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INTERNATIONAL SPACE STATION ORBITAL VOL-II

PRD/PSP/OR/OD

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INTERNATIONAL SPACE STATION ORBITAL VOL-II
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 30000

SECTION 1000 - ADMINISTRATIVE

PUBLICATION DATE: 01/04/99 REVISION: 0000 RUN DATE: 06/30/04

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[PRD] DATABASE RECORD: 571958
ITEM NUMBER: H3

requesting R&R Manager has the responsibility of coordinating with the supporting R&R Manager(s) and the appropriate PRM for validation, approval, and funding of the requirement. The validation, approval, and funding processes are defined by each Program, and may differ depending on the type and scope of the requirements (Shuttle core, Shuttle payloads, Station core, Station payloads, launch versus orbit support, etc.). In any case, the requirements must be validated, approved and funded (if necessary) by the Program Office, or its delegate, prior to implementation. The PRM is responsible for coordinating requirements with the Center Customer Commitment Manager (CCCM) as required by processes developed jointly between the Programs and Space Communications and Data Systems (SCDS). The R&R Managers will coordinate internal to their center, via documented internal processes, any issues regarding funding, approval, or implementation. The appropriate DBM will enter the requirement request into the ASRS database and forward it to all supporting centers or agencies for response. Typically, requirement requests, responses, approval issues, or funding issues are coordinated and negotiated with all involved parties (either informally or through documented processes such as payload integration) prior to the formal PRD documentation process. This leads to a more efficient SRS process and significantly reduces bureaucracy and requirement processing/implementation time.

Requirements that require inter-center communications support will be coordinated through the NISN representative designated by NISN for each Program. The coordination process varies depending on Program and mission phase. The requests for funding or implementation information to support inter-center operational communication requests will be through the NISN Center Representative or its delegate. Once communications requirements are approved and funded by the Program (via the Program's approval process), the requirements will be processed through the SRS PRD, where the delegated R&R Manager has the responsibility for interfacing with the appropriate NISN representative for implementing the requirement.

New or changed requirements should be entered into ASRS databases as Routine Support Requirements (RSRs). Within T-30 days prior to the start of a specific test or operation, support requirements are entered as Expedite Support Requirements (ESRs) to ensure more rapid processing

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and response. At T-72 hours prior to start of tests or operations, real-time support requirements may be levied using existing scheduling systems, briefing messages, or network advisories. If the requirements are to be permanent, they will be entered into the ASRS Database as being continuing official requirements.

[PRD] DATABASE RECORD:	571959	REQUIREMENT STATUS:	APPROVED R
DOCUMENT ID:	ISS II	APPROVAL DATE:	05/22/03
		INITIAL DATE:	05/22/03
ITEM NUMBER:	H4	DATE LAST CHANGED:	05/30/03
SECTION:	1000	TIME LAST CHANGED:	08:42:48
REQUESTER:	MSFC		
TEST CODE:			

1. DESCRIPTION: REQUIREMENTS FUNDING

Operations support requirements documented in the PRD must be funded prior to support implementation. The responsibility for support requirements funding may vary based on the type of requirement, scope of support, agency/organization requesting or providing support, and other factors. The supporting organization or agency is responsible for verifying that funds are available prior to implementing support. If funding has not been made available, or additional funding is required, the requester is responsible for coordination and validation of funds for support requirements.

Normally, when the original program documents are developed, support costs are assessed and funds are budgeted to cover the cost of the support requested. The subsequent requirements are assessed by the provider through the R&R Manager for support impact. Prior to "WILCO" support commitment responses, the provider, through the R&R Manager, will verify that the support is within the scope of existing capabilities, or that funds have been committed or obligated, or that additional funds are required to cover any increase costs.

Prime requesters, as well as the providers, will coordinate with appropriate Program management and financial resource personnel to ensure funding is approved and available. The prime R&R Manager must be aware that new requirements, or changes to existing requirements,

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[PRD] DATABASE RECORD: 571959
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may require additional funding. Therefore, the approval levels within the organizations must be appropriate so that supporting organizations may avoid expending resources researching costs, etc. for requirements that will not be funded and, therefore, cannot be supported. The R&R Manager may submit requirements into the ASRS where funding has not been resolved; however, a statement must be provided to the effect that funding is not resolved and is being worked.

[PRD] DATABASE RECORD: 571977 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: ISS II APPROVAL DATE: 05/23/03
INITIAL DATE: 05/23/03
ITEM NUMBER: H5 DATE LAST CHANGED: 05/30/03
SECTION: 1000 TIME LAST CHANGED: 08:50:07
REQUESTER: MSFC
TEST CODE:

1. DESCRIPTION: DBR FIELD DEFINITIONS

Each page in a PRD consists of four sections. The first part of the page is the Page Header. The second part is the TEXT/REQUIREMENTS (PRD/OR) portion that describes the requirement. The third part of the page is the PSP/OD section that contains the responses to the requirement. The fourth part of the page is the Page Footer. Only the PRD section will be discussed here.

DATABASE RECORD - A unique number generated automatically by the ASRS at the time the requirement is entered into the database.

DOCUMENT ID - This contains the document ID in the ASRS database for this particular PRD

ITEM NUMBER - A letter(s), number, letter(s) sequence that identifies the requesting agency(s), the section sequence number, and the supplier agency(s). Formatted as shown: "XnY"

X would be the letter designator for the requirement requestor(s)
n would be the sequence number within that section
Y would be the letter designator for the requirement supplier(s). This field is not used if the DBR is there for informational purposes only,

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such as this DBR.
Refer to Section 1052 for the list of Agency Designators.

SECTION NUMBER - A number that identifies under which grouping type the requirement would be classified as. Refer to Section 1031 for an index of section numbers and titles used within this PRD.

TEST CODE - These are used as a method of correlating requirements to the test or mission activity involved. Refer to Section 1051 for a list of Test Codes used within this PRD.

REQUIREMENT STATUS - Shows the official state of each DBR. There are five codes which are used. They are:

- DRAFT - Written for review and changes by other centers
- NEW - Requirement has been released but can not be approved because of funding issues or other management actions.
- APPROVED - Requirement is considered to be official and binding. Suppliers need to provide commitment responses.
- MODIFIED - Requirement is being modified by the requestor. No supplier action is to be taken.
- DELETED - Requirement has been deleted by the requestor. Suppliers are released from their support commitments.

APPROVAL DATE - When the approved requirement or change to the approved requirement was entered into the ASRS database.

INITIAL DATE - When the requirement was originally entered in the ASRS database.

DATE LAST CHANGED & TIME LAST CHANGED - Reflects the last date/time that any kind of change was made to this DBR.

[PRD] DATABASE RECORD:	555020	REQUIREMENT STATUS:	APPROVED R
DOCUMENT ID:	ISS II	APPROVAL DATE:	03/03/03
		INITIAL DATE:	04/26/00
ITEM NUMBER:	H7	DATE LAST CHANGED:	05/30/03

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[PRD] DATABASE RECORD: 555020
ITEM NUMBER: H7

SECTION: 1000 TIME LAST CHANGED: 10:43:50

REQUESTER: MSFC
TEST CODE: INFO

1. DESCRIPTION: GLOSSARY

COMMITTED INFORMATION RATE (CIR):

The amount of network bandwidth guaranteed by NISN to be available for a particular WAN service.

CRITICAL:

An availability category used by any ground support function required to assure crew safety or survival of the ISS. Services classified as critical require immediate restoration in the event of a failure.

INCREMENT:

During ISS assembly phase, the time period between the launch of a particular crew until the undocking from the ISS of the return vehicle for that crew.

NON-CRITICAL HIGHLY DESIRABLE:

Restoration of Non-critical Highly Desirable services may be accomplished within 2 hours without creating a hazardous condition to the ISS or the United States Ground Segment (USGS).

NON-CRITICAL ROUTINE:

Restoration of Routine services may be made within 24 hours without creating a hazardous condition to the ISS or USGS.

PAYLOAD FLIGHT ANCILLARY DATA:

Ancillary data is a selected subset of core systems data and other on-board generated data (including payload generated data) required by users to supplement data for payloads data analysis. This data is

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[PRD] DATABASE RECORD: 555020
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necessary for executing real-time operations and for analysis of payloads by ground controllers as required. It contains state vectors, spacecraft attitude data, etc. Ancillary data describes the flight environment in which the payload is operated.

PAYLOAD HEALTH & STATUS:

Payload H&S data consists of sensor data of payloads and equipment in the experiment racks and status data of payloads and racks output by the control equipment. This data does not include science data. Payload H&S data is a subset of payload data required by the Payload Operations Integration Center (POIC) to monitor payload conditions onboard the station. It will be rack level and payload level data and can include elements of ancillary and safety data. This data is downlinked via S-Band.

PAYLOAD SYSTEMS DATA:

Health and Status information from the experiment equipment is a subset of Payload System data. Payload Systems data includes normal hardware and software configurations and status telemetry. Payload systems data includes that data pertaining to payload support systems that will allow the ground to monitor these systems. This data is downlinked via Ku-Band.

PERFORMANCE CATEGORIES:

These descriptions and the accompanying table are provided solely for informational purposes. Exact definitions may be found in the NISN Services Document (NSD).

1. REAL-TIME CRITICAL SERVICE: This service provides a mission critical level of data networking connectivity with emphasis on meeting real-time telemetry transport through the use of the IP suite. Real-time Critical IP service is engineered with a high level of redundancy to achieve the high level of availability.
2. MISSION CRITICAL SERVICE: This service provides a mission critical level of data networking connectivity through the use of the IP

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[PRD] DATABASE RECORD: 555020
ITEM NUMBER: H7

suite with very controlled access and security measures. This service is engineered as a very closed system to support spaceflight mission critical telemetry and data flows.

3. PREMIUM SERVICE: Premium IP service is most appropriate for internal Agency networking requirements where the data should be isolated from the general Internet. Premium IP connectivity to the general Internet is through a controlled gateway and is implemented on an exception basis only.
4. STANDARD SERVICE: Standard IP service is the commodity Internet service that provides the Agency's link to the Internet in general. Standard IP service is open to the public to access publicly available NASA information sources such as World Wide Web services.

REAL-TIME (RT) PAYLOAD DATA:

This is actual experiment data from the payloads, and is also referred to as Science data. This data is downlinked via Ku-Band.

VOICE OVER INTERNET PROTOCOL:

Voice over Internet Protocol (VoIP) is a means of providing for an extension of Mission Voice loops to desktop workstations via common IP based networks. Packets can be encrypted for security.

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SECTION 1031 - INDEX

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1031	INDEX
1050	ABBREVIATIONS/ACRONYMS
1051	TEST CODE DEFINITION
1052	SPECIAL CODE DEFINITION
1070	TECHNICAL REFERENCES
1100	PROGRAM DESCRIPTION
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2200	TELEMETRY DATA
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SECTION 1050 - ABBREVIATIONS/ACRONYMS

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[PRD] DATABASE RECORD: 545762
ITEM NUMBER: H1

IS	Instructor Station
ISS	International Space Station
IT	Information Technology
IVoDS	Internet Voice Distribution System
JAXA	Japan Aerospace Exploration Agency
JSC	Johnson Space Center
Kbps	Kilobits per second
KSA	Ku-band Single Access
KSAF	Ku-band Single Access Forward
KSAR	Ku-band Single Access Return
KSC	Kennedy Space Center
LOR	Line Outage Recorder
Mbps	Megabits per second
MCC-H	Mission Control Center - Houston
MCC-M	Mission Control Center - Moscow
MDM	Multiplexer Demultiplexer
MMT	Mission Management Team
MPEG	Moving Pictures Expert Group
ms	milliseconds
MSFC	Marshall Space Flight Center
NASA	National Aeronautics and Space Administration
NCHD	Non-Critical Highly Desirable
NISN	NASA Integrated Services Network
NMI	NASA Management Instruction
NPG	NASA Procedures and Guidelines
NPRD	Network Program Requirements Document
NTSC	National Television Standards Committee
OCA	Orbiter Communications Adapter
OCMS	Operations Control Mission Software
OND	Operational Need Date
OSF	Office of Space Flight
PB	Playback
PDSS	Payload Data Services System
PDL	Payload Data Library
PEI	Payload Engineering and Integration
PID	Program Introduction Document
PIMS	Payload Information Management System
PN	Pseudorandom Noise
POIC	Payload Operations Integration Center

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POP	Point of Presence
PPS	Payload Planning System
PRD	Program Requirements Document
PSP	Program Support Plan
PTC	Payload Training Capability
RAPS	Remote Area for Payload Support
RPI	Remote Principal Investigator
RSA	Russian Space Agency
RT	Real-time
SER	Scientific Engineering and Research
SGS	Space to Ground System
SN	Space Network
SNMP	Simple Network Management Protocol
SSA	S-band Single Access
SSAF	S-band Single Access Forward
SSAR	S-band Single Access Return
SSCC	Space Station Control Center
SSP	Space Station Program
SSPF	Space Station Processing Facility
SSTF	Space Station Training Facility
STDN	Space Tracking and Data Network
STS	Space Transportation System
TBD	To Be Determined
TBS	To Be Supplied
TCP	Transmission Control Protocol
TDRS	Tracking and Data Relay Satellite
TDRSS	Tracking and Data Relay Satellite System
TSC	Telescience Support Center
UDP	User Datagram Protocol
UDS	Universal Documentation System
UF	Utilization Flight
UPD	User Performance Data
USGS	United States Ground Segment
USOC	United States Operations Center
USOS	United States On-Orbit Segment
VoIP	Voice over Internet Protocol
WAN	Wide Area Network
WSC	White Sands Complex
ZOE	Zone of Exclusion

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[PRD] DATABASE RECORD: 545762
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SECTION 1051 - TEST CODE DEFINITION

PUBLICATION DATE: 01/04/99 REVISION: 0000 RUN DATE: 06/30/04

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[PRD] DATABASE RECORD: 555013 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: ISS II APPROVAL DATE: 01/23/04
INITIAL DATE: 04/26/00
ITEM NUMBER: H1 DATE LAST CHANGED: 01/23/04
SECTION: 1051 TIME LAST CHANGED: 13:31:14

REQUESTER: MSFC
TEST CODE: INFO

1. DESCRIPTION: TEST CODE DEFINITION

Test Codes

ARCTALL ARC TSC, all phases
ASIALL ASI, all phases
CSAALL CSA, all phases
ESAALL ESA, all phases
ETOVOPS ISS Payloads being transported to and from Earth and ISS
FULL-TIME Full period configuration required
GRCTALL GRC TSC, all phases
INCxx Increment Numbers (Indicates the valid support increments)
ISSPALL ISS Payloads, all Increments, all Flights
JAXAALL JAXA, all phases
JSCTALL JSC TSC, all phases
POICALL POIC, all phases
POICOPS POIC Real-Time Mission Operations
POICSIM POIC Simulations
POICTEST POIC Testing, excluding Simulations
RPIALL RPI sites
RSAALL RSA, all phases

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SECTION 1052 - SPECIAL CODE DEFINITION

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[PRD] DATABASE RECORD: 545765
ITEM NUMBER: H1

RPO Research Program Office
RSA Russian Space Agency
SSCC Space Station Control Center
SSTF Space Station Training Facility
USOC United States Operations Center
WSC White Sands Complex

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SECTION 1070 - TECHNICAL REFERENCES

PUBLICATION DATE: 01/04/99 REVISION: 0000 RUN DATE: 06/30/04

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[PRD] DATABASE RECORD:      558500      REQUIREMENT STATUS: APPROVED R
DOCUMENT ID:                ISS II      APPROVAL DATE:          03/04/03
                               INITIAL DATE:          01/31/01
ITEM NUMBER:                H1         DATE LAST CHANGED:     06/16/04
SECTION:                    1070      TIME LAST CHANGED:     14:29:13

REQUESTER:                  MSFC
TEST CODE:                  INFO
    
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1. DESCRIPTION: Technical References

The purpose of this section is to list sources of supplemental information or to provide additional background for requirements listed in this document. These references cannot be used for the purpose of levying requirements, but they may be used to explain details that are to lengthy or to complicated to be incorporated into this document.

Document Number	Title
530-ICD-NCCDS/MOC	GSFC NCC to Mission Operations Centers ICD
534-OIP-NCC/MSFC-HOSC	Operations Interface Procedures between the GSFC NCC and the MSFC HOSC
NPG 2810.1	NASA Procedures and Guidelines Security of Information Technology
SSP 41154	USOS to USGS Command and Telemetry ICD
SSP 41158	USOS to IGSS Ku-Band Telemetry Format ICD
SSP 45001	JSC SSCC to MSFC HOSC ICD
SSP 45025	HOSC to JAXA ICD
SSP 45026	HOSC to ESA ICD
SSP 50088	JSC SSTF to MSFC POIC and Remote Area for Payload Support (RAPS) ICD
SSP 50304	POIC Capabilities Document
SSP 50305	POIC to Generic User IDD
SSP 50365	HOSC to JSC TSC ICD
SSP 50366	HOSC to GRC TSC ICD
SSP 50367	HOSC to ARC TSC ICD
SSP 50368	HOSC to MCC-M ICD

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SECTION 2200 - TELEMETRY DATA

PUBLICATION DATE: 01/04/99 REVISION: 0000 RUN DATE: 06/30/04

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[PRD] DATABASE RECORD:      545767          REQUIREMENT STATUS: APPROVED R
DOCUMENT ID:                ISS II          APPROVAL DATE:         02/20/03
                                                             INITIAL DATE:         04/26/00
ITEM NUMBER:                H1G            DATE LAST CHANGED:    06/21/04
SECTION:                    2200          TIME LAST CHANGED:    08:38:52

REQUESTER:                  MSFC
TEST CODE:                  ISSPAL          POICALL
    
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1. DESCRIPTION: KU-BAND RETURN SERVICE FROM WSC TO THE HOSC

The Ku-Band Single Access Return (KSAR) link operates at a data rate of 50 Mbps. In the future, the KSAR link will be upgraded to 150 Mbps. The requirements for Ku-band return data to the HOSC are as follows:

- a. NISN shall provide a fiber terrestrial communication network for the distribution of ISS Ku-Band downlink data. This network shall support variable data rates from 25 Mbps to 150 Mbps.
- b. The input to the network shall be IP packets, and the output to the MSFC is required to be in the same format as that provided to the network.
- c. NISN shall provide a 56 Kbps out-of-band frame relay cloud for network management and status reporting.
- d. The total service availability of the network shall not be less than 0.9995 percent.
- e. The maximum downtime shall not exceed 2 hours for any single outage.
- f. A NISN Mission Critical Service is required.
- g. The maximum acceptable packet loss is .001 percent.
- h. The one way data transport delay shall not exceed 100 ms.
- i. A Mission Critical Systems/MSN security level interface is required.
- j. Reference MSFC-PLAN-3340, IDEA Development Plan, for more detailed requirements.

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 06/21/04

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[PRD] DATABASE RECORD:      551180          REQUIREMENT STATUS: APPROVED R
DOCUMENT ID:                ISS II          APPROVAL DATE:         02/20/03
                                                             INITIAL DATE:         04/26/00
ITEM NUMBER:                H2G            DATE LAST CHANGED:    06/17/04
SECTION:                    2200          TIME LAST CHANGED:    10:37:02

REQUESTER:                  MSFC
TEST CODE:                  ISSPAL          POICALL
    
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SECTION 2200 - TELEMETRY DATA

PUBLICATION DATE: 01/04/99 REVISION: 0000 RUN DATE: 06/30/04

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[PRD] DATABASE RECORD: 554862
ITEM NUMBER: H3G

REQUESTER: MSFC
TEST CODE: ISSPAL

1. DESCRIPTION: SN LINE OUTAGE RECORDING

The S-Band and Ku-Band return links shall be recorded at the White Sands Complex (WSC) for all ISS elements and held for a period of 50 hours, or longer if specifically requested. Playback shall be required in the event of communications or facility failures.

Playback of the Ku-Band data will utilize the same communications link as the real-time data, but real-time and playback data will not be transmitted simultaneously.

S-Band data playback can occur simultaneously with real-time support, on a separate channel. Playback of ACS S-Band data will use a playback channel shared with ATV and HTV S-Band playbacks.

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 03/10/03

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SECTION 2700 - COMMUNICATION

PUBLICATION DATE: 01/04/99 REVISION: 0000 RUN DATE: 06/30/04

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[PRD] DATABASE RECORD:      545763      REQUIREMENT STATUS: APPROVED R
DOCUMENT ID:                ISS II      APPROVAL DATE:          04/26/00
                               INITIAL DATE:          04/26/00
ITEM NUMBER:                H1          DATE LAST CHANGED:     06/18/04
SECTION:                    2700       TIME LAST CHANGED:     10:05:07

REQUESTER:                  MSFC
SUBREQUESTER:              NISN001
TEST CODE:                  INFO
```

1. DESCRIPTION: NISN OVERVIEW

The primary responsibility of the NASA Integrated Services Network (NISN) is to interconnect tracking and telemetry stations and sites, launch areas, mission and project/payload operations control centers, science data capture facilities, and network control centers in the communications of data, voice, and video.

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[PRD] DATABASE RECORD:      545773      REQUIREMENT STATUS: APPROVED R
DOCUMENT ID:                ISS II      APPROVAL DATE:          04/26/00
                               INITIAL DATE:          04/26/00
ITEM NUMBER:                H2G        DATE LAST CHANGED:     06/18/04
SECTION:                    2700       TIME LAST CHANGED:     09:55:56

REQUESTER:                  MSFC
TEST CODE:                  ISSPAL      POICALL
```

1. DESCRIPTION: SECURITY REQUIREMENTS

NISN provided communications services shall comply with NASA Procedures and Guidelines (NPG) 2810.1, NASA's Information Technology (IT) Security Program (latest revision). The users of NISN services shall comply with the Internet Protocol Operational Network (IONet) Access Protection Policy and Requirements document, GSFC document number 290-004.

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 02/02/01

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[PRD] DATABASE RECORD:      551445      REQUIREMENT STATUS: APPROVED R
DOCUMENT ID:                ISS II      APPROVAL DATE:          03/03/03
                               INITIAL DATE:          04/26/00
ITEM NUMBER:                H4H        DATE LAST CHANGED:     06/18/04
SECTION:                    2700       TIME LAST CHANGED:     10:57:29

REQUESTER:                  MSFC
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CLASSIFICATION UNCLASSIFIED

INTERNATIONAL SPACE STATION ORBITAL VOL-II
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
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SECTION 2730 - VOICE NETWORK TRANSMISSION

PUBLICATION DATE: 01/04/99 REVISION: 0000 RUN DATE: 06/30/04

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[PRD] DATABASE RECORD: 545782 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: ISS II APPROVAL DATE: 09/03/03
INITIAL DATE: 04/26/00
ITEM NUMBER: HIGHT DATE LAST CHANGED: 06/21/04
SECTION: 2730 TIME LAST CHANGED: 10:59:10

REQUESTER: MSFC
TEST CODE: ISSPAL POICALL

1. DESCRIPTION: VOICE COMMUNICATION REQUIREMENTS

NISN shall provide voice communication services between the HOSC and other NASA Centers and TSC locations. The number of voice circuits required are as follows:

Circuits	Destination	
138	JSC	(NCHD)
	(4 JSC TSC requested)	
	(6 for Media Relations)	
6	GSFC	(NCHD)
24	ARC TSC	(NCHD)
48	GRC TSC	(NCHD)

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: NOACK RESPONSE DATE: 09/18/03

SUPPLIER: MSFC AGENCY: MSFC/FD43 (MARSHALL SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 09/03/03

SUPPLIER: JSC AGENCY: JSC/DB (T - JOHNSON SPACE CENTER)

SUPPLIER COMMITMENT: NOACK RESPONSE DATE: 09/03/03

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SECTION 2734 - VIDEO/DATA NETWORK TRANSMISSION

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[PRD] DATABASE RECORD: 551424
ITEM NUMBER: HT1G

SUPPLIER COMMITMENT: NOACK RESPONSE DATE: 04/05/04

[PRD] DATABASE RECORD: 545779 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: ISS II APPROVAL DATE: 03/13/03
INITIAL DATE: 04/26/00
ITEM NUMBER: HT2G DATE LAST CHANGED: 04/05/04
SECTION: 2734 TIME LAST CHANGED: 12:14:59

REQUESTER: MSFC JSC
TEST CODE: ISSPAL POICALL

1. DESCRIPTION: SSCC TO HOSC DATA TRANSFER INTERFACE

NISN shall provide an Open IONET and a NASA Operational Wide WAN communications service between the SSCC and the HOSC. This WAN service utilizing the TCP/IP suite will transport the following data types: command responses, command history data files, planning data files, uplink file transfers, and archived ISS Systems data files.

- a. A CIR of 112 kbps shall be provided for the transfer of operational and simulated command responses via a dedicated point-to-point circuit or equivalent dedicated private network.
- b. A CIR of 112 Kbps shall be provided for the transfer of operational and simulated command history files.
- c. A CIR of 192 Kbps shall be provided for the transfer of planning data files.
- d. A CIR of 150 Kbps shall be provided for the transfer of archived ISS Systems data files.
- e. A 192 Kbps, synchronous, serial bitstream data and clock service shall be provided for the transfer of simulated S-band downlink telemetry.
- f. A CIR of 4 Kbps shall be provided for the transfer of real-time and simulated IAM Antenna Management data.
- g. A CIR of 256 Kbps shall be provided for the transfer of Orbiter Communications Adapter (OCA) data.
- h. A NISN Mission Critical Service (for a through f) is required.
- i. A NISN Premium Service for g. is required.
- j. SSCC and HOSC Mission Critical System/MSN security level interface is required.

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[PRD] DATABASE RECORD: 545779
ITEM NUMBER: HT2G

- k. The one-way data transport delay (a through f) shall not exceed 120 ms.
- l. The one-way data transport delay for g. shall not exceed 100 ms.
- m. The maximum acceptable packet loss (for a through f) is .001 percent.
- n. The maximum acceptable packet loss for g. is 1 percent.
- o. Refer to SSCC to HOSC ICD (SSP 45001) for detailed interface requirements.

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: NOACK RESPONSE DATE: 04/05/04

[PRD] DATABASE RECORD:	545780	REQUIREMENT STATUS:	APPROVED R
DOCUMENT ID:	ISS II	APPROVAL DATE:	03/13/03
		INITIAL DATE:	04/26/00
ITEM NUMBER:	HT3G	DATE LAST CHANGED:	03/19/03
SECTION:	2734	TIME LAST CHANGED:	10:24:13

REQUESTER: MSFC JSC
TEST CODE: ISSPAL POICALL

1. DESCRIPTION: SSTF TO HOSC DATA TRANSFER INTERFACE

NISN shall provide a NASA Operational Wide Area Network (WAN) communications service for communications between the SSTF and the HOSC.

The WAN service, utilizing TCP/IP protocol suite, will transport the following data types: simulated payload health and status data and Instructor Station (IS) training session data stream.

- a. A CIR of 256 Kbps shall be provided for the transfer of simulated Payload Health and Status data.
- b. A CIR of 1.1 Mbps shall be provided for the transfer of IS Training Session Data.
- c. A CIR of 100 Kbps shall be provided for the transfer of simulated S-band telemetry data.
- d. A NISN Mission Critical service is required.
- e. A SSTF and HOSC Mission Critical Systems/SER security level interface is required.

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[PRD] DATABASE RECORD: 545780
ITEM NUMBER: HT3G

- f. The one-way data transport delay shall not exceed 100 ms.
- g. The maximum acceptable packet loss is .001 percent.
- h. Refer to the SSTF to MSFC POIC and RAPS ICD (SSP 50088) for detailed interface requirements.

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 03/19/03

[PRD] DATABASE RECORD:	555027	REQUIREMENT STATUS:	APPROVED R
DOCUMENT ID:	ISS II	APPROVAL DATE:	03/13/03
		INITIAL DATE:	04/26/00
ITEM NUMBER:	HT4G	DATE LAST CHANGED:	05/09/03
SECTION:	2734	TIME LAST CHANGED:	08:27:21

REQUESTER: MSFC JSC
TEST CODE: ISSPAL POICALL

1. DESCRIPTION: HOSC TO SSTF DATA TRANSFER INTERFACE

NISN shall provide a NASA Operational WAN communications service for communications between the SSTF and the HOSC. This WAN service, utilizing TCP/IP protocol suite, will transport the following data types: Simulated Payload Health and Status and Instructor Station (IS) Training Session data.

- a. A CIR of 1.4 Mbps shall be provided for the transfer of Remote Area for Payload Support (RAPS) data and Instructor Operator Station (IOS) Instructor Station (IS) Training Session Data.
- b. A CIR of 100 Kbps shall be provided for the transfer of S-band command data.
- c. A NISN Mission Critical Service is required.
- d. A SSTF and HOSC Mission Critical Systems/SER security level interface is required
- e. The one-way data transport delay shall not exceed 100 ms.
- f. The maximum acceptable packet loss is .001 percent.
- g. Refer to SSTF to MSFC POIC and RAPS ICD (SSP 50088) for detailed interface requirements.

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[PRD] DATABASE RECORD: 555027
ITEM NUMBER: HT4G

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 03/19/03

[PRD] DATABASE RECORD: 545790 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: ISS II APPROVAL DATE: 03/13/03
INITIAL DATE: 04/26/00
ITEM NUMBER: H7G DATE LAST CHANGED: 03/19/03
SECTION: 2734 TIME LAST CHANGED: 10:25:34

REQUESTER: MSFC
SUBREQUESTER: JSCT
TEST CODE: JSCTALL

1. DESCRIPTION: HOSC TO JSC TSC DATA TRANSFER INTERFACE

NISN shall provide a NASA Operational WAN communications service for communications between the HOSC and the JSC TSC. This WAN service, utilizing TCP/IP protocol suite, will transport the following data types: Real-Time data, COR Dump of Real-Time data, LOR PB of Real-Time Data, COR Dump of real-time data, LOR PB of COR Dump, PIMS Data, PPS Data, GSE Packet definition and distribution, OCMS Data, Telemetry Services, and Commanding Services.

The X-Windows interface requires a CIR of 56 Kbps for each active session (screen which is continually updating). The X-Windows interface require a CIR of 56 Kbps for the combined non-active sessions.

- a. A CIR of 7.544 Mbps shall be provided for the transfer of real-time payload experiment data, stored payload experiment data, payload health and status data, flight ancillary data, ground ancillary data, downlink file transfers, GSE subsets, and custom data packets.
- b. A NISN Premium service is required.
- c. A HOSC and JSC Mission Critical Systems/SER security level interface is required.
- d. The one-way data transport delay shall not exceed 100 ms.

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[PRD] DATABASE RECORD: 555061
ITEM NUMBER: H8G

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 03/19/03

[PRD] DATABASE RECORD: 554957 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: ISS II APPROVAL DATE: 03/13/03
INITIAL DATE: 04/26/00
ITEM NUMBER: H9G DATE LAST CHANGED: 03/19/03
SECTION: 2734 TIME LAST CHANGED: 10:26:30

REQUESTER: MSFC
TEST CODE: GRCTALL

1. DESCRIPTION: HOSC TO GRC TSC DATA TRANSFER INTERFACE

NISN shall provide a NASA Operational Wide Area Network (WAN) communications service for communications between the HOSC and the GRC TSC. This WAN service, utilizing TCP/IP protocol suite, will transport the following data types: Real-Time data, COR Dump of Real-Time data, LOR PB of Real-Time Data, LOR PB of COR Dump, PIMS Data, PPS Data, GSE Packet definition and distribution, OCMS Data, Telemetry Services, and Commanding Services.

- a. A CIR of 7.278 Mbps shall be provided for the transfer of real-time payload experiment data, stored payload experiment data, payload health and status data, flight ancillary data, ground ancillary data, GSE subsets, and custom data packets.
- b. A NISN Premium service is required.
- c. A HOSC and GRC TSC Mission Critical Systems/SER security level interface is required.
- d. The one-way data transport delay shall not exceed 100 ms.
- e. The maximum acceptable packet loss is <1%.

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 03/19/03

[PRD] DATABASE RECORD: 555047 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: ISS II APPROVAL DATE: 03/13/03
INITIAL DATE: 04/26/00
ITEM NUMBER: H10G DATE LAST CHANGED: 03/19/03

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[PRD] DATABASE RECORD: 555047
ITEM NUMBER: H10G

SECTION: 2734 TIME LAST CHANGED: 10:27:00

REQUESTER: MSFC
TEST CODE: GRCTALL

1. DESCRIPTION: GRC TSC TO HOSC DATA TRANSFER INTERFACE

NISN shall provide a NASA Operational Wide Area Network (WAN) communications service for communications between the HOSC and the GRC TSC. This WAN service, utilizing TCP/IP protocol suite, will transport the following data types: Real-Time data, COR Dump of Real-Time data, LOR PB of Real-Time Data, LOR PB of COR Dump, PIMS Data, PPS Data, GSE Packet definition and distribution, OCMS Data, Telemetry Services, and Commanding Services.

- a. A CIR of 1.544 Mbps shall be provided for the transfer of X-Window commands, PIMS data, PPS data, and uplink file transfer.
- b. A NISN Premium service is required.
- c. A HOSC and GRC TSC Mission Critical Systems/SER security level interface is required.
- d. The one-way data transport delay shall not exceed 100 ms.
- e. The maximum acceptable packet loss is <1 percent.

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 03/19/03

[PRD] DATABASE RECORD:	554960	REQUIREMENT STATUS:	APPROVED R
DOCUMENT ID:	ISS II	APPROVAL DATE:	02/18/03
		INITIAL DATE:	04/26/00
ITEM NUMBER:	H11G	DATE LAST CHANGED:	03/13/03
SECTION:	2734	TIME LAST CHANGED:	07:41:49

REQUESTER: MSFC
TEST CODE: RSAALL

1. DESCRIPTION: HOSC AND MCC-M MISSION DATA TRANSFER INTERFACE

NISN will provide a full duplex NASA operational PIP Wide Area Network (WAN)communications service for communications from the HOSC to the Russian Space Agency (RSA). This PIP WAN service using the Transmission

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[PRD] DATABASE RECORD: 554960
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Control Protocol/Internet Protocol (TCP/IP) suite of protocols will provide the exchange of Mission Planning Data Files and will also be used for the Payload Information Management System (PIMS) interface.

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 02/26/03
RESPONSE:

[PRD] DATABASE RECORD: 554947 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: ISS II APPROVAL DATE: 03/13/03
INITIAL DATE: 04/26/00
ITEM NUMBER: H13G DATE LAST CHANGED: 05/09/03
SECTION: 2734 TIME LAST CHANGED: 08:30:06

REQUESTER: MSFC
TEST CODE: RPIALL

1. DESCRIPTION: HOSC TO RPI DATA TRANSFER INTERFACE

DATA: NISN shall provide a 10 MBPS Standard IP routed data interface between the HOSC and each designated RPI Peering Point for the purpose of transporting telemetry data and providing an Internet interface to POIC Web services, PPS, VoIP, and programmatic interfaces.

- a. Mean Time to Restore (MTTR) between the NISN-provided HOSC Demarcation and a Peering Point shall not exceed 24 hours.
- b. The one-way transport delay between the NISN-provided HOSC Demarcation and a Peering Point shall not exceed 250 ms.
- c. The maximum acceptable packet loss between the NISN-provided HOSC Demarcation and a Peering Point is 1%.
- d. The coverage period for a Standard IP routed data service as identified in the NISN Services Document is acceptable.
- e. NISN responsibility for performance is terminated at the Peering Point(s).
- f. NISN will provide assistance in isolating outages between the Peering Point and the RPI Site, if requested.

NOTE: It is the responsibility of each RPI to make the arrangements

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[PRD] DATABASE RECORD: 554947
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for the transfer of data from the Peering Point to their RPI location. Performance standards, restoration times, and other Service Level Agreement (SLA) type items shall be made solely between the RPI and their Internet Service Provider (ISP). There shall be no NISN involvement in this process.

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 03/19/03
RESPONSE:

[PRD] DATABASE RECORD: 554946 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: ISS II APPROVAL DATE: 04/26/00
INITIAL DATE: 04/26/00
ITEM NUMBER: H14 DATE LAST CHANGED: 05/09/03
SECTION: 2734 TIME LAST CHANGED: 08:34:44
REQUESTER: MSFC
TEST CODE: INFO

1. DESCRIPTION: RPI DATA TRANSFER INTERFACE FROM THE PEERING POINT TO THE RPI SITE

It is the responsibility of each RPI to make the arrangements for the transfer of data from the Peering Point to their RPI location. Performance standards, restoration times, and other Service Level Agreement (SLA) type items shall be made solely between the RPI and their Internet Service Provider (ISP). There will be no NISN involvement in this process.

[PRD] DATABASE RECORD: 554932 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: ISS II APPROVAL DATE: 04/24/03
INITIAL DATE: 04/26/00
ITEM NUMBER: H15G DATE LAST CHANGED: 04/24/03
SECTION: 2734 TIME LAST CHANGED: 09:35:44
REQUESTER: MSFC
TEST CODE: RPIALL

1. DESCRIPTION: HOSC TO UNIVERSITY OF ALABAMA/BIRMINGHAM

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[PRD] DATABASE RECORD: 554932
ITEM NUMBER: H15G

UAB, CMC, Room 415
817 22nd Street South
Birmingham, Alabama

a. NISN shall provide a WAN routed data service at a CIR of 3.5 Mbps.

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: NOACK RESPONSE DATE: 04/24/03

[PRD] DATABASE RECORD: 554929 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: ISS II APPROVAL DATE: 03/03/03
INITIAL DATE: 04/26/00
ITEM NUMBER: H17G DATE LAST CHANGED: 03/13/03
SECTION: 2734 TIME LAST CHANGED: 07:45:06

REQUESTER: MSFC
TEST CODE: RPIALL

1. DESCRIPTION: HOSC TO NORTHEASTERN UNIVERSITY/BOSTON, MA

CAMMP Laboratory
255 Egan Center
Boston, Massachusetts

a. Service shall begin at the rate of 224 Kbps.

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 03/10/03

[PRD] DATABASE RECORD: 554930 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: ISS II APPROVAL DATE: 03/03/03
INITIAL DATE: 04/26/00
ITEM NUMBER: H18G DATE LAST CHANGED: 03/13/03
SECTION: 2734 TIME LAST CHANGED: 07:45:54

REQUESTER: MSFC
TEST CODE: RPIALL

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[PRD] DATABASE RECORD: 554930
ITEM NUMBER: H18G

1. DESCRIPTION: HOSC TO UNIVERSITY OF COLORADO/BOULDER

Engineering Center, Room 1B-08
Boulder, Colorado

a. NISN shall provide a WAN routed data service at a CIR of 1 Mbps.

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 03/10/03

[PRD] DATABASE RECORD: 554938 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: ISS II APPROVAL DATE: 03/03/03
INITIAL DATE: 04/26/00
ITEM NUMBER: H19G DATE LAST CHANGED: 03/13/03
SECTION: 2734 TIME LAST CHANGED: 07:46:31

REQUESTER: MSFC
TEST CODE: RPIALL

1. DESCRIPTION: HOSC TO UNIVERSITY OF WISCONSIN/MADISON

WCSAR, 1416 Engineering Drive
Engineering Hall, Room 2350
Madison, Wisconsin

a. NISN shall provide a WAN routed data service at a CIR of 1.1 Mbps.

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 03/10/03

[PRD] DATABASE RECORD: 554966 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: ISS II APPROVAL DATE: 02/18/03
INITIAL DATE: 04/26/00
ITEM NUMBER: H20G DATE LAST CHANGED: 05/06/03
SECTION: 2734 TIME LAST CHANGED: 09:37:53

REQUESTER: MSFC
TEST CODE: INCALL

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[PRD] DATABASE RECORD: 554966
ITEM NUMBER: H20G

1. DESCRIPTION: HOSC TO BOEING/SEATTLE, WASHINGTON

Boeing Phantom Works, Kent Space Center West
20403 68th Ave. S.
Bldg. 18-21, Rm 11B2
Kent, Washington 98032

a. NISN shall provide a WAN routed data service at a CIR of 1.5 Mbps.

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 04/29/03

[PRD] DATABASE RECORD: 554965 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: ISS II APPROVAL DATE: 03/03/03
INITIAL DATE: 04/26/00
ITEM NUMBER: H21G DATE LAST CHANGED: 03/13/03
SECTION: 2734 TIME LAST CHANGED: 07:47:44

REQUESTER: MSFC
TEST CODE: RPIALL

1. DESCRIPTION: HOSC TO WESTERVILLE, OHIO

Intek, Inc.
751 Intek Way
Westerville, Ohio

a. NISN shall provide a WAN routed data service at a CIR of 224 Kbps.

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 03/10/03

[PRD] DATABASE RECORD: 554963 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: ISS II APPROVAL DATE: 04/26/00
INITIAL DATE: 04/26/00
ITEM NUMBER: H22G DATE LAST CHANGED: 03/13/03
SECTION: 2734 TIME LAST CHANGED: 07:49:07

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[PRD] DATABASE RECORD: 554963
ITEM NUMBER: H22G

REQUESTER: MSFC
TEST CODE: INFO

1. DESCRIPTION: HOSC TO ESTEC

Service shall begin at the rate of 10 Kbps.

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 12/27/01

[PRD] DATABASE RECORD: 554964 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: ISS II APPROVAL DATE: 04/26/00
INITIAL DATE: 04/26/00
ITEM NUMBER: H23G DATE LAST CHANGED: 03/13/03
SECTION: 2734 TIME LAST CHANGED: 07:50:22

REQUESTER: MSFC
TEST CODE: RPIALL

1. DESCRIPTION: HOSC TO COLORADO SCHOOL OF MINES, GOLDEN, COLORADO

a. Service shall begin at the rate of 224 Kbps.

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 01/07/02

[PRD] DATABASE RECORD: 554962 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: ISS II APPROVAL DATE: 03/03/03
INITIAL DATE: 04/26/00
ITEM NUMBER: H24G DATE LAST CHANGED: 03/13/03
SECTION: 2734 TIME LAST CHANGED: 07:51:01

REQUESTER: MSFC
TEST CODE: RPIALL

1. DESCRIPTION: HOSC TO BOEING/HOUSTON

2100 Space Park Drive, Room 3D17

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OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 30000

SECTION 2734 - VIDEO/DATA NETWORK TRANSMISSION

PUBLICATION DATE: 01/04/99 REVISION: 0000 RUN DATE: 06/30/04

CONTINUED

[PRD] DATABASE RECORD: 554962
ITEM NUMBER: H24G

Houston, Texas

- a. NISN shall provide a WAN routed data service at a CIR of 112 Kbps.

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 03/10/03

[PRD] DATABASE RECORD: 558990 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: ISS II APPROVAL DATE: 05/09/01
INITIAL DATE: 05/09/01
ITEM NUMBER: H28T DATE LAST CHANGED: 05/09/03
SECTION: 2734 TIME LAST CHANGED: 08:40:04

REQUESTER: MSFC
TEST CODE: INC2 INC3 INC4 INC5
INC6 INC7

1. DESCRIPTION: EarthKAM Electronic Still Camera (ESC) Digital Image Data Distribution

- a. JSC shall provide distribution of the Ku-Band downlinked data files containing ESC Digital Image Data to the EarthKAM users at the JSC TSC and at the University of California/San Diego (UCSD).
- b. JSC shall provide the EarthKAM users at the JSC TSC with access to the OCA Operators (EDLS Server) and the EarthKAM Server (JSC/DO5 Server).
- c. JSC shall provide the EarthKAM users at UCSD with the ESC Digital Image Data in serial format.
- d. Voice and data distribution to the EarthKAM users at UCSD is required only during active EarthKAM operations periods.
- e. Voice requirements for the EarthKAM users have been identified in DBR 558936 (Section 2750) of this document.

SUPPLIER: JSC AGENCY: JSC/DB (T - JOHNSON SPACE CENTER)

CLASSIFICATION UNCLASSIFIED

INTERNATIONAL SPACE STATION ORBITAL VOL-II
PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
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SECTION 2734 - VIDEO/DATA NETWORK TRANSMISSION

PUBLICATION DATE: 01/04/99 REVISION: 0000 RUN DATE: 06/30/04

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[PRD] DATABASE RECORD: 558990
ITEM NUMBER: H28T

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 09/27/02

CLASSIFICATION UNCLASSIFIED

INTERNATIONAL SPACE STATION ORBITAL VOL-II
 PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
 OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
 PROGRAM NUMBER: 30000

SECTION 2750 - VOICE TERMINATIONS

PUBLICATION DATE: 01/04/99 REVISION: 0000 RUN DATE: 06/30/04

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[PRD] DATABASE RECORD:      554952          REQUIREMENT STATUS: APPROVED R
DOCUMENT ID:                ISS II          APPROVAL DATE:         01/12/04
                                           INITIAL DATE:         04/26/00
ITEM NUMBER:                HT1GHT         DATE LAST CHANGED:    06/18/04
SECTION:                    2750          TIME LAST CHANGED:    12:04:03

REQUESTER:                  MSFC                      JSC
TEST CODE:                  FULL-TIME          ISSPAL          POICALL
  
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1. DESCRIPTION: VOICE COMMUNICATION DETAILS TO JSC & GSFC

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I. JSC-to-MSFC
REAL-TIME SUPPORT          COMMENTS & RESTRICTIONS
1 S/G 1                    T/M          RPI Talk access controlled by PAYCOM
1 S/G 2                    T/M          RPI Talk access controlled by PAYCOM
ASMBLY COORD 1            T/M
CATO 1                    T/M
CBOSS CONF                T/M          JSC TSC CBOSS IVoDS Users (Note 3)
EPO COORD 1              T/M
ETOV COORD                T/M
FCR SYS 1                T/M
FD/POD COORD 1           T/M          JSC ISS FD & MSFC POD ONLY
FMT COORD 1              T/M
HLS CONF 1               T/M          JSC TSC Only (Note 3)
HLS PLAN 1               T/M          JSC TSC Only (Note 3)
HOSC O/W                 T/M          IST Use Only
HOUSTON SUPT             T/M
IEPC 1                   T/M
IP CONF                  T/M
IP/GC 1                  T/M
ISS AFD 1                T/M          Talk for POD & OC Only
ISS COMMAND 1           T/M
ISS FD 1                 T/M          Talk for POD Only
ISS MCC COORD 1         T/M          IST Use Only
ISS MED OPS 1           T/M          MSFC CPO Only
ISS MER 1                T/M
ISS MER 2                T/M
ISS MER PROB            T/M
ISS OPS 1               T/M
ISS PRIME OPS 1         T/M
ISS SYS COORD 4         T/M
OCA BLUE FCR            M
OCA ISS 1               T/M
ODIN 1                  T/M
  
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CLASSIFICATION UNCLASSIFIED

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PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
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SECTION 2750 - VOICE TERMINATIONS

PUBLICATION DATE: 01/04/99 REVISION: 0000 RUN DATE: 06/30/04

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[PRD] DATABASE RECORD: 554952
ITEM NUMBER: HT1GHT

OPS PLAN 1	T/M	
OSO COORD 1	T/M	
PHALCON 1	T/M	
RS ISS VHF 1	M	Note 6
RS ISS VHF 2	M	
S/T PLAN COORD	T/M	
SVF COORD 1	T/M	IST Use Only
TCS COORD 1	T/M	
TRANSL RUS TO ENG	M	
UCSD-MCG	T/M	

II. JSC-to-MSFC

SIMULATION & TEST SUPPORT

COMMENTS & RESTRICTIONS

2 S/G 1	T/M	RPI Talk access controlled by PAYCOM
2 S/G 2	T/M	RPI Talk access controlled by PAYCOM
ASMBLY COORD 2	T/M	
CATO 2	T/M	
EPO COORD 2	T/M	
FCR SYS 2	T/M	
FD/POD COORD 2	T/M	Restricted to MSFC POD console
FMT COORD 2	T/M	
IEPC 2	T/M	
IP/GC 2	T/M	
ISS AFD 2	T/M	Talk for POD & OC Only
ISS COMMAND 2	T/M	
ISS FD 2	T/M	
ISS MCC COORD 2	T/M	IST Use Only
ISS PRIME OPS 2	T/M	
ISS SIM DATA	T/M	POIC Sim Team Only
ISS TN COORD 2	M	
OCA ISS 2	T/M	
OCA RED FCR	M	
ODIN 2	T/M	
OPS PLAN 2	T/M	
ORT COORD	T/M	
OSO COORD 2	T/M	
PHALCON 2	T/M	
SIM ISS SYS COORD 4	T/M	
SIM HOUSTON SUPT	T/M	

CLASSIFICATION UNCLASSIFIED

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SECTION 2750 - VOICE TERMINATIONS

PUBLICATION DATE: 01/04/99 REVISION: 0000 RUN DATE: 06/30/04

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[PRD] DATABASE RECORD: 554952
ITEM NUMBER: HT1GHT

SIM ISS OPS	T/M	
SIM P/L 1	T/M	POIC Sim Team Only
SIM P/L 2	T/M	POIC Sim Team Only
SIM RS ISS VHF 1	M	
SIM RS ISS VHF 2	M	
STL 2	T/M	POIC Sim Team Only
TCS COORD 2	T/M	

III. MSFC-to-JSC
REAL-TIME SUPPORT

SUPPORT COMMENTS & RESTRICTIONS

1 PRO 1	T/M	JSC TSC Only
1 PRO 2	T/M	JSC TSC Only
1 SCI 1	T/M	JSC TSC or CSA Only
1 SCI 2	T/M	JSC TSC or CSA Only
1 SCI 3	T/M	JSC TSC or CSA Only
1 SCI 4	T/M	JSC TSC or CSA Only (Note 3)
1 SCI 5	T/M	JSC TSC or CSA Only
CPO 1	T/M	JSC TSC Only
DMC 1	T/M	JSC TSC Only
Ku COORD 1	T/M	JSC SSCC (T/M) & JSC TSC (M)
LIS COORD 1	T/M	SSCC and JSC TSC
OC 1	T/M	JSC TSC Only
P/L DATA 1	T/M	JSC TSC Only
PAYCAP 1	T/M	SSCC Only. POIC PAYCOM, JSC CAPCOM, & JSC Comm Tech Talk Only
PHANTOM 1	T/M	SSCC and JSC TSC
PLAN CONF 1	T/M	
PLAN COORD 1	T/M	JSC TSC Only
POD 1	T/M	SSCC and JSC TSC
PODF SUPPORT 1	T/M	JSC TSC Only
POIC STOWAGE 1	T/M	JSC TSC Only
PSE 1	T/M	JSC TSC Only
RPI OPS 1	T/M	JSC TSC or CSA Only
SAMS COORD	T/M	JSC TSC Only (Note 3)
SOC 1	T/M	JSC TSC Only
TV OPS 1	T/M	SSCC and JSC TSC

IV. MSFC-to-JSC

CLASSIFICATION UNCLASSIFIED

INTERNATIONAL SPACE STATION ORBITAL VOL-II
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SECTION 2750 - VOICE TERMINATIONS

PUBLICATION DATE: 01/04/99 REVISION: 0000 RUN DATE: 06/30/04

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[PRD] DATABASE RECORD: 554952
 ITEM NUMBER: HT1GHT

SIMULATION & TEST SUPPORT		COMMENTS & RESTRICTIONS
2 PRO 1	T/M	JSC TSC Only
2 PRO 2	T/M	JSC TSC Only
2 SCI 1	T/M	JSC TSC or CSA Only
2 SCI 2	T/M	JSC TSC or CSA Only
2 SCI 3	T/M	JSC TSC or CSA Only
2 SCI 4	T/M	JSC TSC or CSA Only (Note 3)
2 SCI 5	T/M	JSC TSC or CSA Only
CPO 2	T/M	JSC TSC Only
DMC 2	T/M	JSC TSC Only
JSC SIM	T/M	JSC TSC & POIC Sim Teams Only
Ku COORD 2	T/M	JSC SSCC (T/M) & JSC TSC (M)
LIS COORD 2	T/M	SSCC and JSC TSC
OC 2	T/M	JSC TSC Only
P/L DATA 2	T/M	JSC TSC Only
PAYCAP 2	T/M	SSCC Only. POIC PAYCOM, JSC CAPCOM & JSC Comm Tech Talk Only
PAYCOM 2	T/M	LIS Rep at JSC TSC Only
PHANTOM 2	T/M	SSCC and JSC TSC
PLAN CONF 2	T/M	
PLAN COORD 2	T/M	JSC TSC Only
POD 2	T/M	SSCC and JSC TSC
POIC STOWAGE 2	T/M	JSC TSC Only
RPI OPS 2	T/M	JSC TSC or CSA Only
SOC 2	T/M	JSC TSC Only
TCO 2	T/M	LIS Rep at JSC TSC Only
TSC SIM S/G 1 *or*	T/M	JSC TSC Only (CADRE/PD Sims Only)
TSC SIM S/G 2		(No E&M Signaling Required)
TSC SIM	T/M	POIC & JSC TSC Sim Teams Only
TV OPS 2	T/M	SSCC and JSC TSC Only
V. JSC-to-MSFC (STS Support to ISS Payloads) (Notes 4 & 5)		
A/G 1	M	
A/G 2	M	
FD	T/M	Talk for POD & OC Only
MCC COORD	T/M	IST Use Only
POCC CMD	T/M	
PRIME OPS	T/M	

CLASSIFICATION UNCLASSIFIED

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[PRD] DATABASE RECORD: 554952
ITEM NUMBER: HT1GHT

VI. JSC-to-MSFC (PAO LOOPS)

COMMENTATOR OPS	T/M	PAO Use Only
ISS SUPPORT AUDIO	T/M	PAO Use Only
MISSION AUDIO	M	PAO Use Only
PAO COORD	T/M	PAO Use Only
PAO CUE	T/M	PAO Use Only
VIDEO OPS	T/M	PAO Use Only

VII. GSFC-to-MSFC

REAL-TIME SUPPORT		COMMENTS & RESTRICTIONS
GM COORD	T/M	IST Only
NISN COMM COORD	T/M	IST Only
ISS SITE COORD	T/M	IST Only during US VHF supports.
ISS TN COORD 1	M	
TV CONFERENCE	T/M	
WSC PLAYBACK COORD	T/M	IST Only

DBR NOTES:

1. JSC is responsible to provide responses to Section I - VI only.
2. GSFC is responsible to provide responses to Section VII only.
3. This loop has been requested by the JSC TSC
4. Required only when Shuttle is supporting ISS Payloads
5. Default configuration is Real-Time.
6. The default configuration for RS ISS VHF 1 is Monitor only.
Only at the direction of the ISS FD will it be changed to Talk/
Monitor. This should be only during VHF proficiency passes or
for VHF voice contingency supports.

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)
RESPONDER: TONY WILLIAMS

SUPPLIER COMMITMENT: NOACK RESPONSE DATE: 06/15/04

SUPPLIER: MSFC AGENCY: MSFC/FD43 (MARSHALL SPACE FLIGHT CENTER)
RESPONDER: MIKE BLUM

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 01/12/04

SUPPLIER: JSC AGENCY: JSC/DB (T - JOHNSON SPACE CENTER)

INTERNATIONAL SPACE STATION ORBITAL VOL-II
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PROGRAM NUMBER: 30000

SECTION 2750 - VOICE TERMINATIONS

PUBLICATION DATE: 01/04/99 REVISION: 0000 RUN DATE: 06/30/04

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[PRD] DATABASE RECORD: 554952
ITEM NUMBER: HT1GHT

RESPONDER: PAT MATTINGLY

SUPPLIER COMMITMENT: NOACK RESPONSE DATE: 06/15/04

[PRD] DATABASE RECORD: 558936 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: ISS II APPROVAL DATE: 03/04/03
INITIAL DATE: 04/09/01
ITEM NUMBER: H2HT DATE LAST CHANGED: 05/29/03
SECTION: 2750 TIME LAST CHANGED: 12:48:05

REQUESTER: MSFC
TEST CODE: INC2 INC3 INC4 INC5
INC6 INC7

1. DESCRIPTION: EarthKAM Payload Operations Voice Requirements

The following is a list of approved loops required by the JSC TSC and the University of California/San Diego (UCSD) for conducting EarthKAM Payload Operations activities.

JSC MCC-H will make distribution of the following loops to JSC TSC Console Position 2383:

- 1 S/G 1 M
- 1 S/G 2 M
- 1 SCI 1 T/M
- ISS FD 1 M
- LIS COORD 1 T/M
- OC 1 T/M
- OCA ISS 1 M
- OPS PLAN 1 M
- POD 1 T/M
- UCSD-MCG T/M

MSFC HOSC will make distribution of the following loops to UCSD:

- 1 S/G 1 M
- 1 S/G 2 M
- 1 SCI 1 M
- OCA ISS 1 M

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[PRD] DATABASE RECORD: 558936
ITEM NUMBER: H2HT

ISS FD 1 M
LIS COORD 1 M
POD 1 M
UCSD-MCG T/M

SUPPLIER: MSFC AGENCY: MSFC/FD43 (MARSHALL SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 03/04/03

SUPPLIER: JSC AGENCY: JSC/DB (T - JOHNSON SPACE CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 03/05/03

[PRD] DATABASE RECORD: 576357 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: ISS II APPROVAL DATE: 04/21/04
INITIAL DATE: 04/21/04
ITEM NUMBER: H3H DATE LAST CHANGED: 04/21/04
SECTION: 2750 TIME LAST CHANGED: 14:38:34

REQUESTER: MSFC
TEST CODE: INC9

1. DESCRIPTION: PAYLOAD VOICE DISTRIBUTION TO THE GRC TSC

EXPERIMENT VOICE LOOPS

SAMS II, MAMS 1-17,20,22-24,26,30
DAFT 1-17,20,22-24
Facility 18-21,24,25,27,28

VOICE LOOPS:
REALTIME SIMULATION

1=DMC 1 DMC 2
2=ISS FD 1 (M) ISS FD 2 (M)
3=LIS COORD 1 LIS COORD 2
4=OC 1 OC 2
5=FMT COORD 1 (M) FMT COORD 2 (M)
6=POD 1 POD 2
7=PLAN COORD 1 PLAN COORD 2

CLASSIFICATION UNCLASSIFIED

INTERNATIONAL SPACE STATION ORBITAL VOL-II
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PROGRAM NUMBER: 30000

SECTION 2750 - VOICE TERMINATIONS

PUBLICATION DATE: 01/04/99 REVISION: 0000 RUN DATE: 06/30/04

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[PRD] DATABASE RECORD: 576357
ITEM NUMBER: H3H

8=POIC STOWAGE 1	POIC STOWAGE 2
9=1 S/G-1 (Talk, if required)	2 S/G-1 (Talk, if required)
10=1 S/G-2 (Talk, if required)	2 S/G-2 (Talk, if required)
11=CPO 1	CPO 2
12=P/L DATA 1	P/L DATA 2
13=Ku COORD 1 (M)	Ku COORD 2 (M)
14=1 PRO 1	2 PRO 1
15=EXPRESS COORD 1	EXPRESS COORD 2
16=PHANTOM 1	PHANTOM 2
17=TV OPS 1	TV OPS 2
18=1 SCI 1	2 SCI 1
19=1 SCI 2	2 SCI 2
20=1 SCI 3	2 SCI 3
21=1 SCI 4	2 SCI 4
22=PSE 1	
23=PODF SUPPORT 1	
24=RPI OPS	RPI OPS 2
25=GRC SIM	
26=SAMS COORD	
27=MSFC-GRC O/W	
28=TSC SIM	
29=MSG COORD	
30=SOC 1	SOC 2

NOTE:

1) Only 48 loops can be extended at any one time due to limited circuit allocations between GRC and MSFC.

SUPPLIER: MSFC AGENCY: MSFC/FD43 (MARSHALL SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 04/21/04

[PRD] DATABASE RECORD: 576358 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: ISS II APPROVAL DATE: 04/21/04
INITIAL DATE: 04/21/04
ITEM NUMBER: H4H DATE LAST CHANGED: 04/21/04
SECTION: 2750 TIME LAST CHANGED: 14:39:32
REQUESTER: MSFC

INTERNATIONAL SPACE STATION ORBITAL VOL-II
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SECTION 2750 - VOICE TERMINATIONS

PUBLICATION DATE: 01/04/99 REVISION: 0000 RUN DATE: 06/30/04

CONTINUED

[PRD] DATABASE RECORD: 576358
ITEM NUMBER: H4H

TEST CODE: INC9

1. DESCRIPTION: PAYLOAD VOICE DISTRIBUTION TO THE JSC TSC

EXPERIMENT	VOICE LOOP
-----	-----
HRF	1-25,27,31,32
Facility	12,30
EarthKAM	2-4,6,10,11,24
BSTC	1-23,25,28,31

REAL-TIME	SIMULATION
1=DMC 1	DMC 2
2=ISS FD 1 (M)*	ISS FD 2 (M)*
3=LIS COORD 1	LIS COORD 2
4=OC 1	OC 2
5=FMT COORD 1 (M)*	FMT COORD 2 (M)*
6=POD 1	POD 2
7=PLAN COORD 1	PLAN COORD 2
8=POIC STOWAGE 1	POIC STOWAGE 2
9=PSE 1	
10=1 S/G-1 (Talk, if required)*	2 S/G-1 (Talk, if required)*
11=1 S/G-2 (Talk, if required)*	2 S/G-2 (Talk, if required)*
12=RPI OPS	
13=CPO 1	CPO 2
14=PODF SUPPORT 1	
15=P/L DATA 1	P/L DATA 2
16=Ku COORD 1 (M)	Ku COORD 2 (M)
17=1 PRO 1	2 PRO 1
18=PHANTOM 1	PHANTOM 2
19=TV OPS 1	TV OPS 2
20=1 A/G 1 (Talk, if req.)*	2 A/G 1 (Talk, if req.)*
21=1 A/G 2 (Talk, if req.)*	2 A/G 2 (Talk, if req.)*
22=SOC 1	SOC 2
23=FD 1 (M)*	FD 2 (M)*
24=1 SCI-1	2 SCI-1
25=1 SCI-2	2 SCI-2
26=1 SCI-3	2 SCI-3
27=1 SCI-4	2 SCI-4

CLASSIFICATION UNCLASSIFIED

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[PRD] DATABASE RECORD: 576358
ITEM NUMBER: H4H

- 28=JSC SIM
- 29=PRIME OPS 1 (M)* PRIME OPS 2 (M)*
- 30=TSC SIM
- 31=SAMS COORD
- 32=HLS CONF 1
- 33=HLS PLAN 1

* = Provided by JSC/MCC-H or SSCC.

SUPPLIER: MSFC AGENCY: MSFC/FD43 (MARSHALL SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 04/21/04

[PRD] DATABASE RECORD: 576359 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: ISS II APPROVAL DATE: 04/21/04
INITIAL DATE: 04/21/04
ITEM NUMBER: H5H DATE LAST CHANGED: 04/21/04
SECTION: 2750 TIME LAST CHANGED: 14:47:11

REQUESTER: MSFC
TEST CODE: INC9

1. DESCRIPTION: PAYLOAD VOICE DISTRIBUTION TO THE MSFC TSC

EXPERIMENT	VOICE LOOP
-----	-----
FMVM	1-4,6,8,9,11-15,18,20,21
FOAM	1-4,6,8,9,11-15,18,20,21
PCG-STES	1-28
MFMG	1-4,6,8,9,11-13,18,20,21,32
Facility	13,29

REAL-TIME	SIMULATION
1=DMC 1	DMC 2
2=ISS FD 1 (M)	ISS FD 2 (M)
3=LIS COORD 1	LIS COORD 2
4=OC 1	OC 2
5=FMT COORD 1 (M)	FMT COORD 2 (M)
6=POD 1	POD 2
7=NASA TV	

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SECTION 2750 - VOICE TERMINATIONS

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[PRD] DATABASE RECORD: 576359
ITEM NUMBER: H5H

8=PLAN COORD 1	PLAN COORD 2
9=POIC STOWAGE 1	POIC STOWAGE 2
10=PSE 1	
11=1 S/G-1 (Talk, if required)	2 S/G-1 (Talk, if required)
12=1 S/G-2 (Talk, if required)	2 S/G-2 (Talk, if required)
13=RPI OPS	
14=CPO 1	CPO 2
15=PODF SUPPORT 1	
16=P/L DATA 1	P/L DATA 2
17=Ku COORD 1 (M)	Ku COORD 2 (M)
18=1 PRO 1	2 PRO 1
19=EXPRESS COORD 1	EXPRESS COORD 2
20=PHANTOM 1	PHANTOM 2
21=TV OPS 1	TV OPS 2
22=1 A/G 1 (Talk, if req.)	2 A/G 1 (Talk, if req.)
23=1 A/G 2 (Talk, if req.)	2 A/G 2 (Talk, if req.)
24=SOC 1	SOC 2
25=FD 1 (M)	FD 2 (M)
26=1 SCI-3	2 SCI-3
27=MSFC SIM	
28=PRIME OPS 1 (M)	PRIME OPS 2 (M)
29=TSC SIM	
30=ETOV COORD	
31=MSG COORD	
32=1 SCI-4	2 SCI-4

SUPPLIER: MSFC AGENCY: MSFC/FD43 (MARSHALL SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 04/21/04

[PRD] DATABASE RECORD: 576360 REQUIREMENT STATUS: APPROVED R

DOCUMENT ID: ISS II APPROVAL DATE: 04/21/04

INITIAL DATE: 04/21/04

ITEM NUMBER: H6H DATE LAST CHANGED: 04/23/04

SECTION: 2750 TIME LAST CHANGED: 09:55:10

REQUESTER: MSFC

TEST CODE: INC9

1. DESCRIPTION: PAYLOAD IVODS VOICE DISTRIBUTION TO THE RPI SITES

CLASSIFICATION UNCLASSIFIED

INTERNATIONAL SPACE STATION ORBITAL VOL-II
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OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
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SECTION 2750 - VOICE TERMINATIONS

PUBLICATION DATE: 01/04/99 REVISION: 0000 RUN DATE: 06/30/04

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[PRD] DATABASE RECORD: 576360
ITEM NUMBER: H6H

LOCATION	EXPERIMENT	LOOP
Boeing VSR, Houston	PEI	1-7,9,10,13,15,16,19-21,23,24
Boeing VSR, Houston	ARIS	1-4,9-27,29
UCSD	EarthKAM	2-4,13,15,20,24,29,34,35
JPL	EarthKAM	2-4,13,15,20,24,29,34,35
Univ. of Colorado	PGBA/CGBA	1-3,5,9-31
Cal Tech	Foam	1-3,7-10,13,15,16,18-23,25,26
Payload Sys, Cambridge, MA	SPHERES	2-4,9-11,13-25
Cleveland Clinic	HRF/FOOT	2-4,13,15,16,20,23,24,32,33

Real-Time ISS Voice: *****	Simulation ISS Voice:
1=1 PRO 1	2 PRO 1
2=1 S/G 1 (Talk, if required)	2 S/G 1 (Talk, if required)
3=1 S/G 2 "	2 S/G 2 "
4=1 SCI 1	2 SCI 1
5=1 SCI 2	2 SCI 2
6=1 SCI 3	2 SCI 3
7=1 SCI 4	2 SCI 4
8=1 SCI 5	2 SCI 5
9=CPO 1	CPO 2
10=DMC 1	DMC 2
11=EXPRESS COORD 1	EXPRESS COORD 2
12=FMT COORD 1 (M)	FMT COORD 2 (M)
13=ISS FD 1 (M)	ISS FD 2 (M)
14=Ku COORD 1 (M)	Ku COORD 2 (M)
15=LIS COORD 1	LIS COORD 2
16=OC 1	OC 2
17=P/L DATA 1	P/L DATA 2
18=PHANTOM 1	PHANTOM 2
19=PLAN COORD 1	PLAN COORD 2
20=POD 1	POD 2
21=PODF SUPPORT 1	
22=POIC STOWAGE 1	POIC STOWAGE 2
23=PSE 1	
24=RPI OPS	
25=TV OPS 1	TV OPS 2

Real-Time ETOV Voice: ***** Simulation ETOV Voice:

CLASSIFICATION UNCLASSIFIED

INTERNATIONAL SPACE STATION ORBITAL VOL-II
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OPERATIONS REQUIREMENT/OPERATIONS DIRECTIVE (PRD/PSP/OR/OD)
PROGRAM NUMBER: 30000

SECTION 2750 - VOICE TERMINATIONS

PUBLICATION DATE: 01/04/99 REVISION: 0000 RUN DATE: 06/30/04

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CONTINUED

[PRD] DATABASE RECORD: 576360
ITEM NUMBER: H6H

26=1 A/G 1 (M)	2 A/G 1 (M)
27=1 A/G 2 (M)	2 A/G 2 (M)
28=ETOV COORD 1	ETOV COORD 2
29=FD 1 (M)	FD 2 (M)
30=PRIME OPS 1 (M)	PRIME OPS 2 (M)
31=SOC 1	SOC 2

Real-Time Payload Unique ***** Simulation Payload Unique
32=HLS CONF
33=HLS PLAN
34=OCA ISS
35=UCSD-MCG

SUPPLIER: MSFC AGENCY: MSFC/FD43 (MARSHALL SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 04/21/04

CLASSIFICATION UNCLASSIFIED

INTERNATIONAL SPACE STATION ORBITAL VOL-II
 PROGRAM REQUIREMENTS DOCUMENT/PROGRAM SUPPORT PLAN/
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 PROGRAM NUMBER: 30000

SECTION 2800 - VIDEO

PUBLICATION DATE: 01/04/99 REVISION: 0000 RUN DATE: 06/30/04

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[PRD] DATABASE RECORD:      545778      REQUIREMENT STATUS: APPROVED R
DOCUMENT ID:                ISS II      APPROVAL DATE:          10/03/03
                               INITIAL DATE:          04/26/00
ITEM NUMBER:                H1GT        DATE LAST CHANGED:     10/14/03
SECTION:                    2800        TIME LAST CHANGED:     14:11:10

REQUESTER:                  MSFC
TEST CODE:                  ISSPALL      POICALL
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1. DESCRIPTION: TELEVISION DISTRIBUTION REQUIREMENTS

NISN is to provide two (2) video channels to the HOSC, GRC TSC, and to the RPI Peering Point. NISN is to encode NTSC video sourced from JSC Bldg 8, up to 6 Mbps per channel. JSC ISD is responsible for delivery of NTSC video from JSC Bldg 8 to the JSC NISN PIP demarcation point. Service restoration for ISD resources is <8 hours on weekdays, and on-call on weekends.

A NISN PIP service is required to the HOSC/MSFC TSC and the GRC TSC. NISN will provide decoding equipment at the MSFC Bldg. 4207 and at the GRC TSC to deliver NTSC video outputs. The decoding equipment at the MSFC Bldg 4207 services both the MSFC HOSC and the MSFC TSC. A NISN SIP service is required to the RPI Peering Point.

The RPI sites require the video to be delivered in IP format for viewing on a PC. RPI's are responsible for the transfer of encoded video from the Peering Point to their RPI locations and are responsible for the decoding and display of the received video data delivered in IP format.

The following table identifies current and future video service requirements, and will be updated as locations are changed.

Description	Number of Channels
MSFC HOSC	2
MSFC TSC	2
GRC TSC	2
Univ. of Alabama/Birmingham	1
Northeastern Univ./Boston	1
Univ. of Colorado/Boulder	1
Univ. of Wisconsin/Madison	1
Colorado School of Mines	1
Univ. of Cal./San Diego	1

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INTERNATIONAL SPACE STATION ORBITAL VOL-II
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PROGRAM NUMBER: 30000

SECTION 2800 - VIDEO

PUBLICATION DATE: 01/04/99 REVISION: 0000 RUN DATE: 06/30/04

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CONTINUED

[PRD] DATABASE RECORD: 545778
ITEM NUMBER: H1GT

Auburn University 1
Renssalaer Polytechnic Inst 1
Mass Inst of Technology 1
National Institute of Health 1

SUPPLIER: GSFC AGENCY: GSFC/451 (GODDARD SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 10/14/03

SUPPLIER: JSC AGENCY: JSC/DV (JOHNSON SPACE CENTER)

SUPPLIER COMMITMENT: NOACK RESPONSE DATE: 10/03/03

CLASSIFICATION UNCLASSIFIED

INTERNATIONAL SPACE STATION ORBITAL VOL-II
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PROGRAM NUMBER: 30000

SECTION 3073 - REAL TIME DATA DISTRIBUTION

PUBLICATION DATE: 01/04/99 REVISION: 0000 RUN DATE: 06/30/04

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[PRD] DATABASE RECORD:      576361      REQUIREMENT STATUS: APPROVED R
DOCUMENT ID:                ISS II      APPROVAL DATE:          04/21/04
                               INITIAL DATE:          04/21/04
ITEM NUMBER:                H8.4.2H     DATE LAST CHANGED:     04/23/04
SECTION:                    3073       TIME LAST CHANGED:     09:55:49

REQUESTER:                  MSFC
TEST CODE:                  INC9
  
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1. DESCRIPTION: MSFC PROVIDED POIC SERVICES

USER	OPERATING LOCATION	POIC SERVICES
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HRF	JSC TSC	1-3,7
HRF/FOOT	Lerner Inst./Cleveland Clinic	5
ARIS	Boeing VSR, Houston	1,3,5,7
BSTC	JSC TSC	1-3,7
EarthKAM	JSC TSC	1
MAMS	GRC TSC	1-4,7
SAMS II	GRC TSC	1-4,7
MSG	GRC TSC	1-4,7
JSC/PEI	Boeing VSR, Houston	1,3,5,7
MSG	MSFC TSC	1-4,6,7
PCG-STES	MSFC TSC	1-4,7
FMFG	MSFC TSC	1
EarthKAM	UCSD	5
EarthKAM	JPL	5
PGBA/CGBA	Univ. of Colorado	1,2,5,7
CHeCS	JSC SSCC	1
Foam	MSFC TSC	1,3
Foam	Cal Tech	1,3,5
DAFT	GRC TSC	1,3
SPHERES	JSC DoD POCC	1,3
SPHERES	Payload Systems, Cambridge, MA	5
FMVM	MSFC TSC	1,3

NOTE:
1=Basic EHS (Web Services, PIMS, JTRACK, NRT)
2=Commanding
3=Planning Services (iURC, PG, OSTPV/MPV)
4=Telemetry Services (CDP, Display Gen/Ops)
5=IVoDS
6=Remote EPC

INTERNATIONAL SPACE STATION ORBITAL VOL-II
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PROGRAM NUMBER: 30000

SECTION 3073 - REAL TIME DATA DISTRIBUTION

PUBLICATION DATE: 01/04/99 REVISION: 0000 RUN DATE: 06/30/04

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[PRD] DATABASE RECORD: 576361
ITEM NUMBER: H8.4.2H

7=GSE Services

SUPPLIER: MSFC AGENCY: MSFC/FD43 (MARSHALL SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 04/21/04

[PRD] DATABASE RECORD: 576362 REQUIREMENT STATUS: APPROVED R
DOCUMENT ID: ISS II APPROVAL DATE: 04/21/04
INITIAL DATE: 04/21/04
ITEM NUMBER: H9.4.2H DATE LAST CHANGED: 04/23/04
SECTION: 3073 TIME LAST CHANGED: 09:57:24

REQUESTER: MSFC
TEST CODE: INC9

1. DESCRIPTION: POIC KU-BAND DOWNLINK DATA DISTRIBUTION

MSFC POIC shall provide Ku-Band downlink data distributed by PDSS to the following operating locations.

USER	OPERATING LOCATION	KU-BAND DATA TYPE	MODE
HRF	JSC TSC	HRF LDRL	All
HRF	JSC TSC	HRF MDRL	All
HRF	JSC TSC	HRF HDRL	All
HRF	JSC TSC	HRF Subsystem	All
HRF	JSC TSC	Payload MDM H&S	All
MAMS	GRC TSC	MAMS	All
SAMS II	GRC TSC	SAMS-II-ICU-A	All
SAMS II	GRC TSC	SAMS-II-ICU-H	All
POIC	MSFC POIC	Payload MDM H&S	All
POIC	MSFC POIC	PEP HRL Profile #1 (Timeliner)	All
POIC	MSFC POIC	PEP HRL Profile #2 (Timeliner)	All
POIC	MSFC POIC	PEP HRL Profile #3 (Timeliner)	All
POIC	MSFC POIC	PEP HRL Profile #4 (Broadcast Anc.)	All
POIC	MSFC POIC	PEP HRL Profile #5 (Payload Anc.)	All
POIC	MSFC POIC	PEP HRL Profile #6 (File Xfer)	All
POIC	MSFC POIC	PL Prime MDM File Transfer	1

CLASSIFICATION UNCLASSIFIED

INTERNATIONAL SPACE STATION ORBITAL VOL-II
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PROGRAM NUMBER: 30000

SECTION 3073 - REAL TIME DATA DISTRIBUTION

PUBLICATION DATE: 01/04/99 REVISION: 0000 RUN DATE: 06/30/04

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[PRD] DATABASE RECORD: 576362
ITEM NUMBER: H9.4.2H

POIC	MSFC POIC	PL Secondary MDM File Transfer	1
ARIS	BOEING VSR, Houston	ARIS	All
BSTC	JSC TSC	BSTC	All
PCG-STES	MSFC TSC	PCG-STES	All
MSG	MSFC TSC	Facility	All
MSG	MSFC TSC	Payload MDM H&S	All
CGBA	Univ of Colo	CGBA	All

MODES:

- 1=Real Time
- 2=Comm Outage Recorder (COR) Dump
- 3=Line Outage Recorder (LOR) Playback of Real Time
- 4=Line Outage Recorder (LOR) Playback of COR Dump

SUPPLIER: MSFC AGENCY: MSFC/FD43 (MARSHALL SPACE FLIGHT CENTER)

SUPPLIER COMMITMENT: WILCO RESPONSE DATE: 04/21/04

THIS REPORT CONTAINS 64 PAGES

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