



INTERNATIONAL TELECOMMUNICATION UNION

**ITU-T**

TELECOMMUNICATION  
STANDARDIZATION SECTOR  
OF ITU

**Q.80**

**GENERAL RECOMMENDATIONS ON TELEPHONE  
SWITCHING AND SIGNALLING  
FUNCTIONS AND INFORMATION FLOWS  
FOR SERVICES IN THE ISDN**

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**INTRODUCTION TO STAGE 2 SERVICE  
DESCRIPTIONS FOR SUPPLEMENTARY  
SERVICES**

**ITU-T Recommendation Q.80**

(Extract from the *Blue Book*)

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## NOTES

1 ITU-T Recommendation Q.80 was published in Fascicle VI.1 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 Q.80

### INTRODUCTION TO STAGE 2 SERVICE DESCRIPTIONS FOR SUPPLEMENTARY SERVICES

#### 1 Introduction

The purpose of this Recommendation is to provide an introduction to the Stage 2 service descriptions for supplementary services, given in Recommendations Q.81-87.

#### 2 Cross-references

The work in Recommendations Q.81-87 is based on the Stage 1 service descriptions given in the I.251-257-Series Recommendations (see Annex A). They are coordinated with the Stage 2 service description for basic calls, given in Recommendation Q.71, and were developed according to the methodology given in Recommendation Q.65.

#### 3 Relationships among supplementary services

##### 3.1 *Call diversion services*

Recommendation I.252, §§ 2-5, defines a set of supplementary services called "Call Diversion Services". This set consists of the Call Forwarding supplementary services and the Call Deflection supplementary service. This section describes how these services relate to each other and describes the different network routing techniques which may be used to provide these services. It begins with the latter topic.

##### 3.1.1 *Network Routing Techniques*

Figure 1/Q.80 gives an overview of the Call Diversion services and illustrates the network routing techniques that may be used for these services.

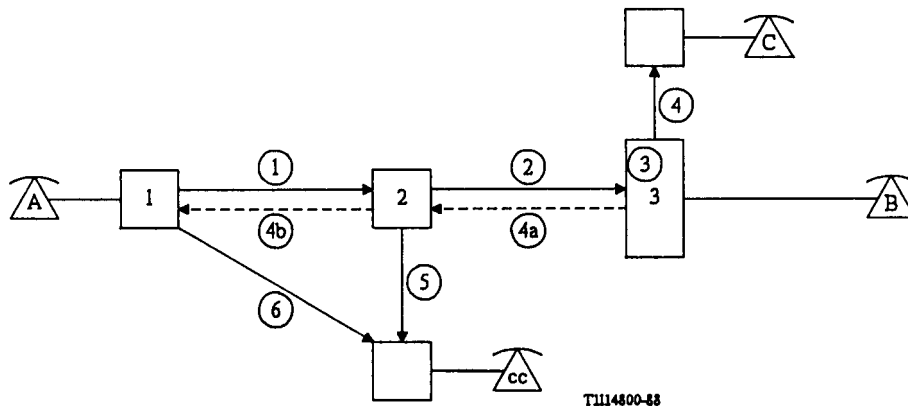
Referring to Figure 1/Q.80, a Call Diversion occurs if User A calls User B who has subscribed to one of the Call Diversion services, and the call processing for that service (described below) determines that the call should be sent to User C.

If User C is relatively close to User B, then it would be reasonable for User B's serving switch to simply switch the call to User C (i.e. act like a transit switch as if User A had called User C directly). This technique is called "forward switching".

If User C is not close to User B (e.g. User CC in Figure 1/Q.80), then it might be reasonable for User B's serving switch to ask that a previous switch in the call path (e.g. Switch 2) to re-route the call. This is called "(partial) rerouting". If User B's serving switch asks that User A's switch (i.e. Switch 1) re-route the call, this is called "(full) rerouting".

*Note 1* - The choice of network routing technique is the prerogative of each network provider and may be determined by factors other than geographical distance.

*Note 2* - The analogy to a transit switch is not totally correct. In general, User A will be charged for the connection to User B, and User B will be charged for the connection to User C.



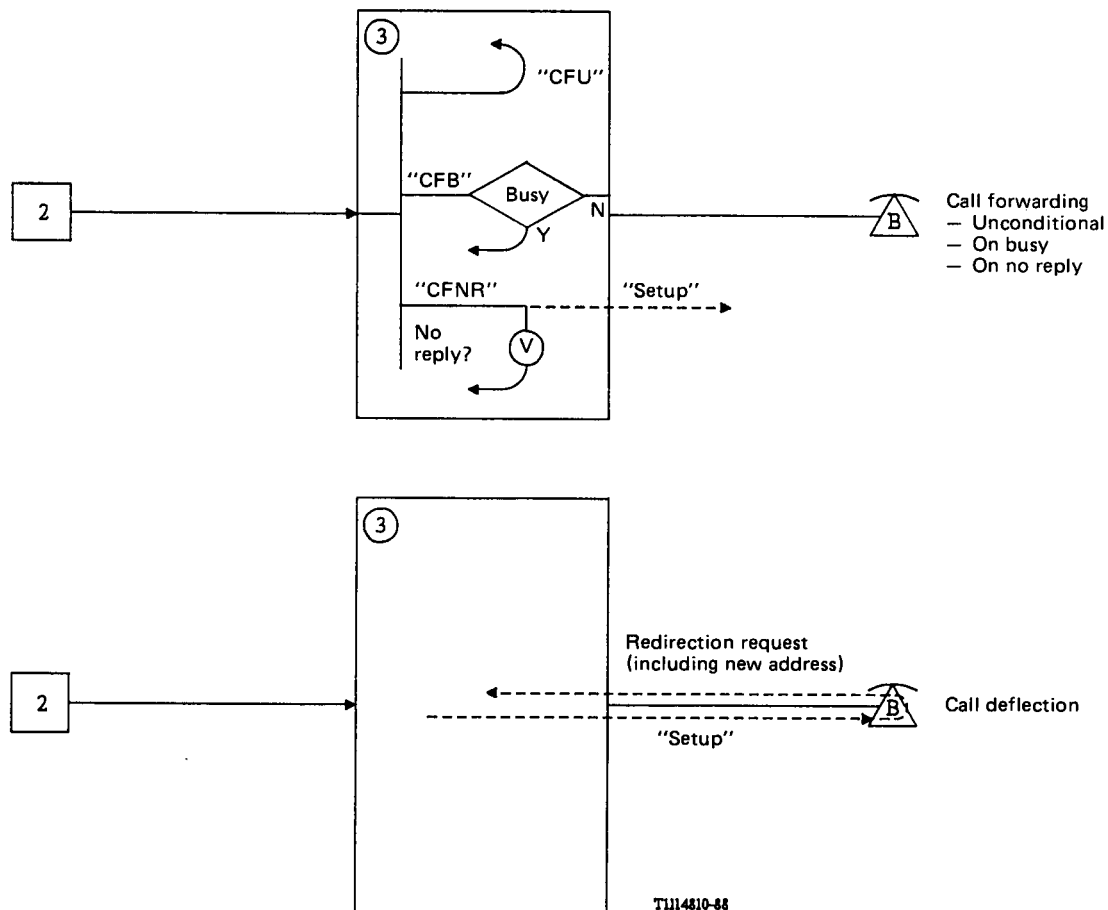
- 1, 2 Original call (A → B)
- 3 Call processing
- 4 Forward switching
- 4a, 5 (Partial) rerouting
- 4a, 4b, 6 (Full) rerouting

**FIGURE 1/Q.80**  
**Network routing techniques**

### 3.1.2 Call processing

In Call Forwarding, the decision to divert the call is made by the serving switch, either because it has been instructed (by a previous interaction with the served user) to forward all calls, or to forward any calls that meet busy, or those that meet No Reply. (See Figure 2/Q.80). (Details of the call processing for Call Forwarding are given in Recommendations Q.82, § 2, § 3 and § 4).

In Call Deflection, the decision to divert the call is made by the served user, upon receipt of an incoming call indication. (*Note* - Care should be taken not to confuse Call Deflection with a possible architecture for Call Forwarding which places the "forwarding detection" entity in the served user's equipment. In Call Deflection, the actual user is involved in deciding whether to divert the call). (Details of the call processing for Call Diversion are expected to be provided early in the next study period.)



**FIGURE 2/Q.80**  
**Call processing**

ANNEX A

(to Recommendation Q.80)

**Cross-reference list of Stage 1 and Stage 2**  
**Recommendations on supplementary services<sup>1)</sup>**

Stage 2

Based on Stage 1 given in:

Q.80	Introduction to Stage 2 service description for supplementary services	
Q.81	Number identification supplementary services	I.251
§ 1	Direct dialling in	I.251, § 1
(§ 2)	Multiple subscriber number	I.251, § 2
§ 3	CLIP	I.251, § 3
§ 4	CLIR	I.251, § 4
§ 5	COLP	I.251, § 5
§ 6	COLR	I.251, § 6
(§ 7)	Malicious call ID	(I.251, § 7)
(§ 8)	Sub-addressing	(I.251, § 8)

<sup>1)</sup> Parentheses "()" around a § of a Recommendation number implies that the § may not appear in the 1988 CCITT Recommendations.

Stage 2

Based on Stage 1 given in:

<i>Q.82</i>	<i>Call offering supplementary services</i>	<i>I.252</i>
(§ 1)	Call transfer	I.252, § 1
§ 2	Call forwarding busy	I.252, § 2
§ 2	Call forwarding no reply	I.252, § 3
§ 2	Call forwarding unconditional	I.252, § 4
(§ 3)	Call deflection	(I.252, § 5)
§ 4	Line hunting	I.252, § 6
<i>Q.83</i>	<i>Call completion supplementary services</i>	<i>I.253</i>
§ 1	Call waiting	I.253, § 1
§ 2	Call hold	I.253, § 2
(§ 3)	CCBS	(I.253, § 3)
<i>(Q.84)</i>	<i>Multiparty supplementary services</i>	<i>I.254</i>
(§ 1)	Conference calling	I.254, § 1
(§ 2)	Three-party	I.254, § 2
<i>Q.85</i>	<i>"Community of interest" supplementary services</i>	<i>I.255</i>
§ 1	Closed user group	I.255, § 1
(§ 2)	ISDN networking services	(I.255, § 2)
	Private numbering plan	
<i>Q.86</i>	<i>Charging supplementary services</i>	<i>I.256</i>
§ 1	Credit card calling	I.256, § 1
§ 2	Advice of charge	I.256, § 2
(§ 3)	Reverse charging	(I.256, § 3)
<i>Q.87</i>	<i>Additional information transfer supplementary services</i>	<i>I.257</i>
§ 1	User-to-user signalling	I.257, § 1