

Life Cycle Sustainment Plan and The Product Support Strategy



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Product Support Strategy – Part of LCSP

- The objective of the product support strategy is to achieve warfighter operational readiness outcomes.
 - Achieving these outcomes is dependent on optimizing the integrated product support elements that constitute the support strategy.
- The PSM is responsible for the development and implementation of the Product Support Strategy.
 - Inherently Governmental Function

New DoD Policy Guidance

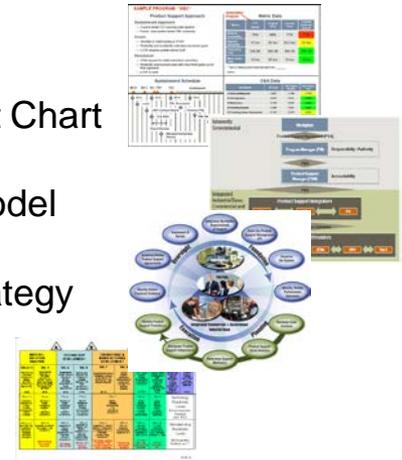
12 Integrated Product Support Elements

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

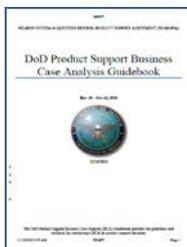


PSM Guidebook: codifies and matures DoD Product Support

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

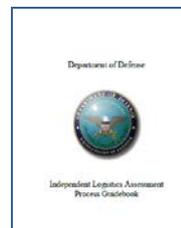


Business Case Analysis Guidebook



- Tool for the PSM
- Optimizes balance of Warfighter capabilities & affordability
- Analytic, standardized, objective
- Required for MS B/C/FOC and every five years or prior to a change to the strategy

Logistics Assessment Guidebook



- Tool for the PSM
- Validates system support strategy
- Conducted by a team of Subject Matter Experts
- Required for MS B/C/FOC and every five years or prior to a change to the strategy

Product Support Strategy

Sustainment Approach

- Current (initial CLS covering total system)
- Future (sub-system based PBL contracts)

Issues

- Shortfall in O&M funding in FYDP
- Reliability and availability estimates are below goals
- LCSP requires update before DAB

Resolution

- POM request for O&M restoration submitted
- Reliability improvement plan with clear RAM goals up for final signature
- LCSP in draft

Metrics Data

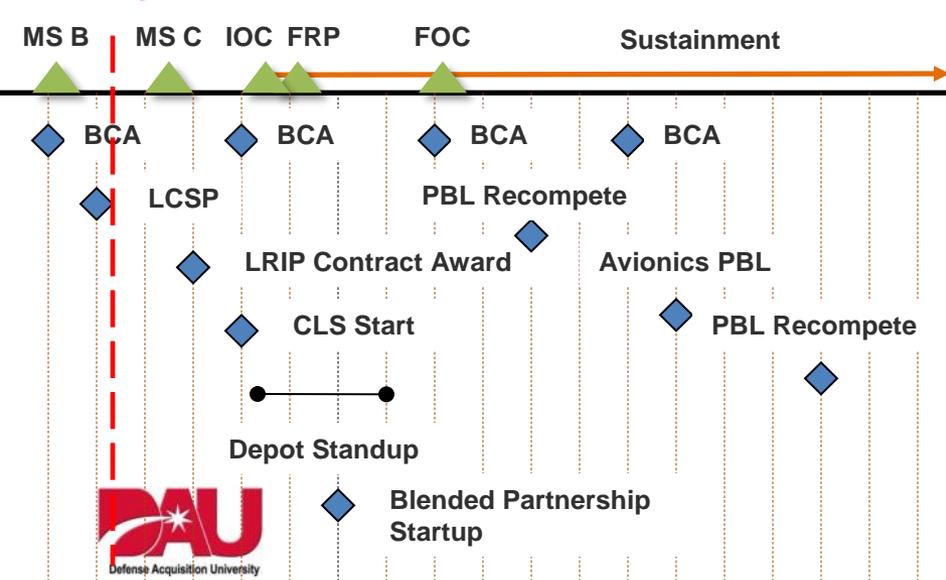
Metric	Antecedent Actual	Original Goal	Current Goal	Current Estimate/ Actual
Materiel Availability	76%	80%	77%	71%
Materiel Reliability	37 hrs	50 hrs	50.5 hrs	48 hrs
Ownership Cost	245.6B	385.5B	395.1B	395.1B
Mean Down Time	12 hrs	20 hrs	18 hrs	15 hrs

* Test or fielding event data derived from _____

Notes:

Sustainment Schedule

Today



O&S Data

Cost Element	Antecedent Cost	ABC Original Baseline	ABC Current Cost
1.0 Unit-Level Manpower	3.952	5.144	5.750
2.0 Unit Operations	6.052	6.851	6.852
3.0 Maintenance	0.739	0.605	0.688
4.0 Sustaining Support	2.298	2.401	2.401
5.0 Continuing System Improvements	0.129	0.025	0.035
6.0 Indirect Support	1.846	1.925	1.956
Total	15.046	16.951	17.682

Cost based on average annual cost per squadron

Total O&S Costs	Antecedent	ABC
Base Year \$M	102,995.2	184,011.9
Then Year \$M	245,665.3	395,147.2

Life Cycle Sustainment Outcome Metrics

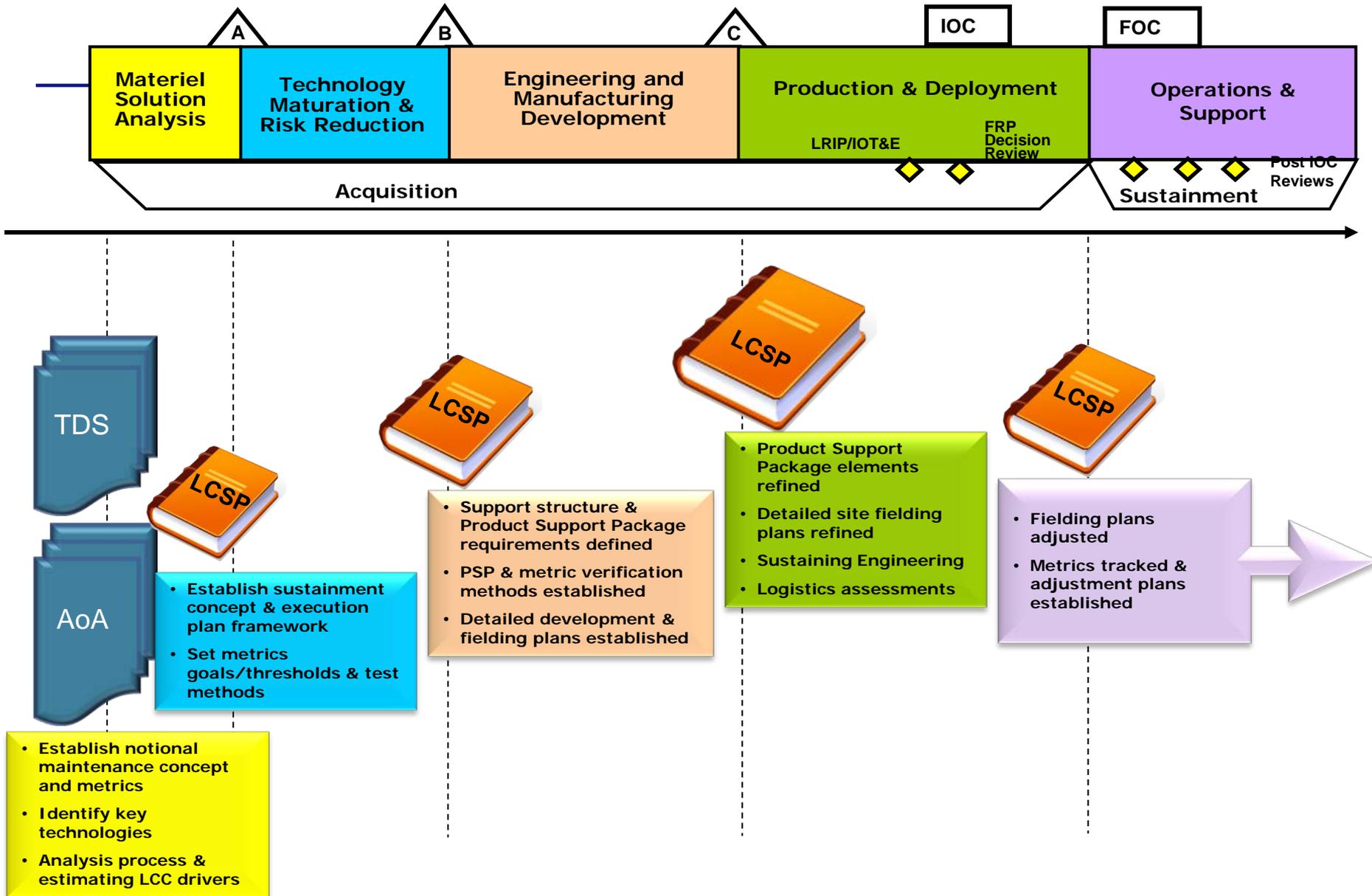


- **Material Availability (KPP*)**
 - A Key Data Element Used In Maintenance and Logistics Planning
- **Material Reliability (KSA*)**
 - Provides A Measure Of How Often The System Fails/Requires Repair
 - Another Key Data Element In Forecasting Maintenance/Logistics Needs
- **Ownership Cost (KSA*)**
 - Focused On The Sustainment Aspects Of The System
 - An Essential Metric For Sustainment Planning And Execution
 - Useful For Trend Analyses – Supports Design Improvements/Modifications
- **Mean Downtime**
 - A Measure Of How Long A System Will Be Unavailable After A Failure or PM
 - Another Key Piece Used In The Maintenance/Logistics Planning Process
- **Established in 10 Mar 07 DUSD (L&MR) Policy Memo**

** Sustainment KPP & KSAs Included In Revised CJCSM 3170*

***These 4 Life Cycle Sustainment Outcome Metrics Are Universal
Across All Programs & Key To Effective Sustainment Planning***

The LCSP Evolves



Fundamental Product Support Tenets

- Produce OUTCOMES, not OUTPUTS.
- Performance is a package, vice transactional goods and services.
- Document performance, support, and resource requirements in PBAs.
- Establish PSI to integrate and manage all (contract and organic) sources of support.
- Establish incentives to promote “win-win” relationships and achievement of performance outcomes.
- Leverage public-private partnerships to make best use of organic and commercial capabilities in long-term collaborative relationships.
- Contract terms provide for long-term (5+ years) relationship.
- Funding provisions incentivize investment
- Contractor assumes higher risk but risk is offset by flexibility and reward opportunities.
- Metrics are few, generally five or less.

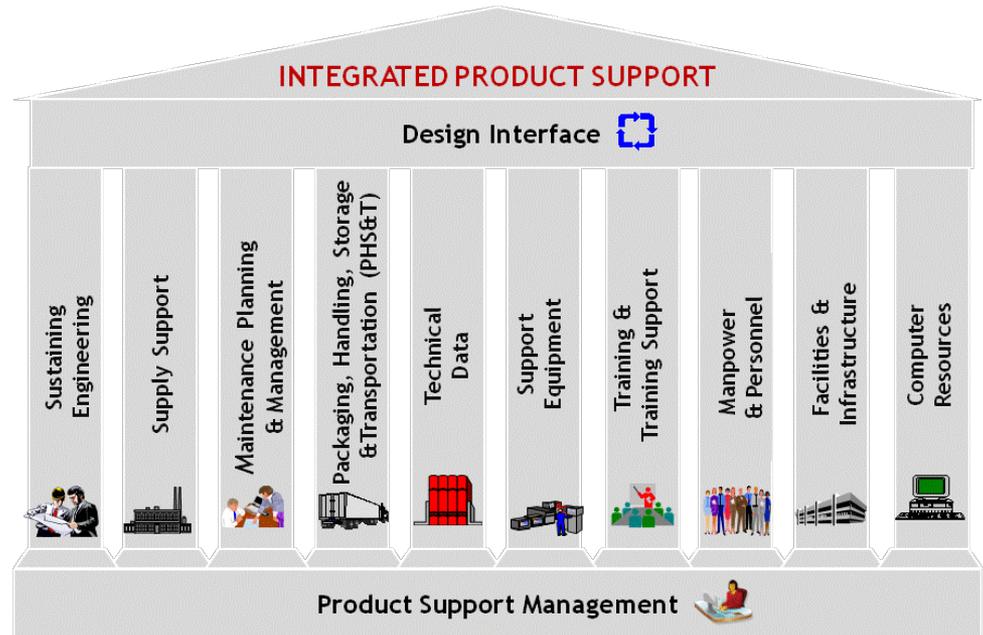
It is NOT outsourcing — it “is not synonymous with CLS nor does it require a private-sector integrator” (AFI 63-107).

What are the 12 Integrated Product Support Elements?

- Product Support Management
- Design Interface
- Sustaining Engineering
- Supply Support
- Maintenance Planning & Management
- Packaging, Handling, Storage and Transportation
- Technical Data
- Support Equipment
- Training & Training Support
- Manpower & Personnel
- Facilities & Infrastructure
- Computer Resources

12 Integrated Product Support Elements

- 12 Integrated Product Support Elements cover all areas of weapon system supportability.
- These elements ensure the Life Cycle Sustainment Plan (LCSP) is complete and integrated.
- Design Interface influences engineering, manufacturing, and product support occur early in the acquisition process.
- Product Support Management creates the environment to implement a total enterprise sustainment strategy.



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.

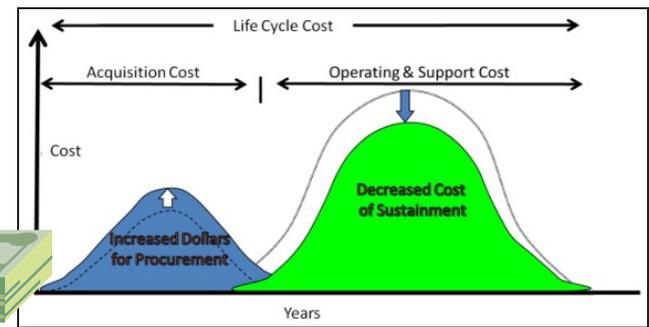
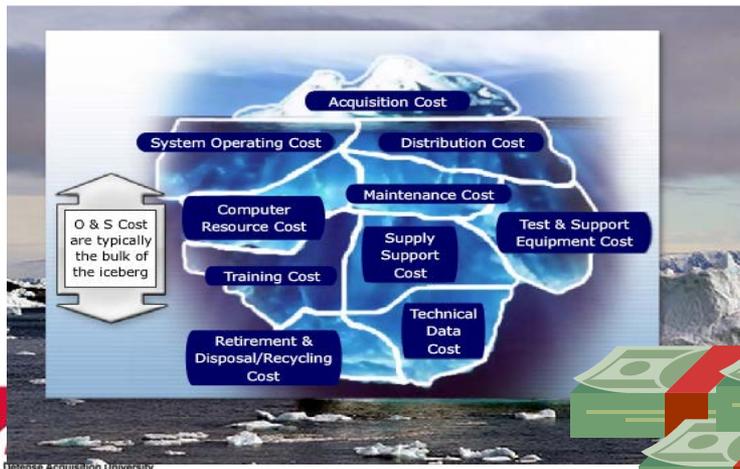
The Challenge

“Traditionally, development and procurement have accounted for about 28 percent of a weapon’s total ownership cost, while **costs to operate, maintain, and dispose of the weapon system account for about 72 percent of the total.**

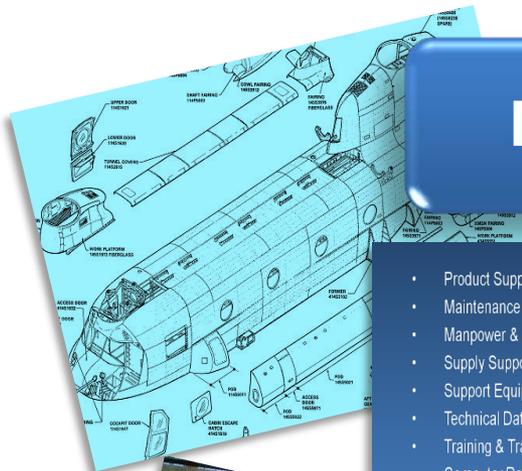
For a number of years, the department’s goal has been to spend less on supporting systems and to devote more funds to development and procurement in order to modernize weapon systems. But, in fact, **growth in operating and support costs has limited the department’s buying power.**

DOD officials have cited shortages of spare parts and unreliable equipment as reasons for low mission-capable rates for some weapons. As a result, **some modernization has been postponed in order to pay high and unexpected operating and maintenance costs.**”

GAO-03-57 Setting Requirements Differently Could Reduce Weapon Systems’ Total Ownership Costs



Systems Engineering Approach and Design



Design FOR Support

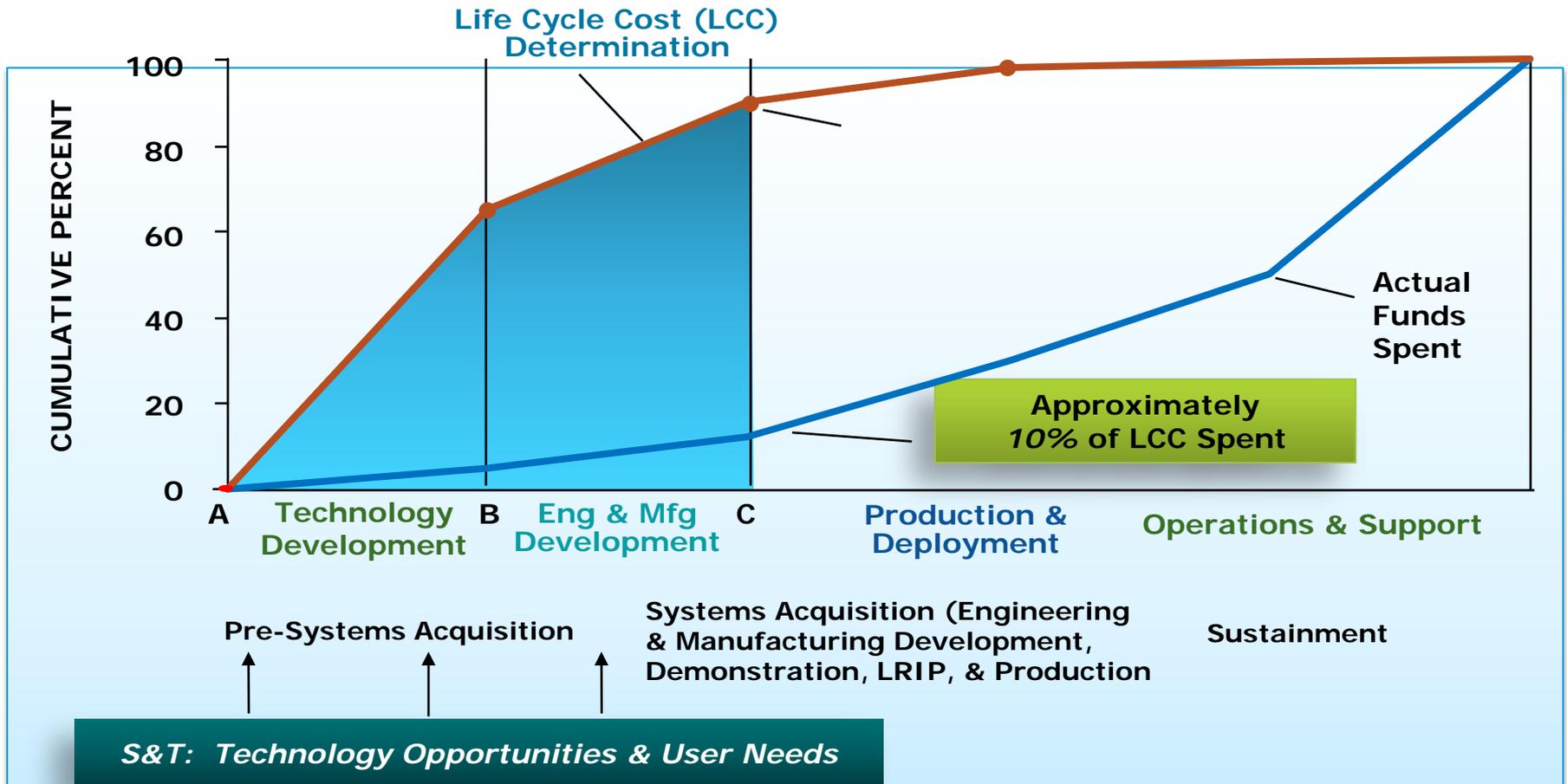
- Product Support Management
- Maintenance Planning & Management
- Manpower & Personnel
- Supply Support
- Support Equipment
- Technical Data
- Training & Training Support
- Computer Resources
- Facilities & Infrastructure
- Maintenance, Handling, Storage and Transportation

Design THE Support



SUPPORT the Design

Design FOR Support

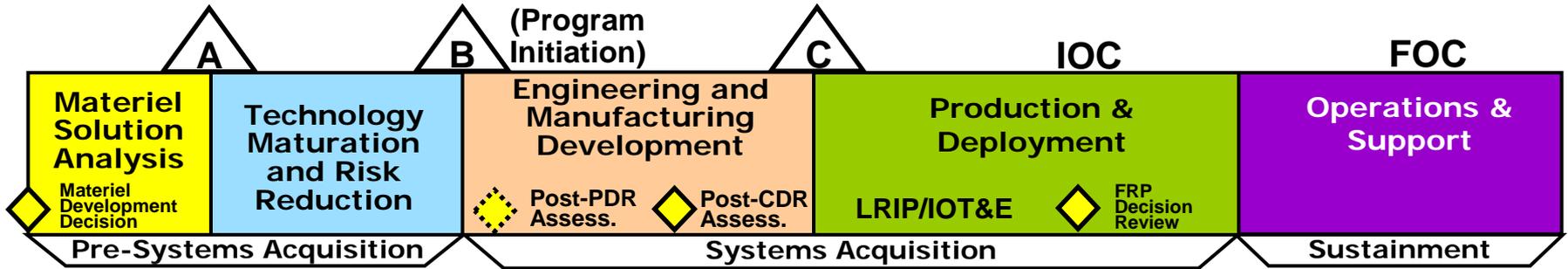


We must be involved in design planning to influence the design to insure supportability

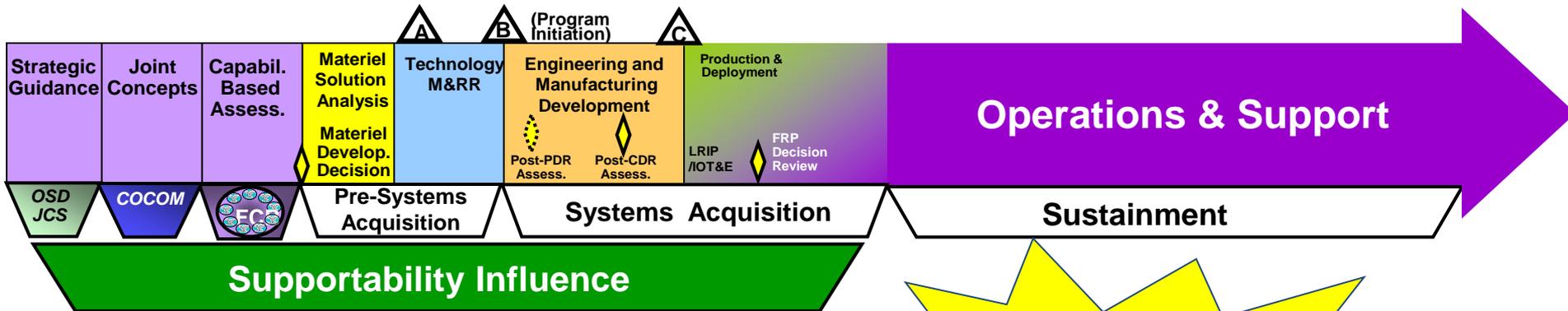
Once designed much of the support costs are locked in

Transitioned - Acquisition to Life Cycle Management Framework

Traditional Acquisition Perspective

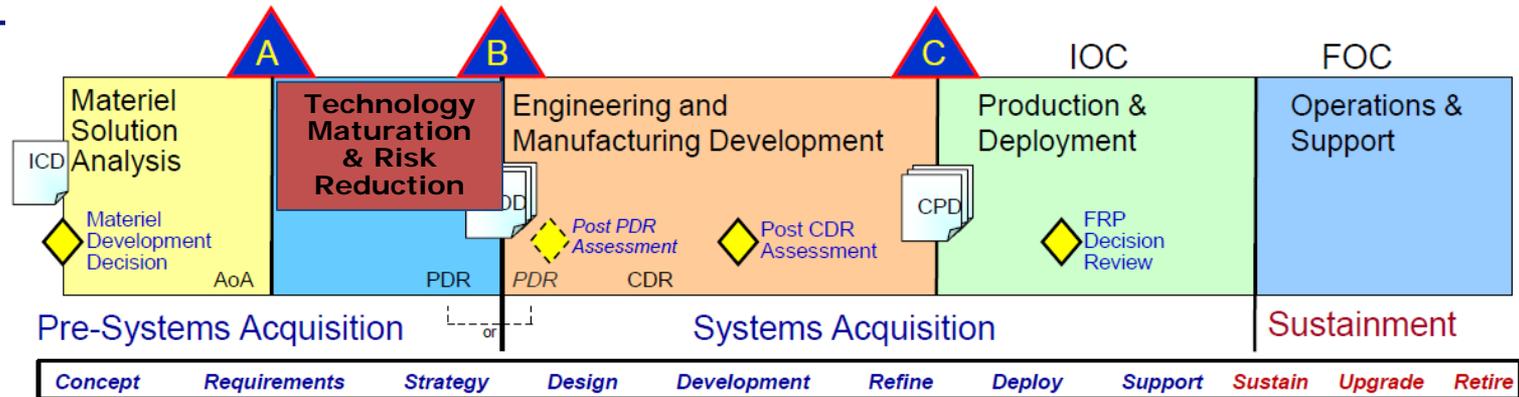


Life Cycle Management Perspective



60-75% of Life Cycle Cost !

Product Support Engagement Strategy Across the Life Cycle



•Key Objectives:

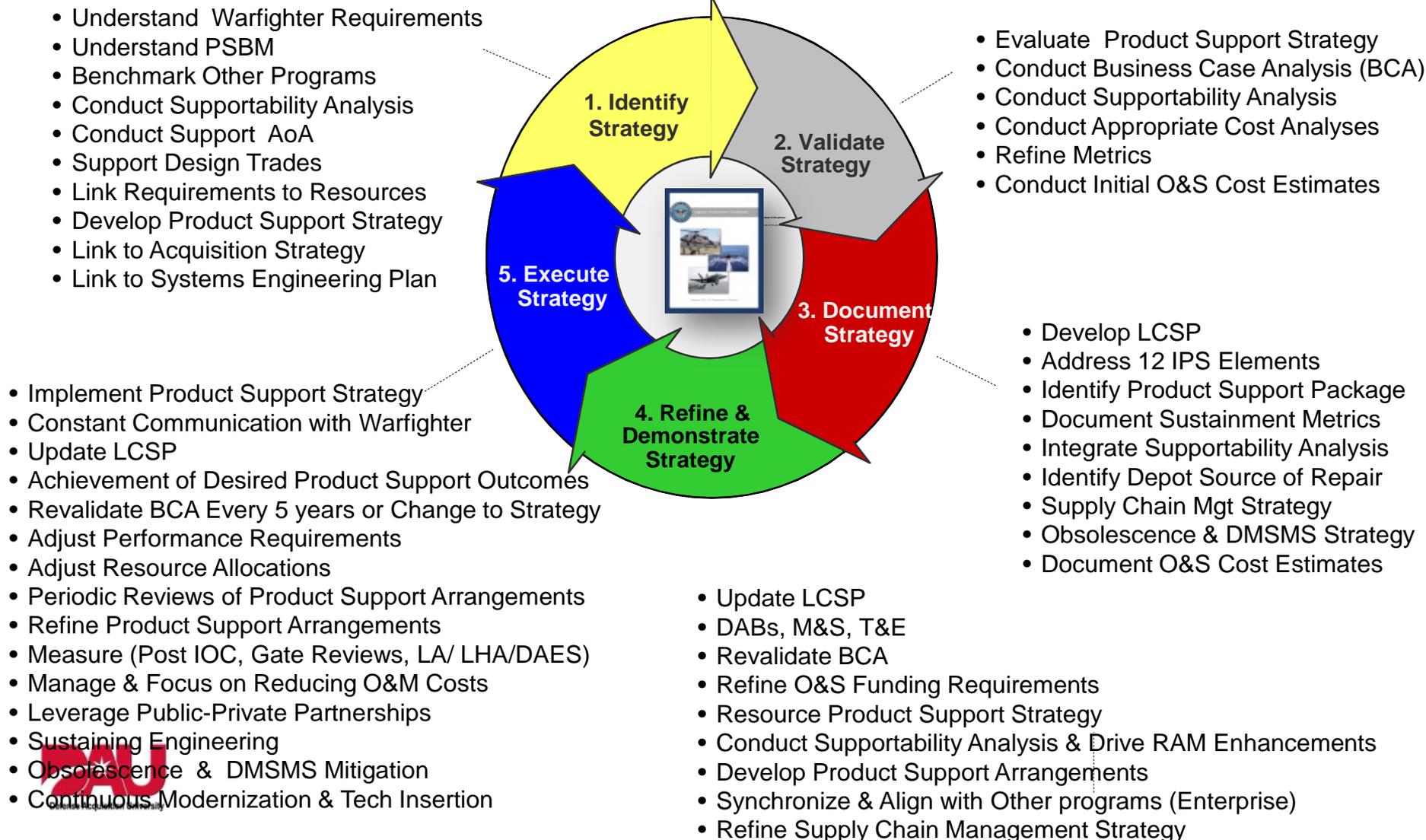
- Design, maintain and modify systems to reduce (or eliminate) demand for logistics
- Effective and efficient logistics support
- Optimize system availability/readiness and life cycle costs

•Key Enablers:

- Life Cycle Management (LCM)
- Product Support Manager (PSM) & well-trained team of life cycle logisticians
- Supportability Analysis
- Product Support Strategy Development, Refinement, Implementation
- Life Cycle Sustainment Plan (LCSP)
- Product Support Business Case Analysis (BCA)
- Adequate O&S funding
- Key Life Cycle Sustainment Outcome Metrics
- Reliability, Availability, Maintainability, Supportability (RAMS)
- Performance Based Life Cycle Product Support (PBL) Strategies
- Prognostics & Health Management (PHM) and Advanced Diagnostics
- Proactive Obsolescence & DMSMS mitigation program

Development and Implementation of a Product Support Strategy is an Iterative Process

Key PSM duties, responsibilities & focus areas



Desired Enterprise Outcomes

- Readiness, but not at any cost
- Optimizing Life Cycle Costs and Weapon System Availability & Readiness Performance Outcomes
- Empowered Government Program Manager & Product Support Manager (PSM) team
- Leveraging capabilities and best practices of both public and private sector to deliver best value product support and sustainment outcomes

What Is a Product Support Strategy?

- Product support **strategy** should improve the product's:
 - Availability
 - Reliability
 - Affordability
 - Supportability
- The strategy describes the supportability planning, analyses, and trade-offs.
- The support strategy should address how oversight of the fielded system will be maintained.

Source: Defense Acquisition Guidebook

Why Outcome Based? (1 of 2)

Budget pressures mean that we must do more with the same.

- Across the life cycle, product support costs for any system are larger than RDT&E and production combined...and costs are growing.
- We are buying fewer systems and keeping them longer, creating additional upward pressure on Operations and Support cost.
- Aging systems bring along baggage: obsolescence, decreasing reliability, diminishing manufacturing sources, and declining performance.

Why Outcome Based? (2 of 2)

Proven way to impact readiness and reduce costs is to continuously invest in:

- Affordability
- Reliability
- Availability
- Maintainability

...beginning with the acquisition strategy.

Incentives = Continuous Investment = Better Performance & Lower Costs = Affordable Readiness

LCSP...an introduction

•LCSP Facts

- The Life-cycle Sustainment Plan (LCSP) is the **program's primary management tool** to satisfy the Warfigher's **sustainment requirements** through the delivery of a product support package*.
- **Separated** from Acquisition Strategy
- Annotated outline
 - **Required for all programs**
 - Approval for ACAT ID by ASD(L&MR) - for which the Milestone Decision Authority (MDA) is USD(AT&L). The "D" refers to the Defense Acquisition Board (DAB), which advises the USD(AT&L) at major decision points.

•Key document for:

- **Programs**
- Milestone decision authorities
- Oversight and policy roles

In today's tight budget climate, the LCSP facilitates cross-functional alignment among acquisition and sustainment stakeholders to deliver affordable systems



*The logistics elements and any sustainment process contracts/agreements to attain and sustain the maintenance and support needed for materiel availability..."sustainment" and "product support" are synonymous

Key LCSP Purpose

The program's management tool to **communicate**, align, and integrate product support stakeholders efforts formulating, implementing, and executing the sustainment strategy

Both Teams Are Playing Football

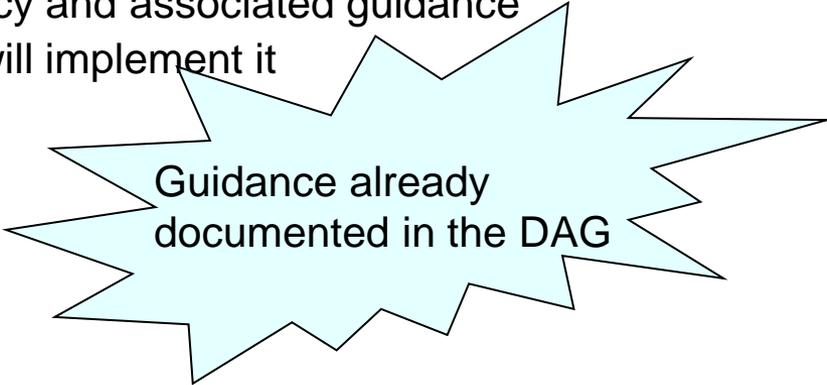


...but they are not playing the same game.

The LCSP Is Not

• It is not a rehash of policy or guidance

- It is the program's plan for accomplishing policy and associated guidance
- It focuses on **specifically how** the program will implement it
 - Who will do what
 - When
 - How (specific tools/processes)
 - How much it will cost



Guidance already documented in the DAG

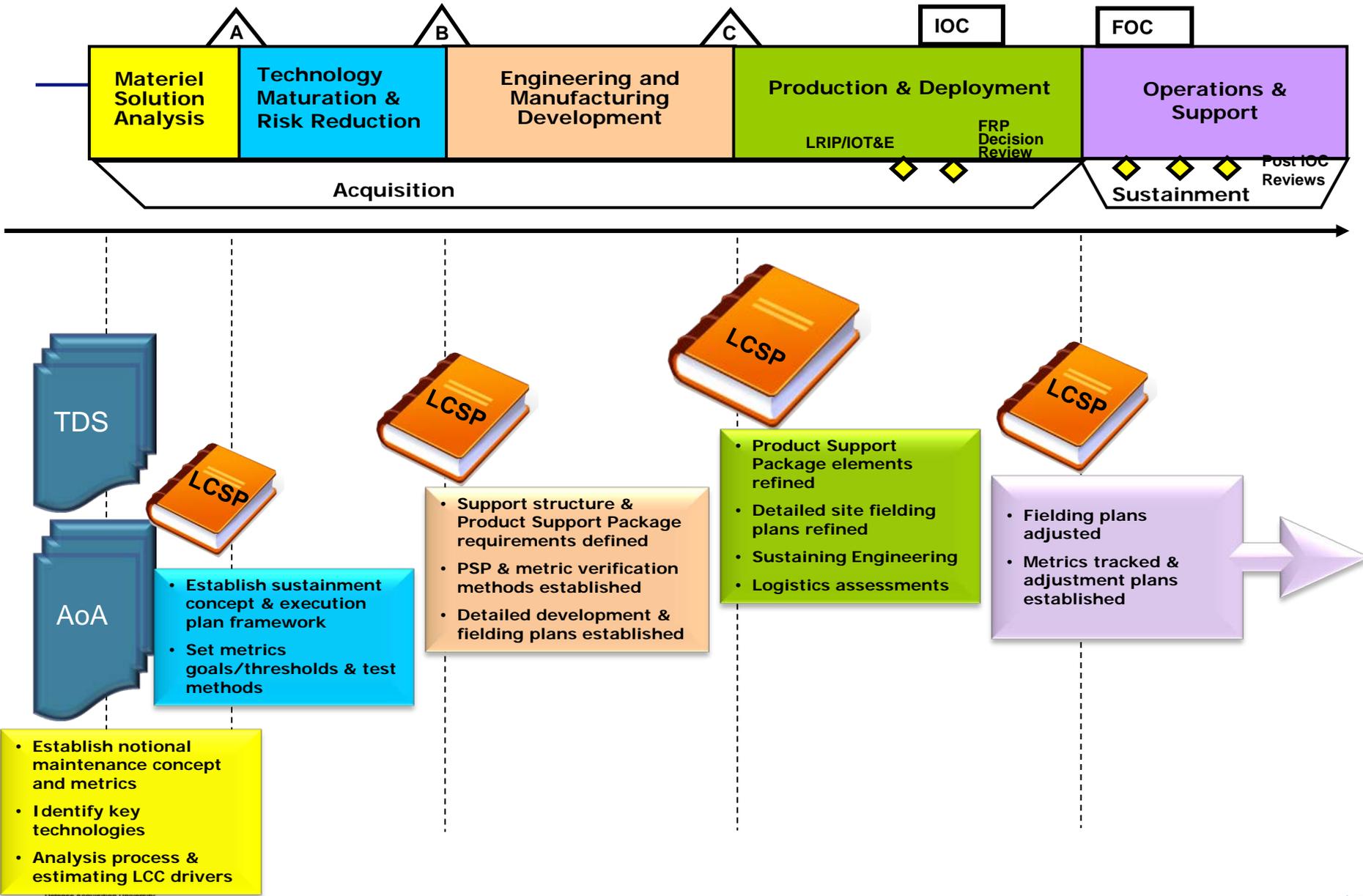
• It is not put together for milestone reviews

- **Program's management tool** for communicating the plan

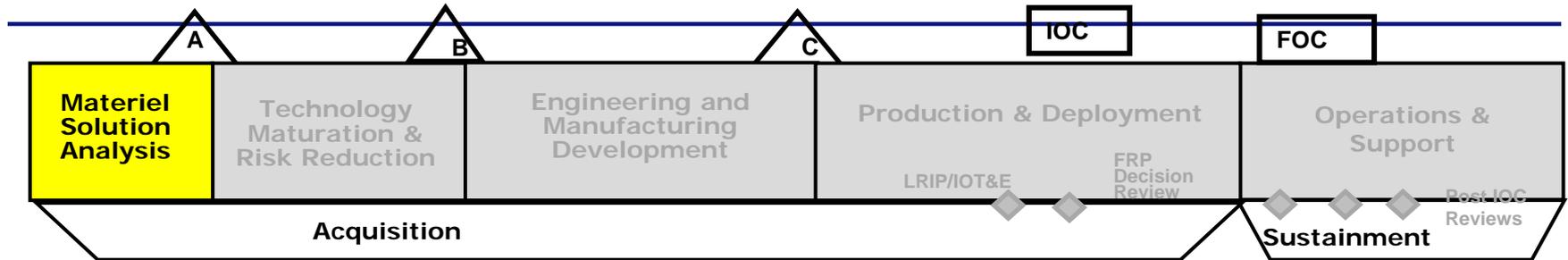
• It is not static

- It is a living document describing the sustainment approach and resources necessary across the life cycle
- The LCSP documents the **current** program plan relative to sustainment
- It **evolves**

The LCSP Evolves



LCSP Phase Emphasis: Material Solution Analysis Phase

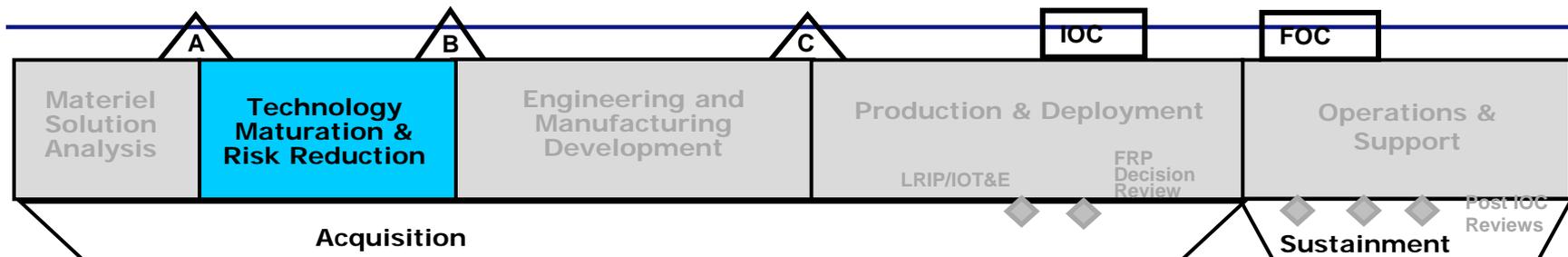


- Establish notional maintenance concept and metrics
- Identify key technologies
- Analysis process & estimating LCC drivers

LCSP Focus:

- Framing the baseline product support strategy
- Analytical process for determining:
 - Affordable metrics
 - Cost drivers and availability degraders
- Key sustainment technologies requiring development

LCSP Phase Emphasis: Technology Maturation and Risk Reduction Phase

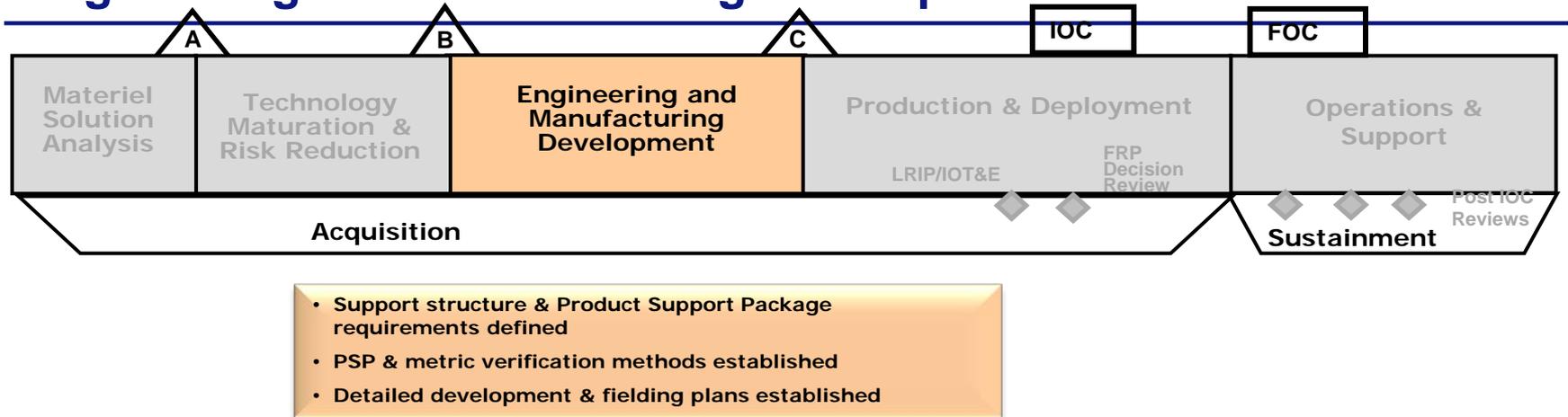


- Establish sustainment concept & execution plan framework
- Set metrics goals/thresholds & test methods

LCSP Focus

- Baseline product support strategy
- Analytical process for determining affordable metrics goals and thresholds:
 - System and subsystem level
 - Supply chain
- Ensuring the supportability design feature requirements are incorporated in the overall design specifications

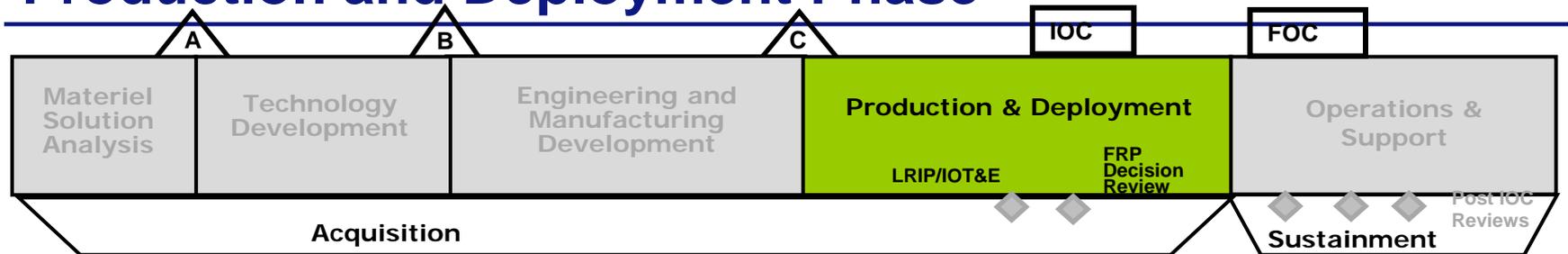
LCSP Phase Emphasis: Engineering and Manufacturing Development Phase



LCSP Focus

- Product Support Package (PSP) & supply chain
 - Detailed Product Support Element requirements
 - Detailed Product Support Package development & implementation
 - Performance verification methods
 - Fielding plans

LCSP Phase Emphasis: Production and Deployment Phase

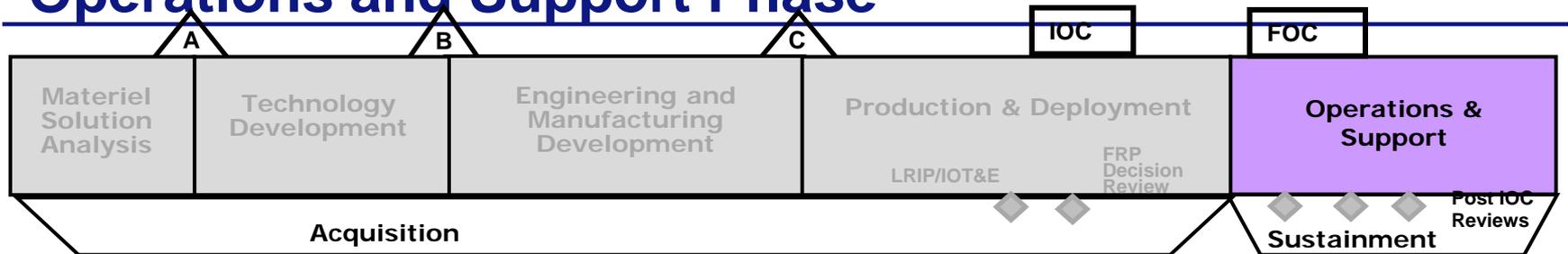


- Product Support Package elements refined
- Detailed site fielding plans refined
- Sustaining Engineering
- Logistics assessments

LCSP Focus

- Fielding plan details and adjustments
- Logistics assessments
 - How sustainment performance will be measured, managed, assessed and reported
- Analytical and management processes for :
 - Refining Product Support Package elements
 - Cost drivers and availability degraders

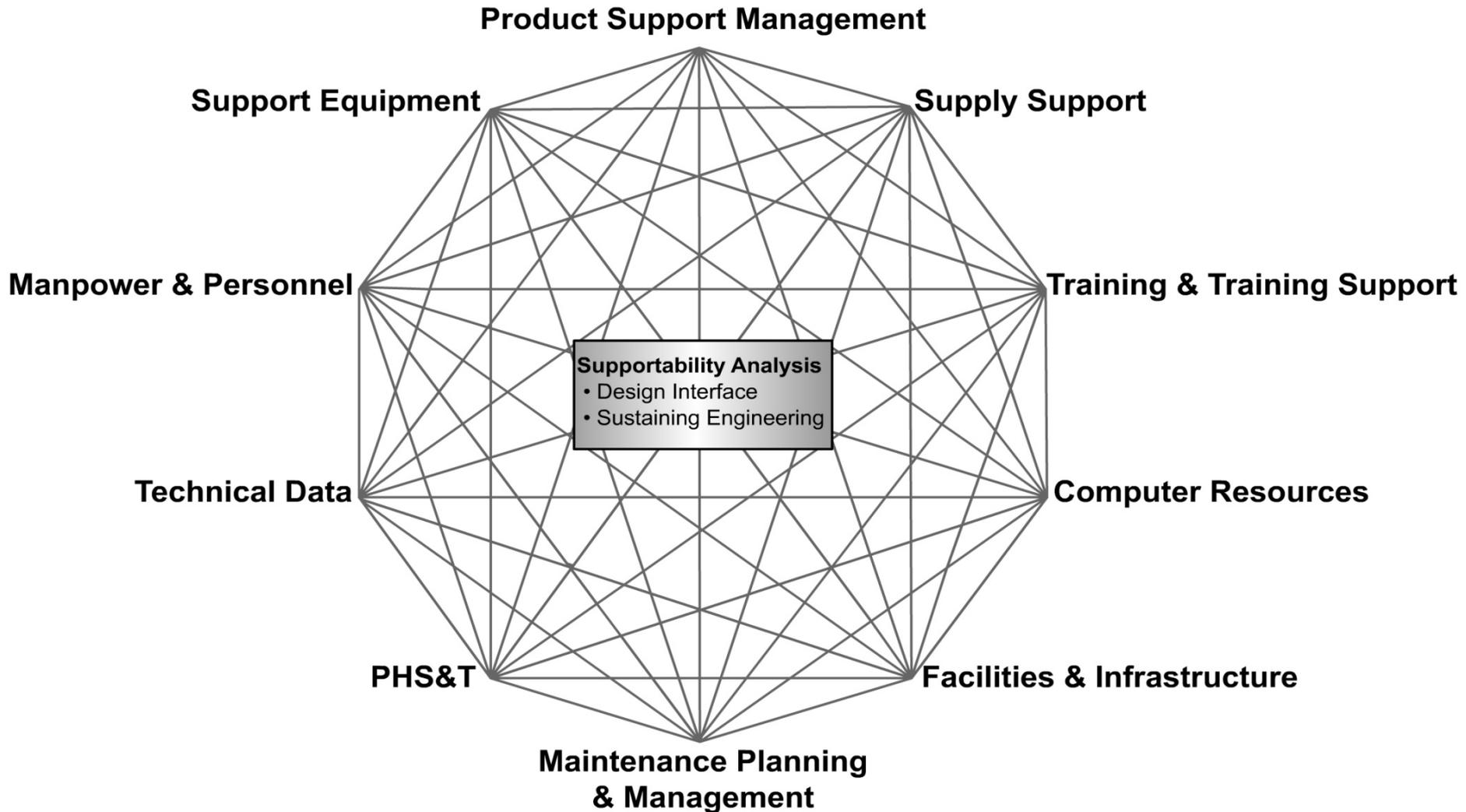
LCSP Phase Emphasis: Operations and Support Phase



LCSP Focus

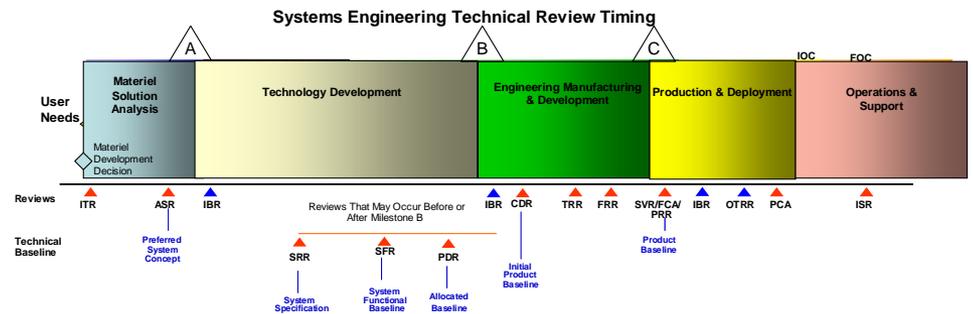
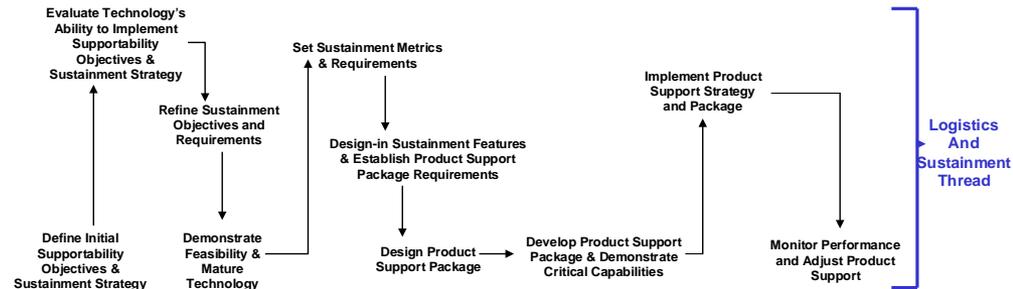
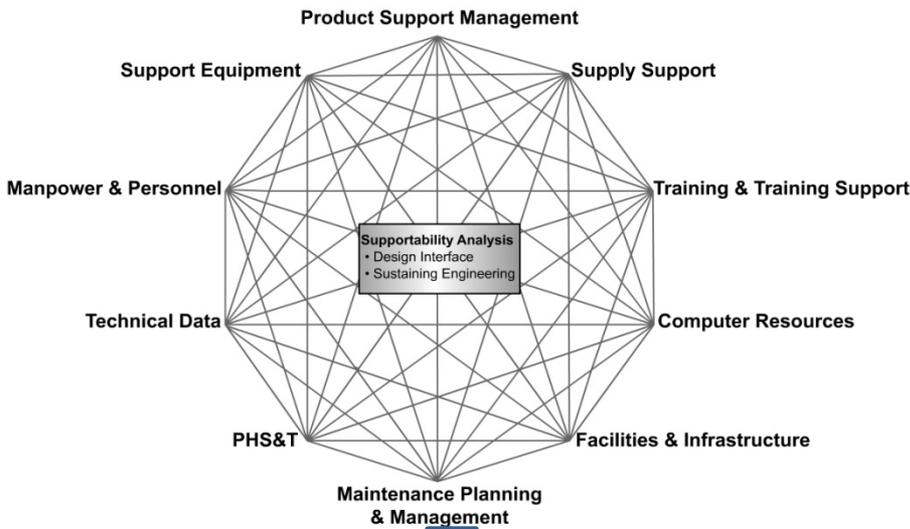
- Sustaining Engineering processes for refining Product Support Package elements
- Logistics assessments on how the system and supply chain are performing
- Adjustments required for program or funding changes

Product Support Elements



Sustainment Strategy

Achieved by **integrating** the product support elements to field the Product Support Package



Product Support Strategy – What are we trying to say?

- Product Support Strategy
 - You know the IPS Elements
 - What do you need to do for each Element?
 - What else do we need to consider?
 - Where do we document our Product Support Strategy?

Life Cycle Sustainment Plan –
Section 3

QUESTIONS

?

Thank You for Your Participation