22 730 5853

This form should be used to notify the Director of the TSB of ISPCs that have been assigned or withdrawn by a Member State since the last notification.

Country/Area: _____

Member State Contact-person **Name**: _____

Address: _____

_____

_____

Tel: _____ **Fax**: _____ **E-mail**: _____

Table A.1/Q.708

ISPC	Unique name of the Signalling Point	Name of the Signalling Point Operator	Country where Signalling Point is to be put into service under subclause 7.9[a)]

[a)] An entry is only made in this column if subclause 7.9 applies.

ANNEX B

Proposed form to be used in accordance with provisions of subclause 9.7

(Date)

To: (Signalling point operator making application for ISPC)

From: (Member State/Administration/Administrator where an ISPC is to be put into service)

(Applicable Administration title) hereby agrees to allow (name of signalling point operator) to put an International Signalling Point Code (ISPC) into service when assigned by (Member State/Administration/Administrator of the signalling point operator), in accordance with the provisions of ITU-T Recommendation Q.708 (subclause 7.9), in the country/territory of (Member State/Administration where the ISPC is to be put into service).

(Signature) (Date signed)

(Authorized Signature for Member State/Administration/Administrator)

ANNEX C

Assignment evolution

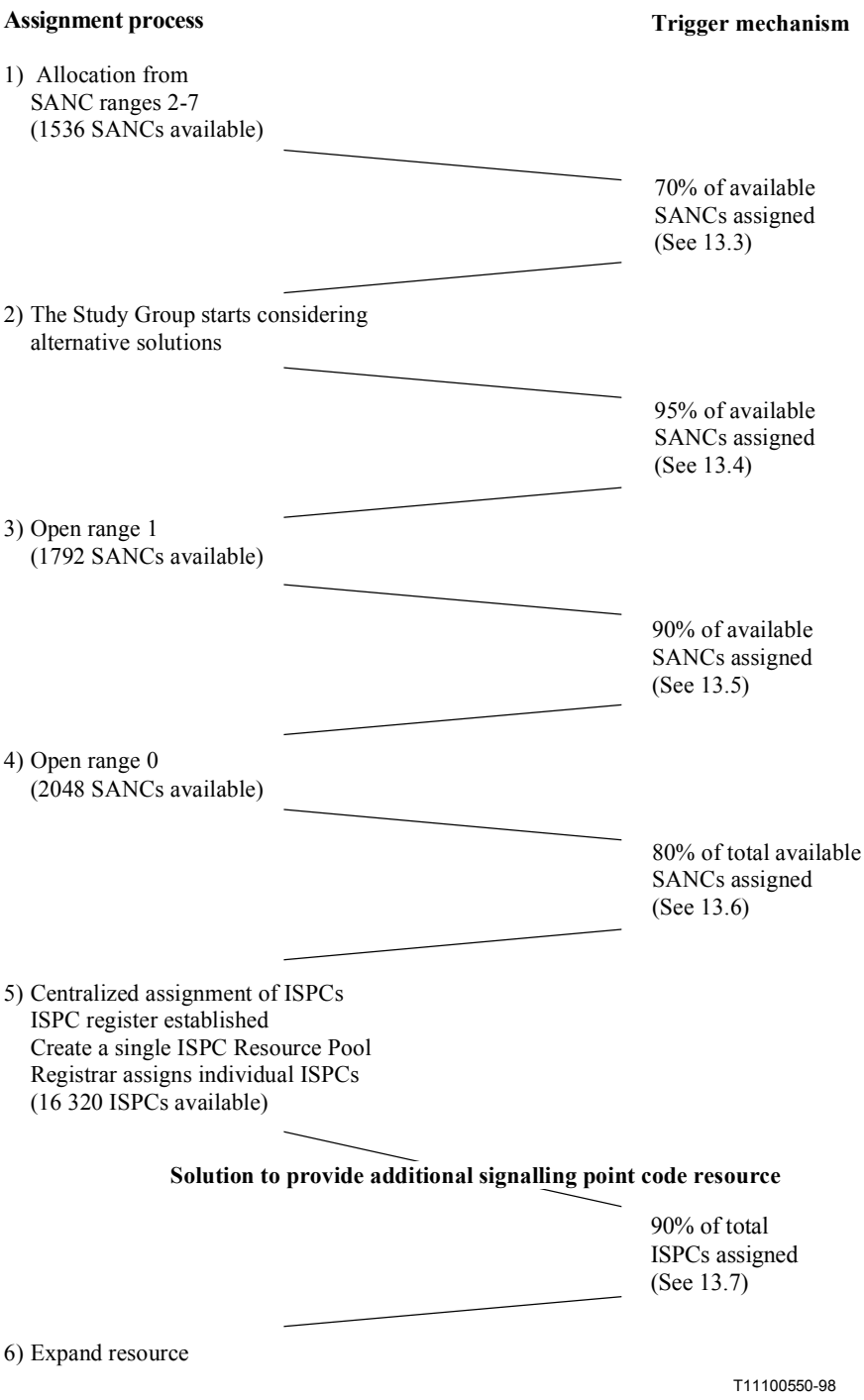

Figure C.1/Q.708 – Assignment evolution

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Series A	Organization of the work of the ITU-T
Series B	Means of expression: definitions, symbols, classification
Series C	General telecommunication statistics
Series D	General tariff principles
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Series F	Non-telephone telecommunication services
Series G	Transmission systems and media, digital systems and networks
Series H	Audiovisual and multimedia systems
Series I	Integrated services digital network
Series J	Transmission of television, sound programme and other multimedia signals
Series K	Protection against interference
Series L	Construction, installation and protection of cables and other elements of outside plant
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Series Y	Global information infrastructure and Internet protocol aspects
Series Z	Languages and general software aspects for telecommunication systems