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Overview
of 12 Integrated Product Support Elements

Defense Acquisition University

Certification Training | Knowledge Sharing | Continuous Learning | Mission Assistance

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AVIATION AND MISSILE COMMAND'S LONG TERM STRATEGIC OBJECTIVE

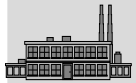
"Compare Current U.S. Army Aviation and Missile Command (AMCOM) Logistics Center (ALC) centralized functions against future Product Support Management (PSM) mission to eliminate any Integrated Product Support (IPS) gaps and to ensure ALC capability to support PSM mission"

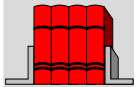
Commanding General AMCOM

INTEGRATED PRODUCT SUPPORT

Design Interface

- Sustaining Engineering
- Supply Support
- Maintenance Planning & Management
- Packaging, Handling, Storage &Transportation (PHS&T)
- Technical Data
- Support Equipment
- Training & Training Support
- Manpower & Personnel
- Facilities & Infrastructure
- Computer Resources

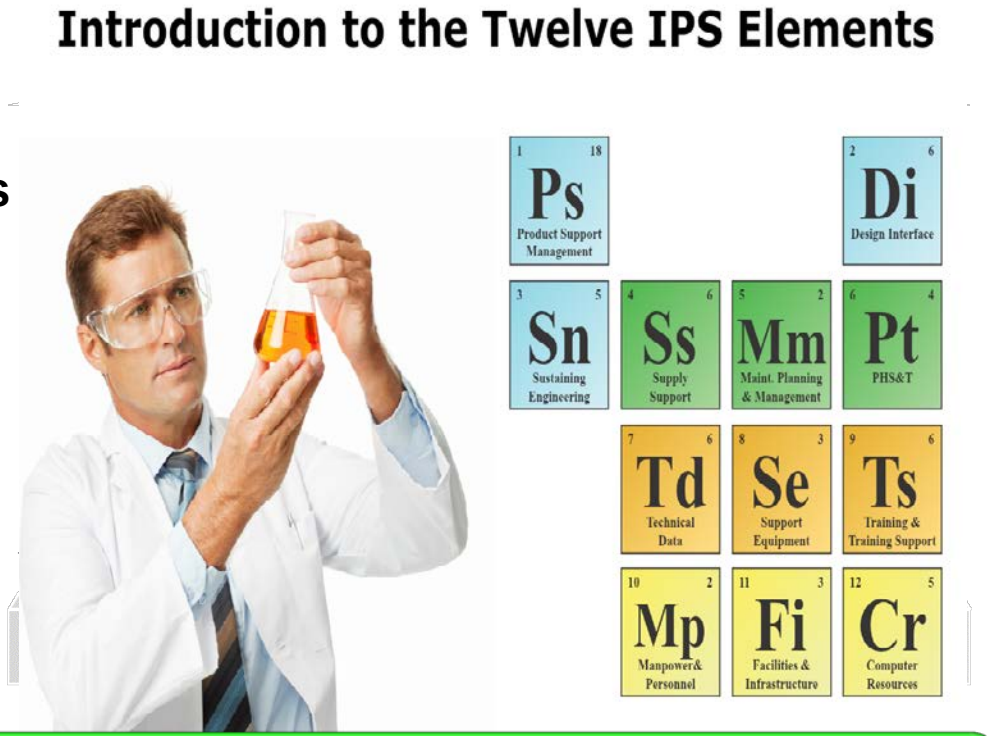



Product Support Management

Product Support is enabled by 12 Integrated Product Support (IPS) Elements designed to deliver system readiness & availability while optimizing system life cycle cost

AGENDA ITEMS

- Overview of Elements
- New Policy and Guidance
- Description and Purpose of Elements
- Integration and Product Support Management
- Life Cycle Sustainment Plan
- Take Aways
- Helpful Links
- Questions?



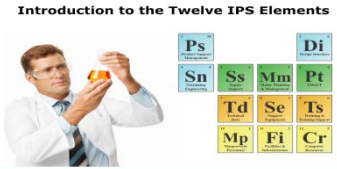
Product support is enabled by a package of 12 Integrated Product Support (IPS) elements designed to deliver system readiness and availability while optimizing system life cycle cost.

NEW POLICY AND GUIDANCE

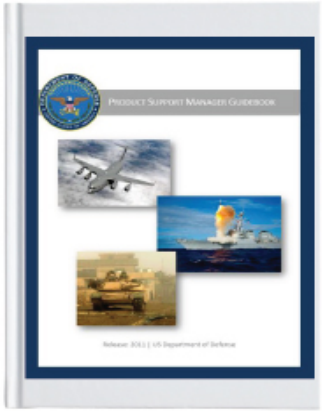
Integrated Product Support Element Guidebook: supplement and further explain implementation of new PSM guidance

12 Integrated Product Support Elements

- Two New Elements: Product Support Management and Sustaining Engineering.



Product Support Manager Guidebook: codifies and matures DoD Product Support



- Product Support Sustainment Chart
- Product Support Business Model
- 12-Step Product Support Strategy
- Sustainment Maturity Levels

INTEGRATED PRODUCT SUPPORT

Design Interface

Sustaining Engineering

Supply Support

Maintenance Planning & Management

Packaging, Handling, Storage &Transportation (PHS&T)

Technical Data

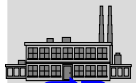
Support Equipment

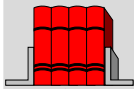
Training & Training Support

Manpower & Personnel

Facilities & Infrastructure

Computer Resources





Product Support Management

Product Support is enabled by 12 Integrated Product Support (IPS) Elements designed to deliver system readiness & availability while optimizing system life cycle cost

PRODUCT SUPPORT MANAGEMENT

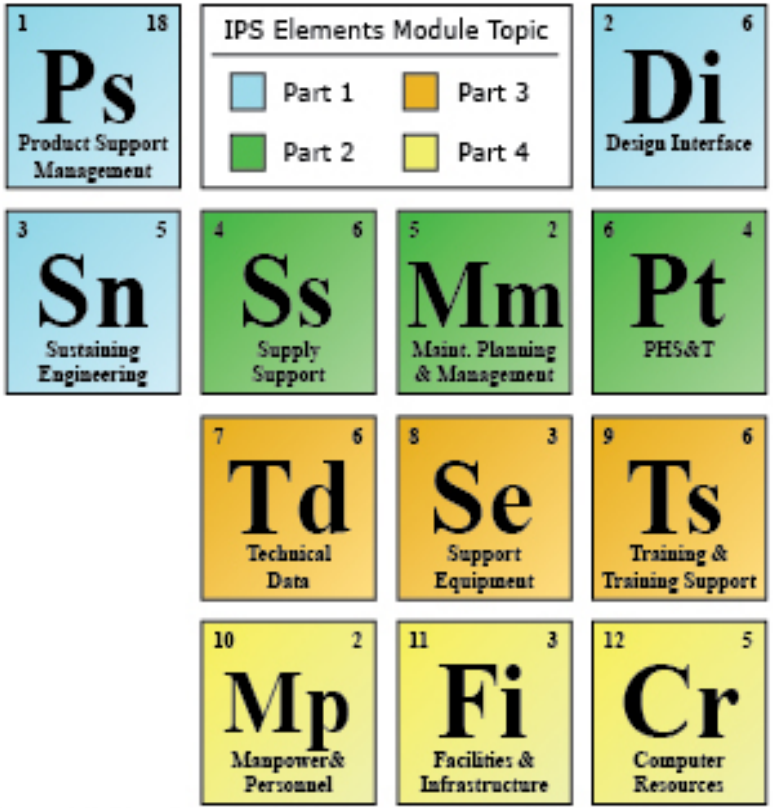
Description

- **Plan**, **manage**, and **fund** weapon system product support across all IPS Elements
- **Development** and **implementation** of product support strategies to ensure supportability is considered throughout system life cycle through optimization of key performance outcomes of **reliability**, **availability**, **maintainability** and reduction of **total ownership costs**
- Planning and execution includes **enterprise level integration** of all twelve integrated product support elements throughout lifecycle commensurate with roles and responsibilities of the Product Support Manager position created under **Public Law 111-84, Section 805**

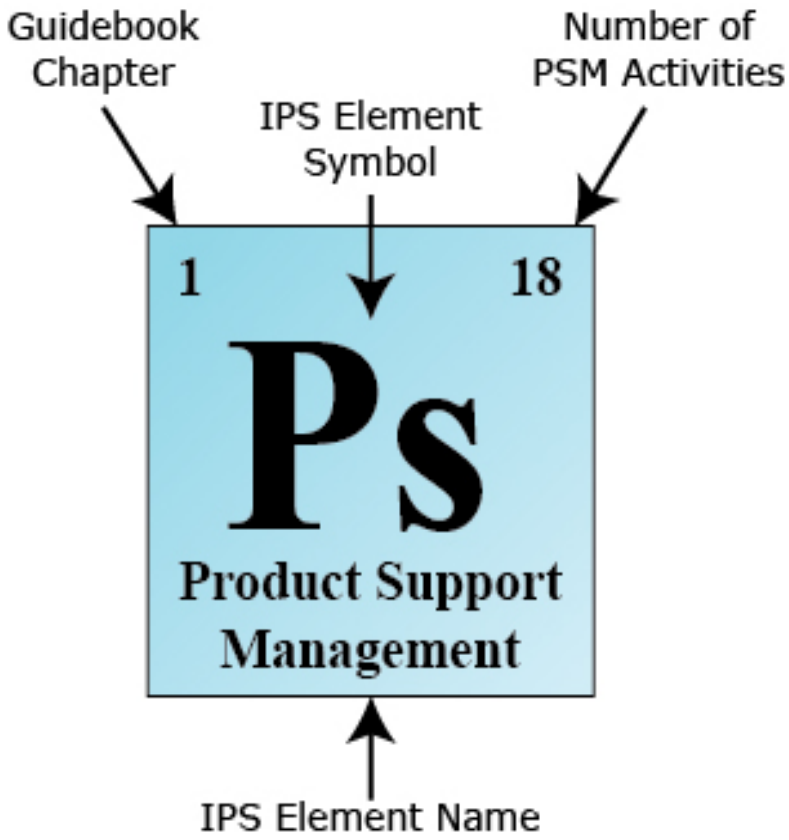
Purpose

- Provide **continuous product support leadership** throughout system's life cycle, reporting to senior leadership of status of program key metrics/product support activities, and providing senior program subject matter expertise in all areas of life cycle product support

PRODUCT SUPPORT MANAGEMENT



Maint.: Maintenance
PHS&T: Packaging, Handling, Storage and Transportation



PRODUCT SUPPORT MANAGER

Description

- **Integral member** of program management team and reports directly to the PM
- Fully understands **all program management requirements** including planning, development and implementation activities, to include contracting, finance, configuration management, outcome based product support strategy development, etc., for **total life cycle product support** of weapon system being fielded

DESIGN INTERFACE

Description

- Design interface is the **integration** of the quantitative design characteristics of systems engineering (**Reliability**, **Availability**, **Maintainability**, etc.) with the functional logistics elements
- Product support requirements are derived to ensure system meets **availability goals**, **design costs**, and **support costs** of are effectively balanced

Purpose

- Intended to be a set of activities to **control** and **manage** design choices that impact supportability
- Inclusion of **product support objectives** into the management of design will greatly increase the probability that product support objectives are met

SUSTAINING ENGINEERING

Description

- Spans those technical tasks to **ensure continued operation** and **maintenance** of a system with managed (i.e., known) risk
- Includes the **technical surveillance** of critical safety items, approved sources for these items, and oversight of design configuration baselines for fielded system
- **Periodic technical review** of the in-service system performance against baseline requirements, analysis of trends, and development of management options and resource requirements for resolution of operational issues

Purpose

- Provides the implementation of **systems engineering** and **life cycle product support strategies** to achieve desired sustainment metric outcomes
- Metrics include DoD required **KPP** of **Materiel Availability**, the **KSAs** of **Materiel Reliability** and **Operations and Support Cost**; and **metric** **Mean Downtime**, plus subordinate program metrics

SUPPLY SUPPORT

Description

- Consists of **management actions**, **procedures** and **techniques** necessary to acquire, catalog, receive, store, transfer, issue and dispose of spares, repair parts, and supplies
- Includes **provisioning** for initial support, as well as acquiring, distributing, and replenishing inventories as reflected in the supply chain management strategy
- The **right spares**, **repair parts**, and all **classes of supplies** available, in the **right quantities**, at the **right place**, at the **right time**, at the **right price**

Purpose

- Provide **effective** and **efficient** end-to-end **customer service** to meet operational requirements for **all classes of supply** and to **supply materiel** to DoD units throughout the world, the DoD Components and Agencies.

MAINTENANCE PLANNING & MANAGEMENT

Description

- Process to **develop**, **implement** and **manage** the **maintenance concept**, requirements and procedures for a system and who will perform required maintenance tasks and where
- Includes the **identification** of all the **resources** and **funding** required to develop and implement the maintenance and modernization plan
- Defines **repair** and **upkeep tasks**, **schedule**, and **resources** required to sustain a system with focus being to define actions/support necessary to attain operational availability **(Ao)**

Purpose

- Maintenance of DoD's weapon systems and military equipment is a **critical element** in the readiness and sustainability of combat forces
- Maintenance program effectively aligned to meet the operational availability will **optimize** life cycle cost with performance
- **Distribution** of maintenance **workloads** among the public and private sectors is instrumental in maintaining a robust and viable industrial base

PACKAGING, HANDLING, STORAGE & TRANSPORTATION (PHS&T)

Description

- Combination of **resources**, **processes**, **procedures**, **design**, **considerations**, and **methods** to ensure that all system, equipment, and support items are preserved, packaged, handled, and transported properly, including environmental considerations, equipment preservation for short/long storage and transportability
- Some items require special environmentally controlled, shock isolated containers for transport to and from repair and storage facilities via all modes of transportation

Purpose

- Focuses on **unique requirements** involved with **packaging, handling, storing and transporting** not only the major end items of the weapon system but also spare parts, other classes of supply, infrastructure items, and even personnel

TECHNICAL DATA

Description

- Represents **recorded information** of scientific or technical nature, regardless of form or character, engineering data, specifications, standards and Data Item Descriptions
- **Data rights**, **data delivery**, as well as use of source controlled data are “as maintained” bill of materials and system configuration identified by individual configuration item
- **Does not include** computer software or financial, administrative, cost or pricing, or management data or other information incidental to contract administration

Purpose

- **Includes the processes** of applying policies, systems and procedures for identification and control of data requirements; for the timely and economical acquisition of such data; for assuring the adequacy of data for its intended use; for the distribution or communication of the data to the point of use; and for use analysis

SUPPORT EQUIPMENT

Description

- Support equipment consists of **all equipment (mobile or fixed) required** to support the operation and maintenance of a system
- Program managers are expected to **decrease the proliferation** of support equipment into the inventory by minimizing the development of new support equipment and giving more attention to the **use of existing** government or commercial equipment

Purpose

- To support operation, maintenance, repair and calibration of a weapon system so it is maintained in, or restored to, a state of readiness that meets Warfighter's mission needs and operational requirements

TRAINING AND TRAINING SUPPORT

Description

- Consists of **policy**, **processes**, **procedures**, **techniques**, Training Aids Devices Simulators and Simulations, planning and provisioning for the training base
- **Includes** New Equipment Training, institutional, sustainment training and Displaced Equipment Training for individual, crew, unit, collective, and maintenance through initial, formal, informal, on the job training and sustainment proficiency training

Purpose

- To provide **learning process** by which personnel individually or collectively acquire or enhance pre-determined job-relevant **knowledge**, **skills**, and **abilities**
- Integrates training **concepts**, **strategie**s, and **elements** of logistic support to satisfy personnel skill levels required to operate, maintain, and support systems

MANPOWER & PERSONNEL

Description

- Involves the **identification** and **acquisition** of personnel (military/civilian) with the skills and grades required to operate, maintain, and support systems over their lifetime
- **“Manpower”** represents the number of personnel or positions required to perform a specific task
- **“Personnel”** indicates human aptitudes, knowledge, skills, abilities, and experience levels that are needed to properly perform job tasks

Purpose

- To identify and acquire military and civilian personnel with the skills and grades (i.e., rank) required for lifetime support of a materiel system

FACILITIES AND INFRASTRUCTURE

Description

- Consists of **permanent/semi-permanent** real property assets required to support a system, **including studies** to define types of facilities or facility improvements, location, space needs, environmental and security requirements, and equipment
- **Includes** facilities for training, equipment storage, maintenance, supply storage, ammunition storage, and so forth

Purpose

- **Encompasses** a variety of functions that focus on life cycle design, construction, resourcing and maintenance of military installations, facilities, civil works projects, test ranges, airfields, roadways, maintenance depots and ocean facilities
- Due to **potential long lead times** in funding, acquisition or construction, and resourcing, planning must start as early in the acquisition process as possible

COMPUTER RESOURCES

Description

- **Encompasses** facilities, hardware, software, documentation, manpower, and personnel needed to operate and support mission critical computer hardware/software systems
- **Includes** information technology resources and infrastructure required to operate and support mission critical systems to include manpower, personnel, hardware, software, and documentation

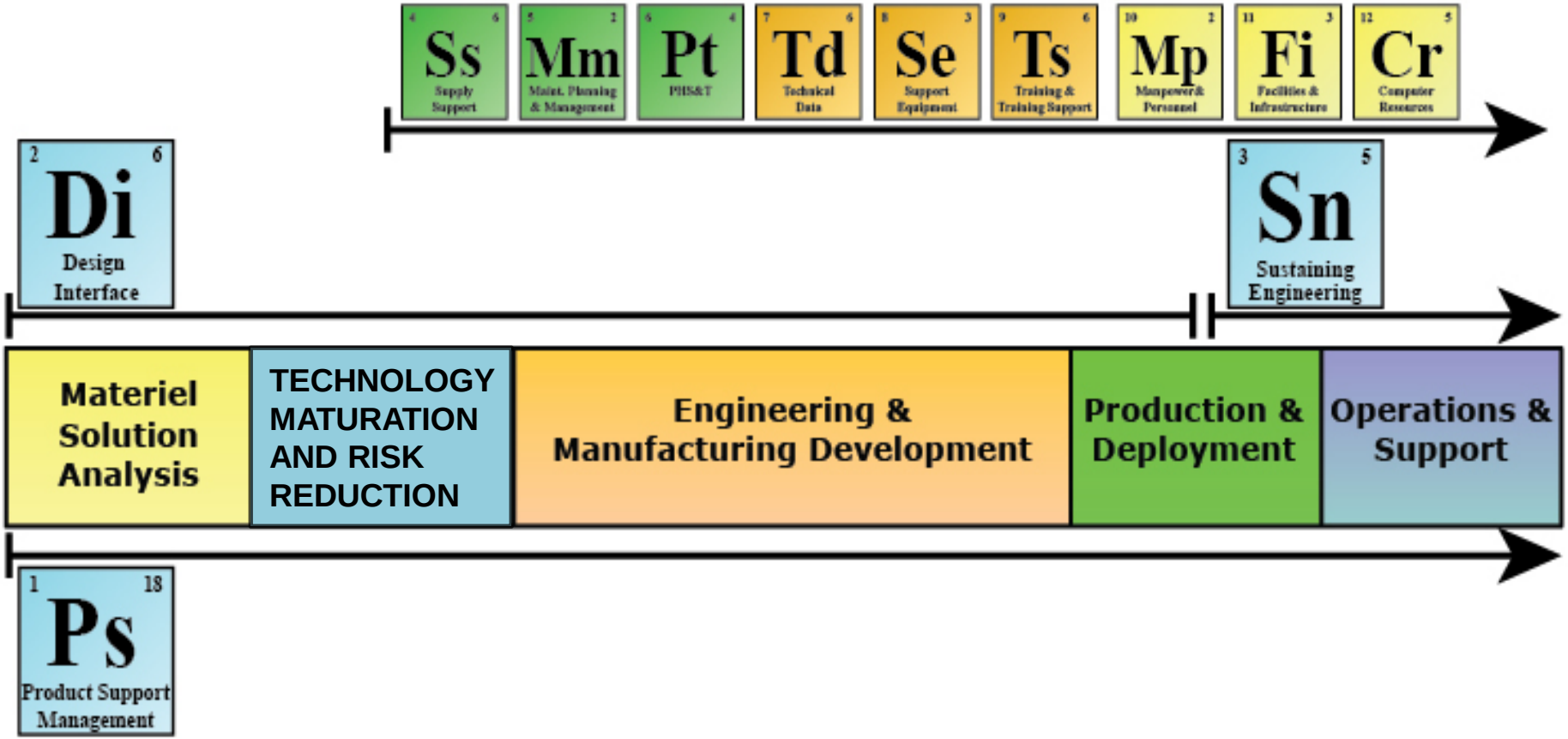
Purpose

- Most weapon systems today have a **significant investment** in embedded and external software with its related hardware
- **Expenses** associated with design and maintenance of software programs is so high that one **cannot afford not to manage** this process effectively

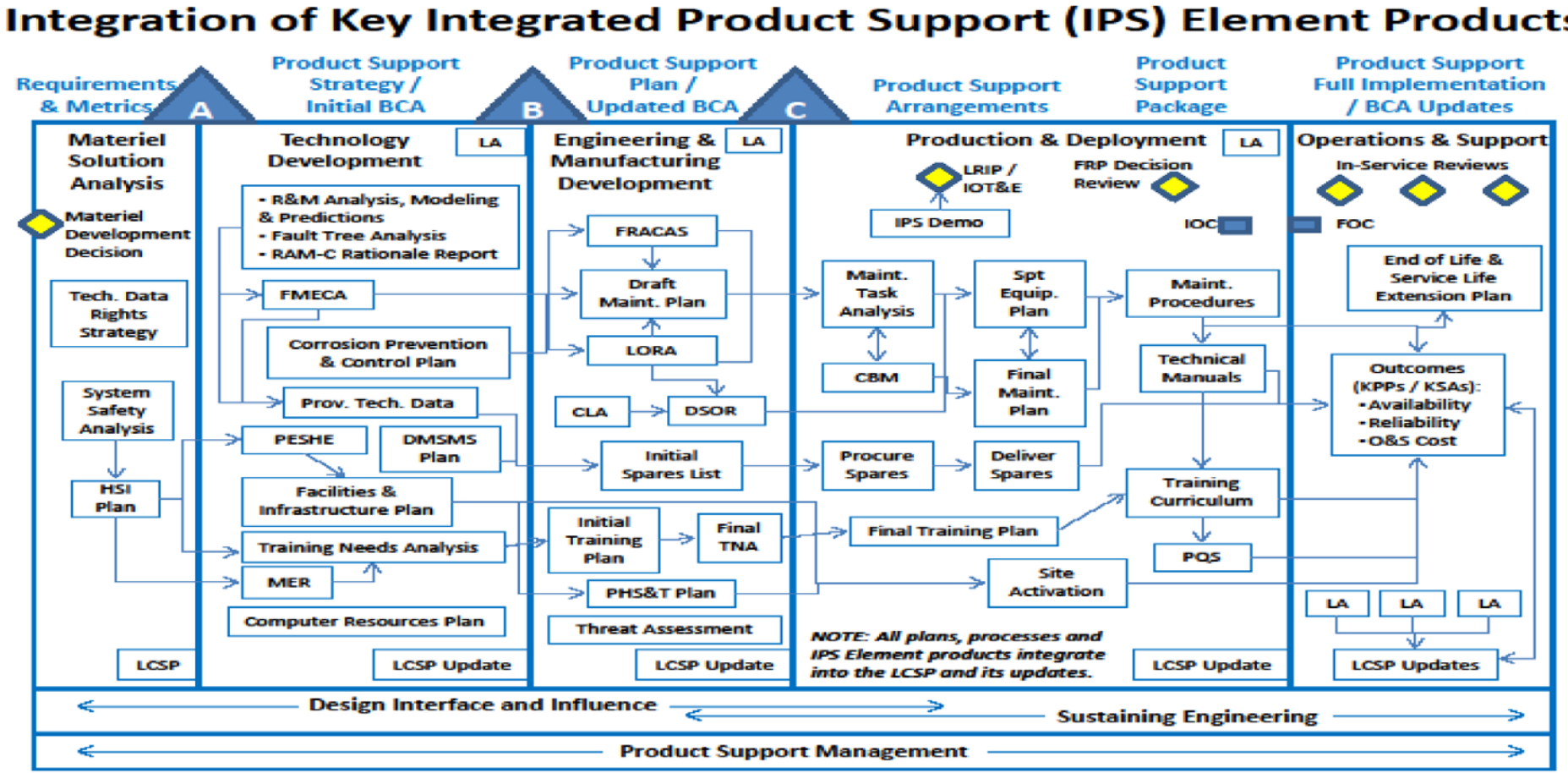
INTEGRATION AND PRODUCT SUPPORT MANAGEMENT

- PSM IPS Element integrates all activities across IPS elements to achieve the program's **KPPs and KSAs**
- Integration starts as part of requirements and metrics determination prior to **Milestone A** when the PSM is officially designated for the program and the initial **Life Cycle Sustainment Plan (LCSP)** is developed
- **Across the Life Cycle**, the PSM develops and updates product support strategy documented in LCSP and oversees development, delivery and update of product support package to optimize availability, reliability and reduce cost

IPS ELEMENTS ACROSS THE LIFE CYCLE



PRODUCT DELIVERABLES

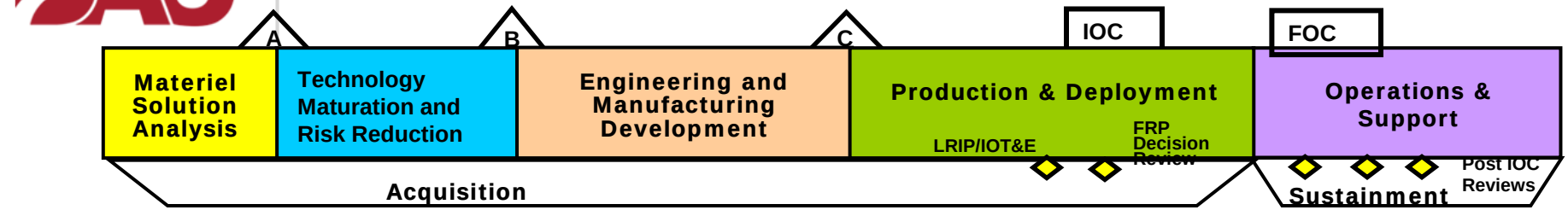


LIFE CYCLE SUSTAINMENT PLAN (LCSP)

Definition

- **Documents** PM and PSM's plan for formulating, implementing and executing sustainment strategy, and is part of overall **Acquisition Strategy**
- **Describes** approach and resources necessary to develop and integrate sustainment requirements into system's design, development, testing, deployment and sustainment
- Para 5.1.2.2. of Defense Acquisition Guidebook (DAG), entitled *LCSP,* and DoD Instruction 5000.02 requires LCSP be developed/provided as part of program approval process to document how sustainment strategy is implemented
- Begins in **Materiel Solution Analysis Phase** by describing notional product support and maintenance concepts used to determine sustainment requirements optimizing readiness outcomes and minimal life cycle-cost
- Life Cycle Sustainment Plan Outline

THE LCSP EVOLVES



- Establish notional maintenance concept and metrics
- Identify key technologies
- Analysis process & estimating LCC drivers

- Establish sustainment concept & execution plan framework
- Set metrics goals/thresholds & test methods

- Support structure & Product Support Package requirements defined
- PSP & metric verification methods established
- Detailed development & fielding plans established

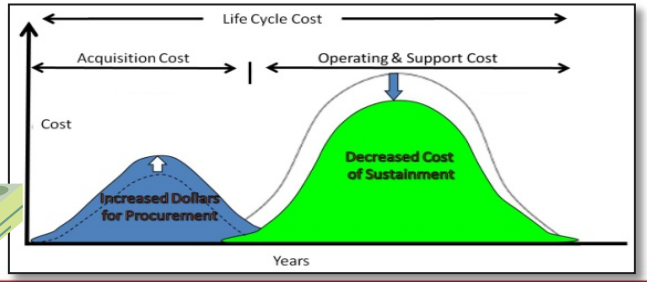
- Product Support Package elements refined
- Detailed site fielding plans refined
- Sustaining Engineering
- Logistics assessments

- Fielding plans adjusted
- Metrics tracked & adjustment plans established

TAKE AWAYS

- **Product support** is enabled by a package of 12 IPS Element designed to deliver system readiness and availability while optimizing system life cycle cost
- **12 IPS Elements** cover all areas of weapon system supportability
- These elements ensure the **LCSP** is complete and integrated
- **Design Interface** influences engineering, manufacturing, and product support and occur early in the acquisition process
- PSM creates environment to implement a total enterprise sustainment strategy

Costs to operate, maintain, and dispose of the weapon system account for about 72 percent of the total life cycle cost



Introduction to the Twelve IPS Elements

1 18 **Ps** Product Support Management					2 6 **Di** Design Interface
3 5 **Sn** Sustaining Engineering	4 6 **Ss** Supply Support	5 2 **Mm** Maint. Planning & Management	6 4 **Pt** PHS&T		
	7 6 **Td** Technical Data	8 3 **Se** Support Equipment	9 6 **Ts** Training & Training Support		
	10 2 **Mp** Manpower& Personnel	11 3 **Fi** Facilities & Infrastructure	12 5 **Cr** Computer Resources		

HELPFUL LINKS

- **IPS Element Guidebook**:
  https://acc.dau.mil/ips-guidebook
- **Product Support Manager Guidebook**:
  https://acc.dau.mil/psm-guidebook
- **Life Cycle Sustainment Plan Outline:**
  https://acc.dau.mil/lcsp-outline
- **Continuous Learning Module:**
  - CLL 046 “The Twelve Integrated Product Support Elements”

QUESTIONS?