Voice Service Unit

Description

The Voice Service Unit of the Superkey® Electronic Telephone System provides the ability to record brief messages within the system for various notification situations that arise within the system. These messages should not be confused with answering machine type messages. The Voice Service Unit is designed for long term storage of specific messages that relate to call processing within the system.

The Voice Service Unit is heavily used when the internal Automated Attendant function is enabled on the Superkey® system. For more information on the operation of Automated Attendant, please see the Automated Attendant section of the Features and Services Description

Conditions

The Voice Service Unit for the SK-200 installs in a peripheral card slot on any available cabinet. The SK-200 VSU (Model SK-VSU/2) provides four Voice Service Unit modules, each with 60 seconds of available recording time. A maximum of 10 SK-VSU/2 cards may be installed on a system, allowing a total of up to 40 Voice Service Unit modules per system.

Programming

Form 01-06-01 determines if all VSU modules will be dedicated to parallel tasks or if they will be independently assigned. A setting of 0 will cause all VSU modules to serve all available CO trunks. A setting of 1 will allow individual VSU modules to be assigned to trunk groups on Form 14-VSU-09.

Form 14, locations 01 through 08 provide the ability to assign the Voice Service Unit to various functions. Assignments must be made in order. If a message is longer than approximately 8 seconds, it will "push" the other messages towards the end of the message length time.

To illustrate this, if the first message on the system is 12 seconds in length (assuming 60 seconds total time on the VSU), the total time remaining is 48 seconds. If the first five messages are each 12 seconds in length, there is no time remaining for the last three messages, so the programming for the last three messages is irrelevant.
The options that can be programmed on Form 14-01 through Form 14-08 are listed below:

VSU Channel Assignment, (Form 14-VSU-01 through 14-VSU-08)	00=Non-Operational

01=DISA: Answer Greeting	02=DISA: Dialed Extension is Busy
03=DISA: Dialed Extension Does Not Answer	04=DISA: Dialed Number is invalid
05=DISA: Console is Busy, Please Wait	06=DISA: Time duration has run out
07=DISA: Insufficient Digits Dialed	08=DISA: Night Answer Greeting
09=External Call Forward Reroute Message	14=Wake Up Message
15=SLT Message Waiting	

Form 14-VSU-09 assigns a VSU module to a CO Trunk Group. Trunk groups are programmed on Form 44.

If a channel on Form 14 is set to 14 (Wake Up message), Form 01-05-01 (Wake Up Call Signaling) should be programmed as 0, to direct wake up calls to use the Voice Service Unit for wake up calls. If Form 01-05-01 is set to 1, calls will be connected to background music instead of the Voice Service Unit.

See also Direct Inward System Access, in the Features and Services Description document.

Operation

To record and play voice prompts:
1.   From the operator's station,
        Dial 79*xx (where xx is the Voice Service Unit module being recorded. Valid numbers for xx are 01-40. Modules 01 through 04 will be on the first physical SK-VSU/2 card in the system. Modules 05-08 will be on the second SK-VSU/2, etc.*
2.   LCD display shows:

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VOICE PORT (1)
  *:REC #:PLAY
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3.   The number in parenthesis indicates the voice channel number on the VSU module that is presently being programmed.
4.   You may step to the voice channel that you wish by pressing the digit [1] until the desired channel number appears.
5.   Press [*]. You will hear a confirmation tone. You may begin speaking as soon as you hear the tone. When you have finished, press [1].
6.   To listen to your recording, press [#]. The selected message will play.

DISA Description

This section describes the details of operation, programming and implementation of Direct Inward System Access (DISA) on the Superkey® SK-200. This appendix primarily concentrates on the implementation of DISA with Voice Service Units. DISA call flow is also explained at the end of this document through the use of a flow chart.

DISA Overview

DISA and the Voice Service Unit provide an end user with the ability to have the telephone system answer calls, play a greeting to the caller and provide some choices to the incoming caller as to how calls should be routed. It's most common use is to provide Automated Attendant functions to reduce or eliminate the need for a person dedicated to the task of answering telephone calls. Through the use of DISA with the Voice Service unit, outside callers can directly dial individual stations, select one of up to five stations from a single digit dialing menu, or in the SK-200 route themselves to one of a number of people within a department.

Maintenance personnel may use the DISA feature to make program changes from a remote location such as their service center. DISA callers may be allowed access to speed dial, "dial 9" CO line groups, individual CO lines, the system operator and they may also be allowed to invoke the monitor feature for specific stations or either of the two door phones.

While DISA can be implemented without the use of a Voice Service Unit, most DISA setups make use of the VSU to provide some level of Auto Attendant capabilities.

Voice Service Unit

Each SK-VSU/2 provides 4 Voice Service Unit modules. Each module is capable of providing up to 60 seconds of recorded messages.

The Voice Service Unit for the SK-200 utilizes a peripheral card slot. It does impact system capacity, so an SK-200 cabinet equipped with a SK-VSU/2 card will have nine available card slots for CO line cards and station cards.

Multiple SK-VSU/2 Voice Service Unit Cards can be installed on an SK-200, up to a maximum of 10 cards on a multiple cabinet SK-200 system.

Programming Options and Parameters

On Superkey® systems, unlike most other systems on the market, a DISA call can be treated as a normal incoming telephone call until it is answered by the system. As such, most normal operating parameters for CO lines also apply. They will be described in detail within this section.

Form 01-01-04, Delay DISA Access is the first step in determining how long the incoming CO line will ring and act as a normal incoming call before it is answered by DISA and directed to Automated Attendant (if the system is equipped with VSU) or DISA dial tone (if the system is not equipped with a VSU). The parameters are listed below:

Delayed DISA Access Form 01-01-04		0=1 Second	1=3 seconds
2=5 seconds	3=7 seconds	4=9 seconds	5=16 seconds
6=31 seconds	7=61 seconds	8=121 seconds	9=255 seconds

This parameter is important for at least two reasons:

1. If all calls are to be answered exclusively by the Voice Service Unit, Delayed DISA Access should be set at 0. With this setting, as soon as a call is detected, DISA will answer the call and begin call processing.

2. If DISA is to be used as a "backup" method of answering calls, such as an Attendant Overflow, Form 01-01-04 should be set to a value that will allow adequate time for an available answering position to answer the call. This setting will be determined by the urgency that the customer wishes to place on incoming calls.

Form 01-06-03, VSU Service determines if multiple Voice Service Unit modules are to be combined into one group or if different Voice Service Unit modules may be assigned to different incoming CO groups. If 01-06-03 is set to a value of 0, all Voice Service Unit modules will service all incoming CO trunk groups. If 01-06-03 is set to 1, each Voice Service Unit module can be programmed to service a specific trunk group. Assignment to a trunk group is via Form 14-VSU-09. Trunk groups are programmed on Form 44.

In some installations a customer may be operating two different businesses within one telephone system. In that case the message that the incoming caller will hear will be determined by the CO trunk where the call was received. In this situation, 01-06-03 is programmed with a value of 1.

In other situations a customer may elect to utilize all of the Voice Service Units to answer as many calls of one type as possible. In that situation all Voice Service Units would carry the same messages, so as to handle as many calls as possible. In this situation 01-06-03 is programmed with a value of 0.

Valid settings for Form 01-06-03 are:

Form 01-06-03 VSU Service	0=All VSU modules serve all DISA enabled CO lines	1= Assign VSU modules to CO groups on Form 14-VSU-09

Form 01-07-04, DISA No Digits Dialed Routing provides the capability to **drop calls** where no digits are dialed into a DISA call. Under most applications, this parameter will be programmed to overflow to an operator group. In instances where incoming digits are expected and no alternate call handling is to take place, this option provides a quick method for disconnecting callers who do no t dial.

Form 01-07-04 DISA No Digits Dialed Routing	0=Recall to Operator	1=Drop Call

Form 01-08-04, DISA Operator Recall Location on No Answer determines where a call will forward if an incoming caller dials an extension that does not answer. If all recalls are to be answered by a central operator (or group of operators) this parameter should be set to 0, which will cause the call to forward to the operator group number (Form 04) that corresponds to the same number as the CO group (Form 44).   If this parameter is set to 1, the call will recall to the operator group (Form 04) that corresponds to the station group (Form 28-STN-01) number.

Form 01-08-06, DISA No Answer Recall Timer determines how long a DISA call will ring a station before it considers the call to be unanswered. This parameter can be set from a minimum of 8 seconds (a setting of 0) to a maximum of 80 seconds (a setting of 9).

Form 01-08-06 DISA No Answer Recall Timer (Seconds)						0=8	1=16
2=24	3=32	4=40	5=48	6=56	7=64	8=72	9=80

Form 01-08-07 DISA Transfer Time (No Digits Dialed) determines how long the system will wait before dealing with a caller who does not dial any digits. When this timer expires, the system will then check Form 01-07-04 to determine if the call should be routed to an operator or dropped. In systems that are equipped with a VSU, this timer applies after the initial greeting message has played. In systems without a VSU, this timer begins as soon as the call is answered by the system.

Form 01-09-04 VSU Detect Disconnect allows calls routed through the VSU to be disconnected by the system when tones other than DTMF are "heard" by the system. The selection of disconnect tones can be set up to suit your local central office.

Form 01-09-04 VSU Detect Disconnect	0=Ignore Disconnect Tones
1=Disconnect on 60 Impulses Per Minute	2=Disconnect onf 120 IPM

3=Disconnect on 60 IPM or 120 IPM	4=Disconnect on Dial Tone
5=Disconnect on 60 IPM or Dial Tone	6=Disconnect on 120 IPM or Dial Tone
7= Disconnect on 60 IPM, 120 IPM or Dial Tone	

Form 01-09-06 UCD All Agents Busy Recording Queue Timer (First Message).
To be added in future software revisions.

Form 01-09-07 UCD All Agents Busy Recording Queue Timer (Second Message).
To be added in future software revisions.
Form 01-09-08 UCD Overall Timeout (Call cut-off timer).
To be added in future software revisions.

Form 01-11-04 DISA Queuing to VSU determines if incoming calls will be queued to the VSU if it is unavailable or if calls should be processed without queuing to VSU. This option should normally be set to 1 (Queue) if the Voice Service Unit(s) are being used as an automated attendant for the system. It should be set to 0 (do not queue) if there is no VSU in the system.

Form 01-11-04 DISA Queuing to VSU	0=Do Not Queue	1=Queue

Form 01-11-05 DISA Special Digit Acceptance allows the customer to select the level of service that is appropriate for the individual installation. In most automated attendant applications it is not desirable to allow callers to have access to outside CO lines, speed dialing, or outside disconnect capabilities. In such situations 01-11-05 allows the installation personnel to selectively disable outside dialing capabilities and other special features. When a digit is treated as "special," it may be used for special system defined functions. When a digit is treated as "Digits only," is has only a normal DTMF function and no special DISA capabilities are recognized by the system.

Form 01-11-05 DISA Special Digits	0=All special digits valid
1=[*],[#] Special [8],[9] Digits only	2=[8],[9] Special - [*],[#] Digits only
3=No Special Digits	

Form 01-11-06 DISA Transfer Count determines the number of times that an incoming caller can passively remain in the DISA cycle. When this counter has been exceeded the caller will be routed to the VSU call disconnect timer and if no digits are dialed, the call will be disconnected.

Form 01-11-06 DISA Transfer Count	0=2	1=3	2=4	3=5

4=6	5=7	6=8	7=9	8=10	9=Infinite

Form 01-11-08 DISA Single Digit Dialing determines if DISA callers are to have access to Single Digit Dialing. If this item is disabled (0), Single Digit Dialing will not be in operation for DISA callers. If enabled (1), Single Digit Dialing will be enabled for incoming DISA callers. The association of Individual Voice Service units with Single Digit Dialing groups is programmed on Form 14-VSU-09.

Form 01-11-08 DISA Single Digit Dialing (SDD)	
0= No Single Digit Dialing	1= SDD Enabled as per form 14-VSU-09

Form 14-VSU Provides for VSU Channel Assignment.

SK-200 provides for programming of up to 40 Voice Service Units (up to 10 SK-VSU/2 circuit cards). Form 14 is numbered 14-VSU-*nn* where VSU is the VSU number from 01 up to 40 and *nn* is the individual item number, from 01 through 09. Items 01 through 08 provide for channel assignment. Item 09 allows assignment of a Voice Service Unit to one of the eight available CO Groups (as programmed on Form 44). Item 09 is only applicable if Form 01-06-03 is programmed as 1.

Valid entries for Items 01-08 are listed below:

SK-200 14-VSU-01 - 14-VSU-08=Channel Assignments	
00=Disabled	
01=DISA: Answer Greeting	02=DISA: Dialed Station Busy
03=DISA: Dialed Station Does Not Answer	04=DISA: Dialed Number is Invalid
05=DISA: Console Busy, Please Hold	06=DISA Timer has Expired
07=DISA:Insufficient Digits Dialed	14=Wake Up Message
08=DISA: Night Answer Greeting	09=External Call Forward Reroute
10=UCD All Agents Are Busy	11=UCD All Agents Still Busy
12=UCD Call will be terminated	15=SLT Message Waiting Advisory

Form 46-CO-04 DISA External Call Forward Status determines under what conditions DISA will be activated. DISA may be completely disabled, enabled only during Day Service, only during Night Service, or at all times. The valid settings are listed below.

Form 46-C0-04 DISA External Call Forward Status	0=Day Disable / Night Disable
1=Day Disable / Night DISA	2=Day DISA / Night Disable
3=Day DISA / Night DISA	4=Day Disable / Night ECF
5=Day ECF / Night Disable	6=Day ECF / Night ECF
7=Day DISA / Night ECF	8=Day ECF / Night DISA

DISA With a Voice Service Unit - Chart 1

DISA Call Flow
DISA With Voice Service Unit
Page 1 of 3

DISA With a Voice Service Unit - Chart 2
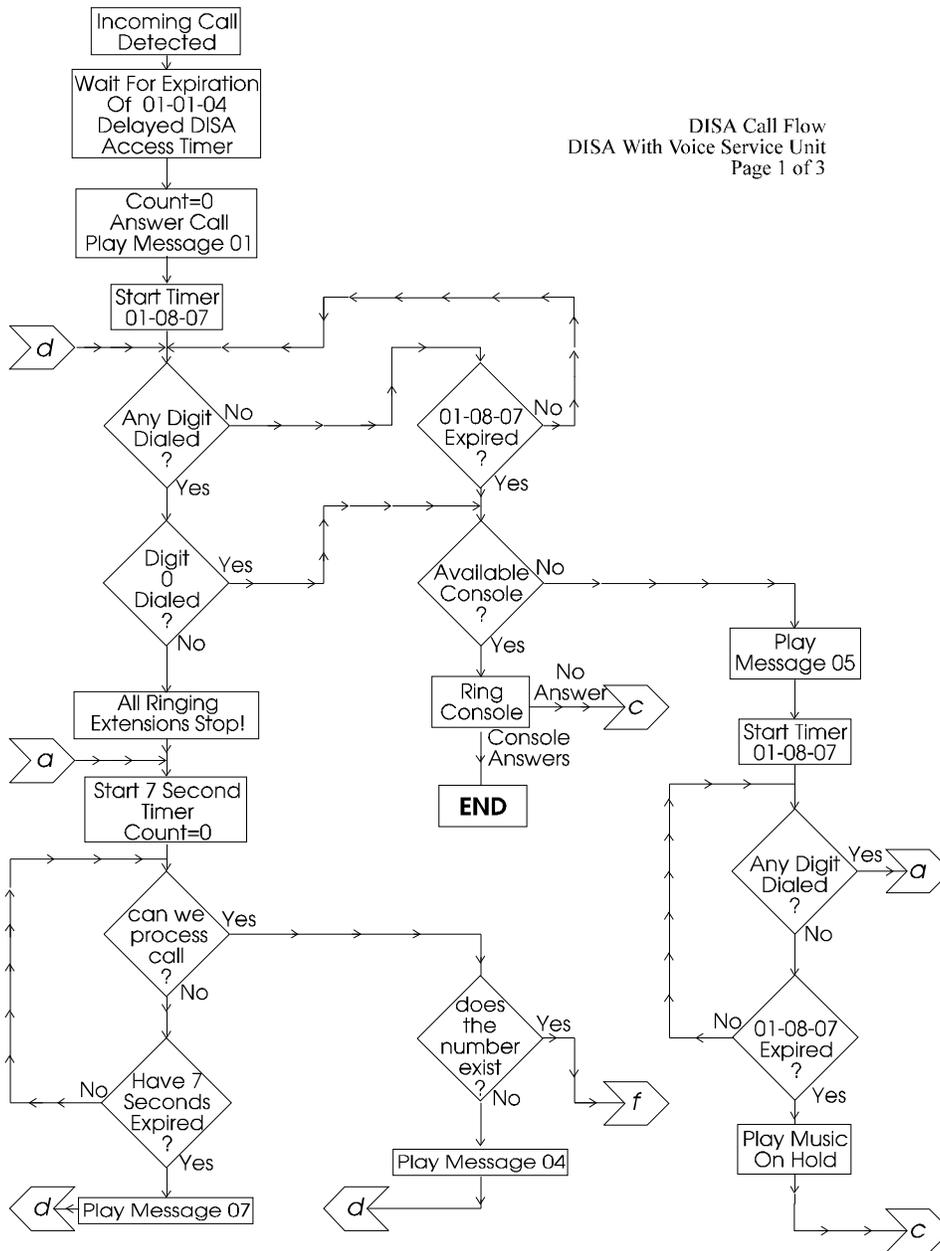
DISA Call Flow
DISA With Voice Service Unit
Page 2 of 3
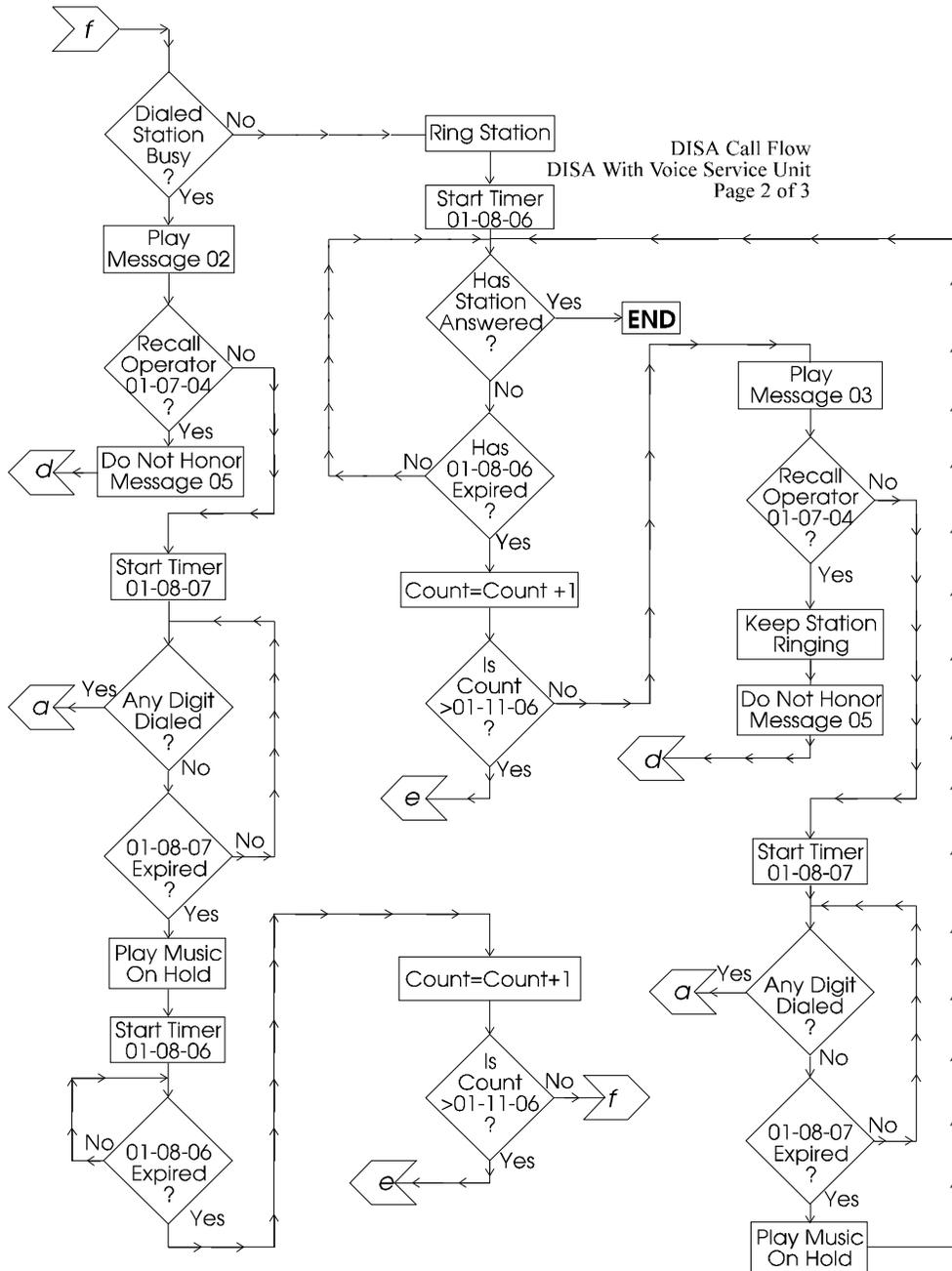
DISA With a Voice Service Unit - Chart 3

DISA Call Flow
DISA With Voice Service Unit
Page 3 of 3

```
            c

      Start Timer
      01-08-06

              Has
  No       01-08-06
           Expired
              ?
            Yes

   Count=Count+1

              Is
            Count      No
          >01-11-06
              ?
            Yes
     e

     e
       Play
     Message 06                Available   No
                                Console
                                   ?
     Start Timer                  Yes
     01-08-07
                              Ring Console

                                                  Play
              Any Digit  No                     Message 05
               Dialed          Console    Console
                 ?             Does Not   Answers       Start Timer
                Yes           Answer                    01-08-07
     a
                             Count=Count-1                       Any Digit  Yes
                                                         a        Dialed
                                 c                                   ?
              Has                                                   No
   No       01-08-07
            Expired                                     01-08-07   No
               ?                                        Expired
              Yes                                          ?
                                                         Yes
     Disconnect
       Call                                            Play Music
                                                       On Hold
      END
                                                         c
```

END