recoup

I.255.2Private Numbering Plan

This service being identified needs to be further studied and the description is not yet included.

6.14Multiple subscriber number

For further study.

6.15Call hold service

No impact, i.e. neither supplementary service affects the operation of the other supplementary service.

6.16Advice of charge

No impact, i.e. neither supplementary service affects the operation of the other supplementary service.

7.Dynamic description

The dynamic description of this service is shown in Figure 1/I.255.1.

Recoup

Recoup

Recoup

Recoup

Recoup

No impact, i.e. neither supplementary service affects the operation of the other supplementary service.

6.6 Calling line identification restriction

It is an option to allow invocation of CLIR in connection with a CUG call.

6.7 Closed user group

Not applicable.

6.8 Conference calling

All conferees must belong to the same CUG. When adding a new conferee, the CUG-restrictions must be checked before the new conferee is allowed to enter the conference.

6.9 Direct dialling-in

No impact, i.e. neither supplementary service affects the operation of the other supplementary service.

6.10 Diversion services

6.10.1 Call forwarding busy

See call forwarding busy interaction with CUG in I.252.2.

6.10.2 Call forwarding no reply

See call forwarding no reply interaction with CUG in I.252.3.

6.10.3 Call forwarding unconditional

See call forwarding unconditional interaction with CUG in I.252.4.

6.11 Line hunting

When a free line of a hunting group has been found, any CUG condition must be met before the connection will be established.

6.12 Three party service

See three party service interaction with Closed User Group in I.254.2.

6.13 User-to-user signalling

No impact, i.e. neither supplementary service affects the operation of the other supplementary service.

This Recommendation does not cover charging principles. Future Recommendations in the D-Series are expected to contain that information. It shall be possible to charge the subscriber accurately for the service.

5. Interworking requirements

A CUG may span over several networks. In this case the responsibility for the management of this CUG is in one of these networks; in addition there is a need for a CUG identification mechanism that would be accepted by all of the encompassed networks. One such mechanism presently exists for CUGs spanning over data networks having X.121 as the numbering plan (see Recommendation X.180 Administrative Arrangements for International Closed User Groups). An equivalent mechanism should be defined for CUGs on networks using the E.164 numbering plan, or on networks which do not use the same numbering plan.

6. Interaction with other supplementary services

The intention of CUG is to allow some connections and prohibit others. No supplementary service interaction should be allowed which could compromise this intention.

6.1 Call waiting

No impact, i.e. neither supplementary service affects the operation of the other supplementary service.

6.2 Call transfer

The CUG-restrictions must be met:

between the calling/called party and the transferring party,

between the transferring party and the transferred-to-party,

between the calling/called party and the transferred-to-party.

If all and only if all the above statements are fulfilled, the transfer of the call is allowed.

6.3 Connected line identification presentation

No impact, i.e. neither supplementary service affects the operation of the other supplementary service.

6.4 Connected line identification restriction

No impact, i.e. neither supplementary service affects the operation of the other supplementary service.

6.5 Calling line identification presentation

When requesting an outgoing access capability, the user makes a normal call.

If the user sets up a call without requesting the CUG service and the user has a preferential CUG, the network assumes that the preferential CUG is requested.

The choice of preferential CUG will only be alterable by service provider action.

3.2.2.2Incoming (terminating) calls

An incoming call from another CUG member will be indicated to the called CUG user with a CUG indication and the appropriate CUG index.

An incoming call from a non-CUG user, assuming that the called CUG user has incoming access allowed, will contain no CUG related information in the call offering message.

An incoming call from a CUG user using outgoing access, to a CUG user subscribed to a different CUG but with incoming access, will contain no CUG related information in the call offering message.

3.3Exceptional procedures

3.3.1Activation/deactivation/registration

None identified.

3.3.2Invocation and operation

Upon receipt of a request for CUG service the network shall check its validity in conjunction with the access capabilities contained in the user profile. If a non-valid request is received or the checks cannot be performed, then thenetwork shall reject the call and return an appropriate indication to the calling user.

If, due to an interworking situation, signalling in the network is not able to carry the information required to provide the service, the call attempt is terminated and an appropriate cause information is given to the calling user.

3.4Alternative procedures

3.4.1Activation/deactivation/registration

None identified.

3.4.2Invocation and operation

None identified.

4.Network capabilities for charging

3.Procedures

3.1Provision/withdrawal

The CUG service is provided on a subscription basis. As a network provider option, CUGs can be offered with several subscription options. The subscriber options may apply separately to each ISDN number and basic service, or apply to a particular ISDN number for a set of basic services.

Subscription optionValue

Closed User Groups-List of one or more CUGs

Preferential CUG-none designated

Note - User must always specify a preferential CUG when the type of inter- CUG access option is set to none

-CUG value

Type of inter-CUG access-None
(in/out of CUG)-Outgoing access
-Incoming access
-Outgoing and incoming access

Intra-CUG restrictions-None
-Incoming (terminating) calls barred
-Outgoing (originating) calls barred

3.2Normal procedures

3.2.1Activation/deactivation/registration

Not required.

3.2.2Invocation and operation

Normal call setup procedures will apply to all CUG calls. In addition, the network shall carry out internal checks to determine whether or not the particular call is allowed between the two parties concerned.

3.2.2.1Outgoing (originating) calls

At the time of call setup the user specifies a CUG index to indicate that service to a particular CUG is requested. This is achieved by the user, including a request for a CUG service and the relevant CUG index in setting up his call. The CUG indices are allocated by prior arrangements with the service provider. Withdrawal of the CUG service, or indices will be an action of the service provider at the request of the user or due to service provider reason.

ii) CUG with outgoing access

The user may make and receive calls in the same way with the same exception as in i). 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 Appendix 1.)

iii) CUG with incoming access

They make and receive calls in the same way with the exceptions as in i). 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 Appendix 1.)

iv) 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 the options 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 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.

2.3 Qualifications on the applicability to telecommunications services

None identified.

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 (Note - This information is held by the provider of this service):

- 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).

All of these cases are illustrated in Appendix 1.

i) 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 Appendix 1).

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

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 Appendix 1);

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 Appendix 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).

Recommendation I.255 - Community Of Interest Supplementary Services

The purpose of this Recommendation is to provide the stage 1 description of the method defined in Recommendation I.130 using the means given in Recommendation I.210.

Supplementary services are described by a prose definition and description (step 1.1) and by a dynamic description (step 1.3). The application of the attribute technique, as defined in Recommendation I.140, for supplementary services is for further study.

This Recommendation describes the following community of interest supplementary services:

1.255.1Closed User Group (CUG)
1.255.2Private Numbering Plan (PNP) (Note 1)

Note 1 - This service being identified needs to be further studied and the description is not yet included.

I.255.1 Closed User Group

1.Definition

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

Note - With the definition of ISDN networking service, their relationship with CUG needs to be studied.

2.Description

2.1General description

A CUG is a list of users which may be a member(s) 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 list of basic services.

Note - In the case of 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.

2.1.1Access arrangements