



**E**UROPEAN  
**T**ELECOMMUNICATION  
**S**TANDARD

**ETS 300 129**

May 1992

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Source: ETSI TC-SPS

Reference: T/S 22-10

ICS: 33.080

**Key words:** ISDN, supplementary service.

**Integrated Services Digital Network (ISDN);  
Malicious Call Identification (MCID) supplementary service  
Functional capabilities and information flows**

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## Foreword

This European Telecommunication Standard (ETS) has been produced by the Signalling Protocols & Switching (SPS) Technical Committee of the European Telecommunications Standards Institute (ETSI) and was adopted having passed through the ETSI standards approval procedure.

In accordance with CCITT Recommendation I.130 [1], the following three level structure is used to describe the supplementary telecommunications services as provided by European public telecommunications operators under the pan-European Integrated Services Digital Network (ISDN):

- Stage 1: is an overall service description, from the user's stand-point;
- Stage 2: identifies the functional capabilities and information flows needed to support the service described in stage 1; and
- Stage 3: defines the signalling system protocols and switching functions needed to implement the service described in stage 1.

This ETS details the stage 2 aspects (functional capabilities and information flows) needed to support the Malicious Call Identification (MCID) supplementary service. The stage 1 and stage 3 aspects are detailed in ETS 300 128 (1992) and ETS 300 130 (1992), respectively.

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## 1 Scope

This standard defines the stage two of the Malicious Call Identification (MCID) supplementary service for the pan-European Integrated Services Digital Network (ISDN) as provided by European public telecommunications operators. Stage two identifies the functional capabilities and the information flows needed to support the service description. The stage two description also identifies user operations not directly associated with a call (see CCITT Recommendation I.130 [1]).

This standard is specified according to the methodology specified in CCITT Recommendation Q.65 [2].

This standard does not formally describe the relationship between this supplementary service and the basic call, but where possible this information is included for guidance.

This standard does not specify the requirements where the service is provided to the user via a private ISDN.

This standard does not specify the requirements for the allocation of defined functional entities within a private ISDN; it does however define which functional entities may be allocated to a private ISDN.

This standard does not specify the additional requirements where the service is provided to the user via a telecommunications network that is not an ISDN.

The MCID supplementary service is applicable to all telecommunications services.

This standard is applicable to the stage three standards for the ISDN MCID supplementary service. The term "stage three" is also defined in CCITT Recommendation I.130 [1]. Where the text indicates the status of a requirement (i.e. as strict command or prohibition, as authorisation leaving freedom, or as a capability or possibility) this shall be reflected in the text of the relevant stage three standards.

Conformance to this standard is met by conforming to the stage three standards with the field of application appropriate to the equipment being implemented. Therefore no method of testing is provided for this standard.

## 2 Normative references

This standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references subsequent amendments to, or revisions of any of these publications apply to this ETS only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

- [1] CCITT Recommendation I.130 (1988): "Method for the characterisation of telecommunication services supported by an ISDN and network capabilities of an ISDN".
- [2] CCITT recommendation Q.65 (1988): "Stage 2 of the method for the characterisation of services supported by an ISDN."
- [3] CCITT Recommendation I.112 (1988): "Vocabulary of terms for ISDNs".
- [4] CCITT Recommendation Q.71 (1988): "ISDN 64 kbit/s circuit mode switched bearer services".
- [5] CCITT Recommendation Z.100 (1988): "Functional Specification and Description Language (SDL)."

### 3 Definitions

For the purposes of this standard, the following definitions apply:

**Integrated Services Digital Network (ISDN):** see CCITT Recommendation I.112 [3], § 2.3, definition 308.

**Service; telecommunications service:** see CCITT Recommendation I.112 [3], § 2.2, definition 201.

### 4 Symbols and abbreviations

For the purposes of this standard, the following symbols and abbreviations apply:

CC	Call Control, typically a LE
CCA	Call Control Agent, typically a TE
CLI	Calling Line Identity
FE	Functional Entity
FEA	Functional Entity Action
LE	Local Exchange
PTNX	Private Telecommunication Network Exchange
TE	Terminal Equipment

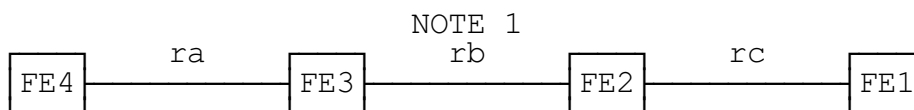
### 5 Description

Not applicable.

### 6 Derivation of the functional model

#### 6.1 The functional model description

The functional model for the MCID supplementary service is shown in figure 1.



NOTE 1: This model recognises that a Private Telecommunication Network Exchange (PTNX) (NT2) will require service control functionality (i.e. FE2) to be provided by the PTNX. For the case where no PTNX is involved, e.g. Terminal Equipment (TE) directly connected, generally by basic access, neither FE2 nor relationship rb exists.

NOTE 2: It is assumed that a PTNX uses access link clearing procedures independent of the extension clearing procedures. FE2 shall meet the requirements of the stage 1 service description and shall not delay the access throughput (see ETS 300 128 (1992), subclause 6.2.3).

NOTE 3: FE4 provides Calling Line Identity (CLI), when requested from FE3.

Figure 1



## 6.2 Description of the functional entities

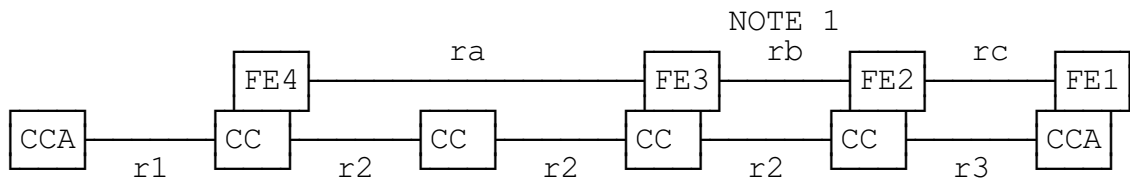
The Functional Entities (FEs) required by the MCID supplementary service above those of the basic call are as follows:

- FE1 MCID agent of the served user;
- FE2 MCID control of served PTNX user;
- FE3 MCID control of served user;
- FE4 MCID control of the call originating network entity.

## 6.3 Relationship with a basic service

The relationship to a basic service is shown in figure 2.

NOTE: The basic call model is defined in CCITT Recommendation Q.71 [4], §2.1 with the exception that r1 represents an outgoing call relationship from a Call Control Identity (CCA) and r3 represents an incoming call relationship to a CCA.



NOTE 1: For the case where no PTNX is involved, e.g. TE directly connected, generally by basic access, neither FE2 nor relationship rb exists.

Figure 2

## 7 Information flows

### 7.1 Information flow diagrams

The initiation of functional entity actions at functional entities and the information flow between FEs is shown in figures 3 to 8.

#### 7.1.1 Entry into the MCID service at FE3

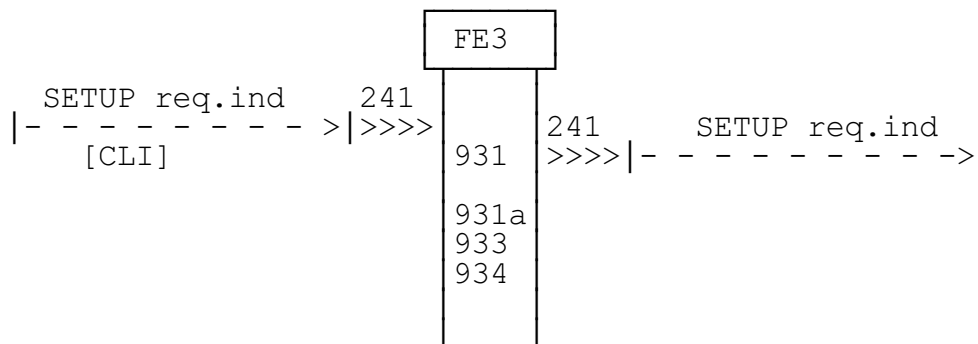
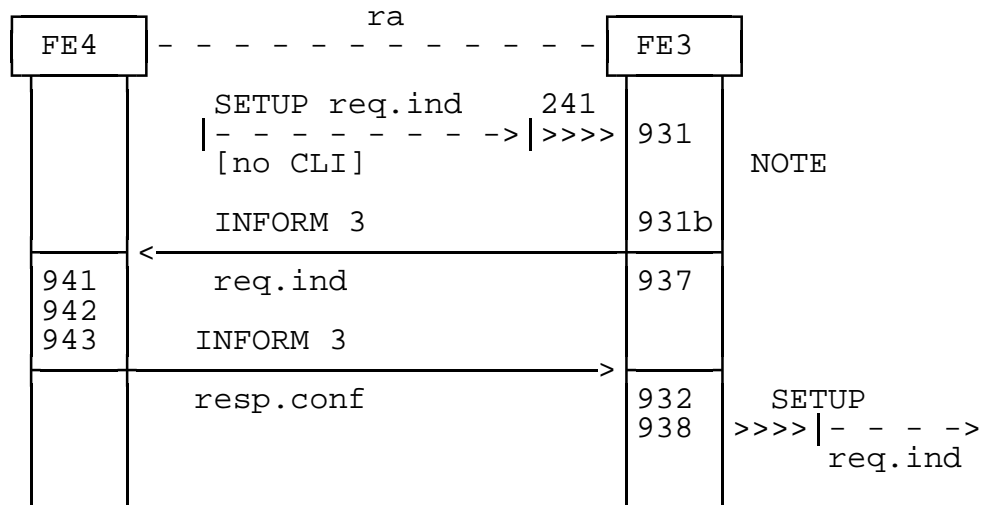


Figure 3

7.1.2 Information request towards FE4 upon detection of incomplete SETUP contents for MCID service at FE3



NOTE : Detection of insufficient contents of SETUP for MCID service will prevent a basic call from being established across the access until INFORM 4 resp.conf is received or timer Tmcid.2 expires at FE3. Timer Tmcid.2 expiry will result in call clearing. Timer Tmcid.2 is equivalent to the appropriate network timer T33.

Figure 4

7.1.3 Functions of FE3 when calling party clears before the served user invokes the MCID service

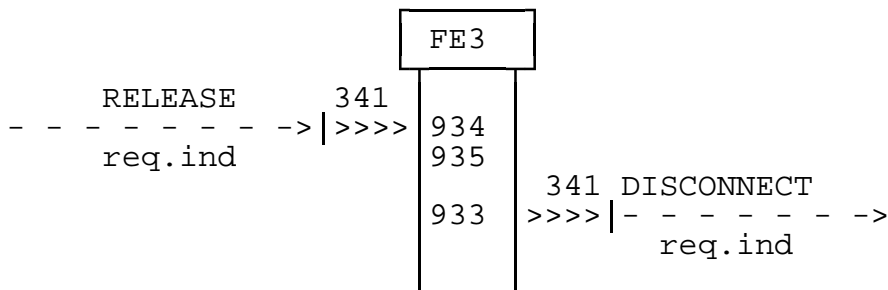


Figure 5

7.1.4 Invocation of the MCID supplementary service (directly connected served user)

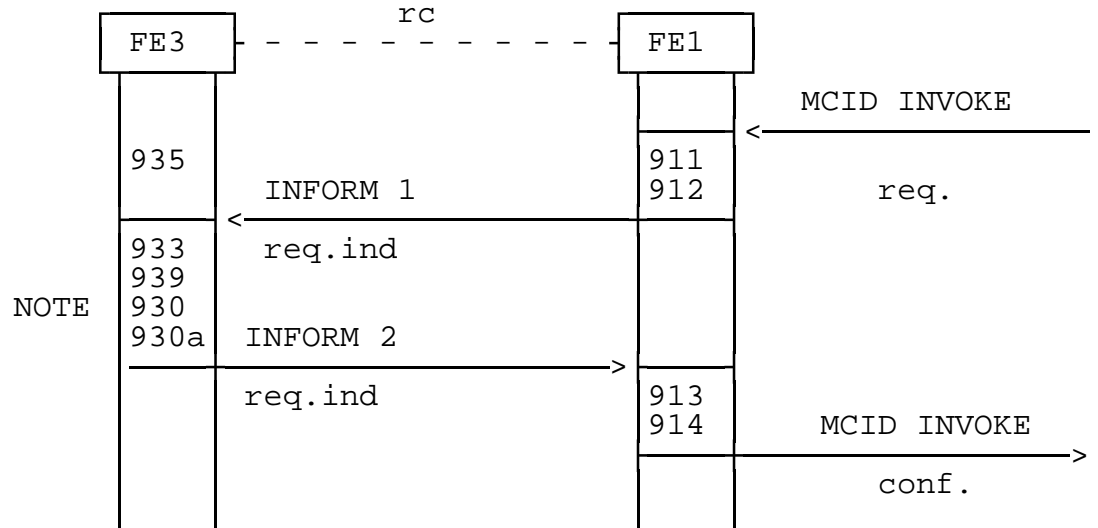


Figure 6

7.1.5 Invocation of the MCID supplementary service (served user is PTNX extension)

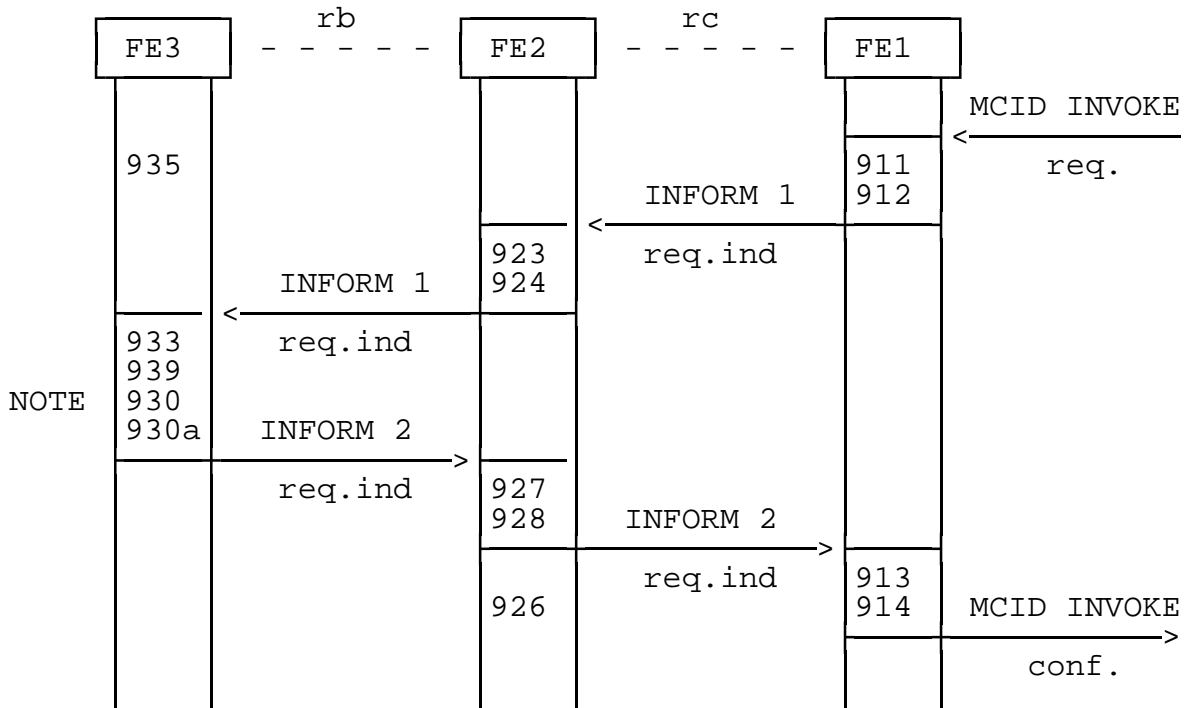
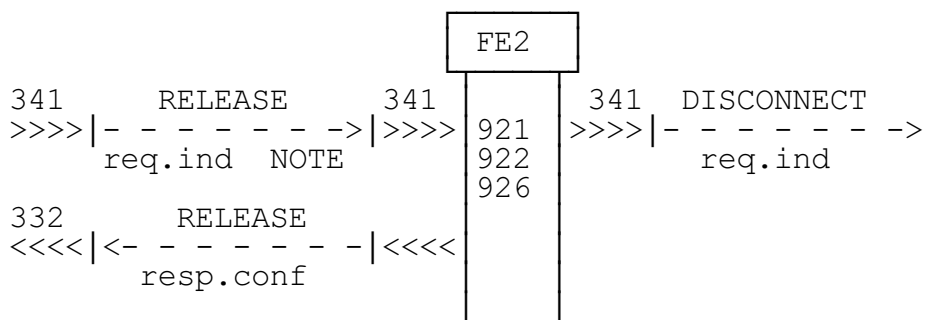


Figure 7

**7.1.6 Functions of FE2 when calling party clears before served user (PTNX extension) invokes the MCID service**



NOTE : Timer Tmcid.1 provided by the FE2 (shall be equivalent to the appropriate network timer T305 or T306).

**Figure 8**

**7.2 Definitions of individual information flows**

**7.2.1 Relationship ra**

**7.2.1.1 Contents of INFORM 3**

The contents of INFORM 3 req.ind shall be as in table 1.

**Table 1**

INFORM 3	req.ind	resp.conf
Information required indicator CLI	Mandatory	Mandatory

**7.2.1.2 Contents of INFORM 4**

The contents of INFORM 4 req.ind shall be as in table 2.

**Table 2**

INFORM 4	resp.conf
Information required indicator CLI (user provided) CLI (network default) CLI presentation indicators	Mandatory Optional Mandatory Mandatory

**7.2.2 Relationship rc**

**7.2.2.1 Contents of INFORM 1**

The content of INFORM 1 req.ind are given in table 3.

**Table 3**

INFORM 1	req.ind
Called party number	Optional

**7.2.2.2 Contents of INFORM 2**

There are no contents of this information flow.

**7.2.2.3 Contents of INFORM 5**

The content of INFORM 5 req.ind shall be as in table 4.

**Table 4**

INFORM 5	req.ind
Appropriate failure reason	Mandatory

**7.2.2.4 Contents of INFORM 6**

The content of INFORM 6 req.ind shall be as in table 5.

**Table 5**

INFORM 6	req.ind
Calling party clear	Mandatory

## 8 SDL diagrams for functional entities

The SDLs are provided according to CCITT Recommendation Z.100 [5].

### 8.1 FE1

The SDLs for FE1 are shown in figures 9 and 10.

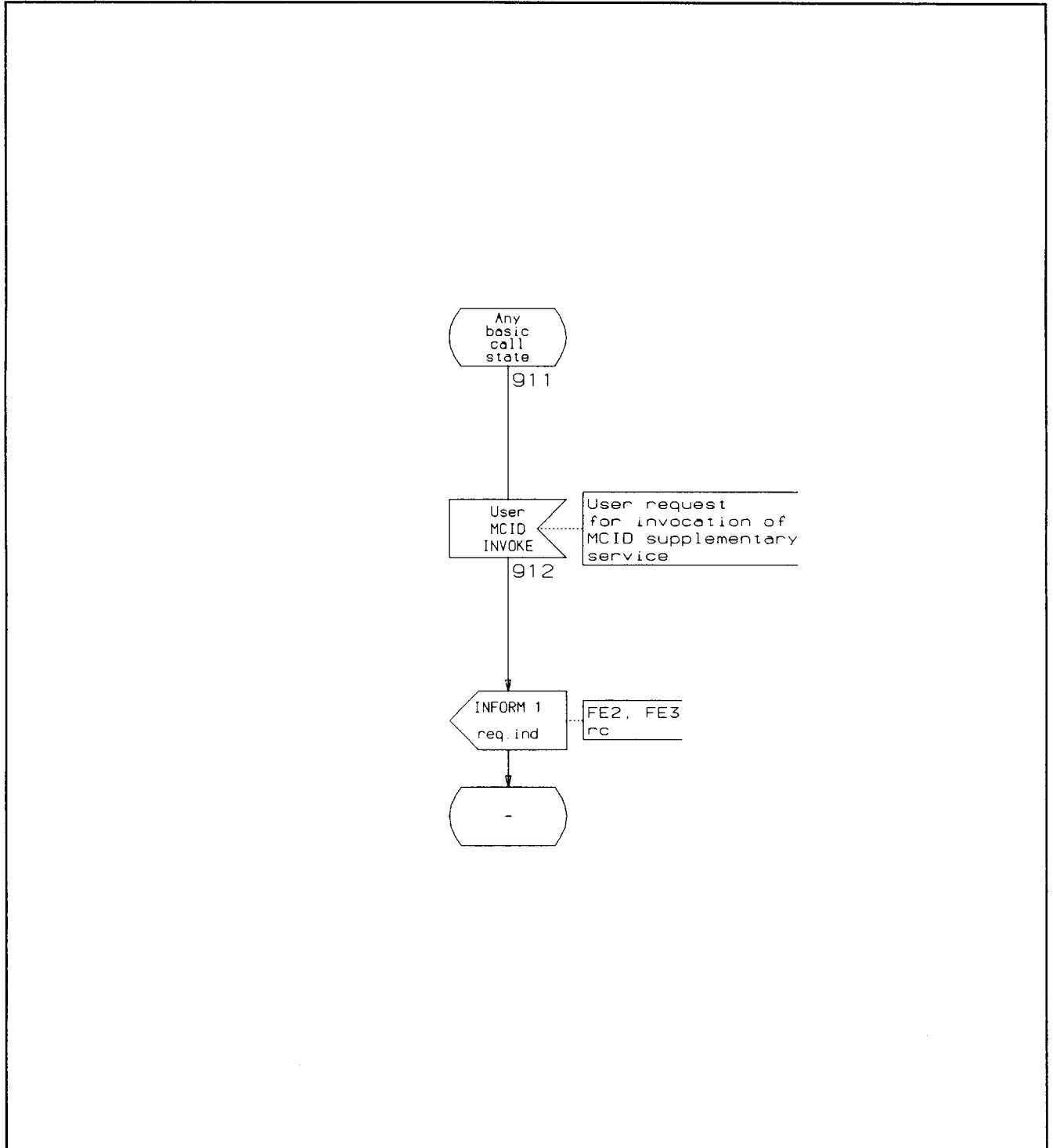


Figure 9: FE1 - user request for the MCID supplementary service

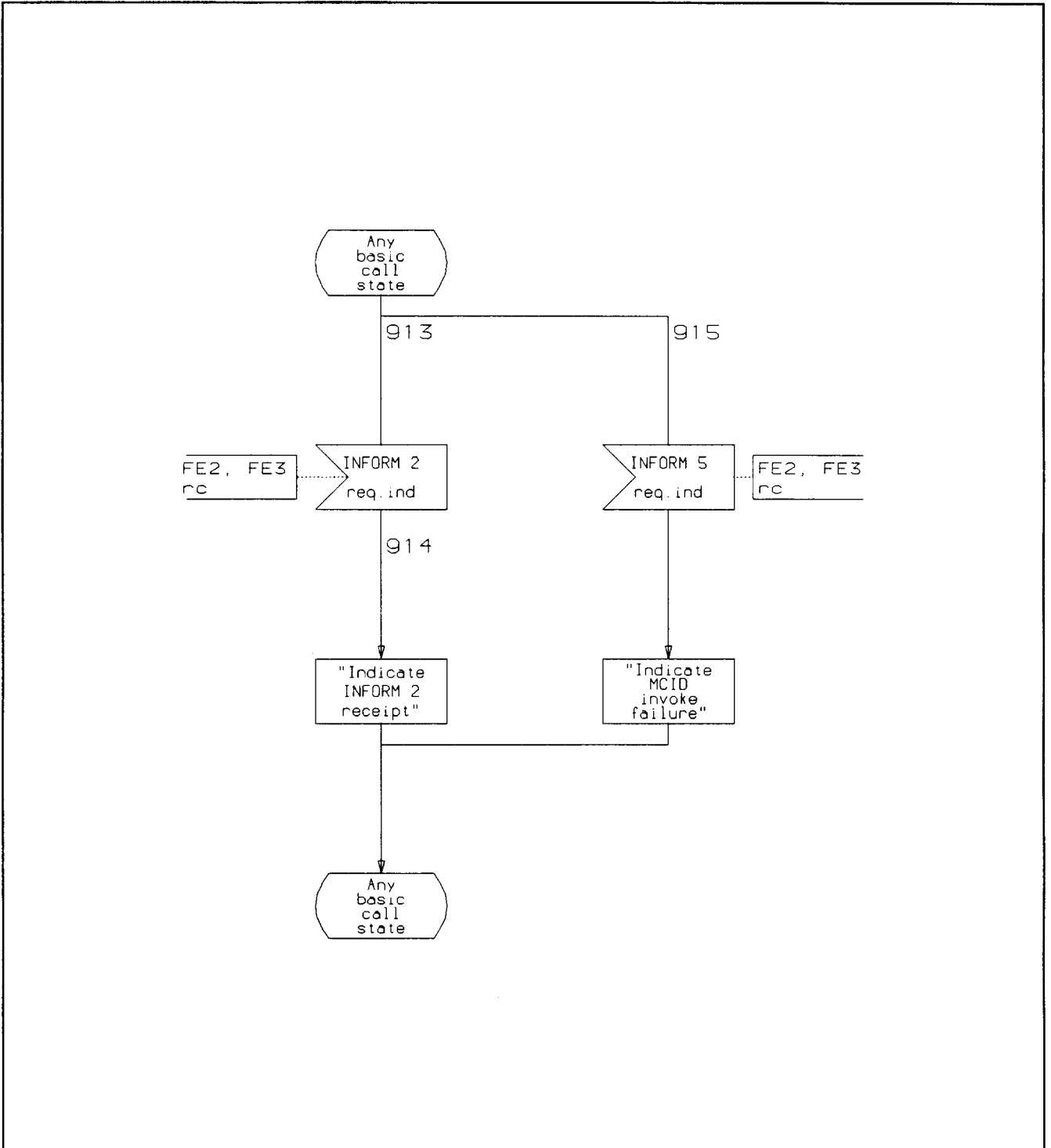


Figure 10: FE1 - processing FE2 response to user request

8.2 FE2

The SDL for FE2 is shown in figure 11.

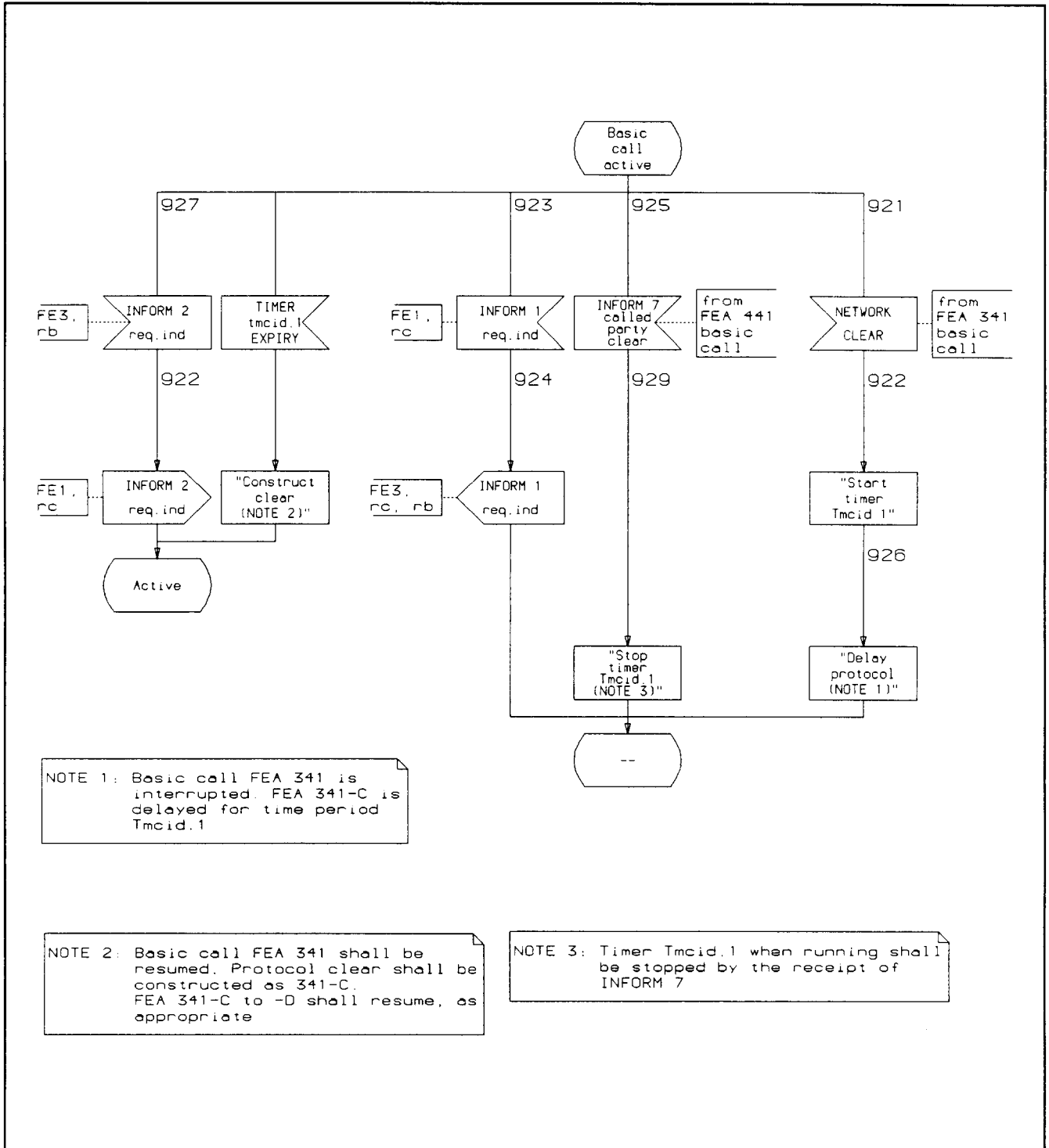


Figure 11: FE2



8.3 FE3

The SDLs for FE3 are shown in figures 12, 13, 14 and 15.

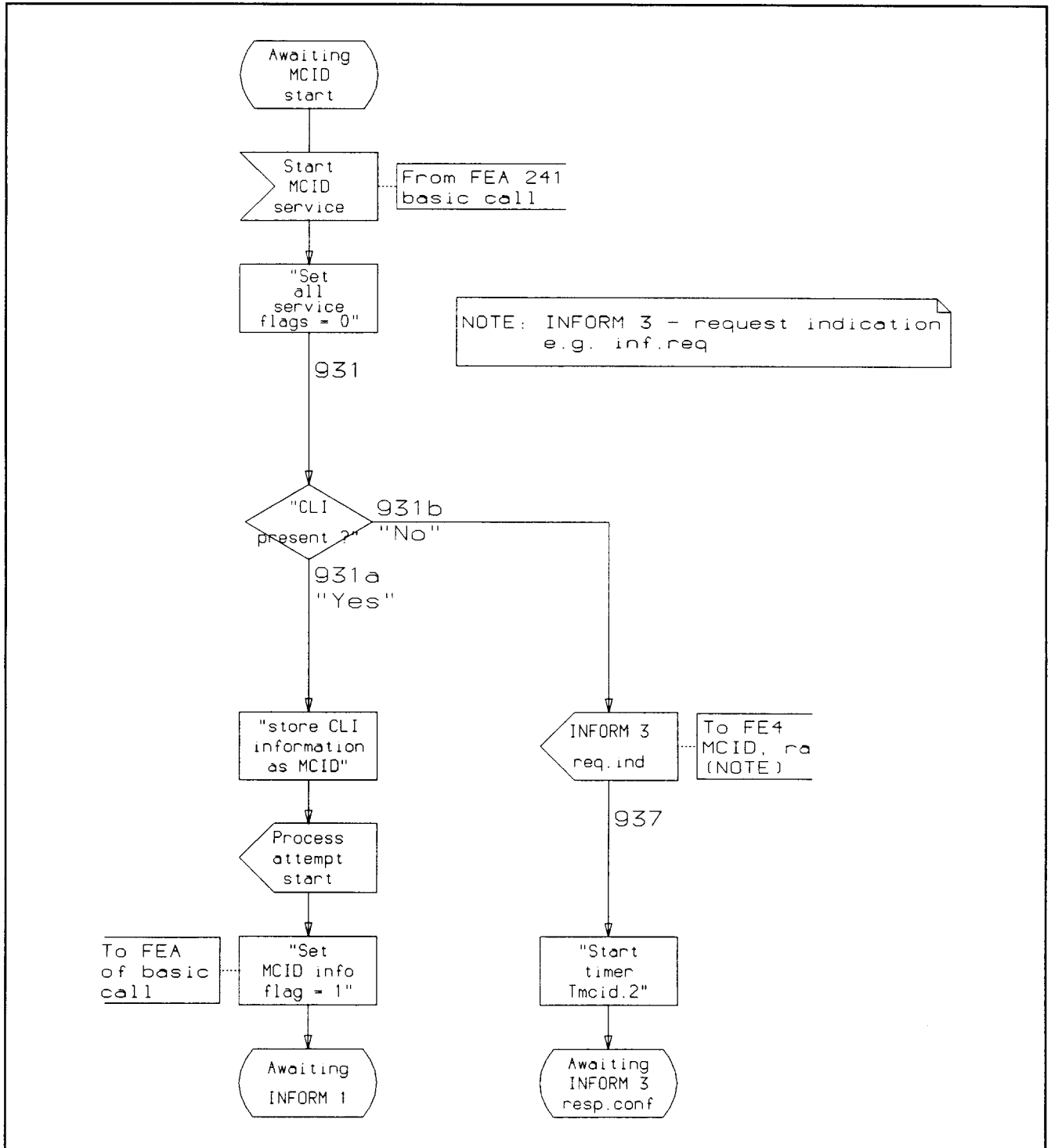


Figure 12: FE3 requesting CLI information

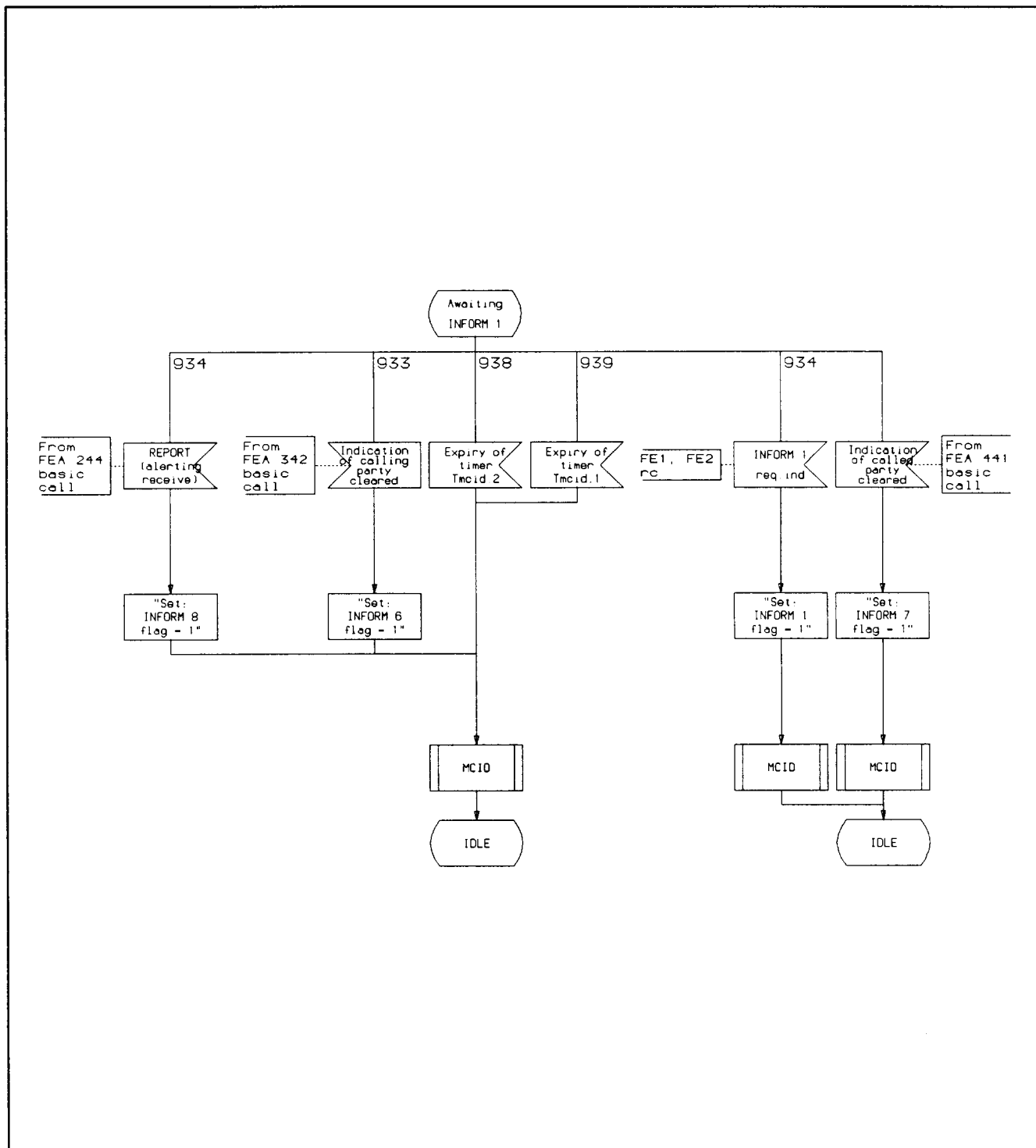


Figure 13: FE3 - invocation of MCID supplementary service

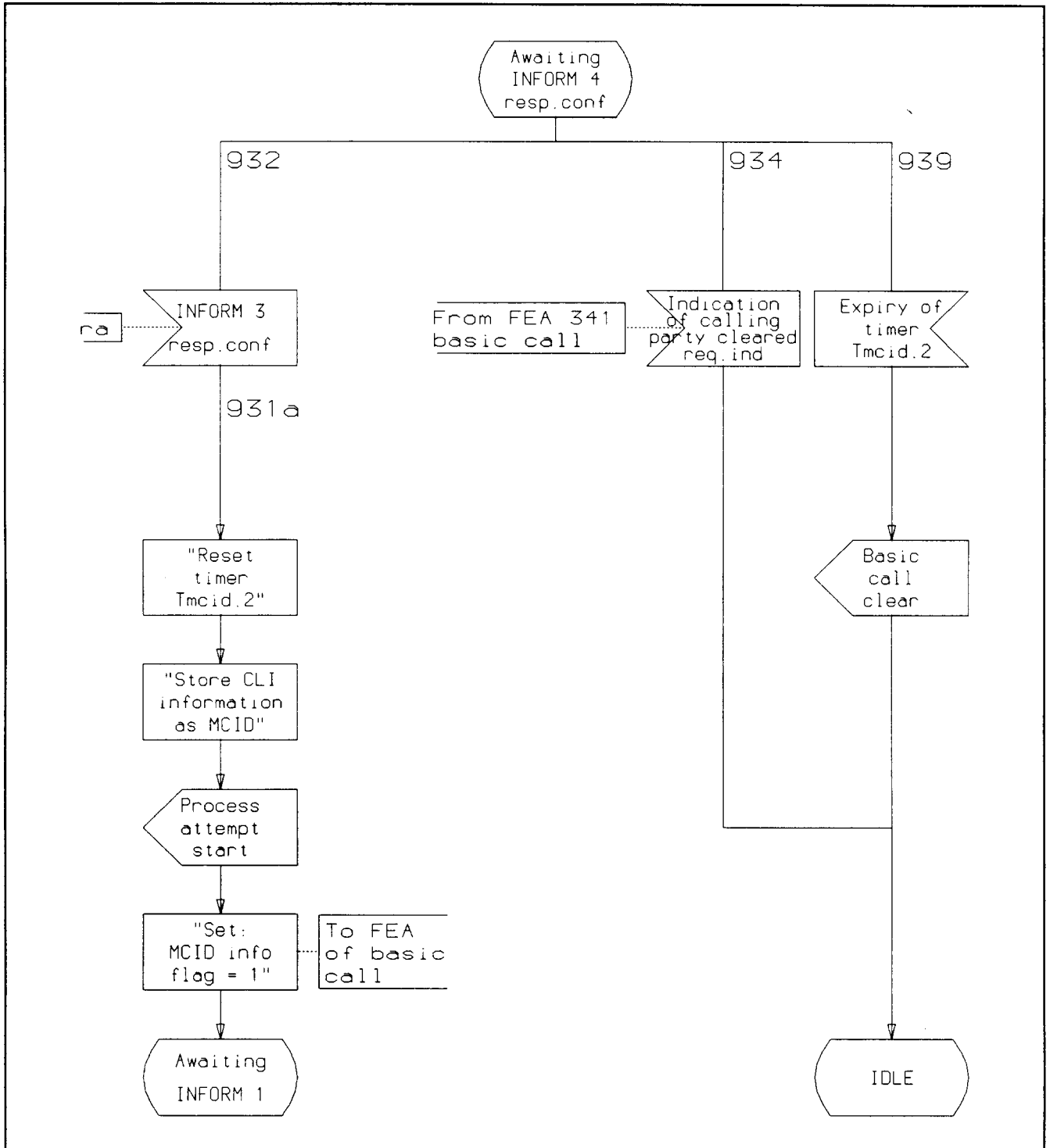


Figure 14: FE3 - collection of CLI information

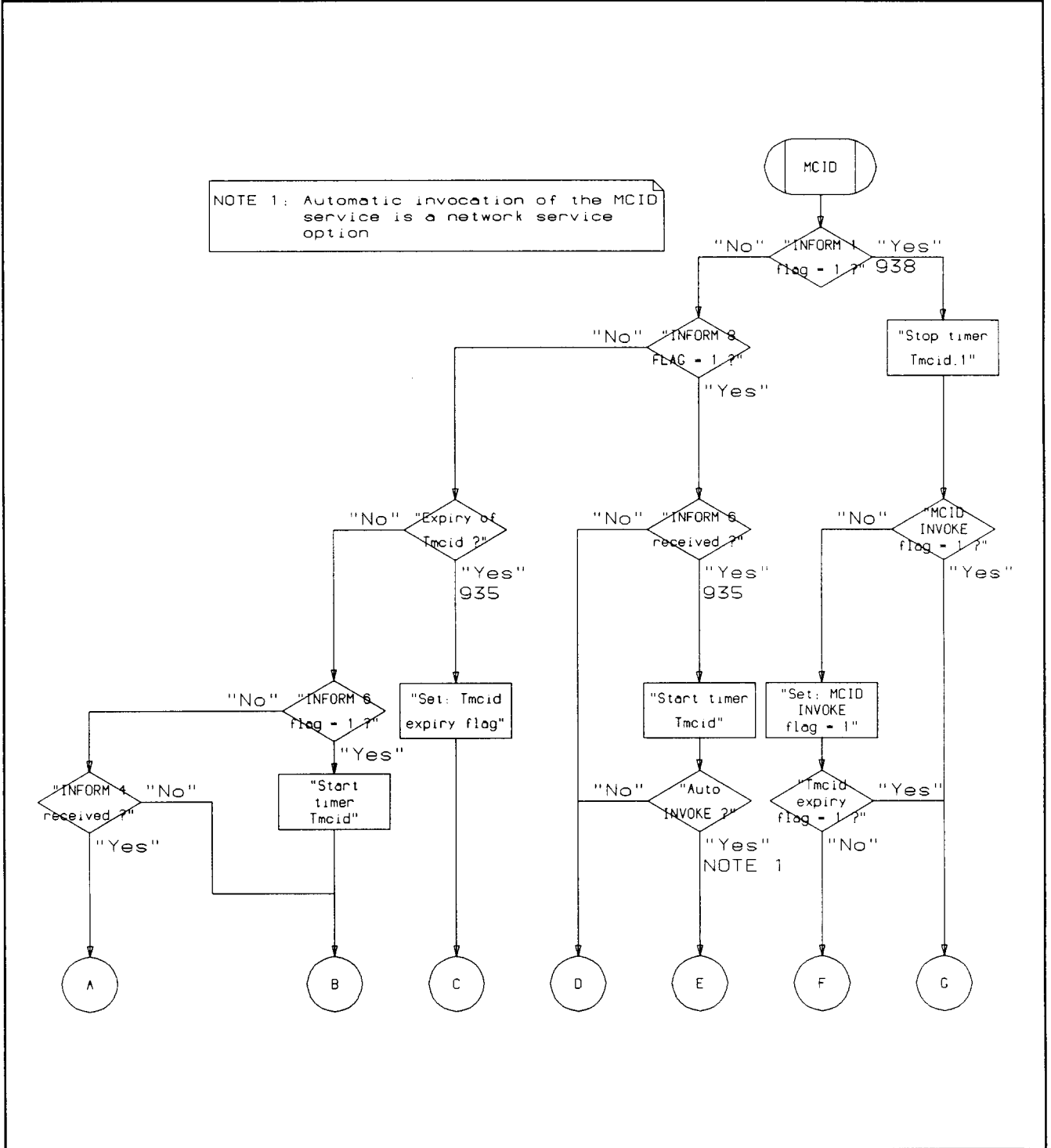


Figure 15 (sheet 1 of 2): FE3 - MCID macro

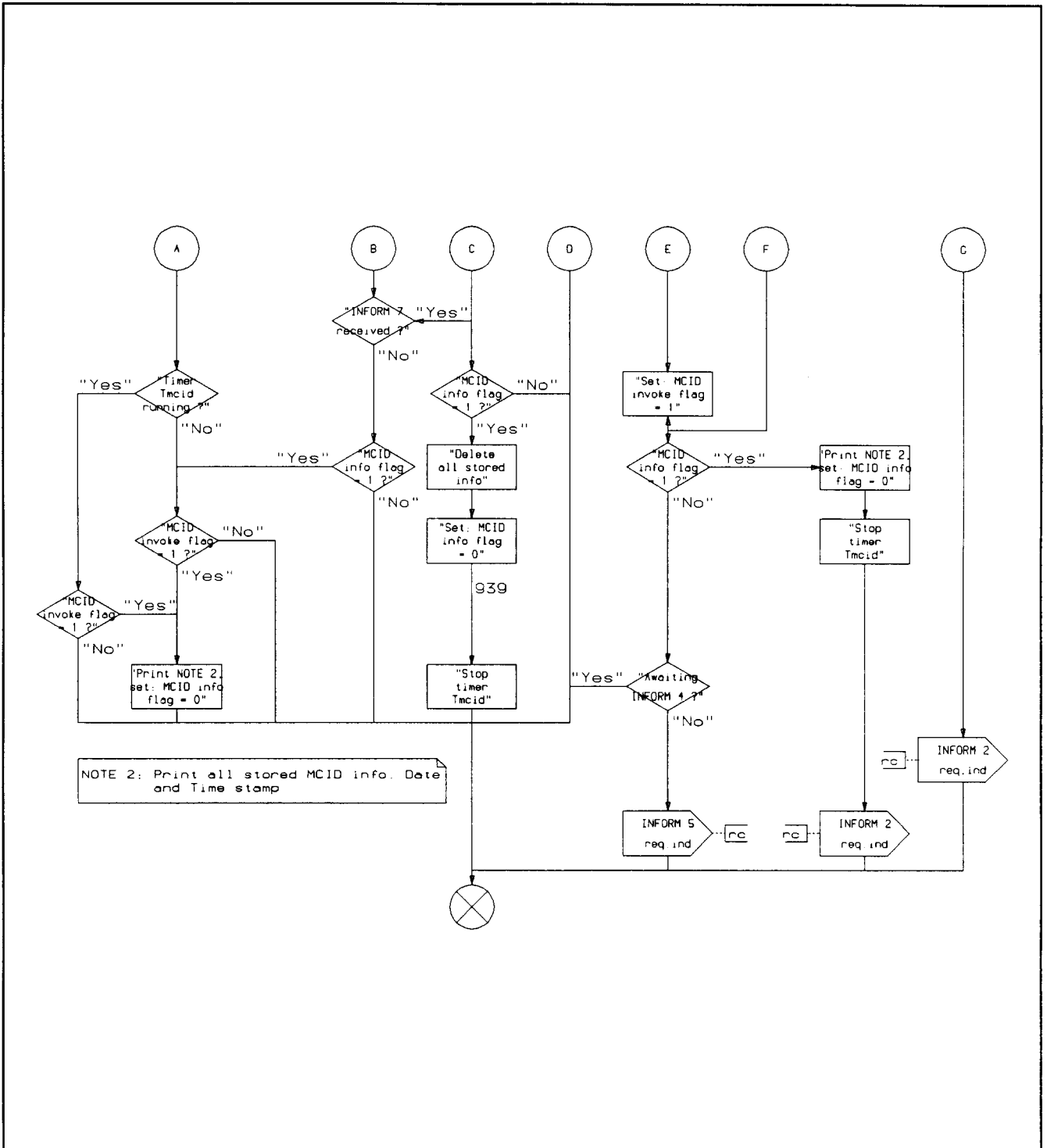
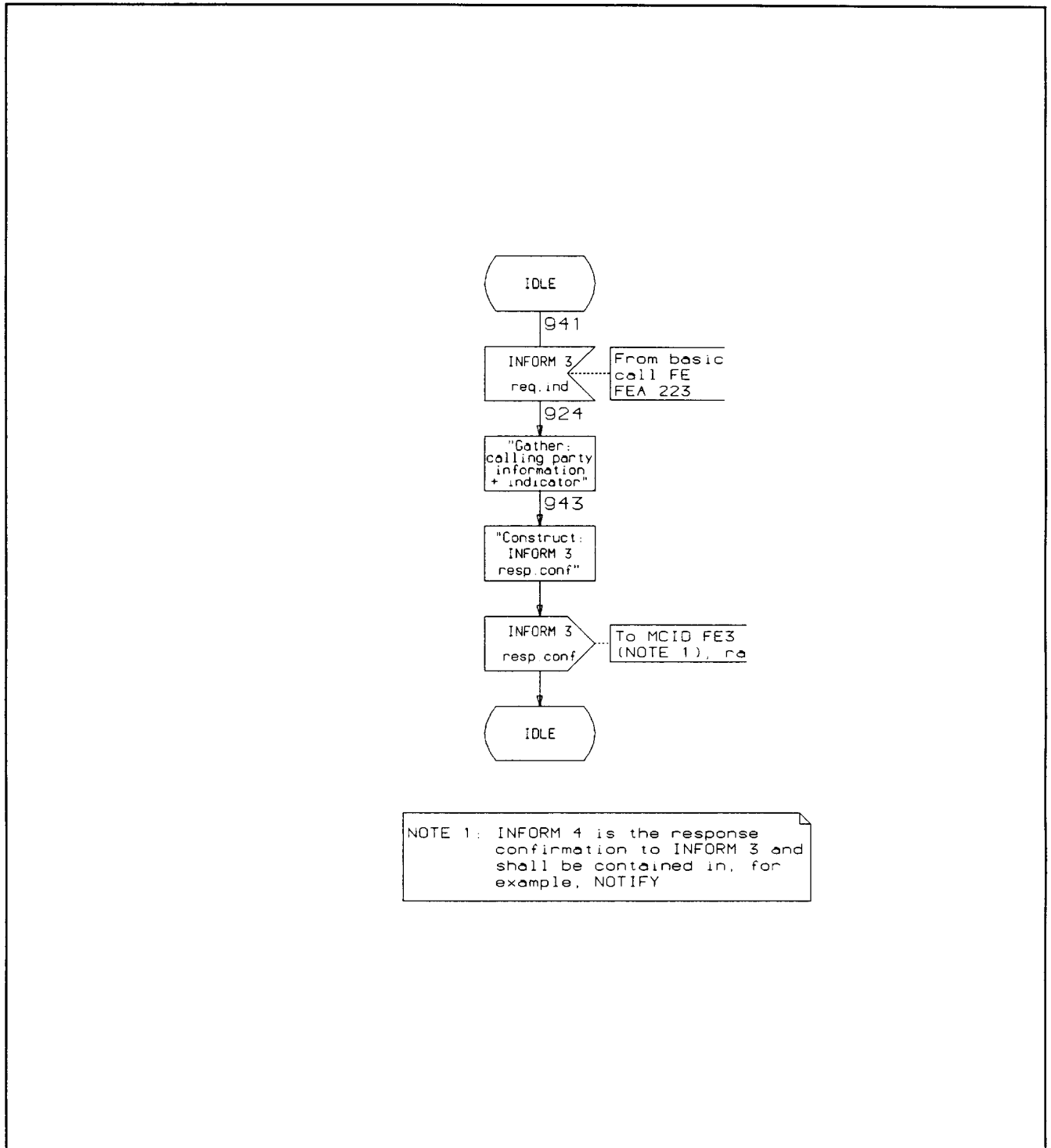


Figure 15 (sheet 2 of 2): FE3 - MCID macro

8.4 FE4

The SDL for FE4 is shown in figure 16.



NOTE 1: INFORM 4 is the response confirmation to INFORM 3 and shall be contained in, for example, NOTIFY

Figure 16: FE4

## 9 Functional Entity Actions (FEAs)

The following FEAs shall be associated with each FE.

### 9.1 FEAs of FE1

- 911: receive the user MCID invoke instructions and respond 912.
- 912: transmit MCID INFORM 1 req.ind towards network.
- 913: receive MCID INFORM 2 req.ind from FE2 or FE3 and respond 914.
- 914: indicate to the user confirmation of successful MCID invocation.
- 915: receive MCID INFORM 5 req.ind and indicate rejection to user.

### 9.2 FEAs of FE2

- 921: detect a clearing request from network (e.g. RELEASE request or DISCONNECT request from the network) and respond 922, 926.
- 922: start timer Tmcid.1 (equivalent to network timer T.305 or T.306).
- 923: detection of INFORM 1 from FE1 and respond 924.
- 924: transmit INFORM 1 to FE3.
- 925: detect called party clear request, respond 929, stop timer Tmcid.1 (if running), basic call FEA342, i.e. normal clearing.
- 926: delay response of clearing protocol (e.g. delay RELEASE COMPLETE or RELEASE) respond 923 (until expiry of Tmcid.1 then basic call FEA341, i.e. normal clearing) and 925.
- 927: detect INFORM 2 req.ind and respond 928.
- 928: transmit INFORM 2 req.ind to FE1.
- 929: transmit INFORM 7 towards FE3.

NOTE: FE2 need not be present when this service is provided to a TE connected via the T reference point only (i.e. no NT2 or S reference point).

### 9.3 FEAs of FE3

- 931: detect presence or absence of CLI information (basic call FEA241a) and respond 931a or 931b.
- 931a: store CLI information as MCID information and respond 93A, 934, 933.
- 931b: transmit INFORM 3 req.ind towards FE4, 937, 932.
- 932: receive INFORM 3 resp.conf from FE4, respond 931a and stop Tmcid.2.
- 933: detect INFORM 1 req.ind and respond 930 and 939.
- 934: detect INFORM 6 (calling party clear) before INFORM 1 received from user and respond 935, optionally: respond 930 (automatic invocation).

- 935: start timer Tmcid.1 and retain MCID information within store for time period Tmcid.1, respond 933 (expiry of Tmcid.1 shall result in 936).
- 936: erase stored MCID information for this call reference.
- 937: start timer Tmcid.2 (expiry of timer Tmcid.2 shall result in call clearing).
- 938: stop timer Tmcid.2.
- 939: stop timer Tmcid.1.
- 930: printout all stored MCID information and respond 930a.
- 930a: transmit INFORM 2 resp.conf to FE2 or FE1.
- 93A: receive INFORM 8, respond 93B.
- 93B: detect INFORM 6 after INFORM 8 received, respond 934.

**9.4 FEAs of FE4**

- 941: receive INFORM 3 (MCID ENCOUNTERED req.ind) from FE3 and respond 942.
- 942: gather (short term store) all available calling party identity information and respond 943.
- 943: formulate the calling party identity information within an INFORM 4 resp.conf and transmit towards FE3.

**10 Allocation of functional entities to physical localities**

Possible physical locations of the functional entities are shown in table 6.

**Table 6**

	FE4	FE3	FE2	FE1
Scenario 1	LE (Calling)	LE (Called)	-	TE (Called)
Scenario 2	LE	LE	PTNX	TE
Scenario 3	LE	LE	-	TE



**History**

<b>Document history</b>	
May 1992	First Edition
May 1996	Converted into Adobe Acrobat Portable Document Format (PDF)