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OPERATIONAL REQUIREMENTS DOCUMENT (ORD) FOR UNITED STATES STRATEGIC COMMAND (USSTRATCOM) STRATEGIC WAR PLANNING SYSTEM (SWPS)

ACAT LEVEL IV

DECEMBER 1994

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TABLE OF CONTENTS

Paragraph **Page**

LIST OF FIGURES 4
LIST OF TABLES 4
1. GENERAL DESCRIPTION OF OPERATIONAL CAPABILITY 5
   a. Defense Planning Guidance. 5
   b. Mission Area. 5
   c. Mission Need 5
   d. Program Background 6
   e. Proposed System 7
   f. Support Concept 11
2. THREAT 12
3. SHORTCOMINGS OF EXISTING SYSTEM 13
4. CAPABILITIES REQUIRED 15
   a. System Performance 15
   b. Logistics and Readiness 32
   c. Critical System Characteristics. 33
      (1) General Requirements. 33
      (2) Deliberate Planning Requirements 38
      (3) Adaptive Planning Requirements 39
      (4) Theater Planning Requirements 40
      (5) Force Requirements. 41
         1. ICBM Requirements. 42
         2. SSBN Requirements. 42
         3. Bomber Requirements. 42
         4. Tanker Requirements 43
         5. Reconnaissance Requirements 43
      (6) USTRANSCOM Requirements 44
5. INTEGRATED LOGISTICS SUPPORT (ILS) 45
   a. Maintenance Planning 45
   b. Support Equipment 46
   c. Human Systems Integration 46
   d. Computer Resources 47
   e. Other Logistics Considerations 47
6. INFRASTRUCTURE SUPPORT AND INTEROPERABILITY 49
   a. Command, Control, Communications, and Intelligence (C3I) 49
   b. Transportation and Basing 49
   c. Standardization, Interoperability, and Commonality 49
   d. Mapping, Charting and Geodesy Support 50
   e. Environmental Support 50
7. FORCE STRUCTURE 52
8. SCHEDULE CONSIDERATIONS 53

Paragraph **Page**

REFERENCES 54
WORKING DEFINITIONS 55
ACRONYMS 56

LIST OF FIGURES

Number	Title	Page
1.	SPS SIOP Planning Process Recommendation–Living SIOP (U)	8
2.	SPS SWPS Applications Recommendations–Enhanced SWPS Tools (U)	8
3.	SPS SWPS Infrastructure Recommendation–Open Architecture (U)	10
4.	SPS SWPS Database Recommendation–Modern DBMS (U)	10
5.	Notional Deliberate Planning Time Budget (U)	22

LIST OF TABLES

Number	Title	Page
1.	System Performance Parameters (U)	16
2.	SIOP Quality Factors (U)	19
3.	Nuclear Force Mix Planning Factors (U)	21
4a.	SWPS Products–Targeting (U)	23
4b.	SWPS Products–Missile Application (U)	24
4c.	SWPS Products–Aircraft Application (U)	26
4d.	SWPS Products–Analysis (U)	30
4e.	SWPS Products–Miscellaneous (U)	31
5.	SWPS Electronic Interfaces (U)	35

1. (U) GENERAL DESCRIPTION OF OPERATIONAL CAPABILITY

a. (U) Defense Planning Guidance. The requirements identified in this Operational Requirements Document (ORD) respond to the major program planning guidance objectives of the Defense Planning Guidance (DPG) for fiscal years (FYs) 1996-2001, dated 23 May 1994. (b)(1) [redacted] forces of sufficient size and capability to effectively hold at risk a broad range of assets; to deter, defend against, and defeat aggression by potentially hostile regional powers; and to promote interoperability and standardization of command control, communications, computers, and intelligence (C^4I) systems. The Strategic War Planning System (SWPS) modernization effort directly supports these objectives. The program is supported in the *United States (US) Commander in Chief (CINC) US Strategic Command (USSTRATCOM) (CINCSTRAT) FY 96-01 Integrated Priority List (IPL)*. (b)(1) [redacted]

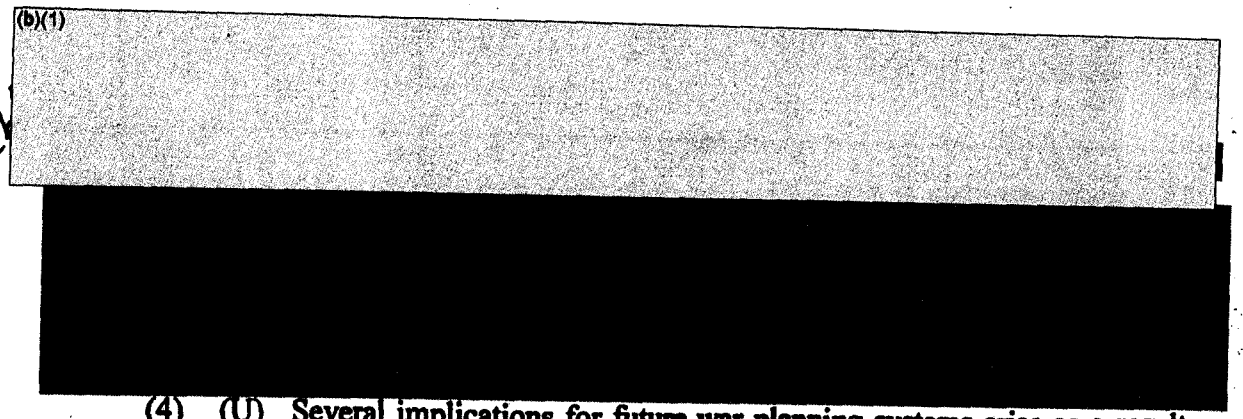
b. (U) Mission Area. The primary mission area addressed in this requirements document is Office of the Under Secretary of Defense for Acquisition (OUSD(A)) #300, Command Control, Communications, and Intelligence (C^3I) programs.

c. (U) Mission Need. The mission of USSTRATCOM is to deter major military attack, especially nuclear attack, on the United States and its allies and, if deterrence fails, to employ forces. CINCSTRAT's responsibilities are to ensure C^3I capability for strategic force employment worldwide, to employ forces as directed by the National Command Authority (NCA), and to provide support to other combatant commanders as required.

(1) (U) The mission of USSTRATCOM will continue to focus on planning, analysis, dissemination to, and employment of strategic nuclear forces. The planning system must be capable of strategic nuclear planning and analysis in both deliberate and crisis situations.

(2) (U) The strategic planning system must interoperate with other Department of Defense (DoD) planning systems to assist with/facilitate the planning, analysis, and employment of non-strategic nuclear forces (NSNF). The current nuclear planning process and system are primarily designed to plan and analyze strategic nuclear forces; [redacted] (b)(1)

(b)(1)



(4) (U) Several implications for future war planning systems arise as a result of changes in missions, threats, and forces. The planning system must be responsive and versatile enough to accommodate the evolving USSTRATCOM mission, including the ability to plan and analyze a variety of strategic weapons for any theater (global, regional) either as deliberately planned options or by adaptive planning. Although projected reductions in the nuclear target base result from force reductions driven by the Strategic Arms Reduction Talks (START) agreements, threat estimates indicate that there will be more mobility in the offensive threat. This trend will make targeting an even more difficult and challenging problem for the planning system to handle.

d. (U) Program Background. SWPS is an operational system with a 20-year history of modernization and incremental improvements. The system originated during the 1960's, at the height of the cold war, to deal with the threat to the United States by the Union of Soviet Socialist Republics (USSR). It originally supported the Strategic Air Command (SAC) and the Joint Strategic Target Planning Staff (JSTPS). The system has been modified throughout its life to successfully deal with the many changes to force structure and planning guidance.

(1) (U) In the Fall of 1992, CINCSTRAT commissioned a zero-based review of SWPS to provide recommendations for the future system, considering USSTRATCOM's changing mission, new technology, and the realities of a declining budget. The Strategic Planning Study (SPS) Group (SPSG) was a 10 staff-year effort that involved USSTRATCOM experts, the National Laboratories, DoD think tanks, industry, and the DoD planning and analysis communities. The study proceeded in four phases:

(a) (U) Phase I — Develop requirements based on National and unit-level customers' inputs.

(b) (U) Phase II — Determine the ability of the present system and its then-current modernization plan to meet the identified requirements.

(c) (U) Phase III — Develop the various process, software tools, database, and infrastructure options for meeting the requirements.

(d) (U) Phase IV — Determine the best composite option and provide ancillary recommendations.

(2) (U) The study concluded with recommendations to CINCSTRAT, in the form of a briefing and a follow-on report (reference 1). Both of these were enthusiastically approved by the CINC and his executive committee. In addition, a Strategic Planning Modernization Office (SPMO) was established within USSTRATCOM/J5 to monitor the modernization program and to ensure that the vision established by the SPS and approved by the CINC would eventually bear fruit.

(3) (U) The modernization program identified in the Strategic Planning Study Final Report (reference 1) builds on the strengths of the present planning system.[1] It defines an evolutionary program of incremental modernization to SWPS, with measurable benefits identified in the SWPS Functional Economic Analysis (FEA) (reference 2).

(4) (U) This ORD is based on the results of the SPS and subsequent reviews of the system and its management by the Air Force Systems Acquisition Review Council (AFSARC) and Major Automated Information System Review Council (MAISRC). The material has been updated to reflect minor modifications in the SPS results since the conclusion of the study in October 1993.

e. (U) Proposed System. Figures 1 through 4 show the SPSG's process, applications, infrastructure, and database recommendations that were approved by CINCSTRAT and which are being implemented through the SWPS modernization program.

(1) (U) The Living SIOP process (figure 1) is a departure from the traditional deliberate SIOP planning process. It institutionalizes (b)(1) maintenance for small changes to the target base, major plan revision for major force changes or plan inefficiency (b)(1) and a re-engineered deliberate planning process for entirely new plans driven by major guidance changes. The timeline objectives for each of these processes are shown in the figure. The Living SIOP process is a composite of various individual process improvements: functional consolidation, sortie preprocessing, a stable nucleus of weapon/target assignments, and reorientation of some of the planning steps. These process options were explored during the SPS as part of its functional process improvement (FPI) analysis which used a Corporate Information Management (CIM) -like methodology. The overall SWPS modernization program is process-driven; i.e., the re-engineered process drives changes to the application software which, in turn, drive changes to the database and system

[1](U) Although SWPS is referred to as a *planning* system, it also supports considerable *analysis* activities which are integral to the planning process. Throughout this document, the terms "planning system" and "planner" should be interpreted to include the related analytical activities. When the distinction between planning and analysis is important, it is brought out in the text.

infrastructure. However, the full benefits of the modernization (e.g., timeline reductions) cannot be realized until the application, infrastructure, and database modernizations are complete.

(2) (U) The major changes to the planning tools are shown in figure 2. The SPSG concluded that, with enhancement, the major SWPS planning tools would be adequate to support the Living SIOP process and reduced timelines. Some of the themes of the application modernization are: consolidation of planning tools; common look and feel; workstation-based applications for greater potential for mobility; and greater use of community-standard analysis tools. The SWPS application modernization effort will reduce approximately 20 million lines of code to about 11 million and will provide greater flexibility, more capability, and a worldwide planning focus.

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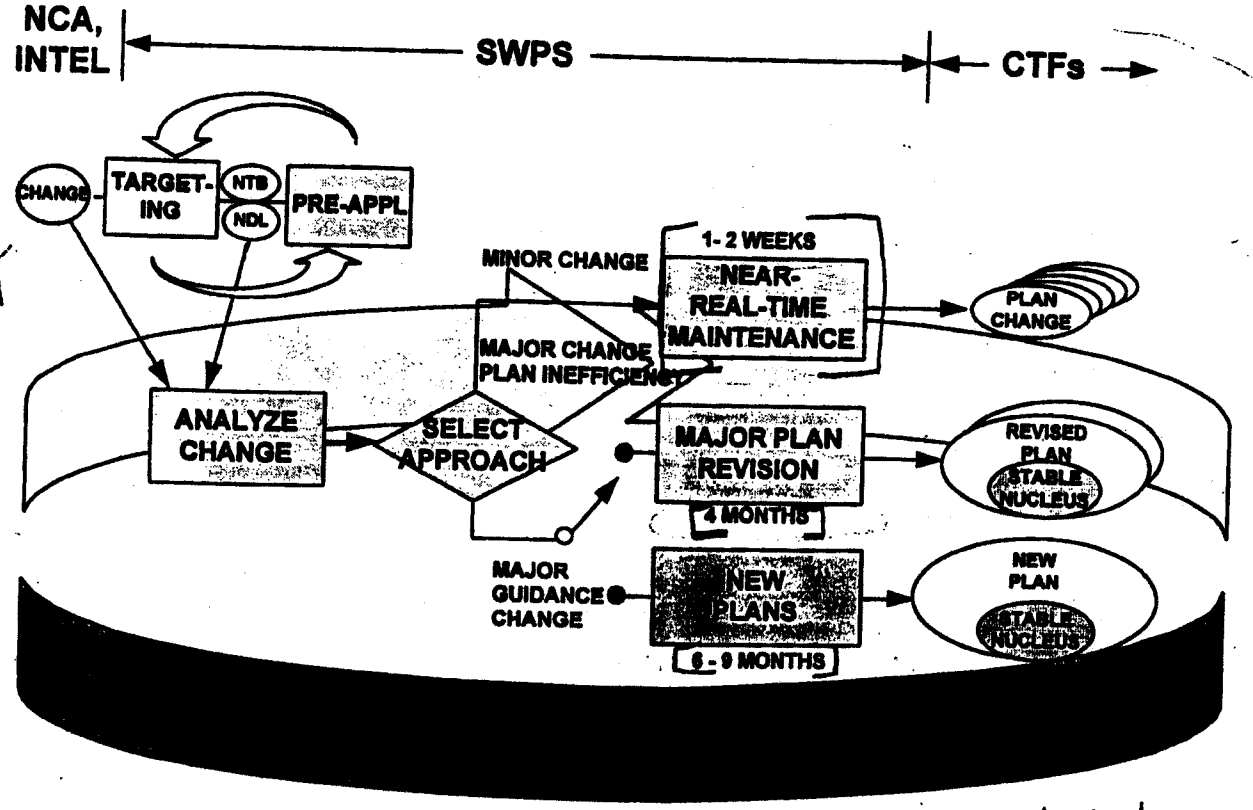

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Figure 1. SPS SIOP Planning Process Recommendation–Living SIOP (U)

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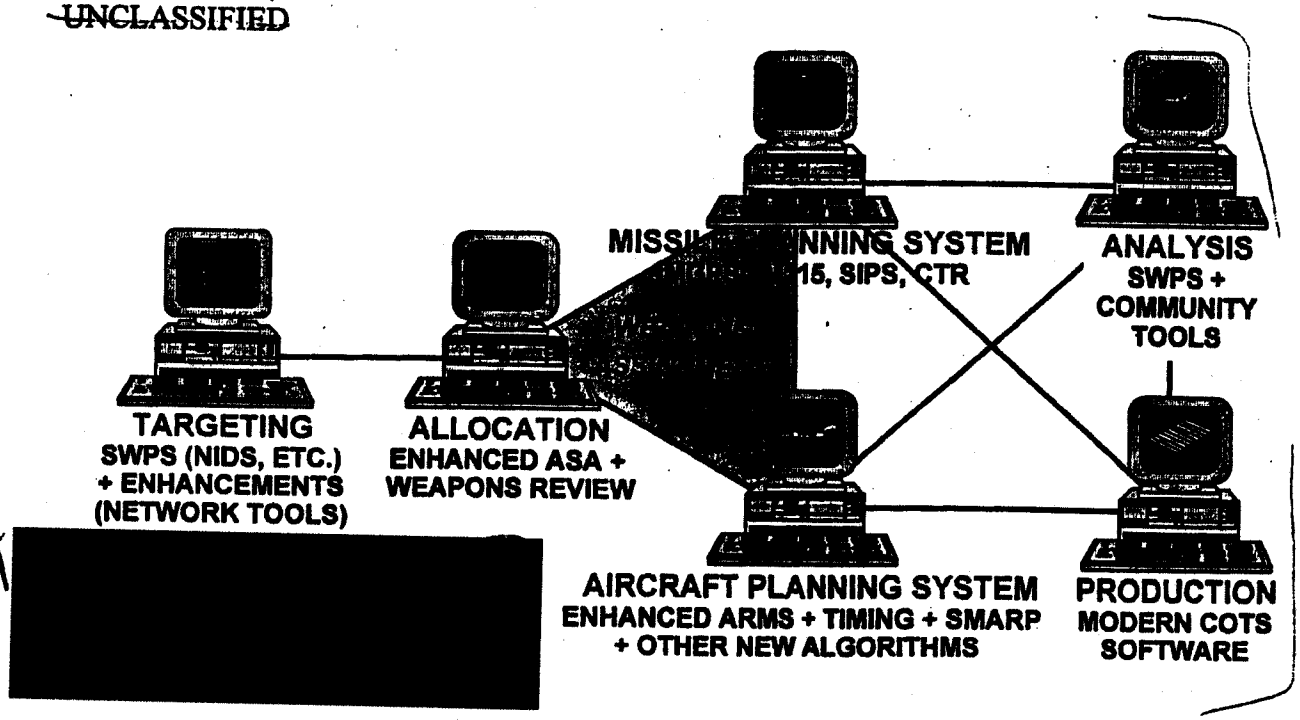

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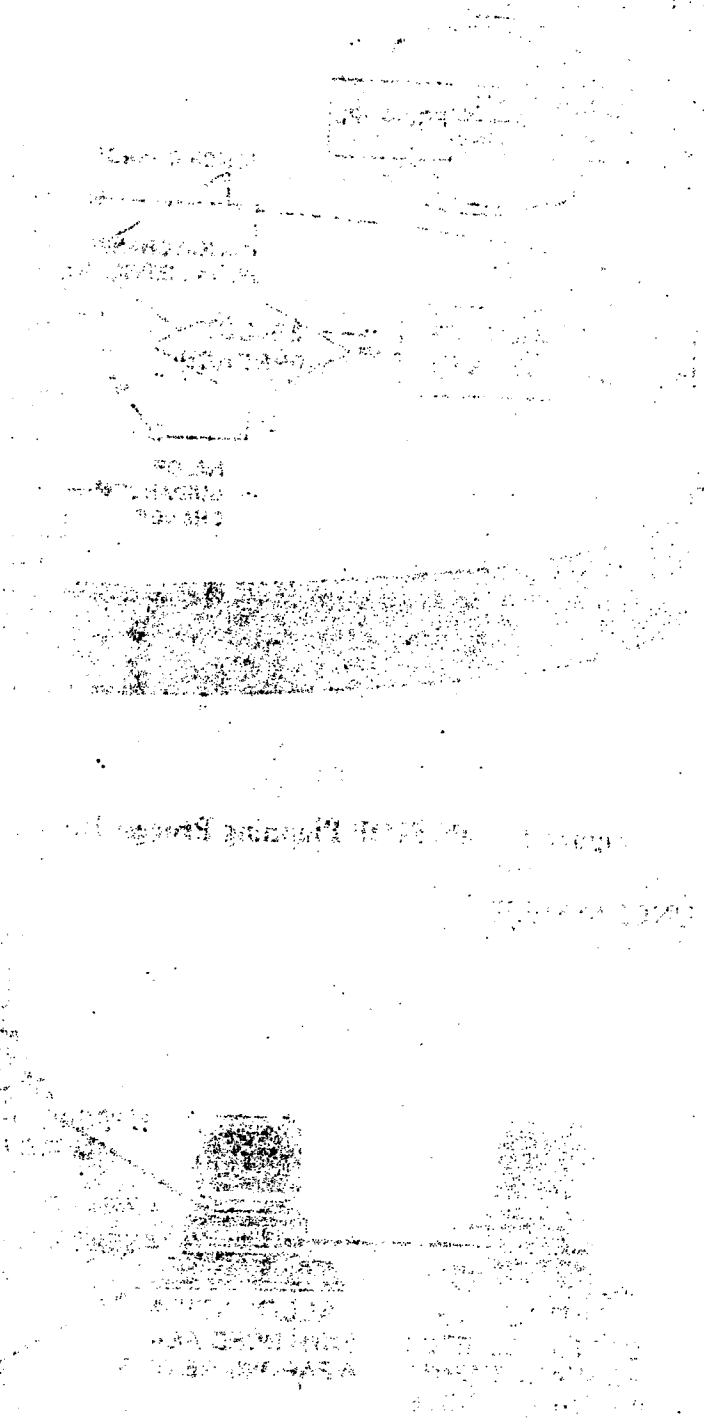
Figure 2. SPS SWPS Applications Recommendations–Enhanced SWPS Tools (U)



(3) (U) The changes to the SWPS infrastructure are illustrated in figure 3. The objective is to move toward an open, distributed, client/server environment that complies with DoD standards. The major applications will be ported to workstations, thereby lessening the dependence on the present IBM mainframe computer. This will allow selection of the most cost-effective machines to serve as global servers for database, applications, or other common system services that may be required.

(4) (U) The SWPS database will transition to a modern database management system (DBMS) as shown in figure 4. The SWPS mainframe currently uses a commercial off-the-shelf (COTS) DBMS accessing the data through a network data model. Some of the more modern, workstation-based applications already use a relational DBMS (RDBMS). Once all the applications have been modernized and the local relational databases built, the network DBMS can be replaced by an enterprise RDBMS.

(5) (U) Based on the analysis performed by the SPS, the primary benefits of the modernization program are summarized below:

(a) (U) Reduced planning timelines through a revised process and better planning tools. (b)(1) maintenance for routine target changes.

(b) (U) Ability to perform new or enhanced missions such as theater nuclear planning and NSNF planning. This also includes the capability for worldwide planning, subject to data availability.

(c) (U) Increased commonality with the Nuclear Planning and Execution System (NPES) by rehosting selected planning applications to workstations. This provides continuity of replanning functions throughout the spectrum of nuclear operations.

(d) (U) Increased commonality with DoD analysis community by adopting community-standard tools.

(e) (U) Enhanced interoperability with other DoD planning systems through the implementation of open standards.

(f) (U) Reduced operations and support (O&S) costs and manpower needed to plan and support the system, once modernization has been completed.

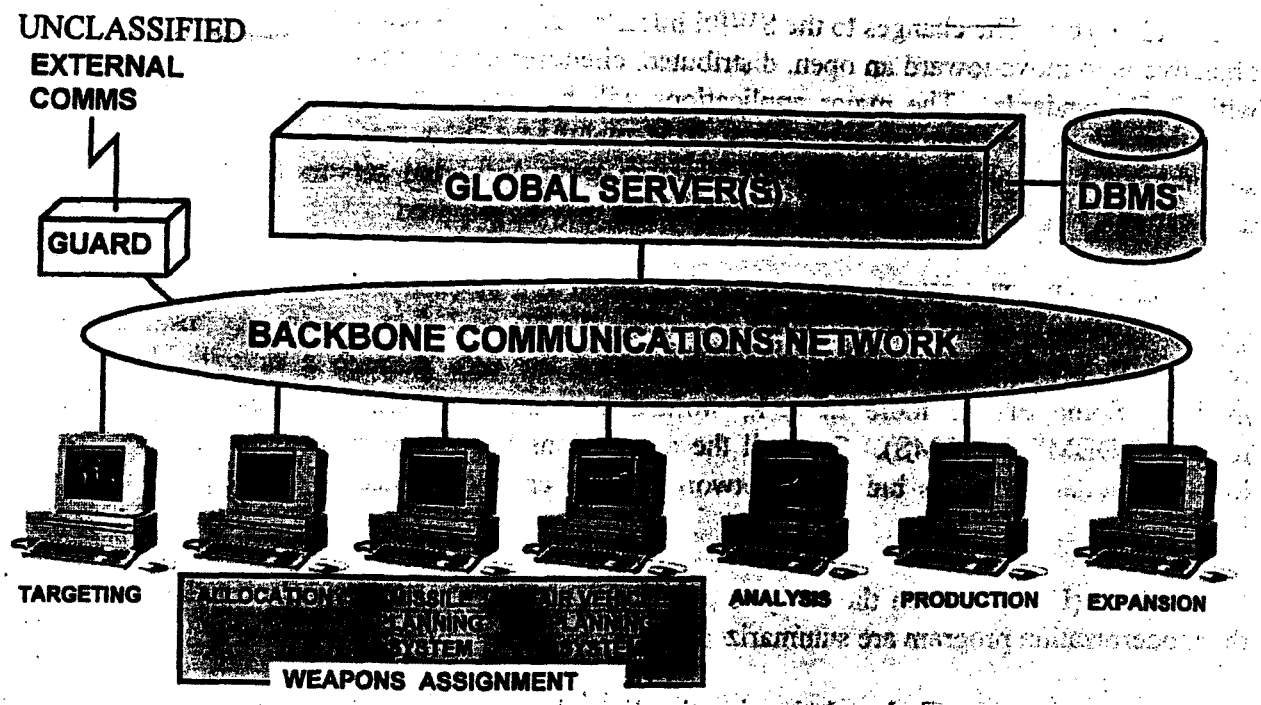


Figure 3. SPS SWPS Infrastructure Recommendation–Open Architecture (U)

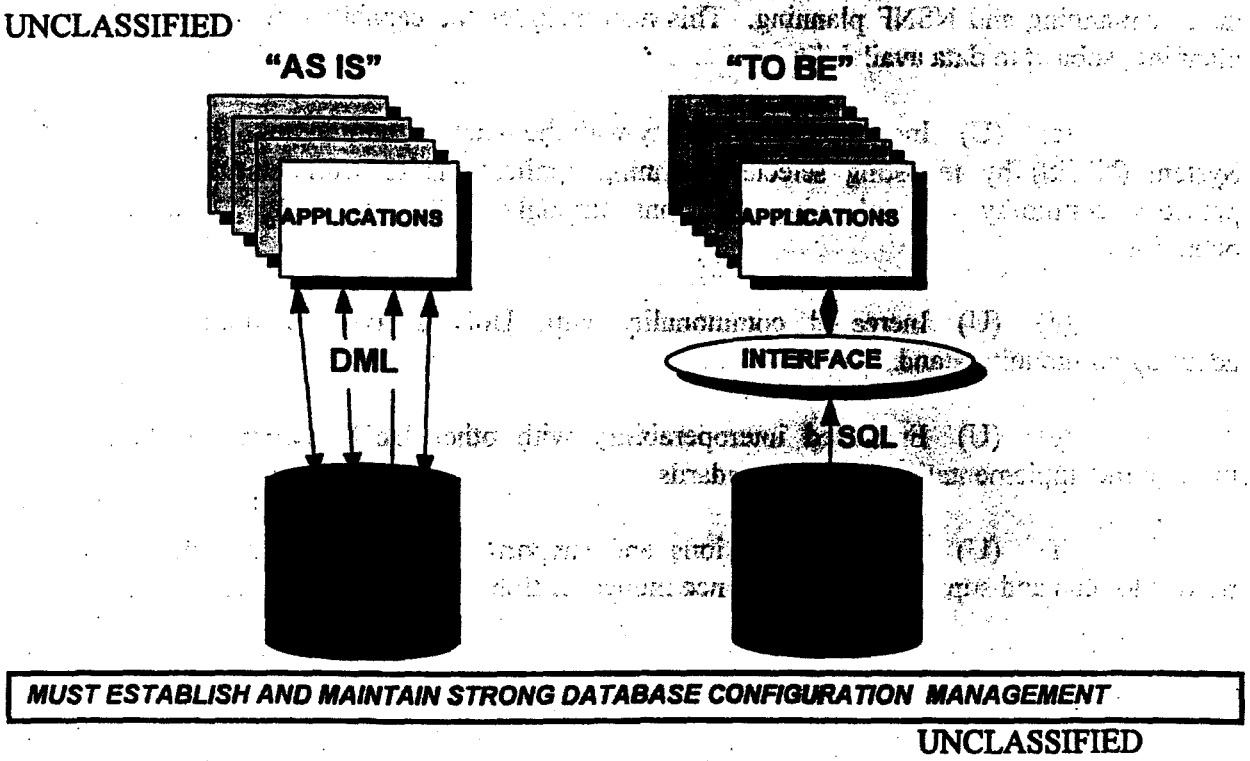


Figure 4. SPS SWPS Database Recommendation–Modern DBMS (U)

f. (U) **Support Concept.** Support for enhancing and maintaining the SWPS hardware and software will be a joint government and contractor effort. Since SWPS is part of an end-to-end capability that ties together NCA guidance and the operational forces, SWPS support must be capable of providing SIOP planners with a system that has high reliability and availability. This level of reliability and availability must be maintained continuously. Planned downtime will not be counted against operational availability (A_O). Planned down situations include such things as preventative maintenance (PM) and the installation, checkout, and acceptance of new and updated hardware and software. Planned downtime is measured from the time the system is taken down until the system is restored to operational readiness. The key to providing high quality support is adherence to the standards and architecture provided in the *Technical Architecture Framework for Information Management (TAFIM)* and the *SWPS Computing Environment Plan (CEP)* (reference 5). The formula for computing availability is:

$$A_O = \frac{\text{(Total time - planned down time) - unscheduled down time}}{\text{(Total time - planned down time)}}$$

2. (U) THREAT

a. (U) The *Joint Strategic Capabilities Plan (JSCP) Annex C (Nuclear)* defines the threat to be countered, provides the projected threat environment, and levies requirements on the planning product of SWPS—i.e., the SIOP. It also discusses Theater Nuclear Option (TNO) requirements as well as other requirements so directed by the NCA. Based on current direction, it is becoming increasingly important to provide a full range of military response options to any potential military threat. SWPS must be capable of developing and analyzing plans to counter these threats and maintaining plans in light of a changing threat situation. Some of the key threat parameters in defining the required system capabilities are identified below.

[redacted]

USSC b1

c. ~~(S/NF)~~ (b)(1)

(b)(1)

[redacted]

USSC, b1

[redacted]

USSC, b1

USC 6b1

[redacted]

3. (U) SHORTCOMINGS OF EXISTING SYSTEM

[redacted]

USSC b1

[redacted]

USSC b1

[redacted]

USSC b1

[redacted]

USSC b1

[redacted]

USSC b1

[redacted]

USSC b1

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b1

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b1

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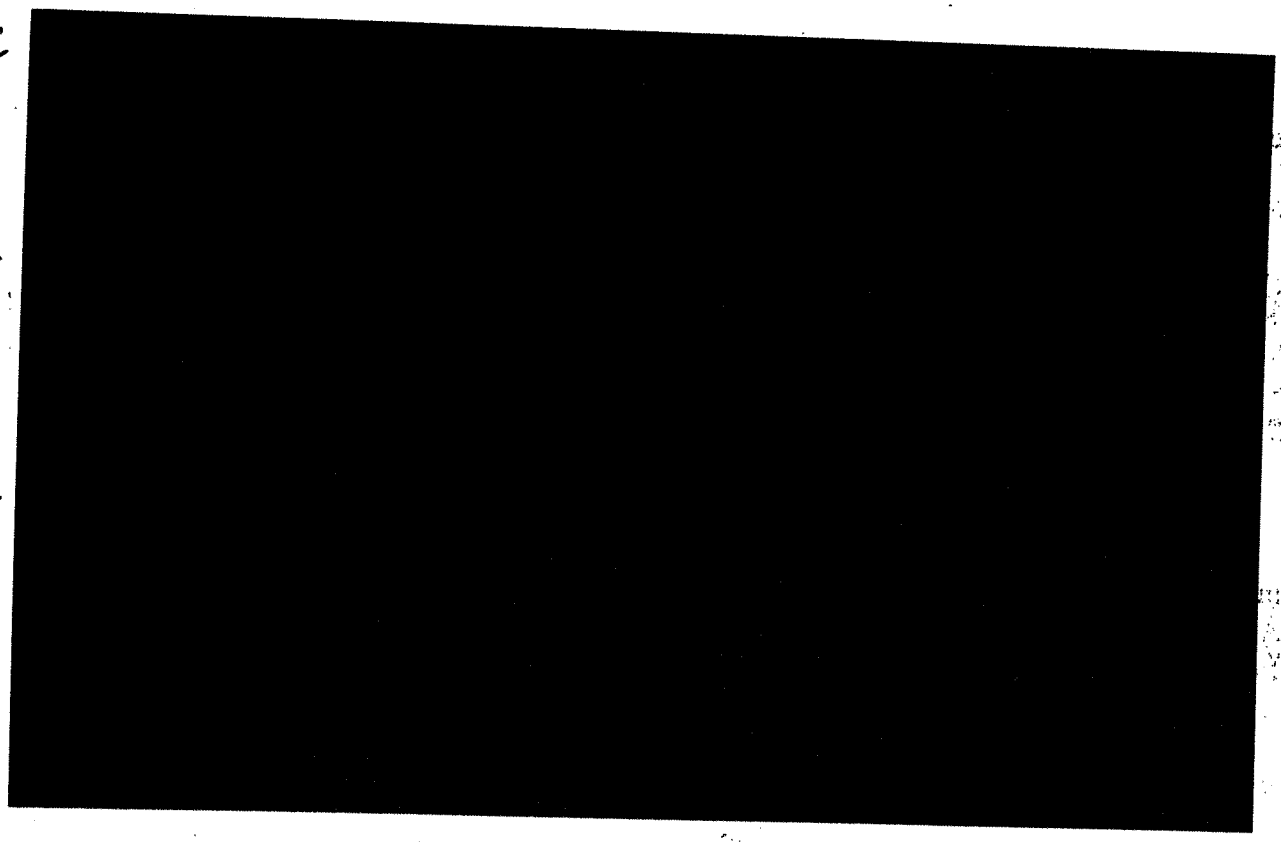

4. (U) CAPABILITIES REQUIRED. This section provides the system-level requirements for SWPS, based on the Strategic Planning Study and embodied in the SPS Final Report (reference 1) and FEA (reference 2) as specific courses of action (COAs) and program increments, respectively.

(U) Please note the following:
1. (U) Key system parameters are indicated via underlined text.
2. (U) Thresholds and objectives are indicated via ***bold italics***.

a. (U) System Performance

(1) (U) System performance parameters are expressed as the number of missions planned in a given period of time. These are provided in table 1. Assumptions/planning factors to be used for system sizing/capacity purposes are as follows:

[redacted]

(b) (U) Force structure: Shown in table 3.

(c) (S) Guidance: Guidance is assumed to be no more complex than that provided in JSCP Annex C FY93 that was used to develop SIOP 94. That guidance resulted in (b)(1)
(b)(1)
(b)(5)

(d) (U) Number of users: The approximate number of SWPS planners for system sizing/capacity purposes is as follows: Targeting – 30; Quality Review – 9; Weapons Assignment – 50; Analysis – 50. It is estimated that the system's peak loading is approximately 55 concurrent planners with a mean of about 30. Reasonable allowance must also be made for SWPS support for office automation purposes: local area network (LAN) peak loading of approximately 750 users; LAN average loading of approximately 500 users; mainframe peak loading of approximately 150 users; mainframe average loading of approximately 100 users.

(e) (U) Products: The system must produce or contribute to the products identified in table 4 (a-e). Note that the definition, periodicity, etc., of these products is subject to change based on guidance and/or mission needs.

Table 1. System Performance Parameters (U)

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Capability	Performance Parameters	Comments
[redacted]		

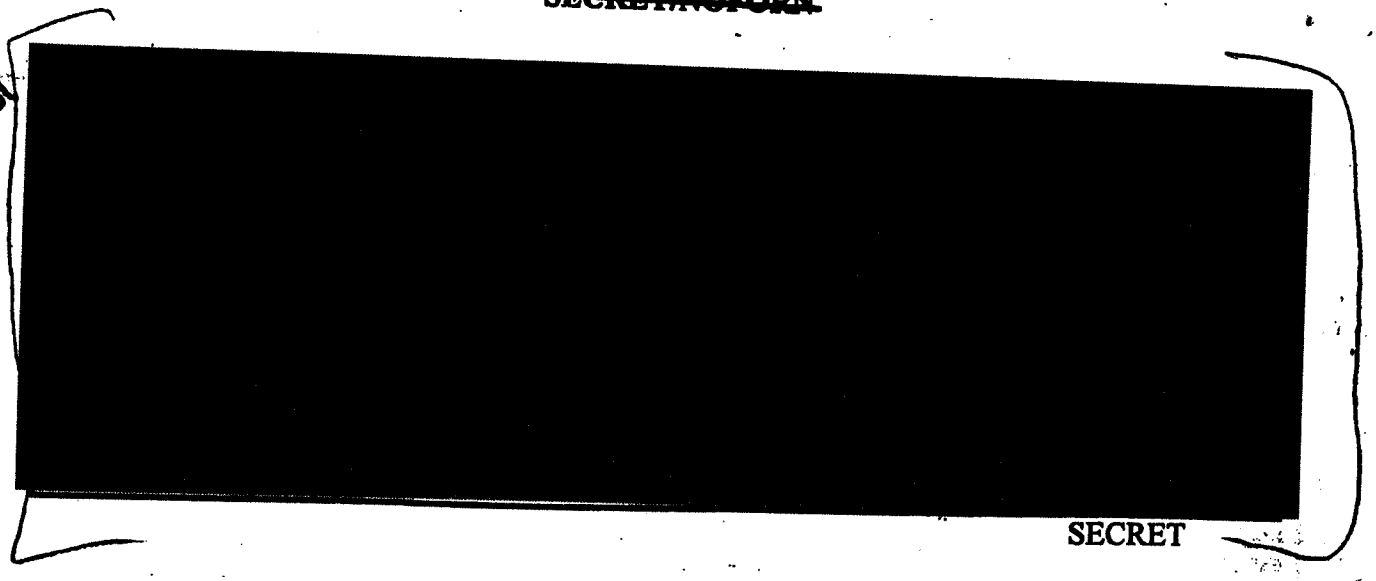

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Table 1. System Performance Parameters (Concluded) (U)

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Capability	Performance Parameters	Comments
(b)(1)		

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Notes: 1. (U) The deliberate planning timeline starts at the time of receipt of final national guidance (JSCP Annex C) and ends at implementation (planning data available for loading on the weapon) at the units. It does not include the time required for preparatory activities such as database or software modifications that may be necessary to help develop the plan. Approximately [redacted] out of the end-to-end time budget are reserved for unit-level planning, although some Headquarters (HQ) and unit-level planning activities may be performed in parallel. Figure 5 provides a notional time budget for deliberate planning.

2. (U) While not covered by this ORD *per se*, the war planning timelines imply derivative requirements on the intelligence input to the war planning system. The Intelligence Data Handling System (IDHS) must be equally capable of handling new and emerging targets and changes to guidance in response to National-level tasking, as discussed in the *USSTRATCOM Command Intelligence Architecture Document, second edition (CIAD-2)*. Although the SWPS modernization effort does not depend on enhanced intelligence capabilities to realize the modernization benefits, there is a synergistic relationship between the two systems.

3. (U) The adaptive planning timeline starts at the time of receipt of national guidance and ends with the plan being completed but not necessarily approved or disseminated (i.e., the timeline includes development of the plan but does not include the time required for plan approval, dissemination to the forces, or unit-level planning). Also, it does not include the time required for preparatory activities such as database or software modifications that may be necessary to help develop the plan.

4. (U) The SIOP maintenance timeline starts at the time of receipt of the change by USSTRATCOM/J5 and ends at implementation (planning data available for loading on the weapon) at the units. It does not include any time that may be required for preparatory activities such as database or software modifications that may be necessary to help modify the plan.

5. (U) Theater nuclear planning timelines only refer to the USSTRATCOM portion of the planning and/or analysis. They do not include, e.g., planning done by the Cruise Missile Support Activity (CMSA), communications time, or plan dissemination. While theater planning is an evolving concept that is also very scenario-dependent, USSTRATCOM contributions to the final theater plan may include one or more of the following: aimpoint construction; COA development; stick route development for air vehicles; timing and deconfliction (T&D); plan analysis.

6. ~~(U)~~ (U) System availability is predicated upon the ability of SIOP planners to perform their tasks when required and within the notional time parameters defined in this document. Currently, the critical systems are the mainframe and network which must be available at least (b)(1) of the time over any (b)(1) running period. If additional missions with greater time sensitivity, such as theater battle management, must be supported by SWPS, the availability requirements will need to be reassessed.

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7. (U) Mean time to repair (MTTR) is for critical equipment that would render SWPS inoperable.

8. (U) It is assumed that the quality of the plan, in terms of established SIOP quality measures such as damage expectancy (DE), will be as good as or better than currently enjoyed. However, because these quality factors are sensitive to factors outside SWPS' control (e.g., force structure, targets, guidance), *a priori* quantitative objectives and thresholds cannot be established. The USSTRATCOM/J5 planners and analysts will judge whether the requirement is satisfied based on historical data ***vis a vis*** the planning problem at hand.

9. (U) The SWPS growth provision applies to the number of targets and forces that the system must be capable of planning/analyzing and to the number of planners that the system must accommodate without significant degradation (i.e., is still able to meet planning timelines and other performance parameters). The system and its subsystems, as delivered, do not need to have these growth capabilities immediately. Rather, it is intended that the system can be upgraded incrementally (e.g., by adding hardware or by changing software parameters such as array lengths), as needed, to meet growth requirements.

10. ~~(U)~~ (U) Each day the SWPS global server should be backed up regardless of the number of changes to the database. Each week a copy of the week's effort should be maintained. A set of records for a running three-week period should be maintained. The archive historical records consist of the on-line historical record plus the active record. For the majority of data, the maximum number of days that archived data can be retrieved is (b)(5)

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Table 2. SIOP Quality Factors (U)

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Quality Factor	Quality Factor
COVERAGE	
[redacted]	
DAMAGE	
[redacted]	
GUIDANCE AND TACTICS	
[redacted]	

usscb1

[redacted]

Table 2. SIOP Quality Factors (Concluded) (U)

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Quality Factor	Quality Factor
GUIDANCE AND TACTICS	
[redacted]	

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Notes: 1. (U) The items in the table are not intended to be exhaustive, but rather indicative of the variety of quality factors contained in the JSCP and related guidance. SIOP quality factors are subject to change based on guidance, weapon systems, threat, and/or tactics changes.

2. (U) Items in boldface type are directly derived from the JSCP. Other items are derived from local guidance (e.g., planning manuals) and/or planner expertise.

3. (U) Note that these quality factors are related to the planning *product* of SWPS rather than to the system itself. They are neither thresholds nor objectives for the system.

4. (U) The weight of each quality factor for a given plan depends on a variety of conditions including the individual planning situation (i.e., deliberate, adaptive, theater), scenario (e.g., peacetime, crisis), force structure, and guidance. The table does not address tradeoffs among quality factors or weights of individual quality factors. No attempt is made to define an overall quality objective function. These are left to planner judgment based on the specific planning situation.

5. (U) Besides the quality factors listed above, each weapon system must be planned within its individual weapon system limits. For example, for bombers these include range, bank angles, flight profiles, weight restrictions, etc. For ballistic missiles they include reentry angle, height of burst (HOB), and circular error probable (CEP) limitations. Violations of these weapon system physical limitations are tested through final plan integrity quality checks (e.g., field aborts).

Table 3. Nuclear Force Mix Planning Factors (U)

~~SECRET~~

Category	Weapon System	Number of Weapons
SSBNs	TRIDENT	[redacted]
ICBMs	MM III	
	Peacekeeper	
Bombers	B-52H	
	B-2	
	B-1B	
ALCMs/ ACMs	ALCM/ACM	
Tankers	KC-135	
Reconnaissance	RC-135V/W	
	U-2	
	F-14 (Tactical Airborne Reconnaissance Pod System (TARPS) configuration)	
	EP-3E	
NSNF/Regional	DCA	
	TLAM-N	

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Notes: 1. (U) (b)(1) (b)(1)

2. (U) Weapon counts are approximate and are subject to change; however, they represent reasonable worst-case system loading parameters. Information on the strategic nuclear force structure is from the USSTRATCOM FY 96-01 Integrated Priority List (IPL). (b)(1) (b)(1) The fundamental requirement is for the system to be capable of planning and analyzing the

numbers and types of strategic nuclear weapons that may exist at the time the system or its increments are fielded.

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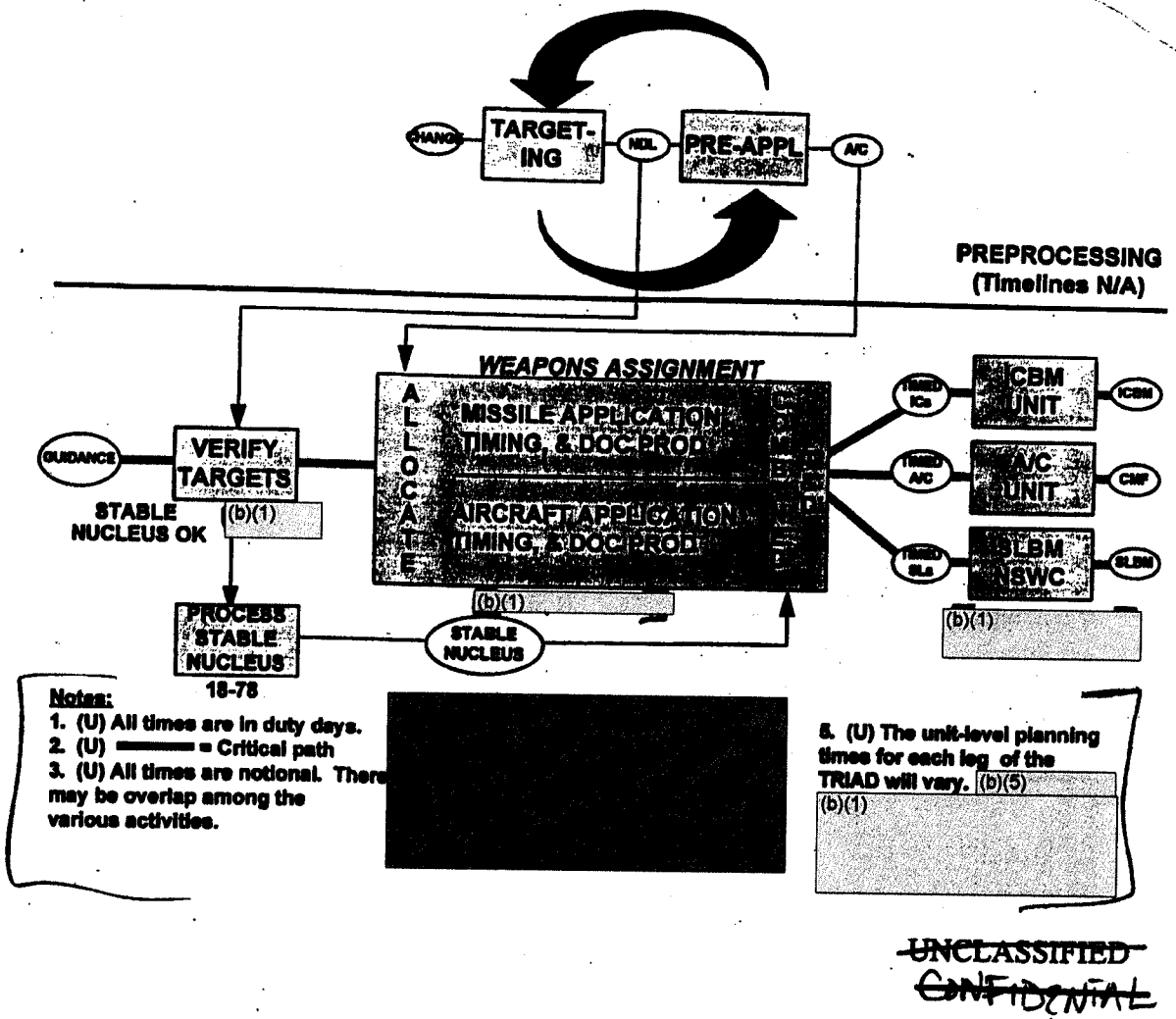

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Figure 5. Notional Deliberate Planning Time Budget (U)

Table 4a. SWPS Products Targeting (U)

~~SECRET~~

Periodicity	Subject/Title/Description	Reference(s)	Classification
Weekly	[redacted]		~~SECRET/NOFORN/WNINTEL/NOCONTRACT~~
Various			~~TOP SECRET//NOFORN/WNINTEL~~
Annual			~~SECRET~~
As required			~~TOP SECRET~~
Every four months			~~TOP SECRET~~
Semi annual			~~SECRET//NOFORN~~
Every four months			~~TOP SECRET//RD~~
Every four months			~~TOP SECRET//RD~~

Monthly	[redacted]	~~TOP SECRET~~
Situational		~~TOP SECRET~~
Monthly		~~TOP SECRET~~
Annual		~~TOP SECRET~~
Semiannual		~~TOP SECRET/RD/NOFORN~~
Annual		~~TOP SECRET/SIOP-ESI~~
Quarterly		~~TOP SECRET/SIOP-ESI~~
Annual		~~TOP SECRET/SIOP-ESI~~

SECRET

Table 45. SWPS Products – Missile Application (U)

SECRET

Periodicity	Subject/Title/Description	Reference(s)	Classification
Monthly	[redacted]		~~TOP SECRET// SIOP-ESI~~
Annual			~~TOP SECRET// SIOP-ESI~~
Annual			~~TOP SECRET// SIOP-ESI~~
Annual			~~TOP SECRET~~
Annual			~~TOP SECRET// SIOP-ESI/FRD~~
Annual			~~TOP SECRET//FRD~~
Every four months			~~TOP SECRET// SIOP-ESI/FRD~~
Every four months			~~TOP SECRET// SIOP-ESI~~
Every four months			~~TOP SECRET// SIOP-ESI/FRD~~

Every four months	[redacted]	~~TOP SECRET//SIOP-ESI~~
Annual		~~TOP SECRET~~
Annual		~~TOP SECRET//SIOP-ESI/FRD~~
Annual		~~TOP SECRET//SIOP-ESI/FRD~~
Every four months		~~TOP SECRET//SIOP-ESI/FRD~~
Every four months		~~TOP SECRET//SIOP-ESI/FRD~~

~~SECRET~~

Table 4b. SWPS Products - Missile Application (Continued) (U)

~~SECRET~~

Periodicity	Subject/Title/Description	Reference(s)	Classification
Every four months	[redacted]		~~TOP SECRET~~
Every four months			~~TOP SECRET~~
Every four months			~~TOP SECRET~~
Monthly			~~TOP SECRET~~
Every four months			~~TOP SECRET//SI-ESI/FRD~~
Situational			~~TOUO~~
Annual			~~SECRET//FRD~~

USSC 61

Situational	[redacted]	~~TOP SECRET//FRD~~
Situational		~~TOP SECRET//ERD~~
Situational		~~TOP SECRET//SI//TSP//ESI~~
Annual		~~SECRET//RD~~
Situational		~~TOP SECRET//SI//TSP//ESI//FRD~~
Situational		~~TOP SECRET//SI//TSP//ESI~~
Situational		~~SECRET//~~

~~SECRET~~

Table 4c SWPS Products – Aircraft Application (U)

~~SECRET~~

Periodicity	Subject/Title/Description	Reference(s)	Classification
Annual	[redacted]	[redacted]	~~TOP SECRET//RD~~
Annual	[redacted]	[redacted]	~~TOP SECRET//SIOP-ESI//FRD~~
Every four months	[redacted]	[redacted]	~~TOP SECRET//SIOP-ESI//FRD~~
Annual	[redacted]	[redacted]	~~TOP SECRET~~
Annual	[redacted]	[redacted]	~~SECRET~~
Annual	[redacted]	[redacted]	~~TOP SECRET~~
Annual	[redacted]	[redacted]	~~TOP SECRET//SIOP-ESI//FRD~~
Annual	[redacted]	[redacted]	~~TOP SECRET~~
Situational	[redacted]	[redacted]	~~TOP SECRET//SIOP-ESI~~

Every four months	[redacted]	~~SECRET~~
Annual		~~TOP SECRET//STOP ESI//NOFORN/RD//FRD~~
Every four months		~~TOP SECRET//NOFORN~~
Every four months		~~SECRET//NOFORN~~
Annual		~~SECRET//NOFORN~~

~~SECRET~~

Table 4c. SWPS Products – Aircraft Application (Continued) (U)

~~SECRET~~

Periodicity	Subject/Title/Description	Reference(s)	Classification
Every four months	[redacted]		~~TOP SECRET//SI//TK//NOFORN~~
Every four months			~~SECRET~~
Semi annual			~~TOP SECRET//NOFORN~~
Every four months			~~SECRET~~
Annual			~~SECRET~~
Annual			~~SECRET~~
Annual			~~SECRET~~
Every four months			~~SECRET~~
Semi annual			~~TOP SECRET//NOFORN~~

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Semiannual	[redacted]	~~TOP SECRET/NOFORN/WNINTEL~~
Semiannual		~~TOP SECRET/NOFORN~~
Semiannual		~~TOP SECRET/NOFORN~~
Semiannual		~~TOP SECRET/NOFORN~~
Semiannual		~~TOP SECRET/NOFORN~~
Semiannual		~~TOP SECRET/NOFORN~~
Semiannual		~~TOP SECRET/NOFORN~~
Semiannual		~~TOP SECRET~~

~~SECRET~~

Table 4c. SWPS Products Aircraft Application (Continued) (U)

~~SECRET~~

Periodicity	Subject/Title/Description	Reference(s)	Classification
Semiannual	[redacted]		~~TOP SECRET//NOFORN~~
Situational			~~TOP SECRET//NOFORN~~
Situational			~~TOP SECRET//NOFORN~~
Semiannual			~~TOP SECRET//NOFORN~~
Semiannual			~~TOP SECRET//NOFORN~~
Semiannual			~~SECRET//~~
Semiannual			~~TOP SECRET//~~
Semiannual			~~TOP SECRET//NOFORN~~
Semiannual			~~TOP SECRET//NOFORN~~
Semiannual			~~TOP SECRET//NOFORN~~

Semi annual	[redacted]	~~TOP SECRET~~
Semi annual		~~TOP SECRET~~
Semi annual		~~TOP SECRET NOFORN~~
Annual		~~SECRET~~
Annual		~~TOP SECRET~~
Annual		~~SECRET~~

~~SECRET~~

Table 4c. SWPS Products – Aircraft Application (Concluded) (U)

~~SECRET~~

Periodicity	Subject/Title/Description	Reference(s)	Classification
Annual	[redacted]		~~SECRET~~
Situational			~~TOP SECRET/SIOP-ESI~~
Situational			~~TOP SECRET/SIOP-ESI~~
Annual			~~SECRET/ARD~~
Monthly			~~TOP SECRET/SIOP-ESI~~

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Table 11. SWPS Products Analysis (U)

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Periodicity	Subject/Title/Description	Reference(s)	Classification
Annual	[redacted]		~~TOP SECRET// SIOP-ESI~~
Annual			~~TOP SECRET// SIOP-ESI~~
Annual			~~TOP SECRET// SIOP-ESI~~
Annual			~~TOP SECRET// SIOP-ESI~~
Annual			~~TOP SECRET// SIOP-ESI~~
Annual			~~TOP SECRET// SIOP-ESI~~
Annual			~~TOP SECRET// SIOP-ESI~~

~~SECRET~~

Table 4e. SWPS Products – Miscellaneous (U)

~~SECRET~~

Periodicity	Subject/Title/Description	Reference(s)	Classification
Situational	[redacted]		~~TOP SECRET/NOFORN~~
Annual			~~TOP SECRET/RD~~
Semiannual			~~TOP SECRET/RD/NOFORN~~
Annual			~~TOP SECRET/NOFORN/WNINTEL~~

~~SECRET~~

b. (U) **Logistics and Readiness.**[3] SWPS hardware and software maintenance must ensure resources are available when needed to produce the SIOP. Since SWPS is a critical AIS that must be capable of operating 24 hours a day, 7 days a week, [redacted] Because the planning effort is basically a sequential process in which one function is completed or nearly completed before the next step in the process can begin, the critical SWPS hardware and software will be different at each stage in the planning/analysis process. Specific maintenance criteria and procedures necessary to meet this objective are:

(1) (U) Currently, the International Business Machines (IBM) mainframe and SWPS network, along with the associated software, are designated critical at all times. The replacements for these system components (e.g., global servers, backbone communications) and any system software necessary for the applications to function (e.g., operating systems, database management systems, community utilities) would be critical at all times.

(2) (U) As planning moves from one step to the next step in the process, the hardware and software needed to accomplish the step in progress become critical. However, each individual involved with that step may be working on different aspects of the plan; therefore, everyone in the section may not require 100% access to all the SWPS hardware and software associated with that step. As long as the individuals are provided access to the system when needed to meet the time budget requirements shown in figure 5 and can meet the other planning parameters from table 1, availability for that section is considered satisfactory. Borrowing equipment, having the individual work in a different area, or other scenario-dependent work-around procedures are acceptable alternatives for ensuring critical hardware and software are available when needed and that planning parameters are not exceeded.

(3) (U) Maintenance of SWPS hardware will be accomplished by a mixture of government personnel and contractors, working closely with the system configuration management function.

(4) (U) Maintenance of SWPS COTS software will require negotiating with the applicable developer. Because software developers control the access to their source code and usually stipulate licensing requirements, the government may place some contractors on contract to ensure an immediate response capability to correct deficiencies in critical COTS software applications.

[3](U) The present SWPS consists of a software development (DEV), maintenance (MNT), and production (PROD) environments hosted on a single, partitioned mainframe, plus a separate Integrated Processing Facility for contractor development use. For the purposes of this document, unless specifically noted, all requirements shall be assumed to apply only to the PROD system.

(5) (U) Maintenance of SWPS application software is a mixture of government and contractor responsibility. The government will decide if they or a contractor will maintain the application software.

(6) (U) Three factors are essential in promptly correcting a deficiency that is precluding planners from performing their required tasks. These are response times, repair times, and reconfiguration times. Response times will be based on urgency of repair and mission needs and are defined as follows:

(a) (U) The objective is to respond and correct all critical hardware problems within [redacted]

(b) (U) When the planners have determined that COTS software deficiencies have precluded the planning process to continue, they will request an emergency repair. The response times will vary depending upon whether there is an existing contract with the COTS vendor. The government will negotiate the development of a software fix to be available as quickly as possible, and normally will request the contractor to continue the repair effort until the software is operable. The objective is for the contractor to respond within [redacted] and work until the problem is corrected.

(c) (U) For critical software application problems: if the government is responsible for correcting the deficiency, they will work until the problem is corrected; if a contractor is responsible for correcting the deficiency, the government will contact the appropriate contractor and negotiate an immediate response. The objective is for the contractor to respond within [redacted] and work until the problem is corrected.

(d) (U) For non-critical hardware problems, the contractor must respond by the end of the next duty day and correct the deficiency within [redacted] Non-critical software problems will be corrected as quickly as possible, but within the workload capacity of the government or without interfering with a contractors development effort.

c. (U) Critical System Characteristics

(1) (U) General Requirements

(a) (U) Security of the nation requires the capability to continue to produce a strategic nuclear war plan that is at least as good as the plan produced by the current system. However, SWPS must provide the capability to produce strategic war plans that can integrate with those of regional war planning systems. As the worldwide nuclear command, USSTRATCOM must have a strategic planning system that, as a minimum, can interoperate with regional nuclear and conventional planning systems that would either support strategic plans or require deconfliction with strategic plans. The systems with which SWPS must interface are shown in table 5. SWPS' architecture

should comply with Government standards for open systems so that it will allow integration/interfacing with any future capabilities.

(b) (U) The second major general requirement is for SWPS to provide an enhanced adaptive planning/analysis capability to ensure that the NCA has a more flexible response capability. This capability will allow the NCA to develop more timely options worldwide, and be able to execute a more flexible national strategy when dealing with worldwide threats.

(c) (U) Related to an enhanced adaptive planning/analysis capability is the need for SWPS to provide more timely response to the changing environment. In a rapidly changing threat situation, the planners must use the SWPS tools in ways that the original designers of the software may not have envisioned. Depending on the scenario, the geographical region, guidance, tactics, constraints, weapon systems, etc. to be used in an adaptive (crisis) situation may be very different than those used in SIOP planning. [redacted] flexible rules bases, changeable by the planner, should be used. The system must respond quickly to last-minute changes in national guidance or completely new guidance resulting from changes in the world situation. SWPS must provide the capability for the planners to respond to planning/analysis requirements that change due to new, emerging, or mobile threats. The system must also allow for changes in the number, type, and weapon system characteristics of the forces allocated to hold the identified threats at risk.

(d) (U) To provide the capability to measure the success of a given plan or option, SWPS must provide the capability to analyze the degree to which the various war planning objectives are met. Ideally, this capability would allow the planner to analyze how well the plan or options satisfy objectives during the planning process so that adjustments can be made to the plan as it is being developed or as maintenance is being performed.

(e) (U) SWPS must provide the capability to develop both subjective and objective measures of effectiveness (MOEs) which accurately reflect the ability of the plans to meet guidance. Historically, DE has been the MOE used to report the results of the war plan; however, SWPS should have the capability to use and provide results on other MOEs as required. [redacted]

(f) (S) [redacted]

(b)(1)

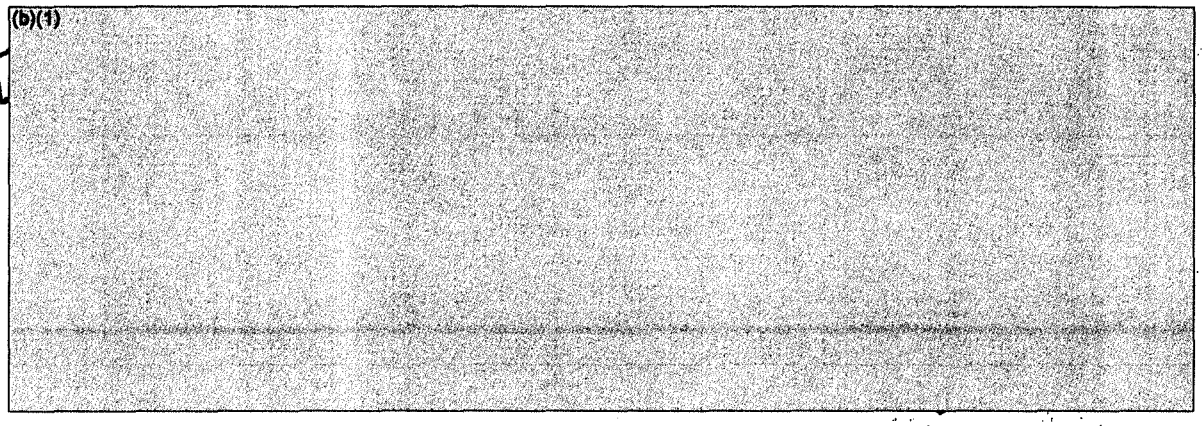

Table 5. SWPS Electronic Interfaces (U)

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Weapon Category	Interface/System	To/From SWPS	Data Exchanged (Categories)	Comments
General	Nuclear Planning and Execution System (NPES)	From	SIOP and theater nuclear planning data	See note 2.
	NATO Nuclear Planning System (NNPS)	From	Target and weapon employment data	See note 3.
	United Kingdom (UK) Liaison Office	To	UK application data	See note 2.
	USSTRATCOM Intelligence Data Handling System (IDHS)	Both	Targets; Defenses	See note 1.
	Defense Mapping Agency (DMA)	To	Mapping data	See note 2.
	Missile and Space Intelligence Center (MSIC)	To	Intelligence	See note 2.
	Joint Staff/J8 (Red Integrated Single Operational Plan (RISOP) gamers)	To	RISOP data	See note 2.

	Air Force Global Weather Central (AFGWC)	To	Weather data	See note 2.
	Weapon system program offices (SPOs) and their contractors	To	Weapon parameters/ data and planning software	See note 2.
	Global Command and Control System (GCCS)	Both	Planning data	See notes 2 and 3.
	Various forward users (see reference 5)	From	Electronic versions of hardcopy products	See note 3. Perhaps via electronic bulletin board service.
	Strategic Defense System (SDS)	Both	Planning data	See note 3.
SSBN	Naval Surface Warfare Center Dahlgren Division (NSWCDD)	Both	SLBM mission planning data and software	See note 1.
	Submarine Retargeting System (SRS)	From	SLBM mission planning data	See note 2.

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Table 5. SWPS Electronic Interfaces (Concluded) (U)

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Weapon Category	Interface/System	To/From SWPS	Data Exchanged (Categories)	Comments
ICBM	Rapid Execution And Combat Targeting (REACT)	From	ICBM mission planning data	See note 1.
Bombers	Air Force Mission Support System (AF MSS)	From	Aircraft and cruise missile mission planning data	See note 2.
	Mission Data Preparation System (MDPS)	From	Aircraft and cruise missile mission planning data	See note 2. This system is planned to be replaced by AF MSS.

	Contingency TACS (Tactical Air Control System) Automated Planning System (CTAPS)	Both	Planning data	See notes 2 and 3.
Tankers	Joint Operational Planning and Execution System (JOPES)	From	Tanker mission planning data	See note 2.
Recce	Combined Mating and Ranging Planning System (CMARPS) (via NPES)	From	Aircraft mission planning data, targets, defenses, reconnaissance objectives, tanker data	See note 2.
NSNF/Regional	Cruise Missile Support Activities (CMSAs)	Both	TLAM-N mission planning data	See note 2.
	Tactical Aircraft Mission Planning System (TAMPS)	Both	DCA mission planning data	See notes 2 and 3.
	Conventional ALCM (CALCM) and conventional TLAM (TLAM-C) mission planning systems	From	Mission planning data sufficient to time and deconflict various strike packages	See note 3.

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Notes: 1. (U) Electronic interface required. The interface must provide both data communication as well data utilization by the relevant application and/or display software.

2. (U) Data exchange mechanism (e.g., tape transfer) required; electronic interface desirable. The data exchange mechanism must provide data utilization by the relevant application and/or display software.

3. (U) Future requirement. Specifics are undefined.

4. (U) USSTRATCOM internal interfaces and non-electronic (e.g., hard copy only) interfaces are not listed. Also, the media by which the interface is effected (e.g., landline, Automated Digital Network (AUTODIN)) are not listed. Reference 5 provides a full list of interfaces.

(g) (U) SWPS must have the capability to incorporate force degrades resulting from maintenance and operational factors into the war plans. This is primarily a plan maintenance function, but it is essential for all planning environments. During normal maintenance or as the result of other unscheduled changes, the system must be able to quantify the impact of changes on plan efficiency and objectives.

(h) (U) SWPS must have the capability to contribute to the analysis of force structure requirements for USSTRATCOM and DoD force structure planning. This analysis must be based on the ability of the forces to meet guidance and required mission effectiveness.

(i) (U) To provide the capability to handle the various levels of classified information input to the system and the materials output from the system, SWPS must have the capability to handle information at different levels of security as well as TOP SECRET (TS)/SIOP-Extremely Sensitive Information (ESI) data. The threshold requirement is for the system to operate in a system high security mode; multilevel security (MLS) is an objective. Protection from unauthorized use of the system or disclosure of its information must be ensured.

(j) (U) SWPS must provide information compatible with encryption and decryption over those communication systems expected to be available in the environments in which the system will be used.

(2) (U) **Deliberate Planning Requirements.** Deliberate SIOP planning refers to the historical strategic nuclear planning and analysis done in support of the SIOP. It consists of preplanning (b)(1) for all three legs of the TRIAD. According to the Living SIOP concept, the deliberate planning process is broken into three sub-processes: (b)(1) (b)(1) major plan revision (b)(1) for force changes or plan inefficiency induced by continual maintenance; and new plan development (b)(1) (b)(1) to accommodate major guidance changes. (See figure 1.) The type and length of process to be invoked for a given change would be negotiated between USSTRATCOM and the Joint Staff depending on the magnitude of the change.

(a) (U) SWPS must provide the capability to produce a core strategic nuclear war plan that consists of large preplanned attack options (b)(1) using all three legs of the TRIAD within the projected force levels and during the time periods stated in the arms control agreements previously addressed. This means that the system must be able to accommodate changing force levels/mixes as arms control agreements are implemented over the next ten years. There will also be a continuing need for some (b)(1) Thus, besides the large preplanned attack options, SWPS must also provide the capability to build, time, deconflict, and evaluate (b)(1) that are responsive to changing guidance, threats, and forces worldwide.

(U) (U) To ensure accurate weapons characteristics are used in the planning/analysis process, SWPS must incorporate the actual or best modeled characteristics of planned weapons rather than notional values. The current[4] weapon systems are:

1. (U) MIRVed ICBMs (currently, Minuteman (MM) III and Peacekeeper) and single RV MM III in the future to comply with START II.

2. (U) MIRVed SLBMs (C-4, D-4 and D-5).

3. (U) Bombers (B-52, B-1 and B-2) using gravity bombs, short-range attack missiles (SRAMs), and nuclear or conventional cruise missiles.

(c) (U) The objective is for SWPS to be able to plan the core plan in [redacted] (See table 1 for specific start/stop times/events, unit-level planning time budget, timeline objectives and thresholds.)

(d) (U) Another major change from the existing planning process is the requirement to be able to accomplish [(b)(1)] maintenance [(b)(1)] for all three legs of the TRIAD.

(e) (U) SWPS must provide the capability to perform interactive war game analysis to determine the effects of constraints on the war plan. The planner should be able to perform "what if" analyses, propose various constraints, and choose among options. The planner should have the capability to determine the effects of changes and modifications in constraints (e.g., JSCP) to the war plan during the planning process. The system should also display the degree of the sensitivity of the constraint for the option being planned.

(f) (S) [(b)(1)] [(b)(1)] [(b)(1)] [(b)(1)]

(3) (S) **Adaptive Planning Requirements.** [(b)(1)] [(b)(1)]

[(b)(1)]

USSC b1 development and dissemination of adaptively planned options within the timelines specified in table 1.

(a) ~~(S)~~ To provide the degree of planning flexibility required during a crisis, SWPS must be capable of developing worldwide nuclear options against evolving, emerging, and changing threats when directed by the NCA or the Joint Chiefs of Staff (JCS). The system must be capable of responding within the timelines set forth by JSCP

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[redacted]

(b) (U) To support adaptive war planning, there are certain planning system capabilities needed for the NCA, Chairman Joint Chiefs of Staff (CJCS), nuclear capable CINCs, and the National Military Command System (NMCS) nodes and command centers (e.g., National Military Command Center (NMCC), Alternate National Military Command Center (ANMCC), National Airborne Operations Center (NAOC), CINC Mobile Alternate Headquarters (CMAH)). Crisis war planning dictates the use of common software, to the extent practicable, among NMCS ground mobile, airborne and fixed command centers. Planning input and output must be compatible with current and future command control and communications (C^3) systems and for all phases of conflict.

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[redacted]

(a) (U) USSTRATCOM contributions to the final theater plan may include one or more of the following: aimpoint construction; course of action development; "stick route" development for air vehicles; timing and deconfliction; and

[5](U) The timeline for adaptive planning is different than the timeline for the core plan previously addressed because the core plan timeline includes plan dissemination and unit-level planning activities.

plan analysis. SWPS must provide the capability to support the planning of theater forces according to the following SPS timeline objectives. (See table 1 for specific start/stop times/events, time budgets, timeline objectives, and thresholds.)

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[redacted]

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[redacted]

(b) (U) To ensure concurrent planning, USSTRATCOM and regional planning systems must be compatible/interoperable (i.e., should be able to exchange/share data electronically). (See table 5 for a list of SWPS interfaces.)

(c) (U) USSTRATCOM is the plan manager for all theater-related nuclear planning and analysis. Therefore, SWPS must be able to electronically integrate the planning of theater forces—both nuclear and conventional. USSTRATCOM must also have an automated capability to analyze the resulting theater nuclear plans for probability of arrival and other mission success factors.

(5) (U) Force Requirements

(a) (U) SWPS must provide the crews with information necessary to accomplish their mission (e.g., targeting information, communications procedures, command and control procedures, and report back procedures).[6] In the changing environment of the future, all weapon systems must be considered for use in numerous scenarios worldwide. Therefore, SWPS must be capable of supporting war plans throughout all phases of conflict, from peacetime through global nuclear war, for bombers, cruise missiles, ICBMs, SSBNs, and support aircraft. Additionally, the system must be flexible enough to accommodate changes in the future as the force mix changes.

(b) (U) The electronic products/data of SWPS must be compatible with the weapon system software for which the plans are being prepared (see table 5).

(c) (U) SWPS must provide the capability to consider actual weapons description data and weapon effects data to ensure that each weapon is capable of accomplishing its assignment. Similarly, the system must ensure that each weapon system can make its assigned target time or other timing constraints.

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[6](U) Some of the information provided to the crews comes from other sources such as the unit-level planning systems. This is true of all of the force requirements covered in this section (e.g., ICBM requirements, SSBN requirements). The products listed in table 4 define the exact format and content of data to be provided by SWPS.

(d) U) SWPS must have a capability to provide the force providers (United States Transportation Command (USTRANSCOM), United States Atlantic Command (USACOM), United States Pacific Command (USPACOM)) with force requirements for execution of the war plan. At a minimum, this information must include commit lists, generation timing, and degrade lists. Under the GCCS concept of operations, there may be a future need for SWPS to support near real-time conferencing among force providers and users.

(e) (U) Besides tanker aircraft, USTRANSCOM provides transport to support the regeneration of USSTRATCOM forces. SWPS must be compatible with the planning and execution system used by USTRANSCOM.

(f) (U) There are a number of overall requirements specific to the individual weapon systems, as discussed in the following paragraphs. Reference 8 identifies C^4I capabilities necessary to meet the above requirements

1. (U) ICBM Requirements

a. (U) To ensure that all missiles are capable of launching and striking designated targets, the targeting, timing, and execution information provided by SWPS must be electronically compatible with the existing and planned (i.e., REACT) ICBM computer software and must not cause field aborts above the specified threshold. (See table 1.)

b. (U) SWPS must be flexible to ensure that ICBMs can meet both preplanned and adaptively planned force commits.

c. (U) Crews must be provided with adequate instructions so that they can accurately target, time, and execute their missiles. Adequate instructions must be provided for both preplanned and adaptively planned targets. Changes and updates to the plan must be provided to the crews, with an adequate amount of time for updating the missiles.

d. (U) An important function of determining the reliability and effectiveness of the ICBM force is the Follow-On Test and Evaluation (FOT&E) program. To support FOT&E, SWPS must be able to provide the appropriate data and software.

2. (U) SSBN Requirements

a. (U) The targeting, timing, and execution information provided by SWPS must be compatible with the existing SSBN/SLBM computer software at NSWCDD to ensure that all missiles are capable of launching and striking their designated targets.

b. (U) The SSBN forces must be capable of launching against adaptively planned targets, as well as preplanned targets.

c. (U) Crews must be provided with adequate instructions so that they can accurately target, time, and execute their missiles. Adequate instructions must be provided for both preplanned and adaptively planned targets. Changes and updates to the plan must be provided so that the crews will have adequate time to update their missiles.

3. (U) Bomber Requirements

a. (U) In conjunction with unit-level planning systems such as AF MSS, SWPS must provide the bomber crews with flight information for their aircraft and weapons. For aircraft, these plans must include departure instructions, air refueling information, action points, targeting information, threat information, communications procedures, safe passage procedures, post-strike base, and recovery procedures for returning to the United States for reconstitution. For cruise missiles, plans must include the route of flight from launch to target, with heading, altitude, and velocity planned for each route segment. Plans must include adequate information for use of the various weapons, such as release altitudes and fuse and timer settings.

b. (U) An important function of determining the reliability and effectiveness of the cruise missiles is the FOT&E program. To support FOT&E, SWPS must be able to provide the appropriate data and software.

4. (U) Tanker Requirements

a. (U) To support worldwide missions of numerous types of aircraft, SWPS must provide the tanker force with launch and recovery base information. SWPS must also provide the tanker force with (b)(1) plans, tanker commit lists, and (b)(1) procedures.

b. (U) The tanker crews must have detailed flight plans for their aircraft. These plans must include departure instructions, route of flight information, (b)(1) procedures, as well as air refueling information concerning the receiver type, location, amount of fuel to be transferred, and communications procedures. Should the planned receiving aircraft fail to arrive at the refueling point, the tanker crew must have procedures for refueling other aircraft. The tanker force must also have post-refueling base/recovery procedures.

5. (U) Reconnaissance Requirements. Reconnaissance needs the ability to: determine targets struck in each option; determine the destroyed and surviving defenses in each option; plan reconnaissance missions based on the attack option(s) objectives, available staging bases, and enemy defenses; plan any tanker support requirements; pass mission tasking, objectives, tanker support, and communications

information to reconnaissance assets; and receive reconnaissance mission results to update applicable target databases.

a. (U) In conjunction with unit-level planning systems (e.g., AF MSS), SWPS must provide the reconnaissance assets with mission material sufficient to support their mission. This may include: (b)(1) (b)(1)

b. (U) The pertinent IMINT and SIGINT objectives must be incorporated into the appropriate tasking documents, along with the implementation guidance.

c. (U) An application timing plan is required for the reconnaissance assets.

d. ~~(S)~~ (b)(1) (b)(1) USSC 61

e. (U) To support worldwide missions, SWPS must provide the reconnaissance force with worldwide launch and recovery base information.

f. (U) In order to perform strategic planning properly, the planning process must be able to task the overhead assets.

g. (U) The data collected by reconnaissance must be reported in a timely manner and be able to be handled by the planning system after it is processed.

h. ~~(S)~~ (b)(1) (b)(1) USSC 61

(6) (U) **USTRANSCOM Requirements.** USTRANSCOM must know the strategic lift requirements, deployment locations, and timing for transporting personnel and equipment to support tanker, bomber, and reconnaissance operations. Capabilities for interoperation with USTRANSCOM and its AISs must assure that users, mission processes, and related information bases are fully mission effective, valid, reliable, secure, and timely.

5. (U) **INTEGRATED LOGISTICS SUPPORT (ILS).** Integrated logistics support provides management and technical activities a disciplined approach to integrate, develop, and acquire support requirements at an affordable life cycle cost without sacrificing mission effectiveness. Integral to meeting the overall mission effectiveness of SWPS are the critical elements of logistical supportability and system readiness that strive to ensure both hardware and software maintenance will conform to the principles of integrated logistics support. Supporting these critical elements are other elements that comprise the basic components of an ILS program, such as maintenance planning, support equipment, human systems engineering, and computer support resources.

a. (U) Maintenance Planning

(1) (U) To ensure SWPS is available to planners when needed, contractors will be used to maintain the system hardware and much of the application software. The government will continue to use a Help Desk for reporting and monitoring deficiencies which affects system hardware availability. All software is and will continue to be thoroughly tested before being used in an operational configuration and placed on the production mainframe, or its successor. The IPF is used to conduct unit-level tests and Developmental Test & Evaluation (DT&E) tests and to debug applications prior to installing the software on the production mainframe. The functional users in J5 will conduct test and evaluation (T&E) on the development system using test libraries from the production system. If a deficiency is identified on contractor-developed software, the government will submit an urgent software deficiency report directly to the developer to begin the repair process. If the deficiency affects government-developed software, the appropriate USSTRATCOM agency will respond to the software deficiency report. If the code has been developed by a government agency other than USSTRATCOM, the deficiency is handled through other government channels as expeditiously as possible.

(2) (U) The advancements in data automation systems has, in many instances, negated the need for preventative maintenance (PM). This is especially true for electronic systems, but mechanical systems may still require PM. Therefore, the government will use the manufacturer's recommendation to decide, on a case-by-case basis, if a PM program on a specific system is needed. Normally, PM will be performed concurrently with corrective maintenance. PM does not include the installation of new versions of hardware and software.

(3) (U) The installation of hardware normally is a joint government and contractor effort. This includes configuring and testing the equipment for compliance with the SWPS CEP and compatibility with the existing system to include the SWPS network. Once these minimum requirements have been satisfied, the hardware can be installed and connected to the local area network (LAN). The government may decide that contractors should do the complete installation; however, the government will verify that the equipment is operating satisfactorily before declaring the hardware as operational.

(4) (U) The current hardware configuration has the production and development mainframe partitioned so that if the primary processor is inoperable, another section of the mainframe can be used (see reference 5). If the production and development mainframe were totally inoperable, the planning function would be moved to an off-site location. The location of the off-site is predicated on the site not being affected by the catastrophic event that disabled the production and development mainframe. The off-site location can either be on or off Offutt Air Force Base (AFB). [redacted] This alternate site is intended to provide limited maintenance and adaptive changes to the SIOP while TRICOMS is disabled. This site will not operate as a remote facility. Limited war planning functions will be relocated to the alternate location. Processing at the alternate site will require transporting the most recent system, database, and application tapes to the site along with war planners, systems programmers, storage management, database, and applications specialists.

(5) (U) Commercial power companies will be the primary source for electrical power. However, auxiliary power sources to support the USSTRATCOM complex, buildings 500 and 501, include diesel generators and batteries. The uninterruptable power supply (UPS) must provide a continuity of power until the commercial power is restored or auxiliary power comes on line. The minimum rating for UPS under load is (b)(1) [redacted]

(6) (U) Crucial to the operational readiness of SWPS is a proper atmospheric environment. This requires the availability of chilled-water, air conditioning, and air handling systems. These systems currently exist and must be maintained to support the current and modernized SWPS.

b. (U) Support Equipment. Contractors will provide and maintain any support equipment needed to maintain the hardware.

c. (U) Human Systems Integration. This paragraph describes Human Systems Integration (HSI) requirements of SWPS regarding integrated manpower, personnel, training, and safety.

(1) (U) Manpower support will be a mix of organic military and civil service personnel and contractor personnel.

(2) (U) Manpower requirements will be based on identification of performance factors and workload. Currently, the Joint Table of Distribution (JTD) reflects the manpower requirements to maintain and operate the existing system.

(3) (U) Training will be provided for personnel who manage, operate, and maintain SWPS hardware and software resources and for SWPS operational users.

Normally, this training will be provided, as part of the contract, by the vendor either during the installation of the new hardware or software or at a separate training session. The government will determine the format for the training and may waive this requirement if the new hardware or software is not significantly different from the existing system. The government will decide if any contractors will also be trained. Training on current and emerging software and hardware technologies will be conducted either by the government or through vendor-provided courses.

(4) (U) SWPS human performance involving human factors engineering and ergonomics, along with considerations of safety and health hazards, will be integrated into system support. Specifically, the design of any system must take into consideration the work environment (24 hours a day, 7 days a week) interaction amongst the J5 staff and between the J5 and J6 staffs, the portability of the system in the event of a catastrophe, changes in national guidance, and flexibility to support changing missions, especially deliberate and adaptive planning.

d. (U) Computer Resources. This paragraph addresses the specific computer resource requirements, capabilities, and control. The TAFIM and *SWPS Computing Environment Plan* provide general guidance regarding the languages, databases, and architectures for developing and maintaining information systems and SWPS, respectively.

(1) (U) SWPS computer resources will be acquired and will operate within constraints imposed by fiscal and operational considerations. These include use of government furnished facilities and equipment, compliance with standards to ensure an open system architecture, interoperability, and stringent security requirements according to the C^{4}I for the Warrior objectives.

(2) (U) USSTRATCOM will provide SWPS with its own computer support resources and will be responsible, by means of organic resources and/or contractors, for operation, engineering, and training.

(3) (U) SWPS will maintain configuration control of all its resources. An internal configuration control board (CCB) will be established to authorize changes to the SWPS hardware and software.

(4) (U) Currently, the critical SWPS hardware components, from a maintenance perspective, include: the mainframes, workstations, printers, storage devices, and the associated communication network. During the modernization effort, the objective is to move to a distributed, workstation-based, client-server environment. The critical hardware components then will include the replacement items for these components and could include personal computers, depending upon technologies and the final configuration selected.

(5) (U) To the extent practicable, application software should not have (b)(1) a flexible, user-changeable rules base should be

used. Also, standards-based graphical user interfaces (GUIs) should be used whenever possible to facilitate the planning.

e. (U) Other Logistics Considerations. Other relevant logistical considerations are discussed below.

(1) (U) Existing hardware and most software will be supported through in-place contracts.

(2) (U) New acquisition support requirements will be approved by the SWPS Program Director.

(3) (U) Technical data and software documentation will be provided to contractors as Government Furnished Information (GFI).

(4) (U) SWPS will be located in facilities that meet air conditioning, power, space, and related environmental requirements.

(5) (U) The government will not maintain spares for the system.

(6) (U) Only the government can authorize the contractor to use repaired components and to cannibalize from inoperable, non-critical hardware to repair critical hardware. This policy is necessary to ensure that the system is not degraded by using parts based on older technology.

(7) (U) To support adaptive/crisis planning requirements, the government may request contractors to work deficiencies normally considered non-critical under the rules governing critical deficiencies.

(8) (U) Technical data will be required. For COTS hardware and software, the user's guide and other documentation provided by the vendor, when the hardware and software are delivered, is considered adequate. For contractor- and government-developed SWPS applications, the documentation will be in accordance with DoD Standard 2167A or DoD Standard 498, the pending replacement directive for 2167A, as modified by the government in the contractor's statement of work.

6. (U) INFRASTRUCTURE SUPPORT AND INTEROPERABILITY

a. (U) Command, Control, Communications, and Intelligence (C^3I)

(1) (U) SWPS will be functionally, physically, and electronically integrated into the overall USSTRATCOM C^3I architecture which also supports USSTRATCOM intelligence, C^2, and office automation. Except at the secure perimeter of the system, SWPS will be physically and electronically isolated into a TOP SECRET/SIOP-ESI environment. Voice support will be provided by organic USSTRATCOM assets.

(2) (U) Under man-in-the-loop control, the communication infrastructure supporting SWPS should be capable of transmitting multiple security levels of information. The classification of data being transmitted will range from UNCLASSIFIED to TOP SECRET/SIOP-ESI. An accredited, secure guard is used to interface SWPS to the USSTRATCOM Intelligence Data Handling System (IDHS) in order to receive targeting information for SIOP planning purposes. All other interfaces to external systems running at other than TOP SECRET/SIOP-ESI will be under man-in-the-loop control.

(3) (U) SWPS currently has a network database management system (DBMS) consisting of 24 separate database components. The objective is to transition to a normalized, relational DBMS (RDBMS), to eliminate redundant data elements, to standardize the remaining data elements, and to access the database using a standard application programming interface (API).

(4) (U) All changes to the system must incorporate the goals and objectives of the C^4I for the Warrior, to include having the capacity to be interoperable with other DoD systems, providing for the maximum use of COTS and non-development items (NDI), and incorporating advanced techniques and MLS solutions where required and feasible.

b. (U) Transportation and Basing

(1) (U) SWPS will be physically located in buildings 500 and 501, USSTRATCOM, Offutt AFB, Nebraska.

c. (U) Standardization, Interoperability, and Commonality

(1) (U) A major goal of SWPS modernization is to reduce dependence on sole source vendors by creating an open system architecture that relies on using the best COTS technology. To achieve interoperability with other fixed and mobile DoD planning systems, SWPS must comply with DoD standards for open systems as identified in the TAFIM. The goal is to evolve to an open infrastructure that provides flexibility, interoperability, portability, supportability, security, and reliability. This means evolving to an open client/server technology by migrating the applications to workstations,

building standard APIs, and providing a graphical user interface for war planners. The *SWPS Computing Environment Plan* (reference 5) identifies the detailed architecture and standards used by the system. SWPS will comply with all mandatory higher order language (HOL) and Federal Information Processing Standards (FIPS) publications.

(2) (U) To ensure ease of use of SWPS by the operational planners, a common GUI will be provided where practicable. This common GUI will provide a standardized, user-friendly methodology for performing the activities supported by SWPS. GUI design details will consider the functional, technical, and training requirements and standards promulgated by DoD. (See references 5 and 12.)

(3) (U) SWPS and its associated hardware and software will conform to the principles of openness, commonality, interoperability, portability, and shared resources. COTS or government off-the-shelf (GOTS) solutions should be used to satisfy planning needs, whenever practicable. When practicable, each SIOP development tool should use a flexible, user-changeable rules base rather than hard-coded guidance.

(4) (U) To the extent practicable, SWPS will be capable of implementing new technology, standards, and grow in modular increments in response to new requirements.

d. (U) Mapping, Charting, and Geodesy Support

(1) (U) There are currently over 17 operational applications that require a variety of MC&G data. These applications use data in various formats and DMA products. SWPS will continue to require periodic updates of the geographic maps, charts, ephemeris data, and geodesic models. As DMA moves to standardize product formats and reduce the number of specialized or customized products, the application software must be modified to use the standard DMA format.

(2) (U) The SWPS architecture must allow various workstations the capability to store, maintain, retrieve, and manipulate MC&G data. The command goal is a single spatial data server (SDS), containing the most current MC&G data in digital form, to provide data to both SWPS and IDHS. The SDS will be incorporated into IDHS in FY95, but technical limitations and security issues may prevent expanding this SDS to also serve SWPS. In this case, SWPS must have a duplicate SDS to provide the MC&G services required by the mission planning workstations. The modernization plan must address both possibilities: MC&G data provided in a standard format from a server already purchased and operational within USSTRATCOM, or MC&G data stored on a server dedicated strictly to SWPS. (See references 6 and 7.)

e. (U) Environmental Support

(1) (U) SWPS will be located primarily[7] in buildings 500 and 501 at Offutt AFB, Nebraska. No special environmental requirements, other than those provided for the safety of personnel and resources, such as lightning and storm advisories, are identified.

(2) (U) The equipment will be able to operate within the existing power, air conditioning, physical sizing, and any other environmental restrictions of the base.

(3) (U) No environment restrictions or limitations, outside the vendors' specifications, have been identified for government-furnished equipment (GFE).

[7](U) Some of the SWPS planning tools (e.g., the National DGZ List (NDL) Integrated Development System (NIDS) and the Missile Graphical Planning System (MGPS)) may be integrated with NPES for deployment to mobile environments. The environmental requirements for these tools are beyond the scope of this ORD.

7. (U) FORCE STRUCTURE

a. (U) The final system configuration will support two environments: an operational, testing, and training environment capable of handling TOP SECRET/SIOP-ESI data, and a software development, testing, and integration environment, capable of handling SECRET data. Except for data, these systems will be functionally identical (i.e., have the same "look and feel") to the users of the system and to the operational software. Both of these systems will be physically located in buildings 500 and 501, USSTRATCOM, Offutt AFB, Nebraska. Both systems will run at system high; full MLS is an objective.

8. (U) SCHEDULE CONSIDERATIONS

a. (U) The requirement is to field a planning system with an initial operational capability (IOC) in five years, with a final operational capability (FOC) in seven to ten years. This may need to be accelerated to respond to accelerated force structure changes/reductions.

(1) (U) IOC will be achieved when all the modifications to the planning and analysis tools needed to meet the system level performance requirements are complete and operational. This includes modernization of the SWPS targeting, allocation, missile application, aircraft application, and production activities as defined in the SWPS FEA (reference 2). These modifications are projected to be complete by FY00.

(2) (U) FOC will be achieved when all the modernization to the SWPS hardware and software needed to meet the system level performance requirements are complete and operational. This includes the IOC capabilities plus the analysis and information management improvements as defined in the SWPS FEA (reference 2). The final hardware installation and testing are projected to be complete by FY03.

b. (U) Final declaration. CINCSTRAT reserves the right to declare when SWPS attains IOC and FOC.

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7. USSTRATCOM, *Spatial Data Server (SDS) Requirements Analysis Technical Information Report (TIR) (U)*, 21 October 1993 (UNCLASSIFIED)

8. USSTRATCOM, *USSTRATCOM Command Control, Communications and Intelligence (C^3I) Systems Master Plan (U)*, October 1995 (~~SECRET~~)

9. Defense Information Systems Agency (DISA), *Human Computer Interface Style Guide: Version 2.0 (U)*, 1992 (UNCLASSIFIED)

WORKING DEFINITIONS

(U) **Commit lists** provide the number of forces required from each force provider to execute the plan. **Generation timing** establishes the schedule for providing the forces to USSTRATCOM. **Degrade lists** tell the providers the priority of the provided forces.

(U) A **field abort** is a condition where the planning data sent from the Headquarters for implementation in a particular weapon or weapon system at an aircraft or ICBM unit, or at NSWCDD is rejected by the weapon fire control system as being infeasible.

(U) The **Integrated Processing Facility (IPF)** is a facility at USSTRATCOM that is used to develop, test, and integrate SWPS software. It is a mirror of, but physically distinct from, the production system used to develop the SIOP.

(U) **Planning** includes the following types of activities: **Deliberate planning** encompasses the day-to-day war planning activities that support preplanned nuclear options. **Adaptive planning** includes *ad hoc* planning activities necessary to plan small nuclear options. Both types of planning are conducted from a fixed facility. For the purposes of this document, **fixed planning** refers to planning at USSTRATCOM.

(U) **Stable nucleus** is a process-driven concept to save planning time and resources. The stable nucleus is a pool of weapon/target assignments that, historically, do not change significantly from plan to plan. The concept is to not replan these assignments, if possible, but simply to carry them over from the previous plan.

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ACRONYMS

Acronym	Definition
ABM	anti-ballistic missile
ACC	Air Combat Command
ACE	Allied Command Europe
ACM	advanced cruise missile
AF	Air Force
AFB	Air Force Base
AFGWC	Air Force Global Weather Central
AF MSS	Air Force Mission Support System
AFSARC	Air Force Systems Acquisition Review Council
AFSATCOM	Air Force Satellite Communication
AFSPACECOM	Air Force Space Command
AIS	automated information system
AJNPE	Alternate Joint Nuclear Planning Element
ALCM	air-launched cruise missile
ALCS	Airborne Launch Control System
ANMCC	Alternate National Military Command Center
API	application programming interface
A_o	operational availability
ARMS	Aircraft Routing and Maintenance System
ASA	Automated SIOP Allocation
AUTODIN	Automated Digital Network
BDA	bomb damage assessment
bps	bits per second
C2	command control
C3	command control and communications
C^3I	command control, communications, and intelligence
C^4I	command control, communications, computers, and intelligence
CADOB	Consolidated Aerospace Defensive Order-of-Battle
CALCM	conventional air-launched cruise missile
CATJPIC	Category Code Joint Plan Interim Changes
CBW	chemical and biological warfare
CCB	Configuration Control Board
CDE	compound damage expectancy
CEP	circular error probable, also computing environment plan
CIAD	Command Intelligence Architecture Document
CIM	Corporate Information Management
CINC	Commander in Chief

CINCACOM	CINC Atlantic Command
CINCPAC	CINC Pacific Command
CINCSTRAT	CINC USSTRATCOM
CIS	Commonwealth of Independent States
CJCS	Chairman Joint Chiefs of Staff
CMAH	CINC Mobile Alternate Headquarters
CMARPS	Conventional Mating and Ranging Planning System
CMSA	Cruise Missile Support Activity
CMF	combat mission folder
COA	course of action
CofE	consequences of execution
CONOPS	concept of operations
CONUS	continental United States
COTS	commercial off-the-shelf
CTAPS	Contingency TACS (Tactical Air Control System) Automated Planning System
CTF	Combined Task Force
CTR	Combined Timing and Resolution
CvDE	coverage damage expectancy
DCA	dual capable aircraft
DE	damage expectancy
DEV	software development facility
DGZ	desired ground zero
DIA	Defense Intelligence Agency
DISA	Defense Information Systems Agency
DBMS	database management system
DMA	Defense Mapping Agency
DMAAC	Defense Mapping Agency Aerospace Center
DML	data manipulation language
DoD	Department of Defense
DPG	Defense Planning Guidance
DT&E	developmental test and evaluation
DTUC	Data Transfer Unit Cartridge
EAP	emergency action procedure
ELINT	electronic intelligence
EP	entry point
ESI	Extremely Sensitive Information
EURTARG	European Target Summary
EWO	emergency war order
FAT	fatality
FDM	Force Direction Message
FEA	Functional Economic Analysis

FIPS	Federal Information Processing Standard
FLAG	Forward Located Alert Generation
FOC	final operational capability
FOT&E	follow-on test and evaluation
FOUO	for official use only
FPI	functional process improvement
FRD	formerly restricted data
FY	fiscal year
GCCS	Global Command and Control System
GFE	government-furnished equipment
GFI	government-furnished information
GOSIP	government open systems interconnection profile
GOTS	government off-the-shelf
GUI	graphical user interface
HOB	height of burst
HOL	higher order language
HQ	Headquarters
HSI	human systems integration
IBM	International Business Machines
ICBM	intercontinental ballistic missile
IDB	Integrated Database
IDHS	Intelligence Data Handling System
ILS	integrated logistics support
IMINT	imagery intelligence
IOC	initial operational capability
IPF	Integrated Processing Facility
IPL	Integrated Priority List
ISS	Intelligence Support Squadron
JCS	Joint Chiefs of Staff
JOPES	Joint Operations Planning and Execution System
JPIC	Joint Plan Interim Change
JS	Joint Staff
JSCP	Joint Strategic Capabilities Plan
JSTPS	Joint Strategic Target Planning Staff
JTD	Joint Table of Distribution
kg	kilograms
km	kilometers
LAN	local area network
LAO	Limited Attack Option
LRP	launch reference point

LU	logical unit
MAISRC	Major Automated Information System Review Council
MAO	Major Attack Option
MDPS	Mission Data Preparation System
MC&G	mapping, charting, and geodesy
MIDE	mean installation damage expectancy
MGPS	Missile Graphical Planning System
MIIPS	Military Intelligence Information Processing System
MIRV	multiple independently targeted reentry vehicles
MLS	multilevel security
MM	Minuteman
MNT	software maintenance facility
MOA	memorandum of agreement
MOE	measure of effectiveness
MRT	minimum reaction time
MSIC	Missile and Space Intelligence Center
MTTR	mean time to repair
NAOC	National Airborne Operations Center
NATO	North Atlantic Treaty Organization
NBC	nuclear, biological, and chemical
NCA	National Command Authority
NDI	non-development item
NDL	National DGZ List
NEREP	Nuclear Execution and Reporting Plan
NF	no foreign nationals
NIDS	NDL Integrated Development System
NIE	National Intelligence Estimate
NMCC	National Military Command Center
NMCS	National Military Command System
NNPS	NATO Nuclear Planning System
NOMS	Nuclear Operations Monitoring System
NPES	Nuclear Planning and Execution System
NRL	NUWEP Reconnaissance List
NRTM	near real-time maintenance
NSA	National Security Agency
NSNF	non-strategic nuclear forces
NSTL	National Strategic Target List
NSWCDD	Naval Surface Warfare Center Dahlgren Division
NTB	National Target Base
NUWEP	Nuclear Weapons Employment Plan
NWRP	Nuclear Weapons Recap Print
O&S	operations and support

OAS	Offensive Avionics System
OPlan	operational plan
ORD	Operational Requirements Document
OT&E	operational test and evaluation
OUSD	Office of the Under Secretary of Defense
PA	probability of arrival
PAR	population at risk
PD	probability of damage
PCA	probability of conflicting arrival
PLCA	Preparatory Launch Commands-Alfa
PM	preventative maintenance
POSIX	Portable Operating System for Information Exchange
PRC	Peoples Republic of China
PROD	SIOP production facility
PSB	post-strike base
PTP	probability to penetrate
RB	reentry body
RDBMS	relational database management system
REACT	Rapid Execution and Combat Targeting
RFTL	Reserve Force Target List
RISOP	Red Integrated Single Operational Plan
RT	relocatable target
RV	reentry vehicle
SAC	Strategic Air Command
SACDIN	SAC Digital Network
SACEUR	Supreme Allied Command Europe
SAOB	Sortie Air Order-of-Battle
SCI	Sensitive Compartmented Information
SDS	Strategic Defense System, also Spatial Data Server
SHAPE	Supreme Headquarters Allied Powers Europe
SIDA	Single Integrated Database
SIGINT	signals intelligence
SIOP	Single Integrated Operational Plan
SIPS	Submarine Interactive Planning System
SIR	SIOP Imagery Requirements
SLBM	submarine-launched ballistic missile
SMARP	Strategic Mating and Ranging Program
SMDPS	Strategic Mission Data Preparation System
SPMO	Strategic Planning Modernization Office
SPO	System Program Office
SPS	Strategic Planning Study
SPSG	Strategic Planning Study Group

SQL	structured query language
SRAM	short-range attack missile
SRF	Secure Reserve Force
SRS	Submarine Retargeting System
START	Strategic Arms Reduction Talks
supp	supplemental DGZ
SWPS	Strategic War Planning System
TACAMO	Take Charge And Move Out
TACS	Tactical Air Control System
TAFIM	Technical Architecture Framework for Information Management
TAMPS	Tactical Aircraft Mission Planning System
TARPS	Tactical Airborne Reconnaissance Pod System
T&D	timing and deconfliction
TDI	Target Data Inventory
TERCOM	terrain contour map
TLAM-C	Tomahawk Land Attack Missile - Conventional
TLAM-N	Tomahawk Land Attack Missile - Nuclear
TNO	theater nuclear option
TRICOMS	TRIAD Computer System
TS	Top Secret
TSC	time sensitivity code
UK	United Kingdom
UKLC	United Kingdom Liaison Cell
UN	United Nations
UPS	uninterruptable power supply
US	United States
USACOM	United States Atlantic Command
USPACOM	United States Pacific Command
USSTRATCOM	United States Strategic Command
USSR	Union of Soviet Socialist Republics
USTRANSCOM	United States Transportation Command
UTC	Urgent Target Change
WIN	WWMCCS Interface Network
WMD	weapons of mass destruction
WPN	weapon
WWMCCS	Worldwide Military Command and Control System