



INTERNATIONAL TELECOMMUNICATION UNION

CCITT

I.255.1

THE INTERNATIONAL
TELEGRAPH AND TELEPHONE
CONSULTATIVE COMMITTEE

(08/92)

**INTEGRATED SERVICES DIGITAL
NETWORK (ISDN)**

**GENERAL STRUCTURE AND SERVICE
CAPABILITIES**

CLOSED USER GROUP

Recommendation I.255.1



Geneva, 1992



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FOREWORD

The CCITT (the International Telegraph and Telephone Consultative Committee) is a permanent organ of the International Telecommunication Union (ITU). CCITT 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 Plenary Assembly of CCITT which meets every four years, establishes the topics for study and approves Recommendations prepared by its Study Groups. The approval of Recommendations by the members of CCITT between Plenary Assemblies is covered by the procedure laid down in CCITT Resolution No. 2 (Melbourne, 1988).

Recommendation I.255.1 was revised by Study Group I and was approved under the Resolution No. 2 procedure on the 4th of August 1992.

CCITT NOTES

- 1) In this Recommendation, the expression "Administration" is used for conciseness to indicate both a telecommunication administration and a recognized private operating agency.
- 2) A list of abbreviations used in this Recommendation can be found in Annex A.

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Recommendation I.255.1**CLOSED USER GROUP***(revised 1992)***1 Definition**

The Closed User Group supplementary service enables users to form groups, to and from which access is restricted. A specific user may be a member of one or more Closed User Groups. Members of a specific Closed User Group can communicate among themselves but not, in general, with users outside the group. Specific Closed User Group members can have additional capabilities that allow them to originate calls outside the group, and/or to receive calls from outside the group. Specific Closed User Group members can have additional restrictions that prevent them from originating calls to other members of the Closed User Group, or from receiving calls from other members of the Closed User Group.

Note – When defining the ISDN networking service, its relationship with Closed User Group needs to be studied.

2 Description**2.1 General description**

A Closed User Group (CUG) is a group of users who may be members of one or several public networks; each ISDN member of a CUG is identified by an ISDN number.

A CUG may be defined independently of any basic service, or in relation with one, or a number of basic services.

Note – In the case of integrated services private branch exchange (ISPBXs) some Administrations will accept ISPBX extensions as CUG members. Other Administrations will consider the whole ISPBX as a CUG member. In the former case, it is possible for an ISPBX to establish relations between subsets of its users and public CUGs, but this is not perceived at the user-network interface.

2.1.1 Access arrangements

A user may be a member of several CUGs. Each service provider may define the maximum number of CUGs which can be allocated to an individual subscriber. When subscribed to at least one CUG, a user may subscribe to one of the following access arrangements:

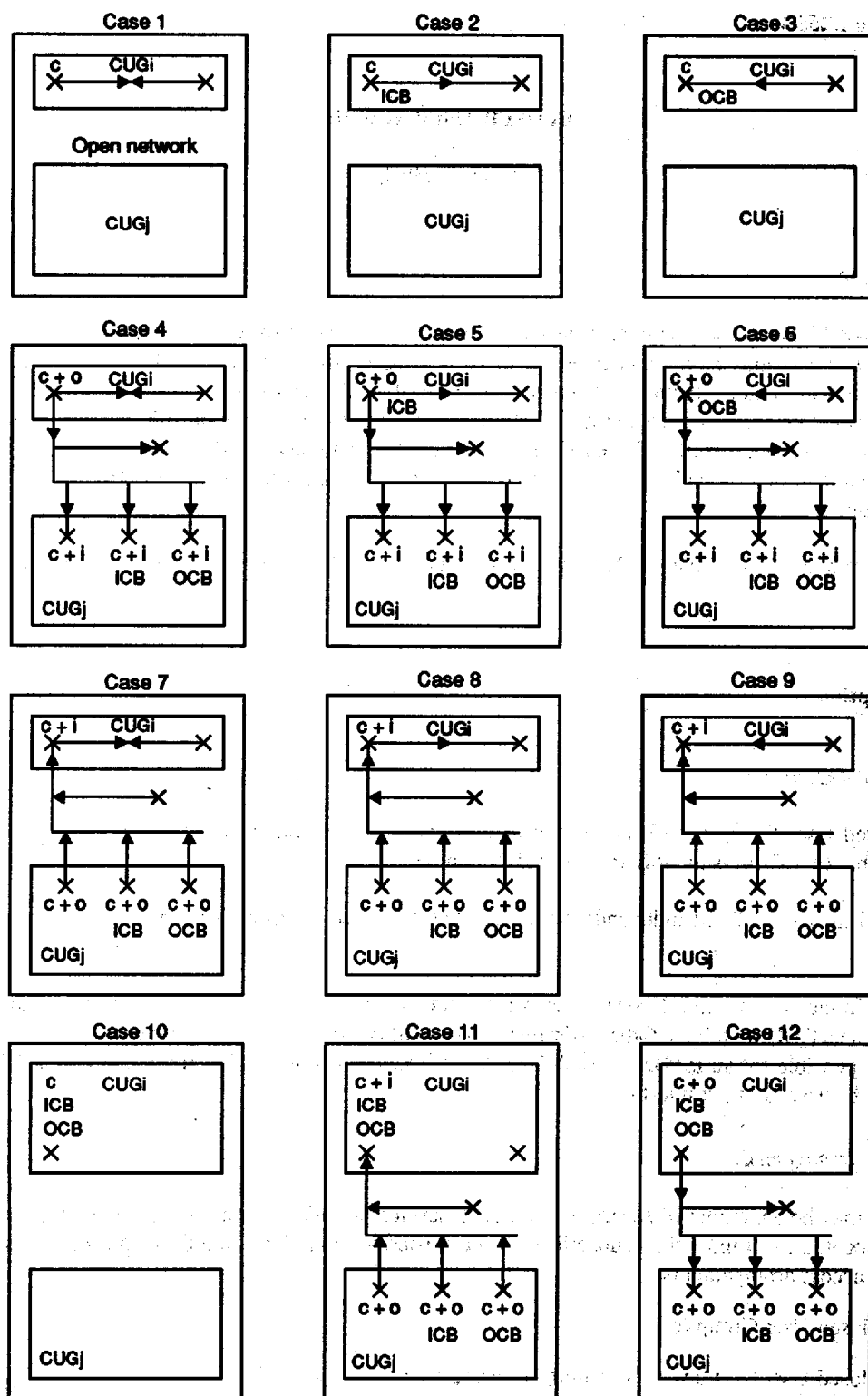
- Closed User Group (c);
- Closed User Group with incoming access (c + i);
- Closed User Group with outgoing access (c + o);
- Closed User Group with incoming and outgoing access (c + i + o).

A user may subscribe to one of two additional access restrictions within each particular CUG:

- incoming calls barred within a CUG (ICB);
- outgoing calls barred within a CUG (OCB).

Note – This information is held by the provider of this service.

All of these cases are illustrated in Figure 1/I.255.



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c CUG
c+o CUG with outgoing access
c+i CUG with incoming access
ICB Incoming calls barred within CUG
OCB Outgoing calls barred within CUG

FIGURE 1/255.1

Access arrangements in CUG

2.1.1.1 CUG only capabilities

The user may make calls to, and receive calls from members of those CUGs of which the user is a member (see case 1 in Figure 1/I.255.1).

An exception to this is when either incoming calls barred within the CUG or outgoing calls barred within the CUG applies.

- a) *Incoming calls barred within the CUG:* This access restriction means that a CUG user is prohibited from receiving calls from users subscribed to the same CUG. This access restriction is given per CUG-user and CUG (see case 2 in Figure 1/I.255.1).
- b) *Outgoing calls barred within the CUG:* This access restriction means that a CUG-user is prohibited from making calls to users subscribed to the same CUG. This access restriction is given per CUG user and CUG (see case 3 in Figure 1/I.255.1).

The network shall provide a preferential CUG option whereby one of the user's CUGs (or the only one if a single CUG applies) is used as a preferential CUG. If the user sets up a call with no CUG facility request, the network assumes that the preferential CUG is requested (i.e., preferential CUG is the default).

2.1.1.2 CUG with outgoing access

The user may make and receive calls in the same way, with the same exception as in § 2.1.1.1. In addition, this user can make calls to all other non-CUG users, and to those other CUG users who allow incoming access. Incoming calls are only allowed from members of the user's CUG(s) (see cases 4, 5, and 6 in Figure 1/I.255.1).

2.1.1.3 CUG with incoming access

The user may make and receive calls in the same way with the same exceptions as in § 2.1.1.1. In addition, this user may receive calls from any non-CUG user and also from other CUG users who have outgoing access. Outgoing calls are only allowed to members of the user's CUG(s) (see cases 7, 8, and 9 in Figure 1/I.255.1).

2.1.1.4 CUG with incoming and outgoing access

The outgoing access and incoming access can be offered simultaneously to the user by the service provider.

2.1.2 Interaction between the options "Preferential CUG" and "Outgoing Access"

Both options imply that no subscriber procedures are needed to invoke either of them when placing a call. When a user subscribes to both options, the service provider does not know which option the user is invoking, if no additional subscriber procedures are used when placing the call.

Three ways of operating are recommended:

- 1) the user has to indicate if a call is intended to be an outgoing access call. If no information (CUG request or outgoing call request) is given, the preferential CUG is assumed;
- 2) the combination of the options is not allowed, i.e. a user cannot have both options allocated at the same time;
- 3) the caller may make a call and the network will route the call with the preferential CUG and an outgoing access request. The call will therefore be connected if the called number is a member of the preferential CUG or is a member of a different CUG and has incoming access, or is a non-CUG user.

The choice of operation is a national option.

2.2 Specific terminology

None.