Program Executive Officer (PEO) Information

Address: AFPEO/C2
             1500 Wilson Blvd
             Rosslyn, VA 22209

2. Because of the complexities and uniqueness of SWPS, the system is broken down into eight interactive planning activities and a supporting information management activity:

(a) Targeting Activity: Target Selection is the classification, coding and prioritization of installations using rule based software to produce an installation database, the National Target Base (NTB). Subsequent to Target Selection is the process of computing weapon aimpoints for NTB installations. Weapon aimpoints must consider weapon characteristics, weapon delivery parameters, and target characteristics.

(b) Quality Review Activity: Quality Review is the process of analyzing changes in the plan and planning factors in real time to assure plan quality.

(c) Missile Application Activity: Produces an operational attack plan for ICBMs and SLBMs. The operational sorties must be compatible with the operational targeting system for specific missiles.

(d) Aircraft Application Activity: Produces operational attack plans for bombers, cruise missiles, reconnaissance, and supporting tankers. The plans include detailed flight instructions for the aircraft and weapons.

(e) Production Activity: The process of developing and shipping war planning products including reports and digital data. The final quality check of the plan is made in the production process. Principal customers of the products are JCS and the services.

(f) Analysis Activity: Analysis is a collection of analysis computer models. They serve the command in the area of studies, war plan analysis/assessment, and planning methodology development. This activity produces tables used within the planning process to compute defense penetration probabilities. The SWPS Integrated Analysis System (IAS) supports a standard access model for direct Enterprise Database interface.

(g) Information Management Activity: Information management is an enterprise activity that supports all SWPS computer related activities. The main functions are infrastructure (encompasses the computer equipment, system operational software, communications, operations and services necessary to sustain and modernize operational support) and program management with the software technology, engineering services, and data required to support all war planning activities.

(h) Enterprise Database (EDB) Activity: A Database Integrated Product Team was formed to better orchestrate the activities surrounding the development, modification, and maintenance of the EDB. It integrates and manages over 20 separate databases into a single database and reduces the total data elements for SIOP planning from over 18,000 to less than 2,000.

(i) Theater Planning Activity: This program supports Theater CINCs in planning contingency operations against high threat countries engaged in the development or proliferation of Weapons of Mass Destruction (WMD). This support involves planning counter-proliferation actions against chemical, biological, and nuclear weapons facilities, and completing a detailed analysis of intelligence data on these facilities. USSTRATCOM tasks Lawrence Livermore National Laboratory to provide nodal analysis on a number of high threat countries' facilities. Jointly, the two entities develop a complete execution analysis and determine the consequences of actions taken against a facilities critical node. The end products produced in this planning effort entail the production of a conventionally oriented Theater Support Planning Document and a nuclear oriented Theater Nuclear Planning Document, the

contents of which are intended to aid the Theater CINC with a comprehensive plan, complete with analysis, options, and consequences.

C. Contract Information:

SWPS uses contracts for software development applications because of the domain expertise (technical and long term). There is a prime contract with Lockheed Martin Mission System awarded 1 Oct 98 to provide system integration, engineering experience and hardware maintenance support. On 1 Jun 99, TRW assumed full responsibility for computer support and software development within USSTRATCOM.

Contractor: SAIC (NIDS II Targeting IPT support)
Contract #: F25600-99-C0503
Type: CPAF
Contract Length: Dec 01
Significant Milestones: Critical Milestone 1: EDB 12 NIDS II Del, Jun 01, Critical Milestone 2: NIDS II Del 2001.2, Sep 01.
Contractor Performance: On schedule.
Method of Tracking: Program Management Reviews (PMR), DD270 Code Reviews, Technical Interchange Meetings (TIMs), Critical Design Review (CDR), Preliminary Design Review (PDR), IPT Meetings; monthly reports

Contractor: Logicon, Inc. (Automated, Quality Review and Analysis Software Support AQRASS) (Quality Review IPT support)
Contract #: F25600-00-R-5004
Type: FFP
Contract Length: Sep 01
Significant Milestones: Critical Milestone 1: Contract Expiration, Sep 01, Critical Milestone 2: New Contract Award, Oct 01.
Contractor Performance: On schedule.

Method of Tracking: Cost & Performance Measurement Reports, Award Fee Reviews, PMRs, Quality Assurance Audits on schedule, CDRs, PDRs, IPT Independent Reviews, monthly funds status.

Contractor: TRW Data Technologies Div. (Ballistic Missile IPT support)
Contract #: F25600-97-C0500
Type: CPAF
Contract Length: Sep 01
Significant Milestones: Critical Milestone 1: MGPS 02.1 SW Delivery Jun 01, Critical Milestone 2: MGPS 3.0 SW Delivery Sep 01.
Contractor Performance: On schedule.
Method of Tracking: IPT Review, PMRs, Award fee evaluation every 6 months, monthly funds status.

Contractor: BAE Systems (Air Vehicle IPT support)
Contract #: DSWA01-97-C-0035
Type: CPAF
Contract Length: Apr 02
Significant Milestones: Critical Milestone 1: APS 2.4 Delivery Mar 01, Critical Milestone 2: APS 2.5 Delivery Oct 01.
Contractor Performance: On schedule.
Method of Tracking: IPT weekly meetings, PIM weekly meetings, Award Fee Reviews, Source Code Review, Progress reports, TIMs, Monthly funds status

Contractor: TRW Data Technologies Div.
Contract #: F25600-99-C0502
Type: CPAF, FFP
Contract Length: Sep 04
Significant Milestones: Critical Milestone 1: Award Fee Period, Feb 01, Critical Milestone 2: Award Fee Mid Point, May 01.

Contractor Performance: On schedule.
Method of Tracking: Task Requirements Notice reports, weekly TIMs, progress reports/metrics.

Contractor: Lockheed Martin Mission Systems
Contract #: F25600-99-C-0501
Type: CPAF
Contract Length: Sep 04
Significant Milestones: Critical Milestone 1: C2 Modernization Evolution Plan, Jan 01, Critical Milestone 2: Enterprise Master
 Schedule, Feb 01.
Contractor Performance: On schedule.
Method of Tracking: Performance and cost reports, award fee plan.

D. Architecture and Infrastructure Standards:

1. Currently, to reduce dependence on custom development and the associated development and maintenance cost, SWPS uses COTS/GOTS products whenever possible to satisfy requirements. Applications developed by SWPS community can be ported to a variety of hardware platforms that conform to open system standards. The consistent use of standard interfaces permits applications to remain independent allowing upgrades or adding individual software applications with minimal impact on operations. This open approach supports the C4I for the Warrior, Global Command and Control System, and allows future technology advances in hardware and software to be incorporated at lower life cycle costs.

2. SWPS is generally at about Level 3 compliance against the DoD-mandated Level 5. However, because of the way the assessment process is defined (i.e., the lowest rated area becomes the system's compliance level), SWPS would formally rank lower.

3. The SWPS program has committed to pursuing a DII COE Level Five compliance, as a minimum. Compliance will be achieved incrementally as major SWPS software applications are re-engineered. Many of the system modifications required to achieve Level Five will also address JTA compliance deficiencies. The human/computer interface is one such example. SWPS Aircraft Application is scheduled to be DII COE Level 5 compliant by Mar 01, Theater Integrated Planning System capability is projected to be DII COE compliant by FY02, and SWPS Analysis community models are scheduled to achieve compliance incrementally consistent with DoD simulation and modeling community timelines.

E. Infrastructure Strategy:

SWPS has developed an open systems architecture using COTS/GOTS hardware and software whenever possible.

All current year hardware and software requirements are fully funded and included in the SWPS funding line.

Long-haul communications requirements are funded through another USSTRATCOM Program Element.

Interdependencies with other acquisitions:

a. The Modernized Intelligence Database (MIDB) data structure upgrade directly impacts the targeting National Target Base/National Desired Ground Zero List Integrated Development System (NIDS II) effort. Any changes to the MIDB program schedule or structure will affect the cost and delivery of NIDS II.

b. Intelligence data formats from the National Imagery and Mapping Agency drive data handling changes to SWPS.

c. For missile planning, changes to ICBM/SLBM embedded performance parameters directly impact models and algorithms in SWPS. Changes would result in increased cost to development to bring SWPS software into alignment.

d. For aircraft and cruise missile planning, changes to performance parameters directly impact model polynomials embedded in the SWPS planning software.

SWPS is a mix of COTS and custom software. Commercial Off the Shelf software is the preferred solution to standardize application tools. However, there are several custom applications supporting hardware, Targeting, Force Application, Quality Review and Plan Analysis functions. The unique characteristics of our strategic forces and complexity of warplanning warrants some custom applications.

F. Program Highlights:

1. SWPS sustains and modernizes strategic C2 systems capable of both deliberate and adaptive strategic nuclear planning in fixed and mobile planning environments.
2. No Milestone decisions occurred during this budget period.

G. Financial Basis for Selecting the Project:

<u>Baseline Information/History</u>

Program Type: ACAT 1AM

Total Number of Baselines: 5

Current Acquisition Program Baseline (APB) Date: 25 Nov 98

Initial Milestone Baseline Approval Date: 26 Jan 94

	Program Year 94	Progra m Year 95	Program Year 96	Progra m Year 97	Progra m Year 98	Program Year 99	Program Year 00	Progra m Year 01
3080	14.29	2.27	1.78	3.67	9.26	4.24	10.99	12.26
3400	43.43	43.40	52.50	52.91	53.44	52.28	43.94	41.30

Department of Defense
Department of the Air Force
Major Investment Report
FY 2002 Amended Budget Estimates

APB Total Resources by FY	57.72	45.67	54.28	56.58	62.70	56.52	54.93	53.56			
Increment 1-N if applicable											

<u>Return on Investment</u>

a. The return on investment for SWPS modernization is measured in terms of compelling military importance and its substantial contribution to the DoD mission. The SWPS modernization plan will meet requirements established by the DoD Nuclear Weapon Employment Policy (NUWEP) document, JCS Joint Strategic Capability Plan (JSCP) Annex C, and Joint Staff and OSD inputs to the USSTRATCOM Strategic Planning Study.

b. The SWPS modernization program will reduce manpower by 131 people. It also reduces future O&S cost by consolidating duplicative application software and redundant databases.

A Functional Economic Analysis (FEA) completed 26 Jan 94 resulted in the current modernization program.

Estimate of Risks:
a. COST: NCA planning guidance – results in variable inputs and cost to modify the system to accommodate new target planning directives.
b. COST SCHEDULE: future force structure changes and results of treaty negotiations decisions will impact the modernization program in the targeting, allocation, aircraft, missile and analysis planning areas.

Part III. Assessment:

A. Description of Performance based system(s):

Baseline Information:

Management Oversight - Modifications to SWPS has occurred using the incremental acquisition process and pre-planned product improvement strategies. The modular functionality of each of the eight Interactive Planning Activity Areas and the increments within those areas create different development phases designed to evolve SWPS to meet strategic deterrence and defense planning guidance. Each increment considers budgetary constraints and system development/integration dependencies.

	Cum total FY 1999 and prior	FY 2000	FY 2001	FY 2002		
B. Previous Baseline (FY01 PB)						
Cost Goals ($M)	406.99	57.62	56.05	48.88		
Schedule Goals (milestones)		QOT&E	IM IOC			
C. Baseline (FY02 PB)						
Cost Goals ($M)	406.99	54.91	56.95	49.52		
Schedule Goals (milestones)	Minor slips to IPT milestones, no affect on overall program milestones					
D. Current Estimate						
Cost Goals ($M)	406.99	54.91	56.95	49.52		
Schedule Goals (milestones)		Apr-00	Sep-98			
E. Variance from Baseline Goals						
Cost Goals ($)	0	-2.71	.9	.64		
Schedule Goals (milestones)						

- The baseline numbers were taken from the last two President's Budget Exhibits as indicated. FY01 PB cumulative totals for FY04 through FY07 include estimates for FY06 and FY07. The FY06/07 numbers were created from the FY05 funding using 2 percent annual inflation factor. FY02 PB cumulative totals for FY04 through FY07 reflect current funding profiles.
- FY02 PB funding reflects additional 3080 funding from a FY02 POM SWPS life-cycle hardware refresh disconnect.
- The program has been rebaselined five times since initial program establishment to extend minor schedule milestones; no impact to system IOC or FOC.
- This system has had no milestone slippage since the last President's Budget
- A life-cycle equipment funding profile disconnect (FY02 – FY07) was added to the SWPS 3080 funding in the FY02 BES
- Effective with the FY02 POM all manpower costs for USSTRATCOM are now reflected in PEs 11325 and 11890. Manpower used in direct support of SWPS is not readily available so manpower costs are no longer reflected in the SWPS program estimates.
- SWPS is a Major Automated Information System (MAIS). The program office meets all OSD/C3I and Air Force Overarching Integrated Product Team (OIPT) reporting requirements. SAF/AQ and AFPEO/C2 accomplish acquisition oversight. Quarterly Joint Program Management Reviews are held with the Program Executive Officer, Program Manager, users, and appropriate contractor personnel to ensure all program goals are/will be met. Monthly/quarterly reports provide local and higher headquarters management the capability to review the current status of the SWPS program. Three of these reports are the Monthly Activity Report (MAR), Defense Acquisition Executive Summary (DAES) and the portfolio review briefing. Recurring program management reviews are also conducted.

A system modernization IOC milestone was attained during FY98, which implements a central database and the new computing environment. The Enterprise Database (EDB) IOC was accelerated three years. The IOC replaced the legacy system (mainframe application) prior to year 2000 in Oct 98. Versions of all war planning applications have been rehosted on the client server architecture and access/use the EDB. The principal applications are Target Planning System (TPS), NIDS, AWPS, MGPS, APS, Quality Review process, Document Production System, and all analysis models.

Schedule Goals:

Baseline (Milestone) Schedule	Last President's Budget (Jan, 2000)		Current Submission (Feb, 2001)
	Approved	**Achieved**	**Approved/Estimated**
Milestone III, Increment III	Jan-94	Jan-94	OSD (MAIRSC)

SWPS is an operational system with an approved modernization plan. Each functional area has their individual milestones with an overall system initial operational capability (IOC) milestone of FY2003.

FY 2000 Accomplishments:

a. Targeting Activity
National Desired Ground Zero List Integrated Development System (NIDS) II
NIDS II was delivered into production in May 00 and has received praise from the users community. NIDS II performed extremely well during the last exercise in October 2000. The NIDS II software delivery, in support of the Enterprise Database (EDB) v11 cutover in Dec 00, occurred flawlessly. Effort has begun on the NIDS II software for the EDB v12 cutover in Jun 01.

b. Quality Review Activity
The Automated Window Planning System (AWPS) software 00.4 was delivered to the Government and went into production on 4 Dec 00. Design and test of a prototype PC version of AWPS (currently on a Unix host) continues. A decision to continue prototype development for the remainder of FY01 was made on 9 Jan 01. Preliminary business case findings illustrate significant life-cycle savings to be realized with a migration to a PC-based system.

c. Missile Applications Activity

Operational Acceptance Testing (OAT) of the Missile Graphics Planning System (MGPS) 02 was completed and promoted to production with EDB v11 on 4 Dec 00. This version completes the MGPS EDB Direct transition. Follow on capabilities testing is being conducted by the government's users.

d. Aircraft Applications Activity

Operational Acceptance Testing on the Air Vehicle Planning System (APS) 2.3 was successfully completed and promoted to production on 4 Dec 00. The Aircraft Integrated Product Team (IPT) was simultaneously engaged in planning for APS v2.4, which is the final development delivery in the present APS contract. The Implementation Plan for APS 2.4 is nearing completion and will be used to manage government and developer task accomplishment and schedule adherence. APS v2.4 is scheduled for promotion to production in Jun 01 in conjunction with EDB v12.0. Additionally, APS hardware and software in the Mobile Consolidated Command Center was successfully used as a reconnaissance mission planning tool during the last global exercise in October 2000.

e. Production Activity

The Document Production System (DPS) v11.0 was promoted into production on 6 Dec 00. The preparation for the DPS v12 release in Jun 01 has started. This work will be include system maintenance fixes and an upgrade of the development environment. The upgrades will provide the war planner with more efficiency in building the SIOP documents.

f. Analysis Activity

The Integrated Analysis System (IAS) Extended Air Defense Simulation (EADSIM) v11, which provides new enhancements and corrective changes was promoted to production 15 Jan 01. The Analysis IPT members continue to work with J2 Intelligence Directorate to make changes to the Consolidated Air Order of Battle/Generated Defensive Order of Battle (CADOB/GENDOB) data definitions and data passed to J5 planning and analysis applications. Changes are planned for EDB v12 cutover.

g. Information Management Activity
Refresh of six SWPS PC File Servers is complete. This effort replaced seven existing PC Servers with four new servers. The final life-cycle refresh of SWPS Workstations under the 10-year modernization is nearing completion. The program has initiated life-cycle refresh of SWPS PCs and the upgrade of the operating system to Windows 2000. FY01 starts the life-cycle refresh of SWPS Unix Servers. Upgrade to Solaris 7 (from Solaris 2.5.1) operating system on 29 MGPS workstations is complete. The new servers will also be upgraded to a Solaris version 8 operating system.

h. Enterprise Database Activity
EDB v11 was delivered on schedule and put into production 4 Dec 00. EDB v12 is schedule for delivery Jun 01. The EDB IPT continues to assess performance improvements for future EDB deliveries.

i. Theater Planning Activity
The USSTRATCOM DCINC was briefed by J55/J6342 on the current requirements and implementation strategy for the Theater Integrated Planning System (TIPS) and the overall USSTRATCOM Theater Support. The J63 was given a go-ahead to purchase hardware and software for TIPS.

FY 2001 Planned Program:

APS II, which is the final phase of Air Vehicle modernization, is scheduled for delivery in FY01. **Analysis modernization will be completed. Included: SIOP Assessment/Analysis Tools.** Life-cycle replacements for PCs, tape silo storage devices, servers, and high availability disk arrays will commence with time-phased incremental purchases with completion scheduled for FY02. Continued software application scheduled maintenance and modifications deliveries.

FY 2002 Planned Program

APS II will be fully operational in FY02.

The Enterprise Database modernization will be completed with all applications directly accessing the single, centralized database.

Software application scheduled maintenance and modification deliveries will continue.

Life-cycle replacements for PCs, tape silo storage devices, servers, and high availability disk arrays will be completed in FY02.

Life-cycle replacement profile to replace all workstations over a four-year period will be started in FY02.

FY2003 Planned Program:

Software application scheduled maintenance and modification deliveries will continue.

Life-cycle replacement profile to replace all workstations continues in FY03.

The modernized system will be Defense Information Infrastructure Common Operating Environment (DII-COE) level 5 compliant for selected software applications.

Performance Goals: The operational benefits to be gained through modernization include:

a. More rapid, flexible, deliberate and adaptive planning capability (e.g. 6 month vs. the current 12 month plan development cycle for SIOP-00).

b. Planning for low observable weapon systems (e.g. B-2 and ACM)

c. Portability of planning tools to mobile environments through use of open computer standards (e.g. Nuclear Planning and Execution System (NPES), MCCC).

d. Compatibility with other DOD planning systems, architectural standards, and C4I for the warrior.

e. Support of non-proliferation of weapons of mass destruction.

f. Use of community-standard planning and analysis tools.

The capability to plan small options worldwide, increase interoperability and improve crisis planning will be achieved. The main changes to the current SWPS infrastructure for attaining this objective are: (1) use of open system architecture; (2) client-server technology; (3) the interface with other DOD planning systems, such as the Air Force Mission Support System (AFMSS) and Contingency (Tactical Air Control) Automated Planning System (CTAPS) and the Navy's Tomahawk Missile Planning System (TAMPS); and (4) the movement to workstations with a mobile capacity and porting of application tools to these workstations to provide common planning tools for both deliberate and crisis planning environments.

- Accomplishments to date:

Mission – SIOP 99 was produced on the client-server infrastructure with the mainframe acting as a fallback option.
Performance – Rehost of all applications from the IBM mainframe to a workstation-client-server environment, 36 months earlier than originally scheduled.

SWPS is an ongoing operational system. All equipment upgrades are installed in parallel with existing equipment for acceptance and performance testing before becoming operational. Software upgrades are fully tested, benchmarked, and documented before implementation. The highest risk of failure is in those areas directly associated with developing software applications at the leading edge of technology. In all cases, those risks are minimized by a progressive and systematic means of testing and evaluation prior to porting software to the operational system. Newly developed or extensively modified software must not only pass rigorous development testing, but must pass operational testing and run concurrently on the development and secondary production systems before being placed on the primary production system. Configuration management ensures only thoroughly tested software is loaded on the primary production system. Software running on workstations must pass exacting security and communications testing. Over many years of developing and enhancing software, SWPS has consistently maintained a high availability rate. To date, no system degradation is associated with any development failures.