summafour

**ANSI Integrated SS7 ISUP,
V3.0 FSR02, Release Notes**

NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device pursuant to Part 15 of FCC Rules. These limits are designed to provide reasonable protection against harmful interference when this equipment is operated in a commercial environment. This equipment generated, used, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manuals, may cause interference in which case the user will be required to correct the interference at his/her own expense.

NOTICE: Customers connecting this device to the network shall, upon request of the telephone company, inform the telephone company of the particular lines such connections are made, the FCC registration number, and ringer equivalence number of this device. This information is contained on the label located on the rear panel of the system.

If this device causes harm to the network, the telephone company may discontinue your service temporarily. If possible, they will notify you in advance. But if advance notice isn't practical, you will be notified as soon as possible. You will be advised of your right to file a complaint with the FCC.

Your telephone company may make changes in its facilities, equipment, operations, or procedures that could affect the proper operation of your equipment. If they do, you will be notified in advance to give you the opportunity to maintain uninterrupted service.

If you experience trouble with the system, please contact Summa Four, Inc., 25 Sundial Avenue, Manchester, NH 03103-7251, (800) 978-6624 for repair information. The telephone company may ask you to disconnect this equipment from the network until the problem has been corrected, or you are sure that the equipment is not malfunctioning.

This equipment may not be used on coin service provided by the telephone company. Connection to party lines is subject to state tariffs.

Printed In U.S.A.

This symbol on the product's nameplate means it has been tested by Electronic Testing Labs, Inc.

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Preface

The *ANSI Integrated SS7 ISUP, V3.0 FSR02, Release Notes* provide important information about Version 3.0 FSR02 of ANSI Integrated SS7 ISUP software. This information includes

- A list of the enhancements and problems corrected since Version 3.0 FSR01.
- A description of the system requirements for V3.0 FSR02.
- A list of special considerations you should be aware of.
- A list of known design constraints.
- A list of known functional constraints and work arounds.

For information on how to install and use the ANSI Integrated SS7 product, refer to the *ANSI Integrated SS7, V3.0, System Supplement* (61090301433).

These release notes are intended for programmers familiar with SDS or VCO Systems, SS7 concepts, UNIX, and Ethernet.

Section 1
CONTENTS OF THE RELEASE

1.1 INTRODUCTION

ANSI Integrated SS7 ISUP, Release V3.0 FSR02 is the latest Integrated SS7 ISUP release for SDS and VCO systems. This section describes the enhancements and problems corrected since ANSI Integrated SS7, Release V3.0 FSR01. This release supports the ANSI standards listed in Table 1.1.

Table 1.1: ANSI Standards Supported by V3.0 FSR02

SS7 Layer	Standard
MTP-2	ANSI T1.111.3, 1991
MTP-3	ANSI T1.111.4, 1991
ISUP	ANSI T1.113, 1992

1.2 INSTALLATION

The startup procedure has changed for this release. **Prior to running the new software, you must complete the following steps**:

1. Remove all the ebs drivers.

2. Turn power off.

3. Turn power back on for the ecp (2-link Sbus) or ecpt (4-link or 8-link Sbus) drivers to be seen by the system.

   NOTE: If you are running a 4-link or 8-link configuration, the ecp drivers will not be loaded. Instead, the ecpt drivers will get loaded. ***The port assignments for these drivers are slightly different from ecp. No matter which slot is occupied, the first occupied slot will have port numbers 1 through 4, the second one will have 5 through 8, and so on.***

   For example, if there are two 4-port cards in the Sbus on a system, and they occupy ecpt4 and ecpt5, the card that occupies ecpt4 will still take ports 1 through 4. Previously, ecp would have taken ports 17 through 20.

4. Follow the usual startup sequence as described in the *ANSI Integrated SS7, V3.0, System Supplement* (61090301233).

1.3 ENHANCEMENTS

V3.0 FSR02 supports the following new features:

- SS7 Link Availability Reported to Host

- Host Control Option

- New SS7 Command ($C0 05)

- Two New CktInt.cfg Feature Flags

- New isup_console Feature

- 8-Link Capability

1.3.1 SS7 Link Availability Reported to Host

You can now transport two SS7 alarms—Link Unavailable (880702) and Link Available (880704)—from the MTP level to the host. See the *NewNet AccessManager Maintenance Manual* for more information on specific alarms.

Cktint sends SS7 Alarm Condition $F0 reports to the host indicating these system alarms are being generated, including type and severity. This enhancement allows the host the flexibility to take corrective action from a remote facility.

A new feature flag, -FEATURE_FLAG 06, causes the MTP link alarms to be processed by cktint and an $F0 alarm report to be sent to the host.

> NOTE: You must include this flag in the CktInt.cfg file and restart Circuit Interworking to receive the $F0 report at the host.

The following is an example of the SS7 $F0 report format:

```
Byte Offset:  4        5        6        7   8       9        10        11
              F0       02       01       00  00      88       07        02
              |        |        |        |___|       |        |         |
              |        |        |          |         |        |         |
          Function   Alarm   Severity   Reserved   Group    Module    Alarm
            I.D.     Type                            ID       ID       Type


              12          13          14          15          16
              02          01          00          01          01
              |           |           |           |           |
              |           |           |           |           |
           Number      Length      Parameter 1  Length     Parameter 2
             of          of                        of
         Parameters  Parameter 1              Parameter 2
```
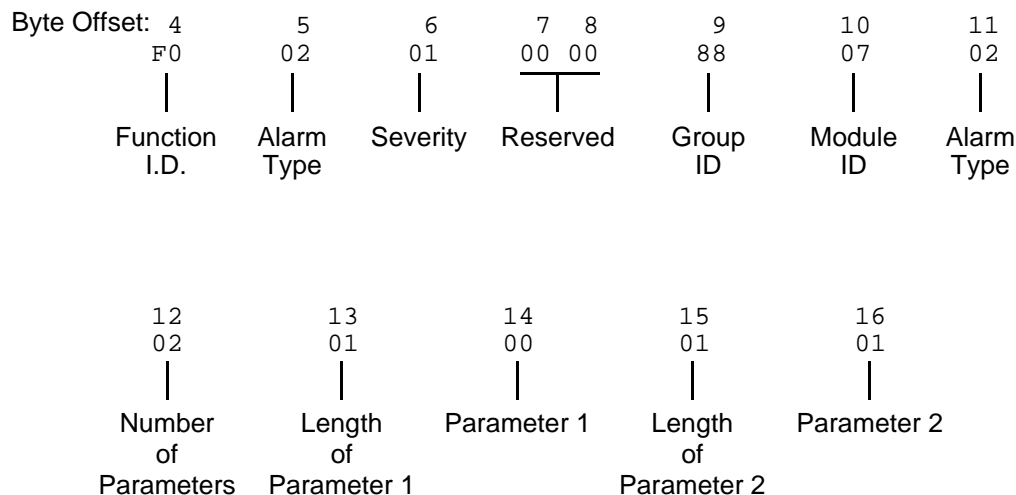
For detailed information on the SS7 Alarm Condition $F0 Report, see the *ANSI Integrated SS7, V3.0, System Supplement.*

1.3.2 Host Control Option

This feature allows only one host to control a call. When enabled, if cktint receives a message from any host except the controlling host, the message will be rejected as "Invalid Controlling Host." A secondary host can only assume control of a controlling host's calls by sending an appropriate SS7 $C0 05 command.

A new feature flag, -FEATURE_FLAG05, enables the Host Control Option (see *Section 1.3.4*).

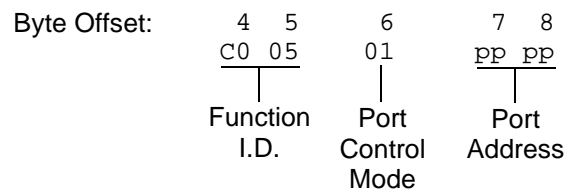> *NOTE: You must include this flag in the CktInt.cfg file and restart Circuit Interworking to enable the Host Control Option.*

1.3.3 New SS7 Command ($C0 05)

The SS7 $C0 05 command allows a host process to relinquish control of a call assigned to itself, or assume control of a call that has been assigned to a different host.

The following is an example of the SS7 $C0 05 command format:

```
Byte Offset:      4    5        6         7    8
                  C0   05       01        pp   pp

                Function       Port        Port
                  I.D.        Control     Address
                              Mode
```

For detailed information on the SS7 Host Assume/Relinquish Port Control $C0 05 command, see the *ANSI Integrated SS7, V3.0, System Supplement.*

1.3.4 Two New CktInt.cfg Feature Flags

There are two new feature flags for the CktInt.cfg file:

- **-FEATURE_FLAG05**—Enables the Host Control Option. Allows only one host to control a call. A secondary host can assume control of a controlling host's calls by sending an SS7 $C0 05 command (see *Section 1.3.2* and *Section 1.3.3*).

- **-FEATURE_FLAG06**—Causes MTP link alarms to be processed by cktint and an SS7 $F0 alarm report to be sent to the host (see *Section 1.3.1*).

1.3.5 New isup_console Feature

You can now display all the feature flags that have been included in the CktInt.cfg file by selecting "f" in the **isup_console** program. If no feature flags are present, the message "No feature flags are enabled," is displayed. The **isup_console** program is located in the ~/**sys**/**CktIntAnEnv** (**$XNV**) directory. For detailed information on the isup_console, see *Section 5.6* in the *ANSI Integrated SS7, V3.0, System Supplement.*

1.3.6 8-Link Capability

V3.0 FSR02 is enhanced to support eight SS7 network links from the SPARC CPU5V/Sbus assembly. The additional four ports replace the current modem card in the Sbus assembly.

> *NOTE:* **There is no modem capability with an 8-link system**. *Instead, you must arrange dial-up to a local network and Telnet access to the SS7 subsystem.*

To upgrade an existing system, you must purchase an 8-link Upgrade Kit
(PN 35026650100, basic; PN 35026750100, redundant) that includes all necessary hardware and NewNet licensing. For more information, contact your Summa Four sales representative.

Hardware installation requires removing the modem card in the Sbus assembly (see Figure 1.1) and replacing it with a 4-port card (see Figure 1.2). Then, follow the directions in the *ANSI Integrated SS7, V3.0, System Supplement* for attaching the additional SS7 network link cables.
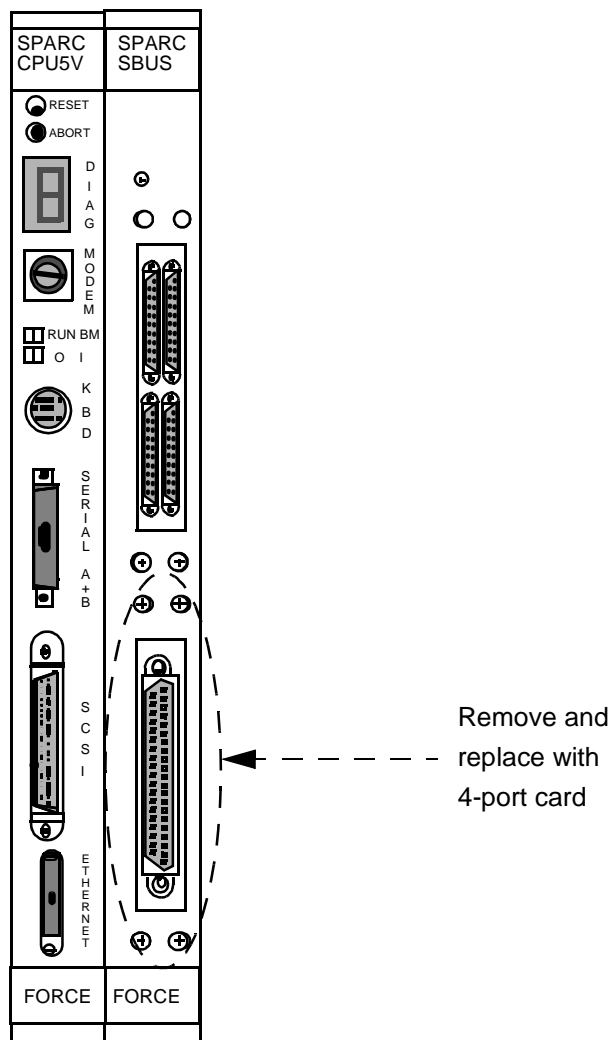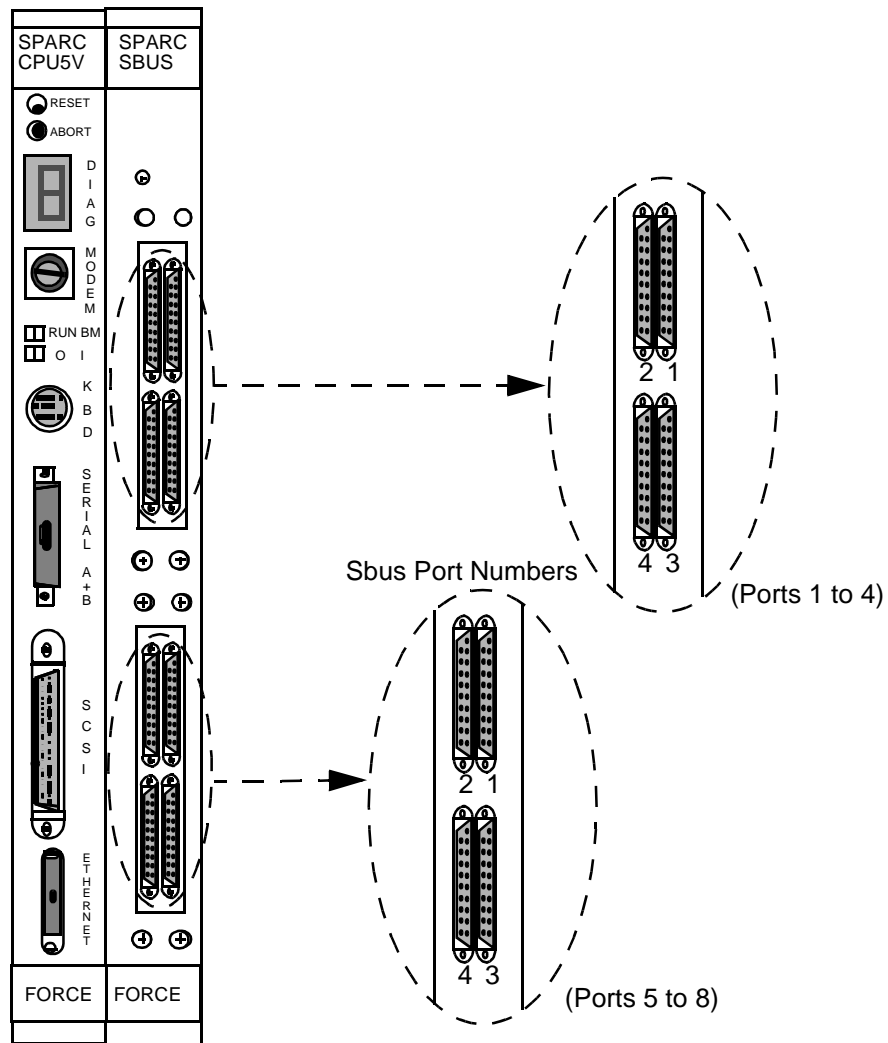
Figure 1.1: 4-link Sbus

Figure 1.2: 8-link Sbus

After the hardware installation, you must modify the MTP Level 2 Provisioning part of the MTP configuration file in **/export/home/cktint/sys/SPan** (**$SPA**) to include additional links and link sets for the SS7 network links you have added. For more information, see *Section 4.3* in the *ANSI Integrated SS7, V3.0, System Supplement.*

The following are sample lines in an .mml file for MTP Level 2 Provisioning with an 8-link configuration:

```
MML-CONFIG:LOG=OFF,TIMEOUT=4000;
MODIFY-SP:NAME=SUMMA,SPC=0-0-1,NI=INTERNATIONAL,TYPE=SEP;
MODIFY-SP:SPC=0-0-1,RESTART=ON,SLTC=ON;
ADD-LSET:LSET=STP1,DPC=0-0-2,ACTIVE=8,LOADED=8,TYPE=ALINK,BR=64000;
ADD-LINK:LINK=STP1-0,LSET=STP1,SLC=0,PORT=1,TYPE=DTE,PRIORITY=0;
ADD-LINK:LINK=STP1-1,LSET=STP1,SLC=1,PORT=2,TYPE=DTE,PRIORITY=1;
ADD-LINK:LINK=STP1-2,LSET=STP1,SLC=2,PORT=3,TYPE=DTE,PRIORITY=2;
ADD-LINK:LINK=STP1-3,LSET=STP1,SLC=3,PORT=4,TYPE=DTE,PRIORITY=3;
ADD-LINK:LINK=STP1-4,LSET=STP1,SLC=4,PORT=5,TYPE=DTE,PRIORITY=4;
ADD-LINK:LINK=STP1-5,LSET=STP1,SLC=5,PORT=6,TYPE=DTE,PRIORITY=5;
ADD-LINK:LINK=STP1-6,LSET=STP1,SLC=6,PORT=7,TYPE=DTE,PRIORITY=6;
ADD-LINK:LINK=STP1-7,LSET=STP1,SLC=7,PORT=8,TYPE=DTE,PRIORITY=7;
ADD-RTSET:RTSET=ATT4E-CC,DPC=0-0-7,ROUTE1=STP1;
MODIFY-LSET:LSET=STP1,ADMINSTATE=ACTIVE;
MODIFY-L2TIMER:TIMER=T2,value=10000;
DISPLAY-L2TIMER:TIMER=*;
DISPLAY-RTSET:RTSET=*;
DISPLAY-LSET:LSET=*;
MODIFY-ALARM-CONFIG:DISPLAY=OFF;
EXIT:;
```

1.4 CORRECTED PROBLEMS

The following are the corrected problems in ANSI Release V3.0 FSR02:

U705050006	The isup_console d option has been corrected to act in the following way. When the d option from isup_console is used to display the debug flags, all of the flags that are turned ON are displayed. If no debug flags are ON, the message, "No debug switches are active," is displayed. Also, if you toggle any debug flag, the current and previous states (i.e., ON, OFF) are displayed.
U706060002	In non-redundant configurations, when the SS7 stack sent CktInt an MTP PAUSE message for one or more SS7 links, CktInt reset all configured trunk groups after it received the MTP RESUME. This caused stable calls to be torn down. This issue is fixed.
U706300001	The isup_console tool accepted hexadecimal trunk group input for circuit-related operations and decimal for group operations. This has been changed so the trunk group input is decimal for both circuit- and group-related operations.
U707070001	The isup_console help menu displayed the "c" as "'c' for to re-configure," which was inconsistent with other help menu entries and grammatically incorrect. Now it is displayed as "'c' to reconfigure."
U707070002	When the "c" option was used in the isup_console, the message "Sent request to reconfigure to NewNet Stack" was displayed. This was incorrect. The message now reads, "Sent request to reconfigure Circuit Interworking."
U707150001	In previous releases, circuit states became stuck when cktint received a continuity check request from the network. During a successful continuity check request, NewNet's circuit state would become stuck in IN-BUSY. This has been fixed. During an unsuccessful continuity check request, the circuit sub-state would become stuck in "continuity." This has also been fixed.
U708110001	Under heavy traffic conditions, the circuit sub-state was getting stuck in the "released" state because CktInt was hunting on circuits in "released" state. This issue is fixed. CktInt now selects only idle circuits.
U708210003	When RSCs were initiated for a T5 timer expiration, they were sent to the network at the rate of the T16 timer instead of the T17 timer. This issue has been fixed.
U709250003	In previous releases, when cktint received an MTP PAUSE for a particular SP, cktint would still attempt to send SS7 messages to NewNet for that SP. This caused unexpected behavior from NewNet. This issue has been fixed. When all the SS7 links are down for an SP, cktint rejects all SS7 messages for that SP with an NSB of 0xD1 (Far End SP Unavailable). The host is responsible for re-sending the message once the links come back in service.
U709020008	In the Confusion (CFN) message going to the network, the "pointer to cause" byte was set to a value of 2 instead of 1. This has been corrected. The non-functional byte with value 0 was also deleted.

U709250009	Cktint was printing invalid error messages for errors numbered 85 and above. This problem has been fixed and cktint now prints all the correct error messages.
U709250011	In previous releases, when there was a problem with an element in the network, such as the loss of power to a transceiver, cktint never closed the correct host and system sockets. When a host transceiver or hub is powered down, there are two situations that can occur. First, Solaris may declare the socket to the host as a "Broken Pipe." Second, nothing happens. Previously, cktint was not recognizing the broken pipe and would not close that socket to the host or the system. In the second case, the tcp variable was too large. Once the variable was changed to 30 seconds, Solaris would declare a time-out on the host socket. After this time-out occurred, cktint still did not close the host or system sockets. These problems have been corrected. When Solaris declares a broken pipe or socket time-out, cktint will close that socket from that particular host to the system.
U709250013	If the SDS/VCO closes a socket, cktint will now close the associated host socket.
U709250014	In previous releases, if there were ports out of service when cktint started up, those ports would stay stuck in a locally blocked state. This issue has been fixed. Now, when circuits are out of service on start-up and then cktint receives an In Service $D9 message, cktint will unblock those circuits.
U709250015	Cktint no longer tries to unblock circuits on the standby side when it receives In Service $D9 and $D3 messages. Also, ports will not get stuck in a locally blocked state after a switchover.

U709250017	In previous releases, Cktint did not consistently track the SDS Port In Service and SDS Card In Service flags for the isup_console status command. These flags now do the following:

	SDS Port In Service	SDS Card In Service
$D3 out of service	NO	No change
$D3 in service	YES	No change
$D9 out of service	NO	NO
$D9 in service	YES	YES

	The following are minor functional constraints:

- On start-up, cktint cannot tell if a card is out of service (OOS); it can only detect that each port on that card is OOS. This causes no functional problems, just a display mismatch. If cktint is started while the card is OOS, cktint will show NO, YES (Port OOS, Card IS (In Service)) and locally block all the ports on that card. When the card is put back IS, the ports are unblocked and cktint will show YES, YES (Port IS, Card IS).

- On start-up, the standby side will always show YES, YES (Port IS, Card IS) and L-BLKED. Again, this causes no functional problems, just a display mismatch. After a switchover, it will be consistent with the active side.

U709260008	If the host opens and closes its socket very fast, <defunct> processes are no longer created.
U709290002	When cktint received a non-SS7 Out of Service $D9 message, depending on how many SS7 circuits were configured, it could take more than a minute to process. This has been corrected by eliminating unnecessary processes.
U710020002	When the host opened a socket and then closed that socket to cktint within the same second, extra _tcprcvclnt processes were often created. This issue has been fixed. Rapid host connections and disconnects no longer produce extra processes.
U710140003	If the standby side of the SS7 stack was brought up first, and the active side of the stack was brought up later, the circuit states were stuck in LR-BLKED after a switchover. This problem has been fixed.
U711110001	Invalid parameter formats were resulting in cktint core dump. This has been corrected.
U801150003	When the link state was set to emergency, a link inhibit operation was performing an emergency changeover. This has been fixed. Now, when the link state is set to emergency, link inhibit performs a time-controlled changeover.

Section 2
SYSTEM REQUIREMENTS

2.1 INTRODUCTION

This section provides a listing of system requirements for running ANSI Integrated SS7 ISUP, V3.0 FSR02. These requirements are divided into hardware, firmware and software. Contact Summa Four, Inc. Technical Support for any site-specific information.

2.2 HARDWARE REQUIREMENTS

In addition to the Integrated SS7 System hardware, V3.0 FSR02 requires a non-redundant or redundant SDS-1000 or VCO/80 System or a VCO/20 System with an SS7 VME shelf.

> **CAUTION: Redundant and non-redundant VCO/80 systems manufactured prior to January 1, 1996 must have the VME Power Switch Module and VME backplane upgraded prior to installing Integrated SS7. If you install Integrated SS7 in an older VCO/80 system, without this upgrade, the hardware will be severely damaged.**
>
> **To determine the manufacture date on your VCO/80 system, open the front door of the system and check date on the manufacturing label, which is located in the upper right hand corner of the system enclosure. If the date on the label is prior to January 1, 1996, do not install the Integrated SS7 hardware until after your system has been upgraded. For information on how to upgrade the VME Power Switch Module and backplane, contact Summa Four Technical Support at 1800-9SUMMA4.**

For console access, a non-redundant Integrated SS7 system also requires an ASCII terminal with null modem or cable (purchased separately).

For console access, redundant systems require two ASCII terminal with null modem or cable (purchased separately) or a VT 320 compatible dual session terminal.

2.3 FIRMWARE REQUIREMENTS

There are no special firmware requirements for V3.0 FSR02. However, the firmware in the SDS-1000 or VCO must have the appropriate revision level required by the Generic. For information, refer to the *Generic Release Notes*.

2.4 SOFTWARE REQUIREMENTS

Version 3.0 FSR02 requires the following software:

- **SDS/VCO Generic V3.3 or later**
- **Solaris Release V2.4**

Table 2.1 is a list of the Integrated SS7 software checksums.

Table 2.1: Integrated SS7 Software Checksums

File Name	File Size	Checksum (/usr/bin/sum)
ebs.cpio.Z	4947711	7747 9664
install_ebs.sh	3185	53000 7
cktint.cpio.Z	1674027	10780 3270
install_cktint.sh	3500	59818 7

Section 3
SPECIAL CONSIDERATIONS

3.1 INTRODUCTION

This section describes the special considerations you should be aware of while using ANSI Integrated SS7, V3.0 FSR02. This section provides explanations for the following areas:

- Commands and reports
- Debug flags
- Host Considerations
- Redundancy
- Routing alarm messages to the console

3.2 COMMANDS AND REPORTS

3.2.1 CktInt Requires $DA And $DB Reports

Do not suppress the $DA and $DB Reports in your SS7 application. These reports are required by CktInt for non-SS7 to SS7 calls and SS7 to non-SS7 calls because of the disconnect control byte. Cktint must see an on-hook.

3.3 DEBUG FLAGS

Turning on the debug flags may negatively impact performance.

NOTE: Make sure all debug flags are turned off for production systems.

3.4 HOST CONSIDERATIONS

3.4.1 Queue Overflow

If a host is not reading messages for its socket connection, a queue overflow will occur. This may cause CktInt to drop host messages. Once the host reads its messages, the buffers are cleared and regular message relay resumes.

3.4.2 Multiple Hosts Affect Call Handling

Additional TCP connections affect SDS/VCO call handling capacity. Optimal performance can be achieved with four or fewer simultaneously active TCP connections.

3.5 REDUNDANCY

3.5.1 No Switchover When Ethernet Fails

If Ethernet fails, the system does not switch over.

Workaround
Add a routine to your host application that can detect when the Integrated SS7 system is unreachable and initiates a switchover.

3.5.2 ASCII Terminals On Redundant Systems

If you turn the Integrated SS7 console off, or power to the terminal is lost, the SPARC5V CPU may abort and return to the boot prompt.

It is possible to connect a single ASCII terminal to both side A and side B via an electronic A/B selector switch. However, the selector must be capable of providing surgeless, spikeless change-overs. If the selector switch does not have this feature, the SPARC5V CPU may abort and return to the boot prompt when a change-over occurs.

3.5.3 Calls During Switchover

Only stable (answered) calls are preserved by the system during a redundancy switchover.

3.5.4 Loss of Network or SS7 Selector Switch Links

The loss of any network links do not cause a switchover. Also, the loss of SS7 selector switch links do not cause a switchover. If you are going to perform maintenance on any of the links, you must first switch the system over to the standby side.

3.5.5 SDS and VCO/80 Do Not Boot Without SPARC CPU Installed

An SDS or VCO/80 system configured for SS7 does not boot if one of the SPARC CPUs is removed from the Control Subrack. The NBC does not download, the NBC's LEDs stay illuminated, and the SDS/VCO system freezes.

3.6 ROUTING ALARM MESSAGES TO THE CONSOLE

To route alarm messages to the system console, complete the following steps:

1. Start the MML utility by entering the following command and pressing **Return**:

   mml 0

2. At the system prompt, enter the following command and press **Return**:

   MODIFY_ALARM_CONFIG:DISPLAY=ON;

3. Exit the MML utility by entering the following command and pressing **Return**:

   EXIT:;

Section 4
DESIGN CONSTRAINTS

4.1 INTRODUCTION

Summa Four, Inc. has identified and evaluated design constraints in Integrated SS7 ISUP V3.0 FSR02. This section provides explanations and, where applicable, workarounds in the area that follows:

- Redundancy

4.2 REDUNDANCY

4.2.1 U703110003: No Switchover When SS7 Is Stopped On Active Side

The system does not switch over automatically when one of the following conditions occur:

- If the Active CktInt and EBS stacks are stopped
- If CktInt hangs or dies
- If any EBS stack process dies and the MONITOR_OPTION is OFF (needs to be off to fix the problem where the Ethernet cable is detached and the system will flip flop sides).

Work Around

Set the All Host Link Failure Action, on the SDS System Host Configuration Screen, to Conditional Switchover. When the Conditional Switching option is selected, a major alarm is generated if all host links fail and a system switchover is initiated if the Standby controller is on-line (file sync. completed) and has active host links.

4.2.2 U702070009: Associated Ports Are Lost After Switchover

CktInt associates ports as specified in the SS7 $49 Command and the association is maintained until call tear down. If the controlling port is an SDS/VCO port, and the associated port is an SS7 port, the two ports are associated until one or the other is released by the host. When one of the ports is released, CktInt automatically releases the other.

However, if the system switches over while the call is stable, CktInt, on what is now the Active side, has no knowledge of port association established prior to switchover. This is because the CktInt on side A does not communicate with CktInt on side B and vice versa. If the host attempts to release the call by its port association, the release will fail.

If the system switches over a second time, and the call is still stable, the CktInt module that established the port association is now on the Active side, and host can release the call by its port association.

Workaround

Do not use the port association option in host applications.

5.1 INTRODUCTION

Summa Four, Inc. has identified and evaluated functional constraints in Integrated SS7 ISUP V3.0 FSR02. This section provides explanations, and where applicable, workarounds for functional constraints in the areas that follow:

- Circuits
- Commands and Reports
- Debug
- Initialization
- isup_console
- Multiple Hosts
- Redundancy
- SS7 Messages and Parameters
- Miscellaneous Problems

5.2 CIRCUITS

The constraints in this subsection apply to problems with circuits and circuit groups.

5.2.1 CktInt May Hang If Cards Out Of Service At Startup

The system supports up to 1728 circuits. However, CktInt may hang during initialization if there are cards out of service when you start CktInt.

Workaround
  Make sure all SDS/VCO cards are in service before starting CktInt.

5.2.2 U610010004: CktInt Core Dumps With Bad Circuit Number

CktInt core dumps if the ckt_ss7_to_sds files are configured with circuit numbers greater than 0x1F.

5.2.3 U703130001/U70318001: Wrong Port State After Restore

When the SS7 links and carrier are restored, after they both were down, CktInt reports that the circuit states are active and idle, but the SS7 stack reports that the circuit states are LR-blocked.

5.2.4 U705200004: Response To CGB/CGU Rejected

When CktInt attempts to respond to the SS7 stack with an ACK for a circuit group block or circuit group unblock, the SS7 stack rejects the message.

5.3 COMMANDS AND REPORTS

The constraints described in this subsection apply to commands and reports.

5.3.1 U703060005: Controlling Host Is Set By Rejected Command

If an SS7 $49 Command is rejected, the host that sent the command becomes permanently associated with the circuit (or circuit group) specified in the command. This may stop other hosts from using the circuit.

Workaround
   To clear this condition, perform a circuit or circuit group reset.

5.3.2 U703240001: $B0 01 Report Does Not Have Full Address

When a host sends a $30 01 Command to CktInt to get the circuit status of a trunk group, the $B0 01 Report returned by CktInt reports only the lower byte of the port address. Also, when the host sends a $30 01 Command for all trunk groups, there is no way for the host to determine when CktInt has sent the last $B0 01 Report other than waiting for a local timer to time out.

5.4 DEBUG

The constraints described in this subsection apply to debug.

5.4.1 U508155173: No Timestamps For Debug Entries

CktInt does not timestamp debug entries.

5.4.2 U702260005: Debug Flag 9 Does Not Work

When the Debug 9 flag is set with flags 2 and 5, non-SS7 messages are not being traced in the CktInt log file. For example, if the host sends a $66 command to the SDS/VCO, this event should be recorded in the log file. Instead, the event is not recorded until the command is returned form the SDS/VCO.

5.5 INITIALIZATION

The constraints described in this subsection apply to initialization and start-up of CktInt.

5.5.1 U611070001: Wrong Power Up States

If CktInt and the SS7 stack start while SDS/VCO cards are downloading, circuit states in CktInt can get stuck in UNKNOWN or TRANSIENT states. Manual intervention (sending a Reset Circuit Group command from the isup_console) is needed to receover from this situation.

Workaround
    Make sure all card downloads are complete before starting SS7 software.

5.5.2 U702050007: SS7 Resource Provisioning Files Are Not Correctly Verified

The system does not properly verify that the circuits defined in the resource provisioning files (ckt_ss7_to_sds and grp_ss7_to_sds) are configured ports on the SDS/VCO.

When CktInt initializes, the Integrated SS7 system sends a Request Resource Allocation ($80) Command to the SDS/VCO for each group defined in grp_ss7_to_sds. In response to each $80 Command, the SDS/VCO checks for the corresponding port in the SDS/VCO database, and returns a Resource Allocation ($80) Report to CktInt if the circuit is defined in the database and is available.

A problem in this process occurs when the port is not defined in the SDS/VCO database. If the port is not defined, no information about the port is returned to CktInt and CktInt considers the circuit on-line and available. The host is not notified of an error and an initialization error message is not generated for the user.

CktInt allows you to send an outgoing IAM using the address of the undefined port. However, Port Hook State Control ($70) and Voice Path Control ($66) Commands to the SDS/VCO, are rejected with a network status byte of 23 (invalid port address). CktInt recognizes that these commands are rejected, but takes no action to respond to the rejection.

5.5.3 U703120002: Warmboot With Autostart Takes 20 Minutes

If autostart is configured and the system is warm booted, it will take at least 20 minutes for the SS7 software to start.

5.5.4 U703230001: $70 Command May Fail On Start-up

If the SDS/VCO Host Control of Call Load feature (set from the System Host Configuration screen of the SDS/VCO Administration Console) is enabled when CktInt starts up, all of the $70 commands CktInt sends to the SDS/VCO to ensure that all of the SS7 ports are on hook are rejected with a network status byte if 3C ($6C or $72 command received before host issued $C0 04 command). If the Host Control of Call Load feature is not enabled, the $C0 04 command fails, but the $70 commands succeed.

5.6 isup_console

The constraints described in this subsection apply to isup_console.

5.6.1 U701290007: isup_console Options

The isup_console prompt lists the "a" and "q" options, which are no longer supported. These options are not displayed as valid options when you use the help (h) option.

5.7 MULTIPLE HOSTS

The constraints described in this subsection apply to multiple hosts.

5.7.1 U606240002/U705010006: Host Connect/Disconnect Problems

If the Integrated SS7 system is configured with more than six hosts, some links may not be released when the hosts are disconnected and the isup_console program lists the link status as ONLINE_READY.

5.7.2 U703140003: ROUNDROBIN Does Not Work When Only One Host Is Running

If only one host is up and running in a multihost environment, the ROUNDROBIN mode for host load sharing does not work correctly.

Workaround
    If using only one host, use BROADCAST mode.

5.8 REDUNDANCY

The constraints described in this section apply to redundancy and switchover.

5.8.1 U712110002: Circuit States on Switchover

Initially, CktInt circuit states are Active/Idle on the active side and Locally Blocked/Idle on the standby side. After switchover, the circuit states of both the active and standby sides become Active/Idle, but the standby side should be Locally Blocked/Idle. This does not affect call processing.

5.9 SS7 MESSAGES AND PARAMETERS

The constraints described in this subsection apply to SS7 messages and parameters.

5.9.1 CktInt Issues A REL Too Soon

When an associated port with an SS7 circuit goes on-hook, a REL is passed to the network indicating that the circuit is available, even though the port may be in a CP_GUARD state.

5.9.2 U703070004: CktInt Processes Invalid IAM Messages

When an SS7 $49 Command, with an IAM message, is rejected with a network status byte CA (Outgoing port is in wrong state), CktInt appears to process the IAM message anyway, since it returns an ACM and ANM message to the host, which indicates that the IAM was passed on to the SS7 network.

5.10 MISCELLANEOUS PROBLEMS

This subsection contains descriptions for miscellaneous problems.

5.10.1 U609060005: Invalid SLTA Pattern Not Rejected

The Integrated SS7 system acknowledges SLTAs with invalid patterns.