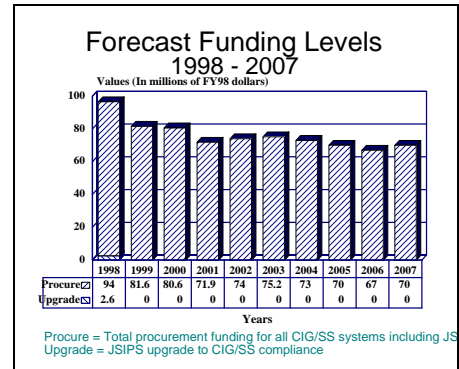


Joint Service Image Processing System (JSIPS) - Archived 1/98

Outlook

- JSIPS is still being procured, but at an unknown amount each year, through approximately 2001
- JSIPS is currently undergoing a Block upgrade to be in compliance with the Common Imagery Ground/Surface System (CIG/SS)
- In 1999, the JSIPS report will be merged into a Common Imagery Ground/Surface System (CIG/SS) report



Orientation

Description. A joint US Air Force, Navy, and Marine Corps program to develop a ground-based common system for receiving and processing national and tactical imagery in near-real time.

Sponsor

US Air Force
Air Force Materiel Command
Electronic Systems Center
Hanscom AFB, Massachusetts (MA)
USA
(Lead agency for development of JSIPS)

Contractors

Raytheon E-Systems
Garland Division
200 Jupiter Road
P.O. Box 660023
Dallas, Texas (TX) 75042
USA
Tel: +1 214 272 0515
Fax: +1 214 272 8144
(Prime Contractor for JSIPS)

Autometric Inc.
5301 Shawnee Road
Alexandria, Virginia (VA) 22322-2333
USA
Tel: +1 703 658 4000
(Photogrammetry)

Brunswick Defense (a division of the Technical Products Group)
1N Field Court
Lake Forest, Illinois (IL) 60045
USA
Tel: +1 708 470 4700
Fax: +1 708 735 4965
(Shelters)

Codar Technology Inc
2405 Trade Centre Ave.
Longmont, Colorado (CO) 80503
USA
Tel: +1 303 776 0472
Fax: +1 303 776 8532
(Computer disk packaging)

Conrac Display Products Inc
Duarte, California (CA)
USA
(Video monitors)

Digital Equipment Corp
146 Main Street
Maynard, Massachusetts (MA) 01754-2571
USA
Tel: +1 508 493 5111
Fax: +1 508 493 8780
(8350 and micro-VAX computers)

Lasertechnics

Albuquerque, New Mexico (NM)
USA
(Video printer)

Loral Corp

Loral Fairchild Systems
300 Robbins Road
Syosset, New York (NY) 11791
USA
Tel: +1 516 349 2200
Fax: +1 516 931 4037
(MIL-STD-2179 tape cassette recorders)

Rugged Digital Systems Inc

Mountain View, California (CA)
USA
(Packaging of VAX computers)

Silicon Graphics

Mountain View, California (CA)
USA
(Graphics hardware software)

Unisys Corp (Now Loral)

Government Systems Group
Salt Lake City, Utah (UT)
USA
(Subcontractor for JSIPS data link development)

Status. In full-scale development with continuing R&D in order to bring JSIPS up to the Common Imagery Ground/Surface System (CIG/SS) standards. The Air Force version was in low rate initial production as of 1996.

Total Produced. An estimated 15 units may have been procured since 1997 if the original JSIPS procurement schedule was followed. The absorption of JSIPS into the Distributed Common Ground Sensor (DCGS) and Common Imagery Ground/Surface System (CIG/SS) has effectively hidden JSIPS procurement since 1997.

Application. Ground-element for processing digital imagery.

Price Range. The estimated unit cost for a complete JSIPS system is US\$28.4 million (1998 dollars). This figure was based on a 1990 contract for 37 JSIPS units totaling US\$709 million with an adjustment for inflation. Recent contracts for upgrades of existing systems have not shed any light on the current price.

Technical Data

Design Features. The Follow-On Tactical Reconnaissance System (FOTARS) development program is an umbrella effort to replace the film-based sensor systems now employed on US tactical air reconnaissance platforms with a new electro-optical/infrared (EO/IR) sensor suite. This new equipment produces digital video images and transmit them, via a data link, to ground-based processing stations in real and near real-time. The program consists of the airborne element known as the Advanced Tactical Air Reconnaissance System (ATARS) and the ground-based element called the Joint Services Imagery Processing System (JSIPS). ATARS is discussed in a separate report in this service.

JSIPS is a joint service program to provide imagery receipt, processing, exploitation, and reporting capabilities responsive to the combat requirements of tactical commanders using inputs received from national, theater, and tactical sources. Designed to be highly flexible with modular components, JSIPS can be configured to meet individual user requirements. Configured as the ground or ship-based processing and dissemination element, JSIPS provides deployed air, naval and ground forces with a facility to insert near real-time imagery intelligence into the decision process at the operational level and allow

combat commanders to have the capability to act within the enemy's decision cycle.

System capabilities are divided into the following seven segments:

Softcopy Exploitation. Provides overall management control of digital image processing, analysis and on-line storage of images received from the work stations. The softcopy capability is JSIPS's key attribute in providing a significant decrease in development time over traditional time-consuming film processing methods.

Digitally processed imagery can be displayed on work station screens in approximately 20 minutes providing there is a direct line of communication from the source to JSIPS. In contrast, it takes anywhere from one to three hours to retrieve and process film cartridges for photo interpretation. Softcopy data exploitation capabilities include: variable playback speeds, image enhancement, contrast manipulation, real-time translation, rotation, and magnification; gray-scale stretch and compression, graphics annotation, mensuration, target location, image/data inset, and map overlays.

Hardcopy Exploitation. Hardcopy capabilities include process-less film printing and film exploitation workstations, as well as the ability to electronically digitize images and maps for analysis and distribution by other electronic means. The Analytical Photogrammetric Positioning System, which is unique to the US Army JSIPS configuration, is resident in this segment.

Tactical Input. Provides data inputs from tactical reconnaissance sources such as the F-16, F/A-18, and UAV-MR ATARS sensors and other tactical intelligence assets. Electro-optical, synthetic aperture radar and IR imagery sensor interfaces are provided.

National Input. Provides the link to national intelligence assets such as reconnaissance satellites and aircraft maintained by the DoD and related intelligence agencies.

Communications Support. This segment provides the secure voice and data patching, switching, and interfaces to connect JSIPS with other ground and sea-based locations via wideband data links or local area networks.

Exploitation Support. Maintains support functions to manage both national and tactical sources. Functions include: computer processing and storage; support report generation, review and validation; and maintenance of report and reference imagery data bases.

Systems Support. Provides support functions for the JSIPS system including environmental control, power generation and distribution, storage space, and maintenance.

Weapon System Support Built to operate in conjunction with existing and developing precision strike weapon systems such as Tomahawk, SLAM-ER, JDAM, JSOW, and the FA-18 E/F.

Operational Characteristics. Aerial reconnaissance image processing is a major JSIPS responsibility. The system has been designed to be transportable to move with tactical ground forces. It consists of up to six shelter-mounted units that can be configured to meet individual service requirements. JSIPS employs a series of ruggedized computers, including Digital VAX 8350s and micro-VAXs, for image processing in a TEMPEST-secure environment. According to industry reports, the system has a 47-gigabit mass storage memory and is able to handle downlinked video at the rate of 2.1 billion pixels per minute.

Each service, the Air Force, Army and Marine Corps, has configured its JSIPS system capabilities to meet service-unique mission requirements. These capabilities are subsets of a total set of capabilities, consisting of both hardware and software elements. The Army plans to use 8 x 8 x 20-foot shelters employing six manned consoles,

while the Marine Corps and Air Force uses a three-console configuration but housed in a smaller 8 x 8 x 10-foot shelter.

Each console has two high resolution monitors, one for digitized hardcopy, the other to display video imagery for softcopy interpretation and manipulation. A hardcopy module is used to record and analyze processed video, as well as to generate hardcopy images. JSIPS is able to transmit intelligence data to various battlefield users.

The Imagery Processing and Dissemination System (IPDS) component of JSIPS is being developed by the Army to provide direct operational access to national and theater imagery in near real-time in order to provide critical, deep target intelligence support to tactical commanders, as well as to support contingency missions and low intensity conflicts.

The Navy has developed its version, JSIPS-N, to provide a shipboard readout capability and provide imagery processing, analysis, and data storage. In FY91, the service development program defined JSIPS-N requirements. Developmental and operational testing of JSIPS-N was scheduled for mid-1993. A production decision was slated to follow in September 1995. A revised ATARS or ATARS follow-on, coupled with JSIPS-N, is slated to replace the Navy's current Tactical Air Reconnaissance Pod System (TARPS), a film-based recon system flown by selected F-14As.

The Tactical Input Segment (TIS) and the Digital Imagery Workstation Suite Afloat (DIWSA) are two major hardware components of JSIPS-N. The TIS receives, records, and processes imagery from multiple sources. The DIWSA, correspondingly, receives imagery data on magnetic media, digitized film, or electronically. The Electro-Optical Long Range Oblique Photography System (LOROPS) and the Synthetic Aperture Radar (SAR) are two image-producing elements of JSIPS-N.

As applied to the Marine Corps, JSIPS supports the service's All Source Imagery Processor and replaces the current Imagery Interpretation and Imagery Processing subsystems of the Marine Air Ground Intelligence System. A revised ATARS system, the product of the 1994 re-start of the program with the US Navy acting as program lead, is to be installed on the F/A-18D (RC) which supersedes the service's RF-4Bs that were retired in 1990.

Air Force JSIPS applications replace costly and manpower/logistics-intensive Photo Processing and Interpretation Facilities associated with the RF-4C. Candidates currently being considered for the new Air Force reconnaissance platform are the F-15D and a modified F-16C.

JSIPS deployments have been roughly identified as follows: USAF - one per each theater; Army - one per corps plus one for training and backup; Marine Corps - one per Marine Expeditionary Force; and Navy - to be

installed on all nuclear-powered carriers, LHAs and LHDs, the NMITC, Naval Surface Warfare Center at Dahlgren and the Naval Strike Warfare Center at Fallon by FY99.

Variants/Upgrades

Auto-Querying. This capability allows multiple airborne platform datalink queries to a JSIPS station to be made, prioritizes these queries, and automatically initiates the data link connection with the next platform in cue once the previous platform terminates the link. This function supports the sequential scheduling of the reception of ATARS imagery from numerous sources.

MVS. The Mission Verification System (MVS) is a low-cost, scaled down playback only capability system

designed to meet aircrew mission verification and sensor maintenance requirements.

Commercial Version. The potential for an export version still exists. E-Systems unveiled a ruggedized commercial version of JSIPS in that is configured for fixed-site applications, however, the commercial version does not figure into the JSIPS unit production forecast.

Program Review

Background. Both the Air Force and Navy/Marine Corps are dependent upon older generation film-based reconnaissance systems that require the aircraft to return to base in order to process and develop a film cartridge. This is a time and labor intensive procedure that affects the photos' intelligence value, as several hours may pass before the photos are in the hands of the intended users. By then the situation on the ground may have changed from what the photos show.

To consolidate various service development programs, the US Air Force and US Navy signed a memorandum in March 1985 that designated the USAF as the lead service for ATARS sensor development, with the Navy responsible for Unmanned Air Vehicle (UAV) applications development.

In 1986, the DoD followed with the establishment of the JSIPS program in order to focus separate Air Force, Army, and Marine Corps imagery processing efforts. A joint service Memorandum of Agreement was formalized designating the US Air Force as lead service for JSIPS development. All three participating services were to share the nonrecurring costs for commonly developed JSIPS items. Shortly thereafter three teams headed by E-Systems, General Dynamics Corp, and Lockheed Corp, were awarded Phase I development contracts for JSIPS.

In 1987 JSIPS technical demonstrations by the teams were completed and evaluated to ensure the ability of each team to meet the critical technical characteristics requirements of the system. Following completion of the design phase, an RFP was released, source selection completed and the full-scale development contract awarded to E-Systems in late August 1987. According to a General Accounting Office (GAO) report on the JSIPS program dated July

1991, the award was a firm fixed price full-scale development contract that required delivery of three JSIPS units (one for each of the three services) by FY1990. The contract was valued at US\$131.5 million for the three developmental units and included priced options for 37 JSIPS units totaling US\$709 million.

The JSIPS development program was restructured in 1990 to offset previous year significant funding shortfalls. The project's scope was also expanded with the addition of the auto-querying capability, the Mission Verification System (MVS) and Electro-Optical Long Range Oblique Photography (EO-LOROPS) compatibility requirements.

The FY92 defense act required the services to continue to manage their JSIPS programs separately subject to conformance with interoperability and mutual support requirements. The conferees also authorized funding for several JSIPS and related program efforts including: integrating the F/A-18 radar upgrade and the EO-LOROPS improvements with the JSIPS and ATARS systems (US\$7.3 million), the airborne imagery transmission (ABIT) and common data relay development efforts; the modification of JSIPS processing equipment to receive data from national sources (US\$4 million), and completion of the R&D of a tactical ground intercept facility (TGIF) for the Marine Corps (US\$3 million).

GAO Report. A July 1991 published GAO report titled *Defense Management: Stronger Oversight of Joint Service Imagery Processing System Needed*, (GAO/ NSIAD-91-164) severely criticized the JSIPS program stating that: (1) JSIPS program cost, schedule, and performance estimates had changed significantly; (2) JSIPS had not been adequately coordinated among the services or with related

programs; and (3) JSIPS lacked adequate management oversight.

In more specific terms regarding the first finding, the GAO stated that despite the memorandum of agreement concerning program leadership and sharing of non-recurring development costs, JSIPS still must compete with other related and unrelated systems for funding within each of the three services. In 1988 the JSIPS program office identified a funding shortfall of approximately US\$38 million due to lack of funds. The Army and Marine Corps were not able to meet JSIPS funding requirements as no funds were available or were withdrawn in FY87. The reprogramming funds that were available went to higher priority programs.

Attempts to provide additional monies, as well as other actions by the JSIPS program office to work around the shortfall, could not generate the necessary funds. This forced the program office to restructure the development contract in order to maintain a sufficient level of annual funding. The net effect of the contract restructure was to increase development costs by nearly US\$55 million over the original contract price - i.e. from US\$131.5 million to US\$186.5 million.

The GAO went on to state that despite this restructuring, the JSIPS program might still face further funding problems and that the DoD had not approved a single joint funding plan for JSIPS. The DoD responded that the program was executable only with the available FY91 and budgeted FY92 funds and that the OSD-approved joint funding plan for JSIPS procurement was reflected in the President's Budget.

With regard to the second finding, the GAO stated that after three years of full-scale development, the JSIPS program continued to be guided by service-unique requirements rather than joint requirements. The organization maintained that this, in turn, had led to the development of service unique equipment versus the goal of a "standard" equipment set. The GAO expressed concern that different service-unique JSIPS designs could lead to problems in executing joint operations. Based on the limited information available on the JSIPS designs which existed at that time, it appears that no single JSIPS design met then stated theater commanders joint operation requirements. The GAO also faulted the services for not sufficiently coordinating JSIPS with related imagery programs such as ATARS and Medium-Range UAV.

The DoD countered with the position that due to operational constraints imposed by size and weight considerations, JSIPS tailored for individual services did have some differences, both physical and functional, that potentially might constrain their flexibility in joint service operations. However, the DoD asserted that although

these configurations did differ, a JSIPS system, whether Navy, Air Force or Marine, could receive, process, and exploit all ATARS-equipped tactical platforms. In addition, it was maintained that the Army JSIPS could accommodate a Tactical Input Segment (TIS) to receive and exploit ATARS imagery, if so desired or required.

In reply to concerns that Theater Commanders-in-Chiefs (C-in-Cs) were not fully apprised of program status, the DoD held a two-day conference in May 1991 with command C-in-Cs to fully review the JSIPS program. The Office of the Secretary of Defense has since maintained several working groups and guidelines that monitor both JSIPS and its related program involvement with ATARS and the Medium-Range UAV programs. These include the Test Plan Working Group and the Interface Control Working Group. There was also the Test & Evaluation Master Plan which was to be coordinated by the OSD once approved by the Secretary of Defense.

The third GAO finding stated that JSIPS had not been designated as a major acquisition program which would have automatically entailed additional management review in the form of external audits and inspections. It was alleged that this oversight had restricted the flow of program status information to the Defense Acquisition Executive, as well as other top-level DoD officials. According to the GAO, their audit was the first external inspection of the JSIPS program conducted since the program was initiated in 1986.

The DoD disagreed with the GAO in designating JSIPS a major acquisition program, but nonetheless in FY95 took over direct responsibility for program development in a much-needed move toward consolidating the potentially confusing projects exclusive to each service branch. Changes made to JSIPS management include improved tracking of program costs, schedule, and performance parameters in the same manner as a major program by the program office at Electronic Systems Division, Hanscom AFB.

At the same time, the program office also began efforts to develop an Independent Cost Estimate to assess affordability and form a basis for contract negotiations. Finally, the OSD established the Tactical Imagery Review Group to provide oversight of JSIPS activity, as well as develop a multi-program baseline for all segments of the tactical imagery program to include ATARS, JSIPS, the common data link, the Medium-range UAV, the F/A-18C/D (RC), and the F-16 (R). These programs are evaluated and reported quarterly to the Defense Acquisition Executives Summary chaired by the Undersecretary of Defense for Acquisition, and which includes service acquisition executives and all OSD principals and senior advisers.

Need Reinforced. In the face of the GAO's 1991 criticism of the program, the need for advanced tactical reconnaissance capabilities was reiterated in the *Conduct of the Persian Gulf Conflict Report* issued in early 1992. It stated "there is a requirement for better imagery reconnaissance assets to support all levels of command" and that "broad area, all-weather, search/ surveillance systems are required to improve the intelligence available to tactical commanders."

As part of the FY93 defense act, Congress believed that despite previous short-falls, the best route was to proceed with the current program, and authorized continued funding for JSIPS and ATARS under the umbrella of the Follow-on Tactical Reconnaissance System (FOTARS) program, but with several conditions added to ensure that it stayed on track.

First, the DoD would have to report to Congress if, at any point, the FOTARS program failed to meet near-term milestones identified by the USAF on September 1, 1992. Second, not more than 50 percent of the funds appropriated pursuant to the FY93 authorization could be obligated until the Secretary of Defense certified the following:

1. The Navy had restructured its program to acquire terminals and datalinks so that datalinks are procured and made operational on the same schedule as that set for terminals and not later than the initial operational capability of the Marine Corps FOTARS.
2. The Chairman of the Joint Chiefs of staff had polled the major warfighting Commanders in Chiefs (the Atlantic, Pacific, Central, European, and Southern Commands) to determine their requirements for ground stations.
3. The DoD had conducted a study of the joint service imagery processing system (JSIPS) capacity required to support the current Defense Guidance statement.
4. The Joint Requirements Oversight Council had reviewed the full program and established a baseline to ensure joint participation in the program.
5. The Future Year Defense Program contained sufficient ground stations to meet the minimum requirements of the Defense Guidance statement and the warfighting Commanders-in-Chiefs.
6. The Air Force had taken such steps as required to develop a technical data package for the advanced tactical air reconnaissance system (ATARS) program in order to be able to conduct a competition for production not later than the second year of the program.

The status of the program as of early/mid 1994 was as follows. The Air Force Electronics Systems Center trans-

ferred a development model of JSIPS to the Camp Pendleton Marine Corps Base to test the system before making a decision to purchase. The Army had also already received one system and the Air Force was scheduled to receive its own system by second quarter of 1996, the same year the Navy planned to integrate the tactical portion onboard ship.

Program Restructured - Again. The JSIPS program continued to be the subject of organizational reviews and in November 1994 the program underwent yet another major restructure. In compliance with the FY95 Defense Authorization Act the director of the Defense Airborne Reconnaissance Office (DARO), Maj. General Kenneth Israel, announced that JSIPS was being restructured into two phases.

The first phase continues system development along the JSIPS path - with the intent of meeting joint requirements as validated by the Joint Requirements Oversight Council (JROC) - and laying down standards and policies that will be used in the second phase. The second phase is devoted to the development of the architecture of a new Common Imagery Ground/Surface System (CIGSS). CIGSS is described as a JSIPS replacement driven by affordability, changes in requirements, and emerging technology considerations.

Under Phase I, the two JSIPS units currently fielded (i.e. the Army and Marine Corps systems) are upgraded to the Air Force low-rate initial production baseline configuration. The Army system will then be transferred to the USAF. These systems along with the USAF LRIP, now in production are to remain operational until CIGSS transition takes place.

Another result of this program reshuffling is a name change. The program is no longer listed as JSIPS in the program element descriptive summary it is now funded under the name "Distributed Common Ground System". This binder will continue to list the program under "JSIPS" for the next year or so because it is the more familiar name.

Navy development will continue to provide a tactical imagery processing and exploitation capability for the fleet and selected onshore sites. The Army will acquire and field a third Modernized Imagery Exploitation System (MIES) — it already has two — to replace the JSIPS transferred to the USAF. MIES will then also remain operational until displaced by CIGSS. It is argued by a DARO report that this restructure "not only maintains the force structure, but provides systems sooner to the Army, Air Force and Marine Corps". The Navy program is not affected by the restructure because their program is not affected by downsizing and their requirements have remained stable.

Initial adjustments to the funding schedule to accommodate these changes have been described as follows. In FY95 JSIPS RDT&E funds are to be used to provide the non-recurring engineering (NRE) required to integrate the rapid positioning capability and imagery product archive into the JSIPS, to upgrade the Tactical Input Segment (TIS) to be compatible with the LRIP Configuration, and add a digital cassette recorder capability to the TIS. JSIPS procurement funds will be used to; 1) upgrade the USMC engineering development model (EDM) and the Army EDM (i.e. the unit transferred to the USAF) to the LRIP configuration, 2) acquire three SATCOM terminals, 3) implement the engineering change orders necessary to maintain compatibility with national systems, and 4) provide integrated logistic support for the fielded USMC JSIPS.

Navy JSIPS-N RDT&E funds support the completion of the integration of the Digital Imagery Work Station - Afloat (DIWSA) and TIS, and the initiation of the DIWSA/TIS compatibility developments for specific shipboard installations. JSIPS-N procurement funds are to be used for the acquisition of DIWSA, DIWSA spares, and the installation of JSIPS-N systems on the USS *George Washington* and USS *Carl Vinson*.

DCGS and CIG/SS. During FY 1996/1997 JSIPS was folded into the Distributed Common Ground Sensor (DCGS) program. This program organized under one heading a variety of systems with similar goals but not necessarily within a common framework. The DCGS is a blanket program to combine R&D and procurement funding for these programs as well as to ensure that all of

the DCGS program elements can interoperate with each other. The DCGS is comprised of three distinct areas: the Airborne Reconnaissance Ground SIGINT Systems (ARGSS), the Distributed Common Ground System Interoperability (DCGSI), and the Common Imagery Ground/Surface Systems (CIG/SS).

CIG/SS is a project that supports the engineering development and acquisition of a common image processing center. The objective is to allow all CIG/SS systems to receive, process, exploit, and report any imagery source, regardless of platform or sensor type, in order to meet the intelligence and targeting needs of any tactical commander of any service.

The CIG/SS program has consolidated a number of programs from the JROC and DARSC program restructure that included JSIPS. The consolidate program include JSIPS-Army, JSIPS-Navy, JSIPS-Air Force, JSIPS-Marine Corps, ETRAC (Enhanced Tactical Radar Correlator), MIES (Modernized Imagery Exploitation System), PINES (PACAF Interim National Exploitation System), and TEG (Tactical Exploitation Group).

In addition, some services have shifted major elements of JSIPS into the CIG/SS program. These include the following:

- US Navy- DIWSA (Digital Imagery Work Station Suite Afloat); the National Input Segment (NIS); and the Tactical Input Segment (TIS)
- USMC- Tactical Exploitation Group (TEG)

Funding

	US FUNDING							
	<u>FY96</u>		<u>FY97</u>		<u>FY98</u>		<u>FY99 (Req)</u>	
	<u>QTY</u>	<u>AMT</u>	<u>QTY</u>	<u>AMT</u>	<u>QTY</u>	<u>AMT</u>	<u>QTY</u>	<u>AMT</u>
RDT&E (USA)								
PE#0305154D								
Defense Airborne								
Reconnaissance Program								
Project P531 –								
Distributed Common								
Ground System								
(Formerly JSIPS)	-	53.2	-	55.3	-	43.0	-	19.9

	<u>FY96</u>		<u>FY97</u>		<u>FY98</u>		<u>FY99 (Req)</u>	
	<u>QTY</u>	<u>AMT</u>	<u>QTY</u>	<u>AMT</u>	<u>QTY</u>	<u>AMT</u>	<u>QTY</u>	<u>AMT</u>
Project P531 – Common Imagery Ground/ Surface Systems (CIGSS)	-	42.8	-	47.8	-	35.2	-	13.8
JSIPS Phase I – (Portion of Project P531 CIGSS listed above)	-	2.5	-	2.4	-	n/a	-	n/a
	<u>FY00 (Req)</u>		<u>FY01 (Req)</u>		<u>FY02 (Req)</u>		<u>FY03</u>	
	<u>QTY</u>	<u>AMT</u>	<u>QTY</u>	<u>AMT</u>	<u>QTY</u>	<u>AMT</u>	<u>QTY</u>	<u>AMT</u>
PE#0305154D Project P531 – Distributed Common Ground System	-	20.0	-	19.8	-	n/a	-	n/a
Project P531 – Common Imagery Ground/ Surface Systems (CIGSS)	-	13.8	-	13.7	-	n/a	-	n/a
JSIPS Phase I – (Portion of Project P531 CIGSS listed above)	-	n/a	-	n/a	-	n/a	-	n/a

Note: Funds for JSIPS FY95 and beyond were transferred to PE#0305154D Defense Airborne Reconnaissance Program, Project P531 Distributed Common Ground System. This program had formerly been covered under PE#0207217F Follow-on Tactical Reconnaissance System. The JSIPS program is being consolidated into the Common Imagery Ground Surface Systems PE#0305208D/P813.

Recent Contracts

<u>Contractor</u>	<u>Award (\$ millions)</u>	<u>Date/Description</u>
Raytheon E-Systems	18.4	Sep 1995 – FVI FFP contract for refurbishment & modification of Army and Marine Corps JSIPS engineering development models to the configuration used by the Ninth Air Force. To be completed by May 2009. (F19628-93-C-0201/P00023)
DBA Systems Inc.	3.4	Jun 1996 – An increment to a US\$12.7 million modification to a US\$40.5 million CPFF contract to provide modifications to current imagery exploitation systems to bring them into conformance with CIG/SS acquisition standards. Work to be completed by June 1998. US Army Corps of Engineers is the contracting authority. (DACA76-91-C-0023)
Raytheon E-Systems	6.3	Jul 1996 – FVI FFP for hardware and software upgrades for three JSIPS units; awarded by USAF. Electronic Systems Center, Hanscom CO, ME is the contracting authority. Completed November 1997. (F19628-93-C-0201/P00045)
Raytheon E-Systems	27.5	Aug 1997 – A US\$27.5 million FVI to a FFP contract to settle claims deriving from delayed and defective government furnished equipment to support JSIPS. Electronic Systems Command, Hanscom AFB, Mass. is the contracting authority. (Contract # F19628-87-C-0205; Mod # P00200)

Timetable

Mar	1985	USAF/Navy memorandum established AF as lead for ATARS sensor development; Navy lead for UAV applications
May	1987	Formal RFP issued
May	1988	Control Data awarded ATARS contract
FY	1989	Began JSIPS integration; began joint testing of JSIPS engineering models
FY	1990	Complete JSIPS DT&E
Oct		Martin Marietta buyout of program from Control Data
FY	1991	Delivery of prototype JSIPS
Aug	1992	Developmental testing began
Feb	1993	Approval granted for Army operation, Air Force LRIP authorized
FY		JSIPS Terminal development
Nov	1994	JSIPS program restructured into two phases; interim JSIPS and CIGSS
FY	1995	JSIPS-N IIC 1/2 DT and OT
FY	1996	AF LRIP delivery, JSIPS-N Milestone III
FY		Production of one JSIPS system complete for use at HQ of 9th Air Force, Shaw AFB
4Q		JSIPS-N TIS TECHEVAL and OPEVAL
May		JSIPS-N has been approved for operation on Navy aircraft carriers and amphibious assault ships as well as several on-shore installations and rapid deployment suits.
FY	1997	Complete transition to CIG/SS program
FY		Production of one JSIPS system complete for use at HQ of 12th Air Force, Davis-Monthan AFB
FY	1998	JSIPS already in service are to undergo a Block upgrade to make them compliant with the CIG/SS program
FY	1999	JSIPS-N IOC/SAR
FY		JSIPS installation to be completed on all CVNs, LHAs, LHDs, the NMITC, NSWC at Dahlgren and NSWC at Fallon

Worldwide Distribution

JSIPS is currently being procured and upgraded to meet CIG/SS requirements for all **US Services**.

Forecast Rationale

In 1995, the JSIPS program underwent a reorganization to make it more efficient. Part of this reorganization included the eventual absorption of the various JSIPS versions and related technologies into the umbrella program designated the Distributed Common Ground Systems (DCGS). The DCGS was further subdivided into the Airborne Reconnaissance Ground SIGINT Systems (ARGSS), the Distributed Common Ground System Interoperability (DCGSI) program, and the Common Imagery Ground/Surface System (CIG/SS).

The JSIPS program is now funded as part of the CIG/SS program which also includes ETRAC (Enhanced Tactical Radar Correlator), MIES (Modernized Imagery Exploitation System), PINES (PACAF Interim National Exploitation System), and TEG (Tactical Exploitation Group). In addition, some services have shifted major elements of JSIPS into the CIG/SS program. These

include the US Navy/USMC programs of DIWSA (Digital Imagery Work Station Suite Afloat); the National Input Segment (NIS); Tactical Exploitation Group (TEG); and the Tactical Input Segment (TIS). The CIG/SS program is also developing ATARS/UAV algorithms, hardware enhancements, etc. as well as numerous additional image enhancement techniques.

With both JSIPS R&D and procurement now a part of the CIG/SS program, it has become extremely difficult to break out the JSIPS portion. According to the PEDS, FY1998 will be the last year where funding will definitely be used on a JSIPS Block upgrade for units already in service. The amount of systems actually being procured for the coming years has become obscured due to all CIG/SS systems using a generic procurement funding program. However, enough fund-

ing exists through the forecast period to procure anywhere from 1-3 JSIPS systems per year.

The 10-year forecast has two distinct parts. The first is the funding to be spent on the JSIPS Block upgrade in FY98. This upgrade will make all currently operational JSIPS units CIG/SS compliant. As no additional funding has been earmarked for future upgrades, it can be assumed that any new JSIPS units procured will include the CIG/SS compliance. The second portion is the

amount of funding available to procure all CIG/SS related equipment including JSIPS. The amounts given are taken directly from the PEDS and do not include any modifications. This is due to CIG/SS being a relatively new program without a funding history to base any potential increases or decreases for the coming year.

In 1999 this report will be melded into a new report titled "Common Imagery Ground/Surface System (CIG/SS)."

Ten-Year Outlook

ESTIMATED CALENDAR YEAR FUNDING (\$ in millions)													
Designation	Application	thru 97	High Confidence Level				Good Confidence Level				Speculative		Total 98-07
			98	99	00	01	02	03	04	05	06	07	
CIG/SS (JSIPS)	COMMON IMAGERY GROUND/SURFACE SYSTEM (ALL US SERVICES)*	4.90	2.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.60
CIG/SS (JSIPS)	CIG/SS PROCUREMENT												
OVERALL	FUNDING (ALL US SERVICES)(a)	170.90	94.00	81.60	80.60	71.90	74.00	75.20	73.00	70.00	67.00	70.00	757.30
Total Funding		175.80	96.60	81.60	80.60	71.90	74.00	75.20	73.00	70.00	67.00	70.00	759.90

(a) JSIPS R&D and Procurement funding is now under the CIG/SS program (which is itself part of the Distributed Common Ground Systems (DCGS)). While it is possible to monitor R&D funding via PEDS, a breakout of JSIPS procurement is not available due to it and a number of other systems falling into a blanket CIG/SS procurement fund.