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Version 1.0.0

Version Date: July 14, 2000



**3RD GENERATION  
PARTNERSHIP  
PROJECT 2  
"3GPP2"**

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***Answer Hold***

***Revision: 1***

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## Revision History

<b>Revision</b>		<b>Date</b>
Rev. 0	Initial Publication	May 2000
Rev. 1	Initial Publication	July 2000
	Editorial corrections to Rev. 0	

### **Note**

This specification is an extract of the post-ballot version of TIA PN-4550-A.

CELLULAR RADIOTELECOMMUNICATIONS INTERSYSTEM  
OPERATIONS

TIA/EIA-41-D Based Network Enhancements for  
**Answer Hold (AH)**

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## FOREWORD

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This Interim Standard contains recommendations for supporting the wireless subscriber feature “Answer Hold (AH)”.

This Interim Standard builds upon the following:

- *TIA/EIA-41-D Cellular Radiotelecommunications Intersystem Operations; Telecommunications Industry Association; 1997.*

## ASSUMPTIONS

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The following items are basic understandings used during the development of this document:

- a. The AH feature shall be applicable to all terminating voice call deliveries (e.g., unanswered voice calls in the Alerting or Call Waiting state) permitting called AH subscribers to answer a terminating call and place it immediately on hold, allowing conversation to begin at a later more convenient time.
- b. When the AH authorized called party activates the AH feature, the calling party shall be provided an appropriate network announcement (e.g., as defined by the service provider) indicating the call delivery is in progress.
- c. Terminating calls are in the answer state when AH is invoked (i.e., answer supervision is returned).
- d. A terminating call in the AH state shall normally remain in the AH state until:
  - the called AH subscriber retrieves the call (e.g., SEND).
  - the calling party disconnects.
- e. AH and Call Waiting (CW) authorized subscribers, active with an in progress call and with another terminating call on hold (e.g., receiving AH treatment), shall be permitted to retrieve the call in the AH state with normal CW procedures (e.g., SEND terminate AH treatment, place the other party on hold, connect the AH called subscriber to the calling party in the AH state, and enter the 2-way CW state).
- f. When the AH service has been invoked, the AH state should be maintained during all handoff processes.
- g. When the call is released for any reason, the AH state shall be automatically released.
- h. If digits are sent to the network by an MS when the MS is instructed by the user to invoke AH, the only digits sent are a prestored digit string associated to AH invocation. The contents of the MS’s buffers are not sent or modified.
- i. A serving network shall notify served mobile stations that it supports AH so mobile stations may determine when AH may be offered as an option to the subscriber.
- j. The mobile station shall not offer AH as an option to the user unless the system to which the MS is registered supports AH. Additionally, the

mobile station shall not offer AH as an option when alerting an idle subscriber unless the air interface currently in use supports the signaling needed for AH invocation for incoming calls to idle subscribers.

- k. A call in the AH state can be retrieved by a flash with or without digits.

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## REVISION HISTORY

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Revision	Date	Remarks
1.0	July, 2000	Initial publication.

## EDITORIAL KEY

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- a. *ANSI-41-D, ANSI-124-B* or *ANSI-664-A* totally new sections are identified via text with right hand margin "diffmarks", as:

A totally new section's text.

- b. *ANSI-41-D, ANSI-124-B* or *ANSI-664-A* new enhanced text is identified via text with "under-score" lines and right hand margin "diffmarks", as:

. . existing text new enhanced text existing text . .

- c. *ANSI-41-D, ANSI-124-B* or *ANSI-664-A* deleted existing text is identified via text with "strike-through" lines and right hand margin "diffmarks", as:

. . existing text ~~deleted text~~ existing text . .

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# 1. INTRODUCTION

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## 1.1 OBJECTIVE

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This Interim Standard (IS) presents Stage-1 (new chapter *TIA/EIA-664-B*), Stage-2 (*TIA/EIA-41.3-D* enhancements), and Stage-3 (*TIA/EIA-41.5-D* and *TIA/EIA-41.6-D* enhancements) recommendations for supporting the Answer Hold (AH) feature use in the Wireless Radiotelephone Service.

## 1.2 SCOPE

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This document specifies the wireless intersystem network operation enhancements required for supporting roaming subscribers with the Answer Hold (AH) feature.

## 1.3 ORGANIZATION

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This document is organized as per *TIA/EIA-41-D* and *TIA/EIA-664-A*.

# 2. REFERENCES

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## 2.1 Normative References

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ANSI T1 Standards:

TIA/EIA:

- *ANSI/TIA/EIA-41-D Cellular Radiotelecommunications Intersystem Operations*; Telecommunications Industry Association; December 1997.
- *TIA/EIA-124-B Wireless Radio Telecommunications Intersystem Non-Signaling Data Communication DMH (Data Message Handler)*; Telecommunications Industry Association; July 1999.
- *TIA/EIA-664 Cellular Features Description*; Telecommunications Industry Association; January 1996.

### 3. **TIA/EIA-664-A “CELLULAR FEATURE DESCRIPTIONS” MODIFICATIONS**

This section provides the Stage-1 feature description for Answer Hold (AH) according to the structure of *TIA/EIA-664-A*.

#### 3.1 **Definitions**

(*TIA/EIA-664-001-A*, page 4)

##### **Answer Hold (AH)**

See Answer Hold.

##### **Switch Control Code (SCC)**

A Switch Control Code consists of a terminating “\*” preceded by the one, two, or three digits of a Switch Control Value (as in: SCV\*).

##### **Switch Control Code String (SCCS)**

A Switch Control Code String is a digit string consisting of a Switch Control Code followed by a termination address (as in SCV\* + termination address).

##### **Switch Control Value (SCV)**

A Switch Control Value is an integer in the range (0...255) that is used by an MS, either alone or in conjunction with a Termination Address, to control elements of the operation of certain MSC-based features.

Depending on the details of the air interface in use, an SCV may be sent by the MS to the network:

- As a Switch Control Code (constructed from the SCV) sent using the air interface’s procedures for sending generic digit strings to the network, or
- Using dedicated air interface specific protocol elements.

In either case, the SCV is always represented as an SCC when sent from MSC to MSC within the TIA/EIA-41 network.

Depending on the details of the air interface in use, an SCV and associated termination address may be sent by the MS to the network:

- As a Switch Control Code String (with the SCC portion of the SCCS constructed from the SCV) sent using the air interface’s procedures for sending generic digit strings to the network, or
- Using dedicated air interface specific protocol elements.

In either case, the SCV and associated termination address are always represented as an SCCS when sent from MSC to MSC within the TIA/EIA-41 network.

The following table defines the Switch Control Values used in this Standard:

Switch Control Values	Usage
0	Forward the incoming call to a network stored destination
16	Forward the incoming call to the destination provided by the mobile in conjunction with this code.
17	Forward the incoming call to voice mail.
18	Apply Answer Hold treatment to the incoming call (assuming an incoming call is being offered to the MS through Alerting or Call Waiting Notification).

**Table X: Switch Control Value Assignments**

## 1.2 Call Model

(TIA/EIA-664-100-B, page 100-1)

For the purposes of defining feature operations and interactions within this Standard, a call model is used. This call model is based on a finite state machine. The finite state machine is driven by a set of events. These events cause the finite state machine to perform a set of actions and change the state of the finite state machine. The current call state determines how a given event may perform a different set of actions.

The following call states are defined for a mobile subscriber:

*Note: the omitted existing text is retained without modification.*

12. Conference Alerting. A variation on the Alerting state for the Conference Calling feature.
13. Answer Hold. An incoming call has been answered and immediately placed on hold, with the appropriate Answer Hold treatment being applied toward the calling party. The system is waiting for the controlling subscriber to retrieve the held call. There is no third party.

*Note: the omitted existing text is retained without modification.*

The following subscriber (and other party) actions are defined:

- A. **Address**: A subscriber presses the **SEND** key with termination address digits.
- C. **Conferee**: A conferee requests a disconnect.
- D. **Disconnect**: The other party (sometimes a calling party) requests a disconnect.
- E. **End**: A subscriber presses the **END** key.

- F. **Feature:** A subscriber enters a Feature Code String followed by the SEND key.
- G. **callinG:** The calling party sends one or more DTMF digits.
- H. **Held:** The held party requests a disconnect.
- I. **Incoming:** An incoming call arrives for a subscriber.
- N. **aNswers:** The other party answers.
- P. **Period:** A time period expires.
- S. **Send:** A subscriber presses the SEND key without digits.
- T. **Third:** The third party requests a disconnect.
- U. **featUre code:** A subscriber enters a Feature Code String, a delimiter digit “#,” and a termination address followed by the SEND key
- V. addressedscV: The subscriber instructs the MS to sends an SCV and associated termination address, to the network.
- W. sWitch control: The subscriber instructs the MS to sends an SCV to the network.

*Note: the omitted existing text is retained without modification.*

The following tables summarize the feature interactions in a state-action matrix for the features in this Standard:

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Action	1	2	3	4	5	6	7	8	9	10	11	12	13
Idle	Idle	Alerting	2-way	Adding on	Holding 2-way	3-way	2-way CW notification	2-way CW	Conference adding on	Conference 2-way	Conference	Conference Alerting	Answer Hold
Address and send	Basic	Basic CC	CT=3WC	CT=3WC	CT=3WC	3WC	CW	CW	CC	CC	CC	CC	AH
Conferee disconnect	N/A	CC	N/A	N/A	N/A	N/A	N/A	N/A	CC	CC	CC	N/A	N/A
other party Disconnect	N/A	Basic	Basic	N/A	N/A	3WC	CW	CW	N/A	CC	N/A	CC	AH
End key	Basic	Basic <sup>1</sup>	Basic	CT=3WC	CT=3WC	CT=3WC	CW	CW	CC	CC	CC	CC	AH
Feature code and send	Basic Feature CC	Basic CC	Basic CC CCW MWN Feature	CC CCW MWN Feature	CT=3WC	3WC	CW	CW	CC	CC	CC	CC	AH
calling DTMF digits	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Held disconnect	N/A	Basic	N/A	CC CT=3WC	CT=3WC	N/A	N/A	CW	N/A	N/A	N/A	CC	N/A
Incoming call	Basic	Basic	Basic CW	CC CT=3WC	CT=3WC	3WC	CW	CW	CC	CC	CC	CC	N/A
other party answers	N/A	N/A	Basic	N/A	CT=3WC	3WC	N/A	N/A	N/A	CC	CC	CC	N/A
Period	N/A	Basic	Basic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	CC	N/A
Send and no digits	Basic	Basic CC	Basic CC CT=3WC	CT=3WC	CT=3WC	3WC	CW	CW	CC	CC	CC	CC	AH
Third disconnect	N/A	N/A	N/A	N/A	CT=3WC	3WC	CW	N/A	N/A	N/A	N/A	N/A	N/A
feature code, termination address and send	Basic CC	Basic CC	CT=3WC CC	CT=3WC CC	CT=3WC	3WC	CW	CW	CC	CC	CC	N/A	AH
addressed scV	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
switch control	N/A	AH	N/A	N/A	N/A	N/A	AH	N/A	N/A	N/A	N/A	N/A	AH

**Table 3: State-Action Matrix to Locate Feature Interactions (Part 1 of 2)**

<sup>1</sup> Some implementations may use the **END** key to activate Answer Hold.

## **X.1 Answer Hold (AH)**

(new Chapter for *TIA/EIA-664-XXX-B*)

Answer Hold (AH) provides a called subscriber the capability to answer the call, but selectively delay the conversation (e.g., calls in the alerting or Call Waiting state). The incoming call is provided an appropriate network announcement to notify the calling party to please hold.

AH is also applicable to incoming calls being delivered to called AH authorized subscribers as Call Waiting (CW) calls.

AH authorized subscribers, with AH active on an incoming call, shall resolve the call in the AH state prior to originating a new outgoing call or call leg.

New incoming calls to AH authorized subscribers, with AH active on an incoming call, shall receive the appropriate busy treatment (e.g., busy tone, redirected to voice mail, etc.) for the called AH subscriber.

### **Applicability to Telecommunications Services**

AH is applicable to voice telecommunications services.

### **X.1.1 Normal Procedures With Successful Outcome**

#### **Authorization**

AH may be generally available or may be provided after pre-arrangement with the service provider.

#### **De-Authorization**

AH may be withdrawn at the subscriber's request or for administrative reasons.

#### **Registration**

AH has no registration.

#### **De-Registration**

AH has no de-registration.

#### **Activation**

AH shall be activated upon authorization.

#### **De-Activation**

AH shall be de-activated upon de-authorization.

## Invocation

AH may be invoked when there is an un-answered incoming call while the called AH subscriber is being alerted or active in a call (e.g., MS receiving alerting treatment, MS receiving Call Waiting [CW] treatment).

## Normal Operation With Successful Outcome

When the called AH subscriber has placed a calling party in the Answer Hold state, the called AH subscriber is considered busy for other incoming calls. Services applicable to a busy called subscriber should be invoked for incoming calls.

	State	Alerting	Condition	
			The called AH mobile station is in the alerting state for an incoming call delivery.	
XID	Call Party Action		System Reaction	
2W 1	The called subscriber invokes the AH feature using an MS specific procedure (e.g., causing the MS to send the SCV of 18 to the network using an air interface specific mechanism).		The calling party is placed on hold, and has AH treatment applied (e.g., network provided AH announcement). Go to the Answer Hold state.	

**Table 1.1a: Alerting State for Answer Hold**

	State	2-way CW notification <sup>1</sup>	Condition	
			The called AH subscriber is in a 2-way conversation with the other party and call waiting notification is applied.	
XID	Call Party Action		System Reaction	
7W 1	The called subscriber invokes the AH feature using an MS specific procedure (e.g., causing the MS to send the SCV of 18 to the network using an air interface specific mechanism).		The calling party is placed on hold, and has AH treatment applied (e.g., network provided AH announcement). Go to the 2-way CW state.	

**Table 1.1b: 2-Way CW Notification State for Answer Hold**

<sup>1</sup> This transaction table is only applicable to AH subscribers who are also authorized for CW.

	<b>State</b> Answer Hold	<b>Condition</b> An incoming call has been answered and immediately placed on hold, with the appropriate Answer Hold treatment being applied toward the calling party. The system is waiting for the controlling subscriber to retrieve the held call. There is no third party.
<b>XID</b>	<b>Call Party Action</b>	<b>System Reaction</b>
13S	The controlling subscriber retrieves the held call (e.g., using an MS specific procedure), as in: <b>SEND</b> .	Ignore any accompanying digits. The held party has AH treatment removed, and the controlling subscriber is connected to the calling party. Go to 2-way state.
13A	termination address + <b>SEND</b> .	
13F	* FC + <b>SEND</b> , or	
13U	FC + termination address + # + <b>SEND</b> .	
13W L	The controlling subscriber retrieves the held call using an MS specific procedure (e.g., causing the MS to send the SCV of 18 to the network using an air interface specific mechanism).	The held party has AH treatment removed, the controlling subscriber is connected to the calling party. Go to 2-way state.
13E	The controlling subscriber enters <b>END</b> .	Release the controlling subscriber. Apply recall distinctive alerting toward the controlling subscriber. Optionally apply audible alerting tone toward the held party. Go to the Alerting state.
13D	The held party abandons.	Release the held party. Go to the Idle state.

**Table 1.1c: Answer Hold State for Answer Hold**

**Call Detail Record**

The system should record call detail information for the following:

- a. AH invocation events.
- b. AH usage events.

See *ANSI-124* for the specific information to be included for each element.

## X.1.2 Exception Procedures or Unsuccessful Outcome

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### Registration

---

None identified.

### De-Registration

---

None identified.

### Activation

---

None identified.

### De-Activation

---

None identified.

### Invocation

---

None identified.

### Exceptions While Roaming

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If the system to which the MS is registered does not support AH, the mobile station display shall not indicate AH as an available option.

### Exceptions During Intersystem Handoff

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If handoff to a system that does not support AH occurs while the mobile station is being alerted, the mobile station display shall not indicate AH as an available option for that call while that system remains the Serving System.

## X.1.3 Alternate Procedures

---

None identified.

## X.1.4 Interactions With Other Cellular Services

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### Answer Hold (AH)

---

Not applicable.

**Call Delivery (CD)**

---

None identified.

**Call Forwarding—Busy (CFB)**

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None identified.

**Call Forwarding—Default (CFD)**

---

None identified.

**Call Forwarding—No Answer (CFNA)**

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None identified.

**Call Forwarding—Unconditional (CFU)**

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None identified.

**Call Transfer (CT)**

---

When the called subscriber has placed a calling party in the AH state, CT can not be invoked.

**Call Waiting (CW)**

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CW is invoked before AH. That is, calls arriving to a busy AH subscriber who is able to receive a second call (e.g., no other call is waiting to be answered) shall be presented to the subscriber with CW notification.

Calls arriving to a busy AH subscriber who is unable to receive a second call (e.g., another call is waiting to be answered) shall not be presented to the subscriber. The call shall be provided the appropriate default busy treatment (e.g., CFB, CFD, busy tone).

**Calling Name Presentation (CNAP)**

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None identified.

**Calling Name Restriction (CNAR)**

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None identified.

**Calling Number Identification Presentation (CNIP)**

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**Calling Number Identification Restriction (CNIR)**

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None identified.

**Conference Calling (CC)**

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When the called subscriber has placed a calling party in the AH state, CC can not be invoked.

**Do Not Disturb (DND)**

---

DND takes precedence over AH. A call to a subscriber with both AH and DND active shall be given DND treatment immediately and not be given AH treatment.

**Emergency Services**

---

None identified.

**Flexible Alerting (FA)**

---

Interaction between FA and AH is beyond the scope of this Standard.

**Message Waiting Notification (MWN)**

---

None identified.

**Mobile Access Hunting (MAH)**

---

Interaction between MAH and AH is beyond the scope of this Standard.

**Password Call Acceptance (PCA)**

---

None identified.

**Preferred Language (PL)**

---

None identified.

**Priority Access and Channel Assignment (PACA)**

---

None identified.

**Remote Feature Control (RFC)**

---

None identified.

**Selective Call Acceptance (SCA)**

---

None identified.

**Subscriber PIN Access (SPINA)**

---

None identified.

**Subscriber PIN Intercept (SPINI)**

---

None identified.

**Three-Way Calling (3WC)**

---

When the called subscriber has placed a calling party in the AH state, 3WC can not be invoked.

**User Selective Call Forwarding (USCF) (Future)<sup>1</sup>**

---

For further study.

**Voice Message Retrieval (VMR)**

---

None identified.

**Voice Privacy (VP)**

---

None identified.

---

<sup>1</sup> User Selective Call Forwarding is not a feature currently defined. This description is retained to describe an intent of feature interaction.

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# 1 SYSTEM FUNCTIONALITY

(TIA/EIA-664-801-1)

The purpose of this section is to define the characteristics of the system with respect to messages and indications to the Mobile Station (MS) and to the calling party.

*The omitted existing text is retained without modification*

## 1.5 Indications Applied Toward the Mobile Station

(new for TIA/EIA-664-801-3)

The following indications may be applied by the system toward the mobile station during normal operation and in providing the features in this Standard, as:

- a. *System support for Answer Hold.*

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# 4. **TIA/EIA-41-D Chapter 1 “Functional Overview” Modifications**

---

## 4 **SYMBOLS AND ABBREVIATIONS**

---

*(TIA/EIA-41-D Chapter 1, page 1-14)*

AH                      Answer Hold

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# 5. TIA/EIA-41-D Chapter 3 “Automatic Roaming Information Flows” Modifications

## 6.x Answer Hold

(new for TIA/EIA-41-D Chapter 3)

This section illustrates some typical scenarios related to Answer Hold (AH) operations.

### 6.x.1 AH Invocation on Call Delivery to an Idle MS

(new for TIA/EIA-41-D Chapter 3)

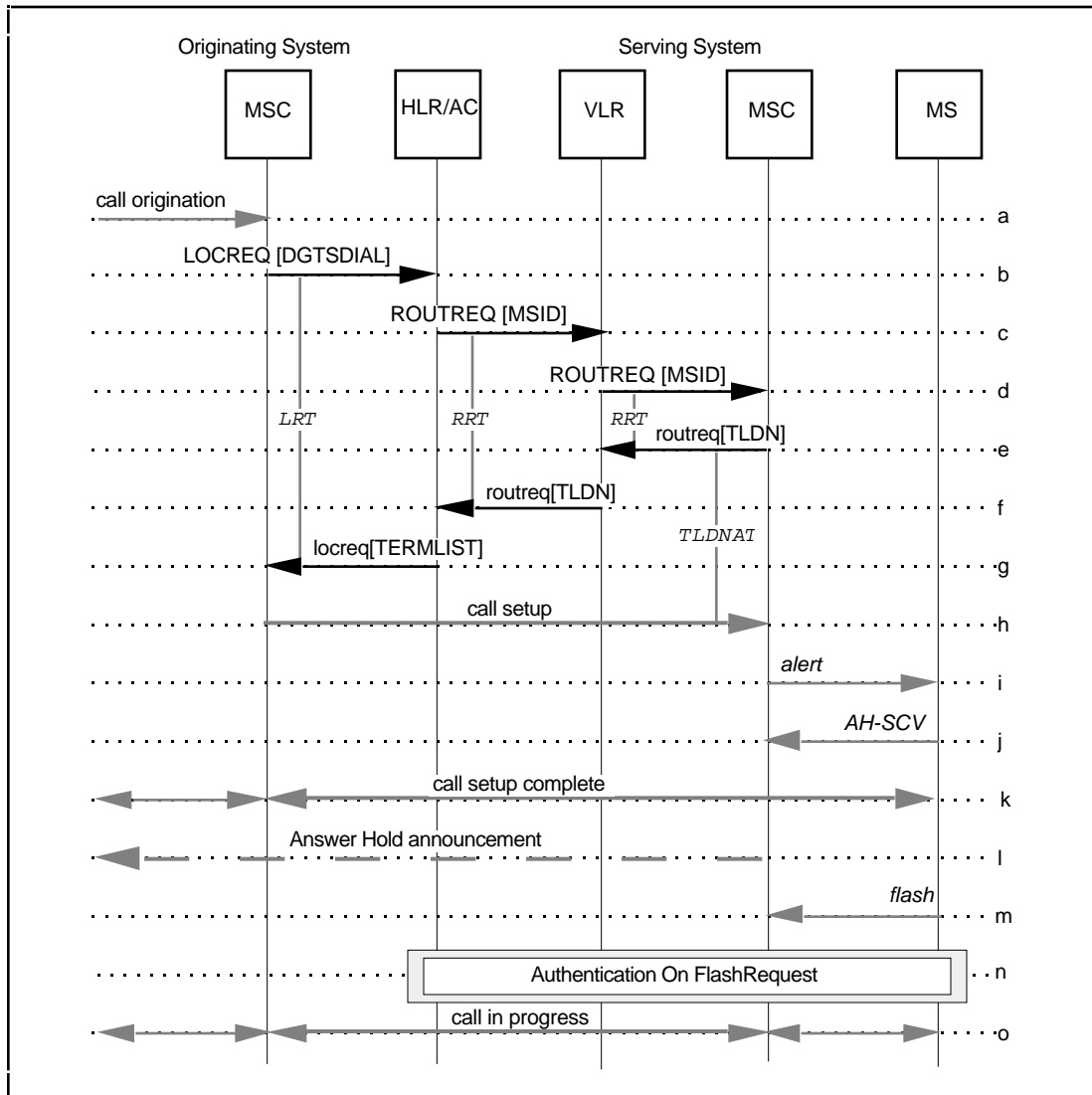


Figure 6.x.1 AH Invocation on Call Delivery to an Idle MS

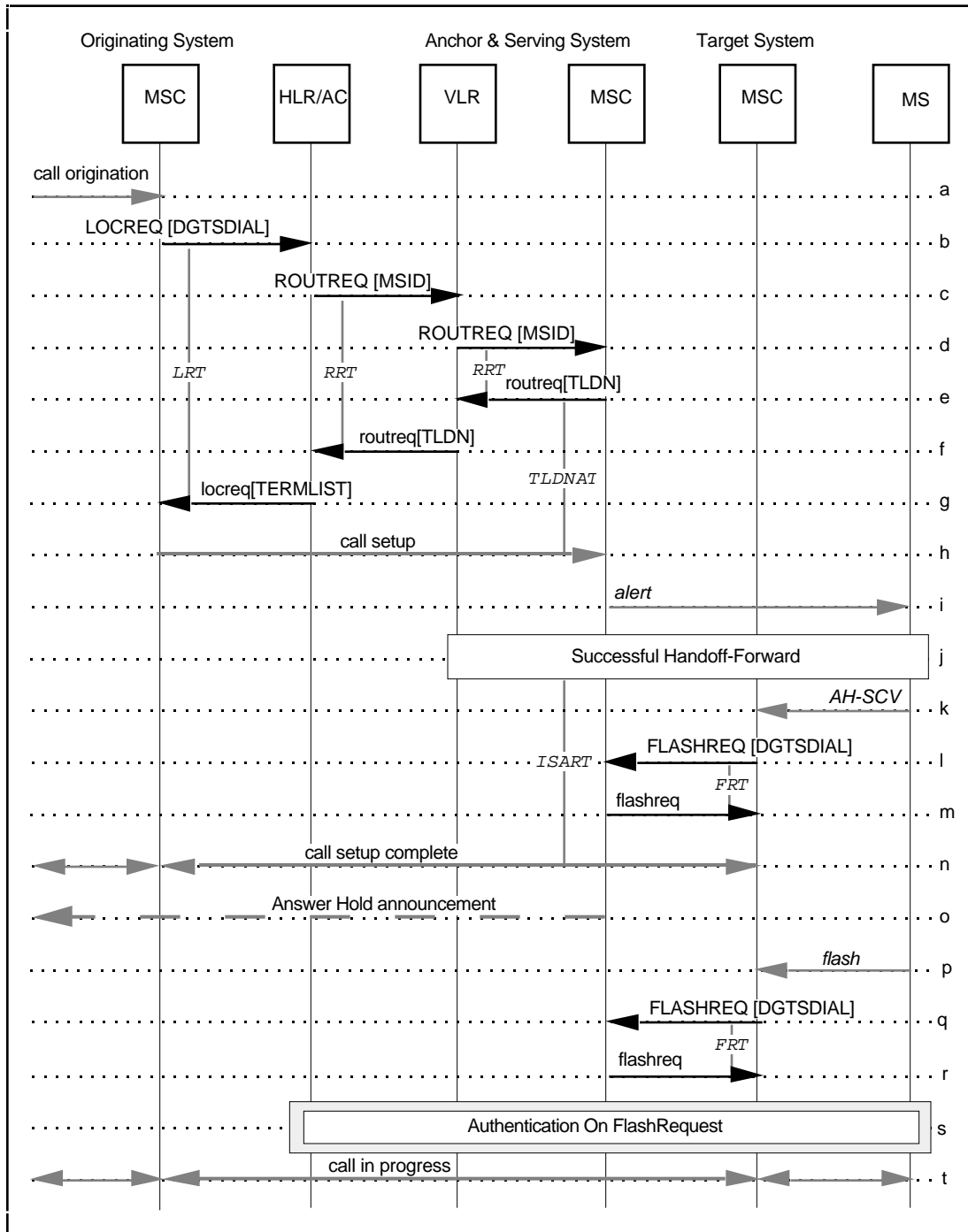
a. A call to a roaming AH subscriber arrives at the Originating MSC.

- b. The MSC sends a LOCREQ to the HLR.
- c. The HLR sends a ROUTREQ to the current Serving VLR.
- d. The VLR sends a ROUTREQ to the Serving MSC.
- e. The Serving MSC assigns a TLDN and returns that TLDN to the VLR in a routreq.
- f. The VLR returns the routreq to the HLR.
- g. The HLR returns the TLDN to the Originating MSC in a locreq.
- h. The Originating MSC establishes a voice path to the Serving MSC using the TLDN in the locreq.
- i. The Serving MSC sends an alert message to the terminating MS.
- j. The called subscriber answers the call using an MS specific AH procedure, and the MS uses an air interface specific mechanism to send the AH-SCV (value 18) towards the MSC.
- k. The Serving MSC recognizes that AH has been invoked. It returns answer supervision for the incoming call and places that call on hold.
- l. The Serving MSC provides AH treatment to the party on hold.
- m. The called subscriber requests that the held call be retrieved, either by using an MS specific AH procedure or by pressing the **SEND** key; the MS sends a Flash Request towards the MSC.
- n. The Serving MSC may initiate the Authentication on FlashRequest process, see scenario 5.4.5. If so, for the purposes of this scenario, it is assumed that authentication is successful.
- o. AH treatment is removed from the held party, and the held call is connected to the MS.

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### 6.x.2 AH Invocation After Handoff

(new for TIA/EIA-41-D Chapter 3)



**Figure 6.x.2 AH Invocation After Handoff**

a~i. Same as 6.X.1, steps a~i.

j. The Serving MSC elects, based on its internal algorithm, to initiate and in this case successfully completes a handoff forward; see Chapter 2, Section 5.1 Successful Handoff-Forward. In this case, the HandoffState parameter is

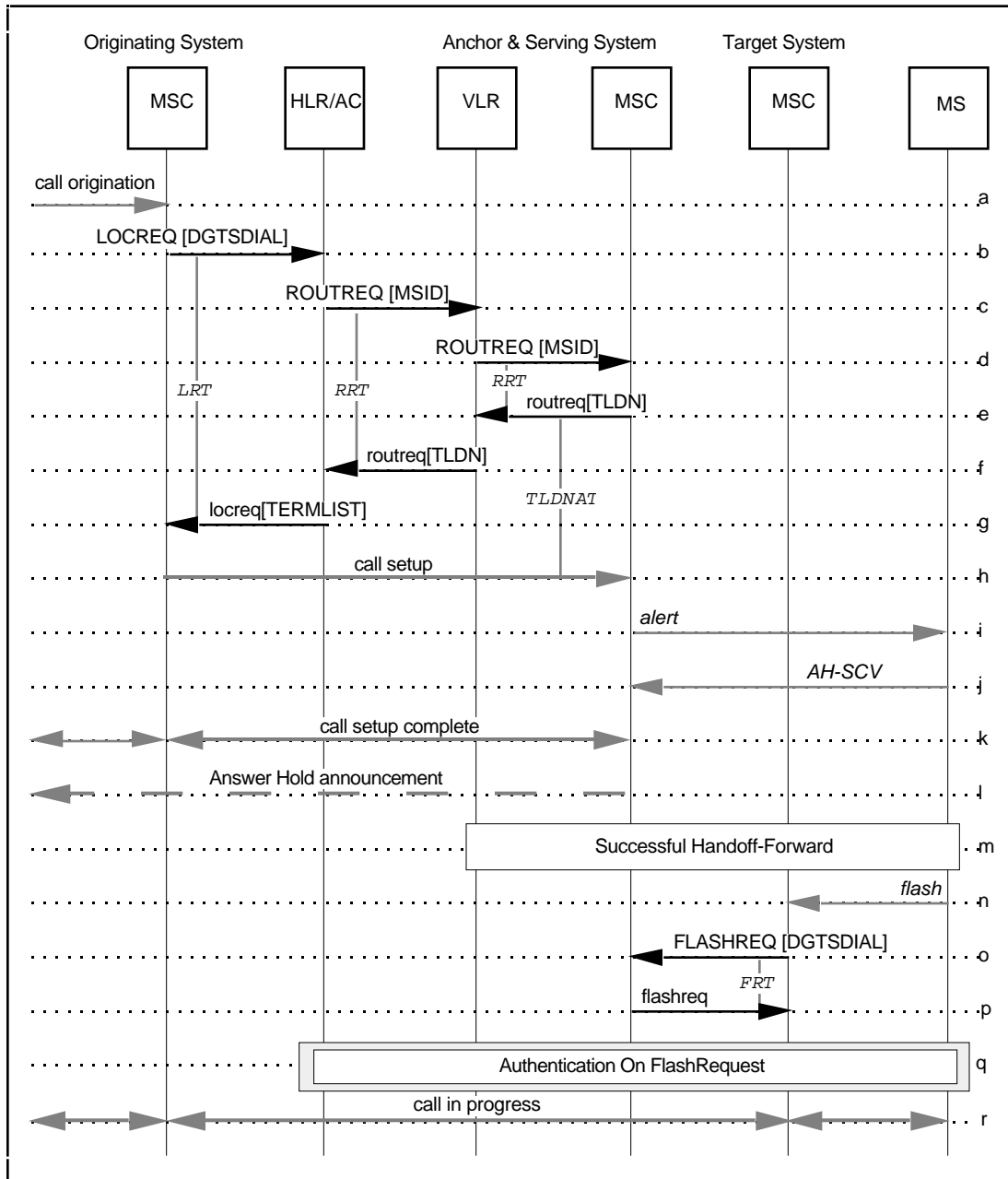
included in the FACDIR set to indicate that the terminator is handing off, and the Anchor MSC starts the InterSystemAnswer Response Timer (ISART).

Note: Handoff to a system which does not support AH is allowed at this point, but AH cannot be invoked when the call is answered while the MS is served by an system that does not support AH. An MS should not offer the subscriber the option of invoking AH while served by such a system.

- k. The called subscriber answers the call using an MS specific AH procedure, and the MS uses an air interface specific mechanism to send the AH-SCV (value 18) towards the MSC.
- l. The Target (now Serving) MSC recognizes the AH-SCV (value 18). The Target (now Serving) MSC stops its alerting timer; it converts the AH-SCV to SCC format (if not received in that format); it populates the Digits (Dialed) parameter with the resultant SCC; and it sends that parameter in a FLASHREQ to the Anchor MSC. . .
- m. . . . The Anchor MSC returns a flashreq. . .
- n. . . . The Anchor MSC recognizes that AH has been invoked, based on the receipt of the AH-SCC (18\*) and the feature activity status of AH in the subscriber's profile. It stops the timer ISART; it returns answer supervision for the incoming call; and it places that call on hold.
- o. The Anchor MSC provides AH treatment to the party on hold.
- p. The called subscriber requests that the held call be retrieved, either by using an MS specific AH procedure or by pressing the SEND key; the MS sends a Flash Request towards the MSC.
- q. The Target (now serving) MSC sends a FLASHREQ to the Anchor MSC.
- r. The Anchor MSC, on receipt of the FLASHREQ, returns a flashreq to the Target (now Serving) MSC.
- s. The Anchor MSC may initiate the Authentication on FlashRequest process, see scenario 5.4.5. If so, for the purposes of this scenario, it is assumed that authentication is successful.
- t. AH treatment is removed from the held party, and the held call is connected to the intersystem trunk towards the MS.

### 6.x.3 AH Invocation Before Handoff

(new for TIA/EIA-41-D Chapter 3)



6.x.3 AH Invocation Before Handoff

- a-l. Same as 6.x.1, steps a-l.
- m. The Serving MSC elects, based on its internal algorithm, to initiate and in this case successfully completes a handoff forward; see Chapter 2, Section 5.1 Successful Handoff-Forward.
- n-r. Same as 6.x.2, steps p-t.

## 6. SIGNALING PROTOCOL MODIFICATIONS

### 6.1 TIA/EIA-41-D Chapter 5 “Signaling Protocol” Modifications

#### 6.5 MAP PARAMETERS

(TIA/EIA-41-D Chapter 5, page 5-119)

#### 6.5.2 Parameter Definitions

(TIA/EIA-41-D Chapter 5, page 5-153)

#### 6.5.2.20 CallingFeaturesIndicator

(TIA/EIA-41-D Chapter 5, page 5-129)

The CallingFeaturesIndicator (CFI) parameter defines the authorization and activity states of the MS's features.

The minimum length of this parameter is 2 octets.

Field	Value	Type	Reference	Notes					
Identifier	CallingFeaturesIndicator IMPLICIT OCTET STRING	M	6.5.1.2						
Length	variable octets	M	6.5.1.1						
Contents									
H	G	F	E	D	C	B	A	octet	Notes
		CFNA-FA		CFB-FA		CFU-FA		1	a
		VP-FA		CD-FA		3WC-FA		2	a
		CNIR-FA		CNIP2-FA		CNIP1-FA		3	a
<u>Reserved</u>	<u>AH-FA</u>	<u>DP-FA</u> (IS-737)		PCW-FA				4	a, b
		• • •						n	c

**Figure 27 CallingFeaturesIndicator parameter**

Notes:

- a. CFU-FA, CFB-FA, etc., denotes the FeatureActivity status for the designated feature, where the FeatureActivity encoding is defined in Table 125.
  - **CFU-FA** = Call Forwarding–Unconditional: FeatureActivity.
  - **CFB-FA** = Call Forwarding–Busy: FeatureActivity.
  - **CFNA-FA** = Call Forwarding–No Answer: FeatureActivity.
  - **CW-FA** = Call Waiting: FeatureActivity.
  - **3WC-FA** = Three-Way Calling: FeatureActivity.
  - **CD-FA** = Call Delivery: FeatureActivity (not interpreted on reception by IS-41-C or later).

- **VP-FA** = Voice Privacy: FeatureActivity.
  - **CT-FA** = Call Transfer: FeatureActivity.
  - **CNIP1-FA** = One number (network-provided only) Calling Number Identification Presentation: FeatureActivity. CNIP2-FA takes precedence over CNIP1-FA.
  - **CNIP2-FA** = Two number (network-provided and user-provided) Calling Number Identification Presentation: FeatureActivity. CNIP2-FA takes precedence over CNIP1-FA.
  - **CNIR-FA** = Calling Number Identification Restriction: FeatureActivity. An *Authorized and Activated* value for CNIR-FA indicates that Calling Number Identification Presentation is restricted.
  - **CNIROver-FA** = Calling Number Identification Restriction Override: FeatureActivity. An *Authorized and activated* value for CNIROver indicates that Calling Number Identification Restriction is overridden.
  - **PCW-FA** = Priority Call Waiting: FeatureActivity.
  - **DP-FA** = Data Privacy: FeatureActivity. (Note: part of IS-737.)
  - **AH-FA** = Answer Hold: FeatureActivity.
- b. Reserved bits shall be ignored on receipt and set to zero on sending.
- c. Ignore extra octets, if received. Send only defined (or significant) octets.

**Table 125 CallingFeaturesIndicator value**

<i>FeatureActivity</i>					
Bits	H	G		Value	Meaning
	or F	E			
	or D	C			
	or B	A			
	0	0		0	Not used.
	0	1		1	<b>Not authorized.</b>
	1	0		2	<b>Authorized but de-activated.</b>
	1	1		3	<b>Authorized and activated.</b>

## 6.2 TIA/EIA-124-B Chapter 6 “Signaling Protocol” Modifications

### 6.4 “Call Detail Parameter Definitions” Modifications

(TIA/EIA-124-B, page 171)

#### 6.4.88 FeatureIndicator

(TIA/EIA-124-B, page 239)

The FeatureIndicator (FEATIND) defines the particular feature accessed by a featurecode or a remote feature operation. These features are in accordance with ANSI/TIA/EIA-664, except as noted.

**Table 109: FeatureIndicator**

Field	Value	Type	Reference	Notes
Identifier	FeatureIndicator IMPLICIT	M	6.1.3.5	a
Length	usually 1 octet	M	6.1.3.6	
ENUMERATED		M	6.5.4	b
Value Identifier	Value	Value Meaning		
unspecified	0	The type of feature is not defined by this standard.		
• • •	• • •	• • •		
answerHold	37	answer hold.		
• • •	• • •	• • •		
----	negative values	reserved for bilateral agreements.		
----	other positive values	reserved.		

Notes:

- a. If this parameter is omitted, then a value 0, "unspecified," is assumed.
- b. Treat reserved values as value 0, "unspecified".

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## 7. TIA/EIA-41-D Chapter 6 “Signaling Procedures” Modifications

### 3.2.2 In Call MS Flash Attempt

(TIA/EIA-41-D Chapter 6, page 6-14)

If the Anchor MSC receives a flash request initiated by an MS engaged in a call, the Anchor MSC shall:

~~When the MS attempts to signal during a call by pressing the [SEND] key, the Anchor MSC shall:~~

1 IF it is required to authenticate flash requests (e.g., signaling encryption is not supported):

1-1 Include the SystemAccessType parameter set to *Flash request*.

1-2 Execute the “MSC Initiating an Authentication Request” task (see 4.4.1).

1-3 IF authentication fails:

1-3-1 Execute “Local Recovery Procedures” task (see 3.5.1).

1-3-2 Exit this task.

1-4 ENDIF.

2 ENDIF.

3 IF *FlashPrivileges* are allowed by the OneTimeFeatureIndicator parameter:

3-a IF a party has been put on hold by a prior AH invocation:

3-a-1 IF another party is currently connected:

3-a-1-1 Put the current party on hold.

3-a-2 ENDIF.

3-a-3 Connect the AH held party to the MS.

3-a-4 Optionally apply warning tone toward the MS.

3-a-5 Exit this task.

3-b ENDIF.

3-1 IF CW has been invoked:

3-1-1 Put the current party on hold.

3-1-2 Connect the held party.

3-1-3 Optionally apply warning tone.

3-1-4 Exit this task.

3-2 ELSEIF a call is waiting for CW treatment:

3-2-c IF the AH-SCV (value 18) or AH-SCC (value 18\*) was received:

3-2-c-1 IF AH is authorized and active for the subscriber:

3-2-c-1-1 Put the waiting party on hold, maintaining the connection to the current party.

3-2-c-1-2 Provide AH treatment to the held party.

3-2-c-1-3 Exit this task.

3-2-c-2 ENDIF.

3-2-d ENDIF.

3-2-1	Put the current party on hold.	1
3-2-2	Connect the waiting party.	2
3-2-3	Optionally apply warning tone.	3
3-2-4	Exit this task.	4
3-3	ELSEIF 3WC has been invoked:	5
3-3-1	Add the held party to the current connection.	6
3-3-2	Optionally apply warning tone.	7
3-3-3	Exit this task.	8
3-4	ELSEIF CT has been invoked:	9
3-4-1	Drop the current party.	10
3-4-2	Connect the held party.	11
3-4-3	Optionally apply warning tone.	12
3-4-4	Exit this task.	13
3-5	ELSEIF a party is on hold:	14
3-5-1	Connect the held party,	15
3-5-2	Optionally apply warning tone.	16
3-5-3	Exit this task.	17
3-6	ELSE:	18
3-6-1	Put the current call on hold.	19
3-6-2	IF there are no digits included with the flash request:	20
3-6-2-1	(Wait around for the subscriber to enter digits or execute internal algorithms.)	21
3-6-3	ENDIF.	22
3-6-4	Execute the “MSC Analyze MS Dialed Number” task to set the Point Of Return (see 3.2.3).	23
3-7	ENDIF.	24
4	ENDIF.	25
5	Exit this task.	26

### 3.3.5 MS Termination Alerting

(TIA/EIA-41-D Chapter 6, page 6-29)

Upon request, the MSC shall perform the following:

- 1 IF the indicated MS is *idle*:
- 1-1 IF a channel has not been allocated for the MS (i.e., the MS has not been paged):
  - 1-1-1 IF an appropriate *idle* voice or traffic channel is available for the identified air interface control channel:
    - 1-1-1-1 Reserve the available voice or traffic channel.
    - 1-1-1-2 Execute the “Page an MS Procedure” task (see 3.3.3).
    - 1-1-1-3 IF the paging was locally successful:
      - 1-1-1-3-1 GOTO Await Answer.
      - 1-1-1-4 ELSEIF the paging was successful on another system:

1		
2	1-1-1-4-1	Execute the “MSC Initiation of an Intersystem Setup” task (see 4.27.1).
3		
4	1-1-1-4-2	GOTO Await Answer.
5		
6	1-1-1-5	ELSE (the paging was unsuccessful):
7		
8	1-1-1-5-1	IF the MS has activated Call Forwarding—No Answer in the CallingFeaturesIndicator or has the <i>No Page Response</i> TerminatingTrigger active:
9		
10		
11	1-1-1-5-1-1	Include the RedirectionReason parameter set to <i>No Page Response</i> .
12		
13	1-1-1-5-1-2	IF this call has requested the <i>None Reachable</i> termination trigger AND IF this is the last leg AND IF a GroupInformation parameter was received:
14		
15		
16	1-1-1-5-1-2-1	Include the GroupInformation parameter.
17		
18	1-1-1-5-1-3	ELSEIF the LegInformation parameter was received:
19		
20	1-1-1-5-1-3-1	Include the LegInformation parameter.
21		
22	1-1-1-5-1-4	ENDIF.
23	1-1-1-5-1-5	IF the MSC is the Originating MSC:
24		
25	1-1-1-5-1-5-1	Execute the “MSC Initiating a Transfer-To-Number Request” task (see 4.49.1).
26		
27	1-1-1-5-1-6	ELSEIF the Originating MSC is provisioned for call redirection:
28		
29	1-1-1-5-1-6-1	Execute the “MSC Initiating a Redirection Request” task (see 4.36.1).
30		
31	1-1-1-5-1-7	ELSE:
32		
33	1-1-1-5-1-7-1	Execute the “MSC Initiating a Transfer-To-Number Request” task (see 4.49.1).
34		
35	1-1-1-5-1-8	ENDIF.
36	1-1-1-5-2	ELSE:
37		
38	1-1-1-5-2-1	Execute the “Apply Access Denial Treatment” task (see 3.4.5).
39		
40	1-1-1-5-2-2	Exit this task.
41	1-1-1-5-3	ENDIF.
42	1-1-1-6	ENDIF.
43	1-1-2	ENDIF.
44		
45	1-2	ENDIF.
46	1-3	IF the RoutingDigits parameter is received:
47		
48	1-3-1	Analyze the routing digits to select an internal trunk group (such as, a service monitor, scrambling device).
49		
50	1-3-2	Execute the “MSC CNIP Terminating Call Invocation” task (see 5.8.4).
51		
52	1-4	ENDIF.
53	1-5	IF the MobileDirectoryNumber parameter is received:
54		
55	1-5-1	Include the MobileDirectoryNumber parameter as the Called Number in the MS alerting command.
56		
57	1-6	ELSE:
58		
59	1-6-1	Include the MobileIdentificationNumber parameter as the Called Number in the MS alerting command.
60		

1-7      ENDIF. 1

1-8      IF the AlertCode parameter received: 2

1-8-1      Include the AlertCode parameter in the MS alerting command to control 3  
the pitch and cadence of the alerting. 4

1-9      ELSE: 5

1-9-1      Include the system default AlertCode parameter in the MS alerting 6  
command to control the pitch and cadence of the alerting. 7

1-10     ENDIF. 8

1-11     Order the MS to alert. 9

**Await Answer** (get here for normal and CW alerting, alerting has been applied, no 10  
timers have been started): 11

1-12     IF the TerminationTriggers is received: 12

1-12-1     Store the TerminationTriggers parameter for this leg. 13

1-12-2     IF the *NoAnswer* trigger is requested in the TerminationTriggers 14  
parameter OR IF the MS has Call Forwarding—No Answer activated in 15  
the CallingFeaturesIndicator parameter: 16

1-12-2-1     IF the NoAnswerTime parameter is received: 17

1-12-2-1-1     Start a no answer timer with the value in the received 18  
NoAnswerTime parameter. 19

1-12-2-2     ELSE: 20

1-12-2-2-1     Start a no answer timer with a system default value. 21

1-12-2-3     ENDIF. 22

1-12-3     ENDIF. 23

1-13     ENDIF. 24

1-14     IF the LegInformation parameter is received: 25

1-14-1     Store the LegInformation to control subsequent redirections. 26

1-15     ENDIF. 27

1-16     Start the alerting timer. 28

1-17     Apply ring back tone to the waiting call. 29

1-18     WAIT for the MS to answer: 30

1-19     WHEN the MS answers or responds with AH-SCV or AH-SCC: 31

1-19-1     Remove the ring back tone. 32

1-19-w     IF the MS was in a call state other than idle prior to alerting (e.g., 33  
CW): 34

1-19-w-1     Execute the “In Call MS Flash Attempt” task (see 3.2.2). 35

1-19-z     ELSEIF the AH-SCV (value 18) or the AH-SCC (value 18\*) was 36  
received: 37

1-19-z-1     IF AH is authorized and active for the subscriber: 38

1-19-z-1-1     Put the incoming call on hold. 39

1-19-z-1-2     Provide AH treatment to the held party. 40

1-19-z-2     ELSE: 41

1-19-z-2-1     Connect the MS to the incoming call. 42

1-19-z-3     ENDIF. 43

1-19-x     ELSE: 44

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1-19-x-1      Connect the MS to the incoming call.
1-19-y      ENDIF.
1-19-2      Connect the MS to the waiting call.
1-19-3      IF the OneTimeFeatureIndicator parameter was received and the Call
              Waiting for future incoming calls field is not set to Ignore:
1-19-3-1    Set the Call Waiting for the existing call field in the
              OneTimeFeatureIndicator parameter equal to the
              OneTimeFeatureIndicator Call Waiting For Future Incoming Calls
              field.
1-19-4      ELSE (the OneTimeFeatureIndicator parameter was not received or the
              Call Waiting for Future Incoming Calls field is set to Ignore):
1-19-4-1    IF Call Waiting is active in the CallingFeaturesIndicator:
1-19-4-1-1  Set the Call Waiting for future incoming calls field in the
              OneTimeFeatureIndicator parameter set to Normal CW.
1-19-4-2    ELSEIF Priority Call Waiting is active in the
              CallingFeaturesIndicator:
1-19-4-2-1  Set the Priority Call Waiting for future incoming calls field in
              the OneTimeFeatureIndicator parameter set to Priority CW.
1-19-4-3    ELSE:
1-19-4-3-1  Set the Call Waiting for future incoming calls field in the
              OneTimeFeatureIndicator parameter set to No CW.
1-19-4-4    ENDIF.
1-19-5      ENDIF.
1-20      WHEN the alerting timer expires:
1-20-1      Remove the ring back tone.
1-20-2      Connect the calling party to an announcement or tone to indicate that
              the called party is not answering.
1-21      WHEN the no answer timer expires:
1-21-1      Include the RedirectionReason parameter set to No Answer.
1-21-2      IF this call has requested the None Reachable (NR) termination trigger
              AND IF this is the last leg AND IF a GroupInformation parameter was
              received:
1-21-2-1    Include the GroupInformation parameter.
1-21-3      ELSEIF the LegInformation parameter was received:
1-21-3-1    Include the LegInformation parameter.
1-21-4      ENDIF.
1-21-5      IF the MSC is the Originating MSC:
1-21-5-1    Execute the “MSC Initiating a Transfer-To-Number Request” task
              (see 4.49.1).
1-21-6      ELSEIF the Originating MSC is provisioned for call redirection:
1-21-6-1    Execute the “MSC Initiating a Redirection Request” task (see
              4.36.1).
1-21-7      ELSE:
1-21-7-1    Execute the “MSC Initiating a Transfer-To-Number Request” task
              (see 4.49.1).
1-21-8      ENDIF.
1-22      ENDWAIT.

```

- 2 ELSE (the indicated MS is busy):
- 2-1 IF Call Waiting is invoked (there is another call pending<sup>2</sup>) OR IF the MS is otherwise unable to accept a call (e.g., the MS has invoked Priority Access and Channel Assignment, Call Transfer, AnswerHold, Conference Calling, Three-Way Calling or the MS is not in a state where it can apply Call Waiting.):
- 2-1-1 GOTO Busy MS Detected.
- 2-2 ELSE (the MS may accept CW):
- 2-2-1 IF the RoutingDigits parameter is received:
- 2-2-1-1 Analyze the Routing digits to select an internal trunk group (such as, a service monitor, scrambling device).
- 2-2-2 ENDIF.
- 2-2-3 IF the MobileDirectoryNumber parameter is received:
- 2-2-3-1 Include the MobileDirectoryNumber parameter as the Called Number in the MS alerting command.
- 2-2-4 ELSE:
- 2-2-4-1 Include the MobileIdentificationNumber parameter as the Called Number in the MS alerting command.
- 2-2-5 ENDIF.
- 2-2-6 Execute the “MSC CW Terminating Call Invocation” task (see 5.7.4).
- 2-2-7 IF Call Waiting is *accepted*:
- 2-2-7-1 GOTO Await Answer.
- 2-2-8 ELSE (Call Waiting was not accepted, the MS is busy):
- Busy MS Detected:**
- 2-2-8-1 IF the MS has activated Call Forwarding—Busy or has the Busy TerminationTriggers set to *Launch a RedirectionRequest* or *TransferToNumberRequest*:
- 2-2-8-1-1 Include the RedirectionReason parameter set to *Busy*.
- 2-2-8-1-2 IF this call has requested the *None Reachable* termination trigger AND IF this is the last leg AND IF a GroupInformation parameter was received:
- 2-2-8-1-2-1 Include the GroupInformation parameter.
- 2-2-8-1-3 ELSEIF the LegInformation parameter was received:
- 2-2-8-1-3-1 Include the LegInformation parameter.
- 2-2-8-1-4 ENDIF.
- 2-2-8-1-5 IF the call arrived via Call Delivery:
- 2-2-8-1-5-1 IF the Originating MSC is provisioned for call redirection:
- 2-2-8-1-5-1-1 Execute the “MSC Initiating a Redirection Request” task (see 4.36.1).

---

<sup>2</sup>MS busy or call pending can be defined as either a) actual calls in the MSC or b) a combination of actual calls in the MSC or TLDNs assigned. Choice b) uses less of the call redirection procedures and thereby routes calls faster. Choice a) handles abandoned calls more properly.

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2 2-2-8-1-5-2 ELSE:  
3  
4 2-2-8-1-5-2-1 Execute the “MSC Initiating a Transfer-To-Number  
5 Request” task (see 4.49.1).  
6 2-2-8-1-5-3 ENDIF.  
7 2-2-8-1-6 ELSE (call did not arrive via Call Delivery):  
8 2-2-8-1-6-1 Execute the “MSC Initiating a Transfer-To-Number  
9 Request” task (see 4.49.1).  
10  
11 2-2-8-1-7 ENDIF.  
12 2-2-8-2 ELSE (busy triggers do not apply):  
13 2-2-8-2-1 Apply busy treatment to the waiting call (e.g., apply busy  
14 tone).  
15 2-2-8-3 ENDIF.  
16 2-2-9 ENDIF.  
17 2-3 ENDIF.  
18 3 ENDIF.  
19 4 Return to the calling task.  
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## 4.15 FLASH REQUEST

(TIA/EIA-41-D Chapter 6, page 6-138)

The Flash Request operation is used to convey user initiated signaling (e.g., depressions of the SEND key) from the Serving MSC to the Anchor MSC to effect call features. Any digits (including an SCC or SCCS) sent entered by the MS user that are associated with the signaling SEND key depression, will be included in the message to the Anchor MSC. Additionally, if the MS sends an SCV, either alone or in conjunction with a termination address, the SCV (respectively SCV/termination address pair) is converted to the associated SCC (respectively SCCS) and the resultant digits will be included in the message to the Anchor MSC.

### 4.15.1 Serving MSC Initiating a Flash Request

(TIA/EIA-41-D Chapter 6, page 6-138)

When the Serving MSC receives a flash (or an air interface message carrying an SCV, SCC, or SCCS) from an MS that is engaged in a voice call or that is alerting, it shall perform the following:

- 1 Include the InterMSCCircuitID parameter set to the trunk for this call.
- 2 Include the MobileIdentificationNumber parameter set to the requesting MS's MIN.
- 3 Include the ElectronicSerialNumber parameter set to the requesting MS's ESN.
- 4 IF an SCV was received without accompanying termination address:
  - 4-1 Include the Digits (Dialed) parameter set to the associated SCC.
  - a ELSEIF an SCV was received along with an accompanying termination address:
    - a-1 Include the Digits (Dialed) parameter set to the associated SCCS.
    - b ELSEIF an SCC or SCCS was received:
      - b-2 Include the Digits (Dialed) parameter set to the received SCC or SCCS.
      - c ELSE:

- c-1 Include the Digits (Dialed) parameter set to the digits (non-encrypted) received from the MS.
- d ENDIF.
- ~~4 Include the Digits (Dialed) parameter set to the digits (non-encrypted) received from the MS.~~
- 5 IF the SignalingMessageEncryptionKey (SMEKEY) parameter was provided for the MS:
- 5-1 Include the ConfidentialityModes (CMODES-actual) parameter set to the current Signaling Message Encryption mode and Voice Privacy mode of the requesting MS.
- 6 ENDIF.
- 7 Send a FlashRequest INVOKE toward the Anchor MSC for this call.
- 8 Start the Flash Request Timer (FRT).
- 9 WAIT for a Flash Request response.
- 10 WHEN a RETURN RESULT is received:
- 10-1 Stop timer (FRT).
- 10-2 Exit this task.
- 11 WHEN a RETURN ERROR or REJECT is received:
- 11-1 Stop timer (FRT).
- 11-2 Execute the “Local Recovery Procedures” task (see 3.5.1).
- 11-3 Exit this task.
- 12 WHEN the timer (FRT) expires:
- 12-1 Execute the “Local Recovery Procedures” task (see 3.5.1).
- e WHEN a FacilitiesRelease INVOKE was received (see 4.13.2):
- e-1 Stop timer (FRT).
- e-2 Stop the alerting timer, if running.
- e-3 Release associated inter-MSC trunk facility (See 4.13).
- 13 ENDWAIT.
- 14 Exit this task.

#### 4.24.1 MSC Awaiting InterSystemAnswer

(TIA/EIA-41-D Chapter 6, page 6-173)

When the MSC determines that it should wait for an InterSystemAnswer message, it shall do the following:

- 1 Start the InterSystemAnswer Response Timer (ISART).
- 2 WAIT for an InterSystemAnswer INVOKE:
- a WHEN a FlashRequest INVOKE containing a Digits (Dialed) parameter populated with an SCC or SCCS is received by the Anchor MSC:
- a-1 Send a FlashRequest RETURN RESULT toward the Serving MSC.
- a-2 IF the AH-SCC (18\*) is received:
- a-2-1 Stop the timer (ISART).

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- a-2-2 Pass the received SCC along with an indication that the call has been answered to the “MS Termination Alerting” task (see 3.3.5) running for the MS.
  - a-2-3 Exit this task.
  - a-3 ENDIF.
  - 3 **WHEN** an InterSystemAnswer INVOKE is received from the border system:
    - 3-1 Stop the timer (ISART).
    - 3-2 Send an InterSystemAnswer RETURN RESULT to the Border MSC.
    - 3-3 Connect the call path.

NOTE: After the call has been established, a subsequent handoff to the visited (Anchor) MSC should be treated as a Handoff Back.
  - 4 **WHEN** a FacilitiesRelease INVOKE is received (see 4.13.2):
    - 4-1 Stop the timer (ISART).
  - 5 **WHEN** the (ISART) timer expires:
    - 5-1 Include the ReleaseReason parameter indicating *clear forward*.
    - 5-2 Execute the “Initiating MSC Initiating a Facilities Release” task (see 4.13.1).
    - 5-3 Execute “Local Recovery Procedures” task (see 3.5.1).
  - 6 **ENDWAIT.**
  - 7 **Exit** this task.

#### 4.24.2 **MSC Initiating InterSystemAnswer**

(TIA/EIA-41-D Chapter 6, page 6-173)

When the MSC determines that it should send an InterSystemAnswer message, it shall do the following:

- 1 Start an alerting timer.

##### **Waiting for MS Answer**

- 2 **WAIT** for the MS to answer:
  - a **WHEN** the MS sends an SCV, either alone or in conjunction with a termination address (whether sent using dedicated air interface specific protocol elements or sent as an SCC or SCCS using air interface procedures for sending generic digit strings):
    - a-1 **IF** the AH-SCV (value 18) or the AH-SCC (value 18\*) was received:
      - a-1-1 Treat the received SVC (or SCC) as an indication that the call has been answered and stop the alerting timer.
      - a-1-2 Execute the “Serving MSC Initiating a Flash Request” task (see 4.15.1).
      - a-1-3 **IF** a RETURN ERROR or REJECT was received:
        - a-1-3-1 Release associated inter-MSC trunk facility (See 4.13).
      - a-1-4 **ELSEIF** the Flash Request Timer (FRT) expired:
        - a-1-4-1 Release associated inter-MSC trunk facility (See 4.13).
      - a-1-5 **ENDIF.**
      - a-1-6 **Exit** this task.

a-2 ELSE:

a-2-1 Execute the “Serving MSC Initiating a Flash Request” task (see 4.15.1).

a-2-2 IF the associated inter-MSC trunk facility has not been released:

a-2-2-1 GOTO Waiting for MS Answer.

a-2-3 ENDIF.

a-3 ENDIF.

3 WHEN the MS answers:

3-1 Send an InterSystemAnswer INVOKE to the Serving MSC.

3-2 Start the InterSystemAnswer (ISAT) timer.

3-3 WAIT for an intersystem answer response:

3-4 WHEN a RETURN RESULT is received:

3-4-1 Stop (ISAT) timer.

3-5 WHEN a RETURN ERROR or REJECT is received:

3-5-1 Stop (ISAT) timer.

3-5-2 Release associated inter-MSC trunk facility (See 4.13).

3-6 WHEN a FacilitiesRelease INVOKE is received (see 4.13.2):

3-6-1 Stop (ISAT) timer.

3-6-2 Release associated inter-MSC trunk facility (See 4.13).

3-7 WHEN timer (ISAT) expires:

3-7-1 Perform Local Recovery Procedures (see 3.5.1).

3-7-2 Release associated inter-MSC trunk facility (See 4.13).

3-8 ENDWAIT.

4 WHEN a FacilitiesRelease INVOKE is received (see 4.13.2):

4-1 Stop the alerting timer.

4-2 Release associated inter-MSC trunk facility (See 4.13).

*Note: the remaining portion of this section is retained unchanged.*

#### **4.41.3 MSC Receiving RoutingRequest INVOKE**

(TIA/EIA-41-D Chapter 6, page 6-256)

*Note: the omitted existing text is retained without modification.*

1-4-7-1 IF there is another call pending (for the Call Waiting feature) or the call is not in a two-way talking state (e.g., PACA requested, alerting, awaiting answer, awaiting page response, AH invoked, CC invoked, 3WC invoked, CT invoked):

*Note: the remaining portion of this section is retained unchanged.*

**7 OPERATION TIMER VALUES**

(TIA/EIA-41-D Chapter 6, page 6-400)

*Note: the omitted existing text is retained without modification.*

**Table 63 Operation Timer Values (continued)**

(TIA/EIA-41-D Chapter 6, page 6-402)

Timer	Default (sec.)	Started when	Normally stopped when	Action when timer expires
• • •	• • •	• • •	• • •	• • •
ISART Intersystem Answer Response Timer	78	Affirmative InterSystemSetup RETURN RESULT is received.	InterSystemAnswer INVOKE is received <u>or</u> the Anchor MSC determines through other means that the MS has answered the call (e.g., a FlashRequest INVOKE carrying the AH-SCC, 18*, is received).	Execute recovery procedures.
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