INTERNATIONAL TELECOMMUNICATION UNION

CCITT

THE INTERNATIONAL
TELEGRAPH AND TELEPHONE
CONSULTATIVE COMMITTEE

I.252.3
(11/1988)

SERIES I: INTEGRATED SERVICES DIGITAL
NETWORK (ISDN)

Service capabilities – Supplementary services in ISDN

CALL FORWARDING NO REPLY

Reedition of CCITT Recommendation I.252.3 published in
the Blue Book, Fascicle III.7 (1988)

NOTES

1   CCITT Recommendation I.252.3 was published in Fascicle III.7 of the *Blue Book*. This file is an extract from the *Blue Book*. While the presentation and layout of the text might be slightly different from the *Blue Book* version, the contents of the file are identical to the *Blue Book* version and copyright conditions remain unchanged (see below).

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

Recommendation I.252.3

CALL FORWARDING NO REPLY

(Melbourne, 1988)

3.1 *Definition*

Call Forwarding No Reply (CFNR) permits a "served user" (see § 3.2.2) to have the network send to another number all incoming calls for the served user's ISDN number which meet no reply, or just those associated with a specific basic service which meet no reply. The served user's originating service is unaffected.

Note – In normal situations, the CFNR service is provided on a per access basis. (In these situations, there is a one-to-one relationship between ISDN number and access.) However, the network may recognize multiple numbers on a single interface; in addition, it may not understand a complete ISDN number (e.g. DDI). In these cases, the CFNR service is offered on the basis of the part of the ISDN number which the network can recognize.

3.2 *Definition*

3.2.1 *General description*

For a given ISDN number, this service (including options) may be subscribed to for each basic service to which the user(s) of the number subscribes, or collectively for all the basic services to which the user(s) subscribes. Since subscription is on an ISDN number basis, the same Call Forwarding subscriptions will apply to all terminals using this number.

Two conditions of CFNR are possible as follows:

1) the call is offered and no indication of a compatible terminal is received; or

2) the call is offered and an indication of a compatible terminal is received.

Only case 2) is considered here. Case 1) is for further study.

Note – In this service description, it is assumed that a single ISDN number is not shared across multiple interfaces. A single ISDN number may, however, be shared by multiple terminals on the same interface. Procedures permitting an ISDN number to be shared across multiple interfaces are for further study. For multiple access installations, it may be possible for the user to specify, on activation, if the service is applicable to a specific access or all accesses associated with that installation.

The served user can request a different forwarded-to number for each basic service subscription parameter value to which he has subscribed.

An indication that the CFNR service is activated on a number may, as an option, be given to the user who has forwarding activated, each time an outgoing call is made. This may take the form of a special indication in the proceed response.

3.2.2 *Specific terminology*

A *served user* is a user of particular ISDN number who is requesting that calls to his number be forwarded. This user may also be referred to as the forwarding user or the called user.

A forwarded-to user is a user to whom the call shall be forwarded.

3.2.3 *Qualifications on the applicability to telecommunication services*

No restrictions identified.

3.3 *Procedures*

3.3.1 *Provision/withdrawal*

CFNR shall be provided after pre-arrangement with the service provider.

The service can be offered with four subscription options. Options apply separately to each basic service subscribed to an each ISDN number. For each subscription option, only one value can be selected. Subscription options are summarized below:

| Subscription options	Value
Served user receives notification that call has been forwarded	– No – Yes, with call offering information (see § 3.3.2.2)
Calling user receives notification that his call has been forwarded	– No – Yes, with or without forwarded-to user number
No reply condition timer	– 5-60 seconds, in steps of 5 seconds
Served user received notification that CFNR is currently activated	– No – Yes

3.3.2 *Normal procedures*

3.3.2.1 *Activation/deactivation/registration*

Same as CFU (see § 4).

3.3.2.2 *Invocation and operation*

The following illustration clarifies the CFNR procedures. Assume that A calls B1, who forwards the call to B2, . . ., Bm, . . ., Bx. The final receiver of the call is C.
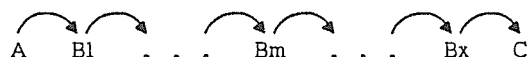
3.3.2.2.1 *Served user Bm's perspective*

When CFNR is active, incoming calls will be offered to the served user. Normal call offering information is provided to the served user. If the served user does not reply within a subscribed time interval, the call will be forwarded. The served user, as a subscription option, may receive notification that a call has been forwarded. This notification is given as soon as the forwarding attempt is started. No further notification is given.

3.3.2.2.2 *Forwarded-to user C's perspective*

The forwarded-to user C will receive an indication that the call has been forwarded.

As an option he may also receive:

1) originally called number B1;

2) cause for original forwarding;

3) last forwarding number Bx;

4) cause for last forwarding.

(Depending on the use or other supplementary services, the forwarded-to user C may also receive information such as the calling party A number and user-to-user signalling. See the descriptions of interactions with other supplementary services.)

3.3.2.2.3 *Calling user A's perspective*

As a subscription option, the served user Bm can request that the calling user receive a notification that the call has been forwarded and, as an additional subscription option, that notification can include the forwarded-to number B(m + 1). Transfer of the fowarded-to user number will not take place if number restrictions at the forwarded-to user exist.

3.3.3 *Exceptional procedures*

3.3.3.1 *Activation/deactivation/registration*

Same as CFU (see § 4).

3.3.3.2 *Invocation and operation*

Call forwarding applies only to subscribed basic services. Calls to an ISDN number requesting a basic service which is not subscribed to will never be forwarded.

Within an ISDN, or tandem ISDNs, the total number of all forwardings for each call should be limited. The maximum number of such connections should be limited to a value between 3 and 5 for each call. This is to prevent infinite looping.

If the limit is reached and an attempt is made to forward the call an additional time, the forwarded call shall be treated as follows:

If the forwarded call cannot be completed to the forwarded-to destination, then the network will clear the forwarded leg of the call and the calling user will, in the case of a telephony call, continue to receive inband ringing tone. The "no reply timer" will not be restarted by the network. (Note that during the activation of CFNR, the calling user shall continue to alert the forwarding user until alerting commences at the forwarded-to user.)

3.3.4 *Alternative procedures*

3.3.4.1 *Activation/deactivation/registration*

None identified.

3.3.4.2 *Invocation and operation*

None identified.

3.4 *Network capabilities for charging*

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.

3.5 *Interworking requirements*

If a forwarded-to number is not within the ISDN, then an interworking situation is said to exist.

If a forwarded call meets an interworking situation, then an interworking indication should be sent to the calling party. Also, if the network cannot determine that the forwarded call cannot be completed (i.e. the progress of the call is provided in-band), the network shall cease alerting at the diverting termination and connect the calling user to the diverted call in order to receive these inband supervisory indications.

Note – The number of times a call has been forwarded once it has exited the ςCommon Channel Signalling (CCS) network cannot be limited by this CCS network.

3.6 *Interaction with other supplementary services*

The ways in which Call Forwarding No Reply interacts with other supplementary services are in general identical to the ways in which Call Forwarding Unconditional interacts with other supplementary services. Thus, if the interactions are described to be "same as CFU", the CFU text should be taken verbatim, except that the expression "Call Forwarding Unconditional" should be replaced by "Call Forwarding Busy".

3.6.1 *Call Waiting*

Refer to Recommendation I.253, § 1.6.10, interaction with CFNR.

3.6.2 *Call Transfer*

Same as CFU (see § 4).

3.6.3 *Connected Line Identification Presentation*

Same as CFU (see § 4).

3.6.4 *Connected Line Identification Restriction*

Same as CFU (see § 4).

3.6.5 *Calling Line Identification Presentation*

Same as CFU (see § 4).

3.6.6   *Calling Line Identification Restriction*

Same as CFU (see § 4).

3.6.7   *Closed User Group*

Same as CFU (see § 4).

3.6.8   *Conference Calling*

Same as CFU (see § 4).

3.6.9   *Direct-Dialling-In*

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

3.6.10   *Call Diversion (i.e. Call Forwarding) services*

3.6.10.1   *Call Forwarding Busy*

The invocation of CFB takes precedence over CFNR.

3.6.10.2   *Call Forwarding No Reply*

Not applicable.

3.6.10.3   *Call Forwarding Unconditional*

The invocation of CFB takes precedence over CFNR.

3.6.11   *Line Hunting*

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

3.6.12   *Three-Party Service*

Refer to Recommendation I.254, § 2.6.10, interaction with CFNR.

3.6.13   *User-to-User Signalling*

Service 1: A CFNR subscriber who has CFNR activated should not respond by accepting or rejecting a User-to-User Service 1 request until the call is answered. If a call for which User-to-User Service 1 was requested undergoes CFNR, User-to-User Service 1 will not be extended to the forwarded-to user.

Service 2: An outgoing call which meets a called party with CFNR activated cannot use User-to-User Service 2. On CFNR, User-to-User Service 2 will not be extended to the forwarded-to user.

Service 3: A CFNR subscriber who has CFNR activated should not respond by accepting or rejecting a User-to-User Service 3 request until the call is answered. If a call which User-to-User Service 3 was requested undergoes CFNR, User-to-User Service 3 may be extended to the forwarded-to user if the forwarding party allows it.

3.6.14   *Multiple Subscriber Number*

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

3.6.15   *Call Hold*

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

3.6.16   *Advice of Charge*

Refer to Recommendation I.256, §§ 2.1.6.10, 2.2.6.10, 2.3.6.10, interaction with CFNR.

3.7   *Dynamic description*

Refer to the CFB dynamic description (which covers CFU, CFB, and CFNR) in § 2.

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