Ensuring the Right Process is Deployed Right:

Synchronizing Process Checkpoints with Business Rhythm

NDIA 5th Annual CMMI® Technology Conference and User Group
November 15, 2005

Joan Weszka
Lori Pajerek
Jim Sturges
Lockheed Martin Corporation

Motivation for this Presentation

- *Process "failures" have been identified as a source of program problems*
  - *By DoD*
  - *By industry, including Lockheed Martin*
- *Using CMMI® requires (at maturity level 3) that processes tailored from the organizational standard process be deployed on programs*
- *However, even in organizations using CMMI®*
  - *The "right" process isn't always deployed*
  - *The process isn't always deployed "right"*

How do we ensure the right process is deployed right?

Agenda

- *What is the "right" process for a program?*
- *How do we ensure the process is deployed "right"?*

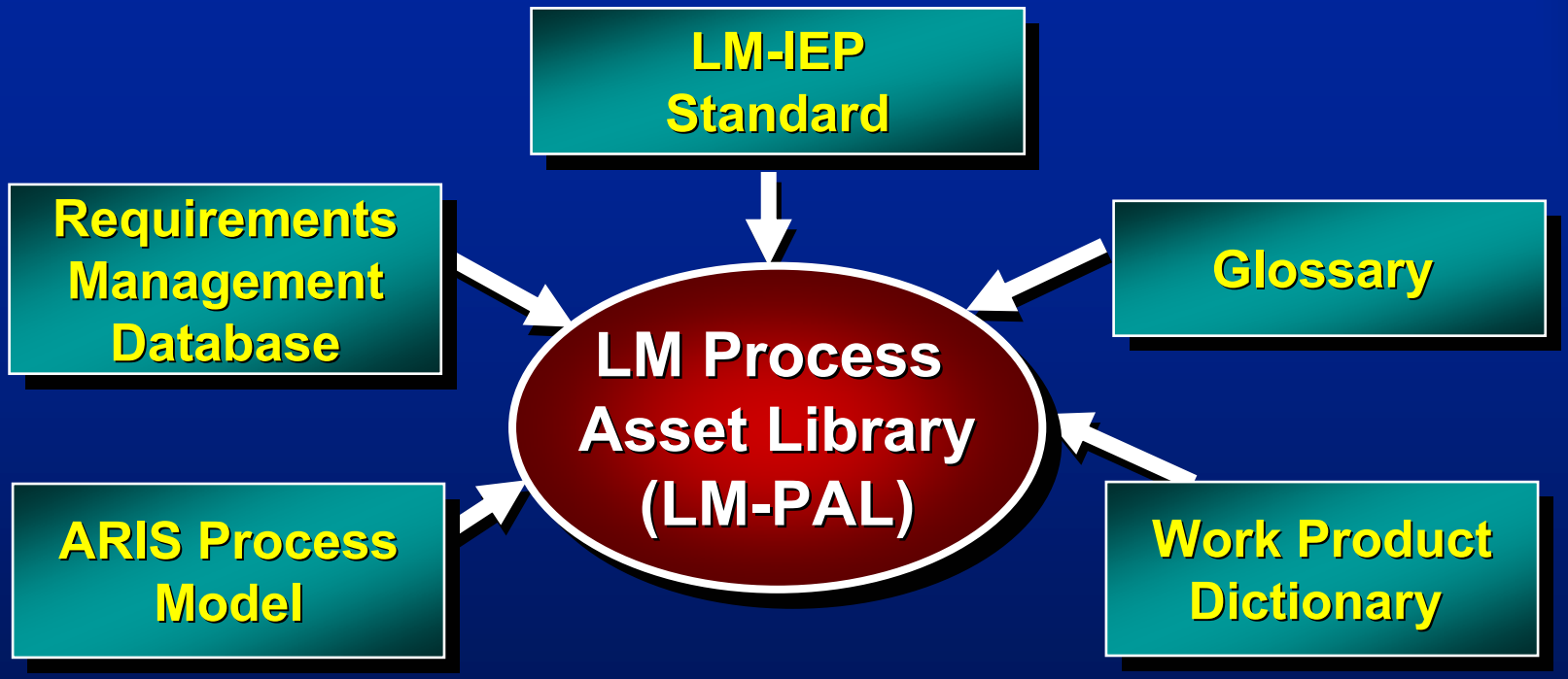
What is the “right” process?

The “right” process

- *Meets requirements, including standards*
  - *From the customer*
  - *From the organization*
- *Is tailored from the organizational standard process*
- *Is appropriately suited to the domain and program*
- *Contains necessary and sufficient process elements*
- *Is integrated across the disciplines*

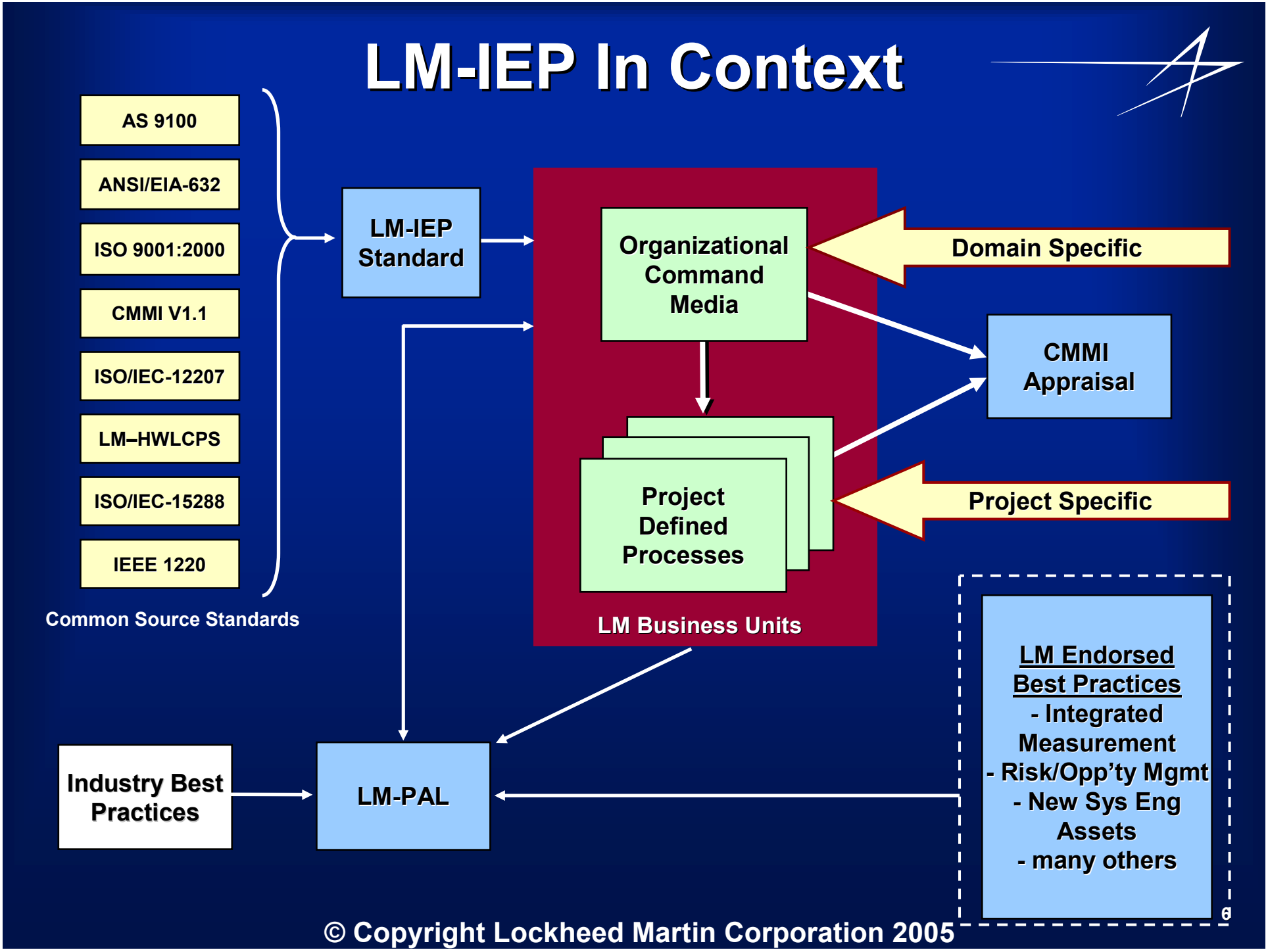
The Lockheed Martin Integrated Enterprise Process (LM-IEP) levies requirements on the Organizational Standard Process

Lockheed Martin Integrated Enterprise Process (LM-IEP) Product Suite



LM-IEP includes Vocabulary, Architecture, Requirements, and Assets

LM-IEP In Context



LM-IEP Architecture

Program Execution Processes

Business Execution Processes

Enterprise Processes

- A.1 Organizational Management
- A.2 Strategic Planning
- A.3 Quality Management
- A.4 Ethics & Business Conduct
- A.5 Legal
- A.6 Communications

Infrastructure Processes

- B.1 Process Management
- B.2 Work Environment Management
- B.3 Technology Mgmt
- B.4 Contracts
- B.5 Workforce Mgmt
- B.6 Finance
- B.7 Supplier Agreements and Procurement
- B.8 Security
- B.9 Property Mgmt

Common Management Processes

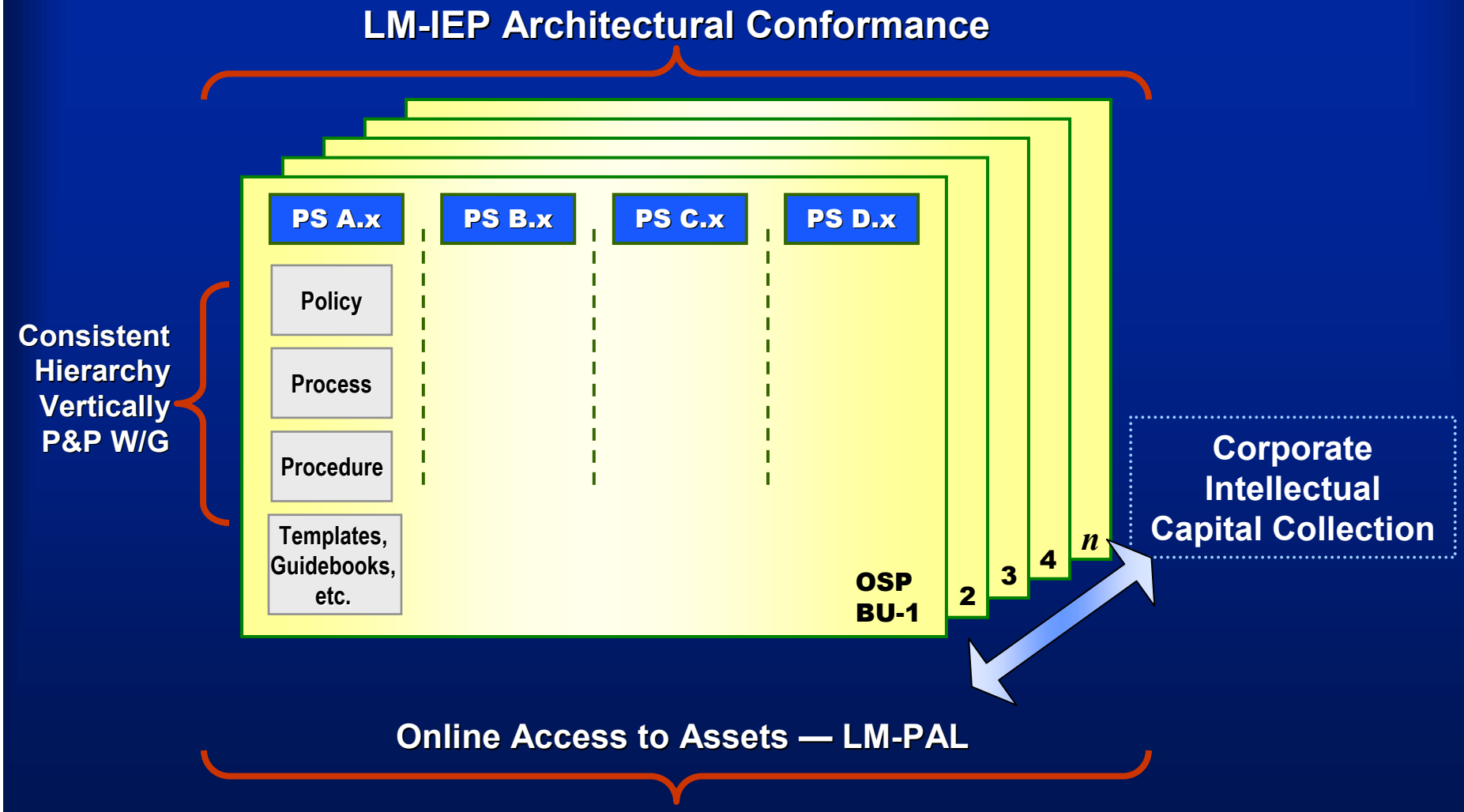
- C.1 Project Planning
- C.2 Decision Analysis
- C.3 Configuration and Data Management
- C.4 Performance Assessment and Control
- C.5 Risk and Opportunity Management

Product Life Cycle Processes

- D.1 Program Mgmt
- D.2 Business Capture
- D.3 Development*
  - D.3.1 Stakeholder Needs Analysis
  - D.3.2 Requirements Development
  - D.3.3 Architectural Design
  - D.3.4 Detailed Design
  - D.3.5 Implementation
  - D.3.6 Integration
  - D.3.7 Verification
  - D.3.8 Validation
- D.4 Production
- D.5 Deployment
- D.6 Operation and Sustainment
- D.7 Disposal

* *Recursive processes to be applied at any level of the system hierarchy*

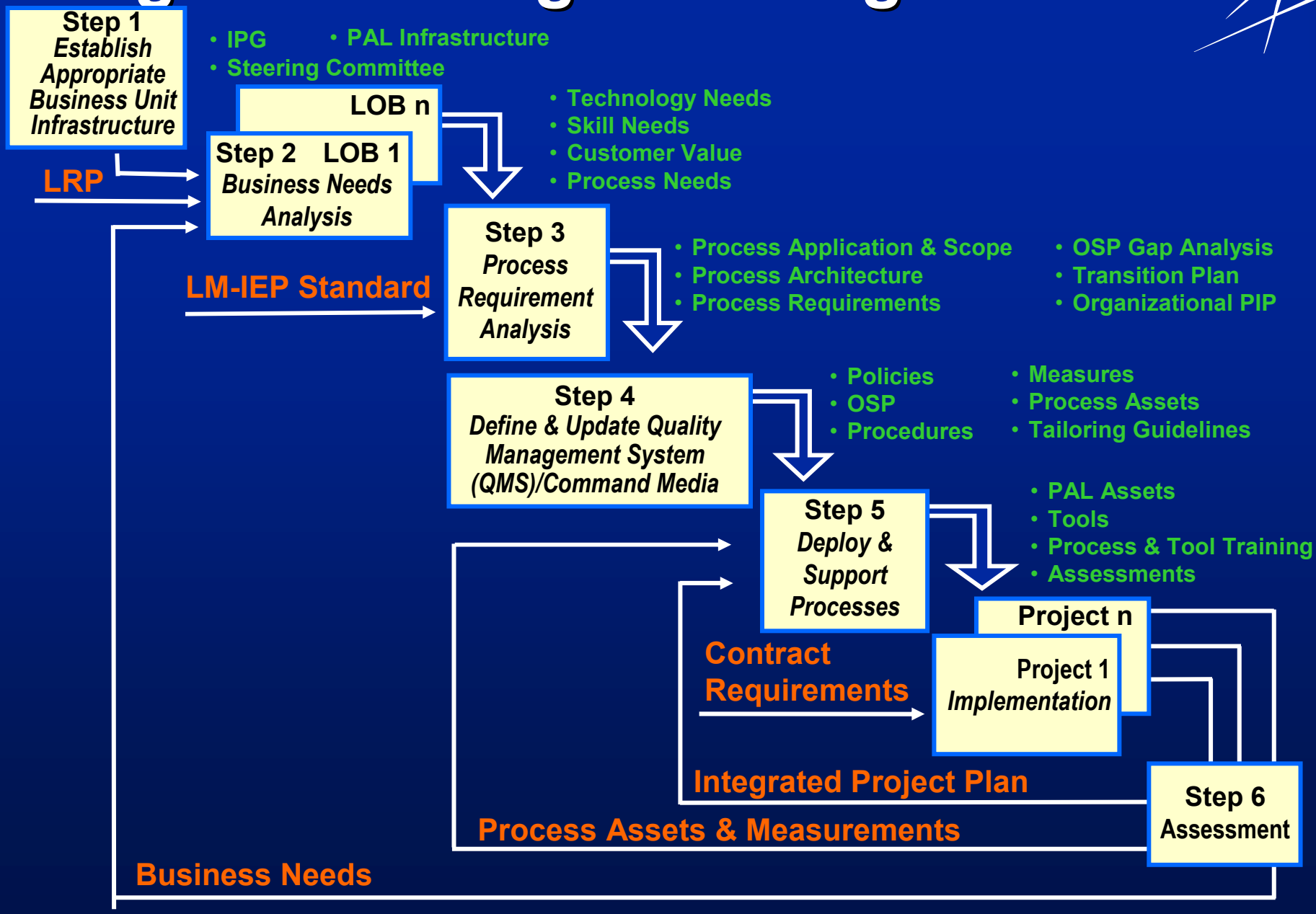
Goal: Consistent OSP Architectures



Key Architectural Tenets

- ***Architecture covers the entire enterprise***
  - To be used as a taxonomy for Corporate command media
  - Detailed taxonomy below IEP level to be determined by responsible functional organizations
- ***Is complete in scope, not in requirements***
  - Requirements based on source standards, thus heavy emphasis on PM, Quality, and Engineering
  - Requirements in other areas need to be augmented by existing corporate policies and procedures, and other industry standards
- ***Represents a single architectural "view"***
  - Presents process elements from a topical viewpoint
  - Other views required for management and practitioners; e.g., temporal, role-based, information flow

Using LM-IEP to get the "right" Process



How do we ensure the process is deployed "right"? - 1

The typical approach involves….

- *Organizational policy ("thou shalt…")*
- *Process & Product Quality Assurance*
- *Mechanisms for ensuring process fidelity, including*
  - *Process-enforcement mechanisms such as process enactment tools*
  - *Process tailoring approval*
  - *Quality assurance audits*
  - *Reviews, checklists, etc.*

How do we ensure the process is deployed "right"? - 2

- *Lockheed Martin experience is that ensuring the process is deployed "right" requires*
  - *Process checkpoints synchronized with a program's business rhythm*
  - *Including process improvement investment during strategic, long-range planning*
  - *Prescribing organizational participation in corporate-level infrastructure*

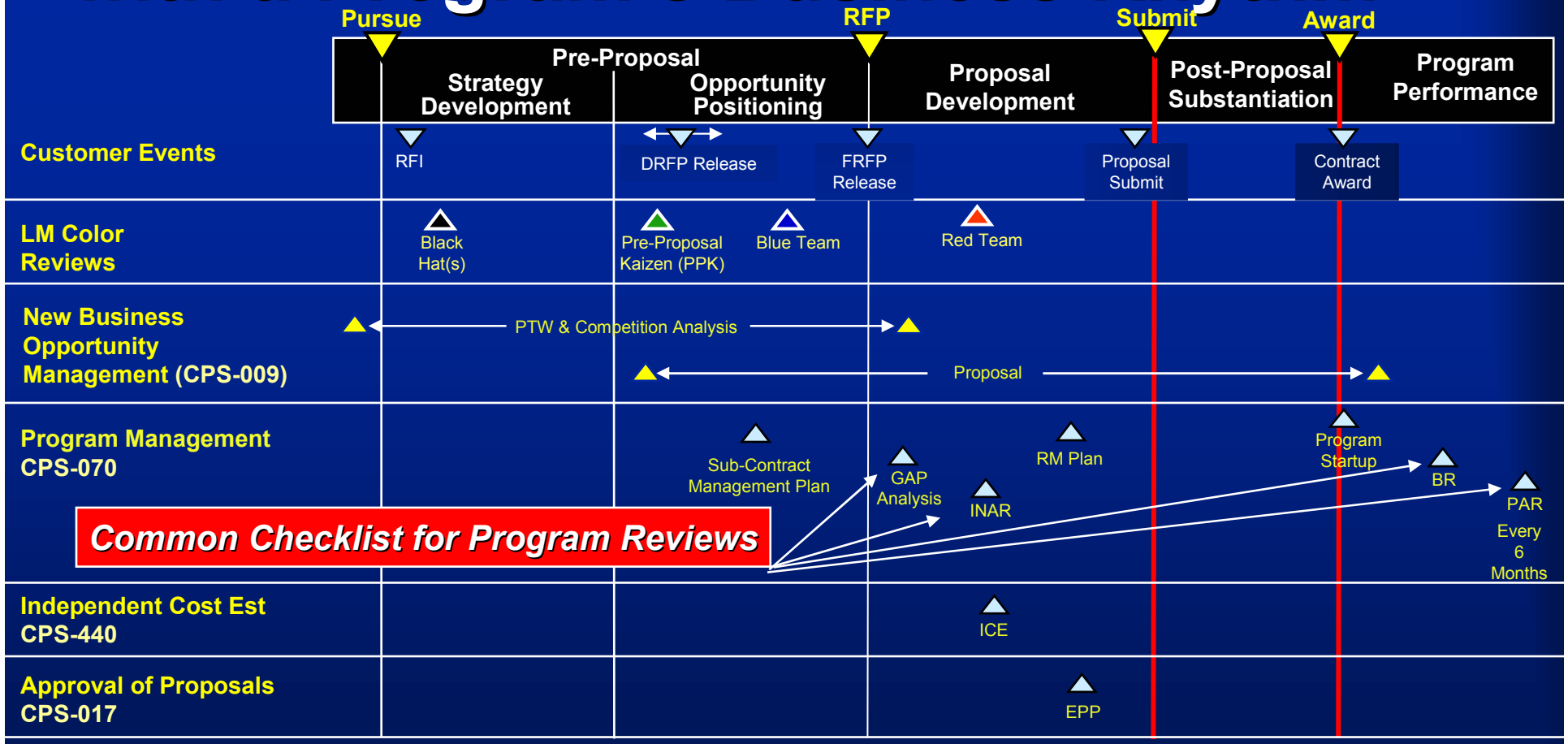
Corporate policy enforces these checkpoints

Corporate Policy Statement (CPS) on *Program Management (PM)*

- *A: Program Manager Development*
- *B: Risk Management*
- *C: Past Performance*
- *D: Proposal and Program Reviews* → Updated
- *E: Data Management*
- *F: Configuration Management*
- *G: Managing Major Subcontracts*
- *H: Integrated Planning & Scheduling* → New
- *I: Program Performance Reporting* → New

Corporate Direction to Formalize the PM Infrastructure

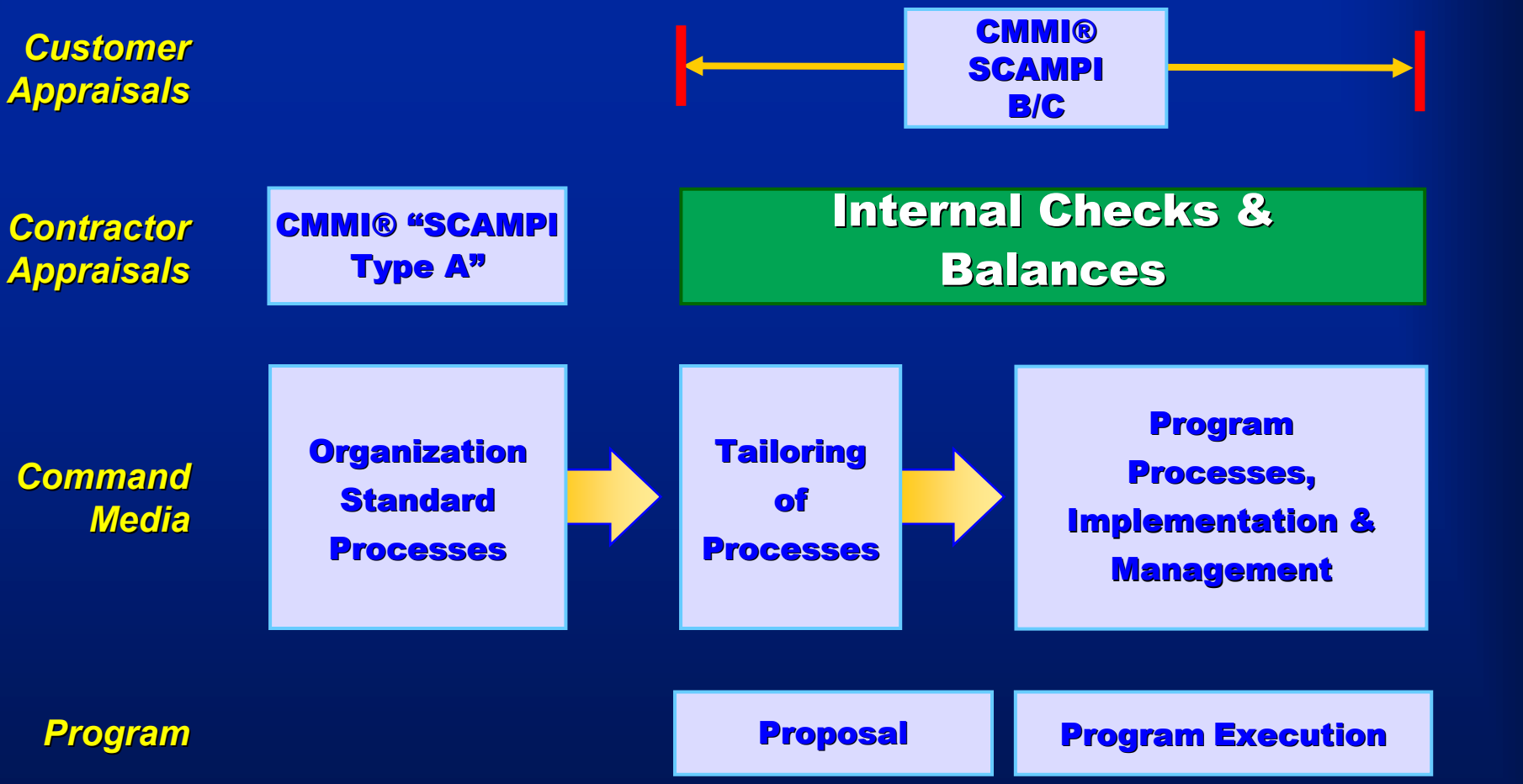
Synchronizing Process Checkpoints with a Program's Business Rhythm



Allows:

- ***On-line Completion and Storage of Checklist***
- ***Centralized Repository for Review Artifacts***
- ***Automatic Action Item Generation***
- ***Summary Metrics of Checklist Findings***

Assuring Organizational and Program Process Compliance & Implementation

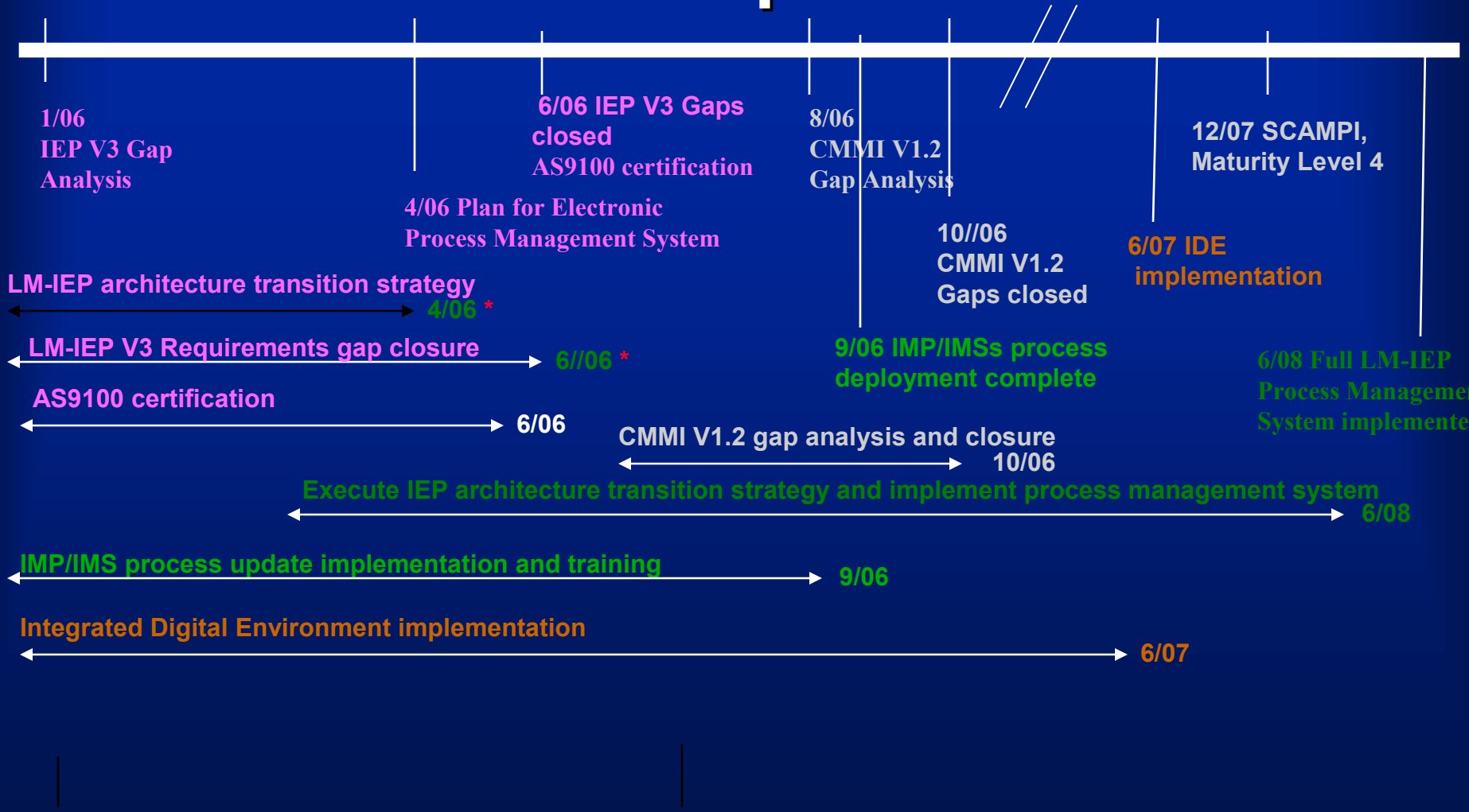


Recommendation: Institute the requirement for process maturity in command media with check and balance for implementation and management.

Future Improvements

- *Fully electronic processes (using models/tools) to*
  - *Improve human understanding and communication*
  - *Improve process fidelity, management and improvement*
  - *Implement multiple views (e.g., behavioral, functional, organizational, informational)*
    - *Support process enactment*
- *Improved program startup*
  - *Ensure smooth transition from proposal phase*
  - *Enable quick and robust program initiation*

Process Improvement Strategy Example



* Submit to corporate

Why participate in corporate infrastructure?

Subcouncil Participation

BRING

issues / needs & your assets

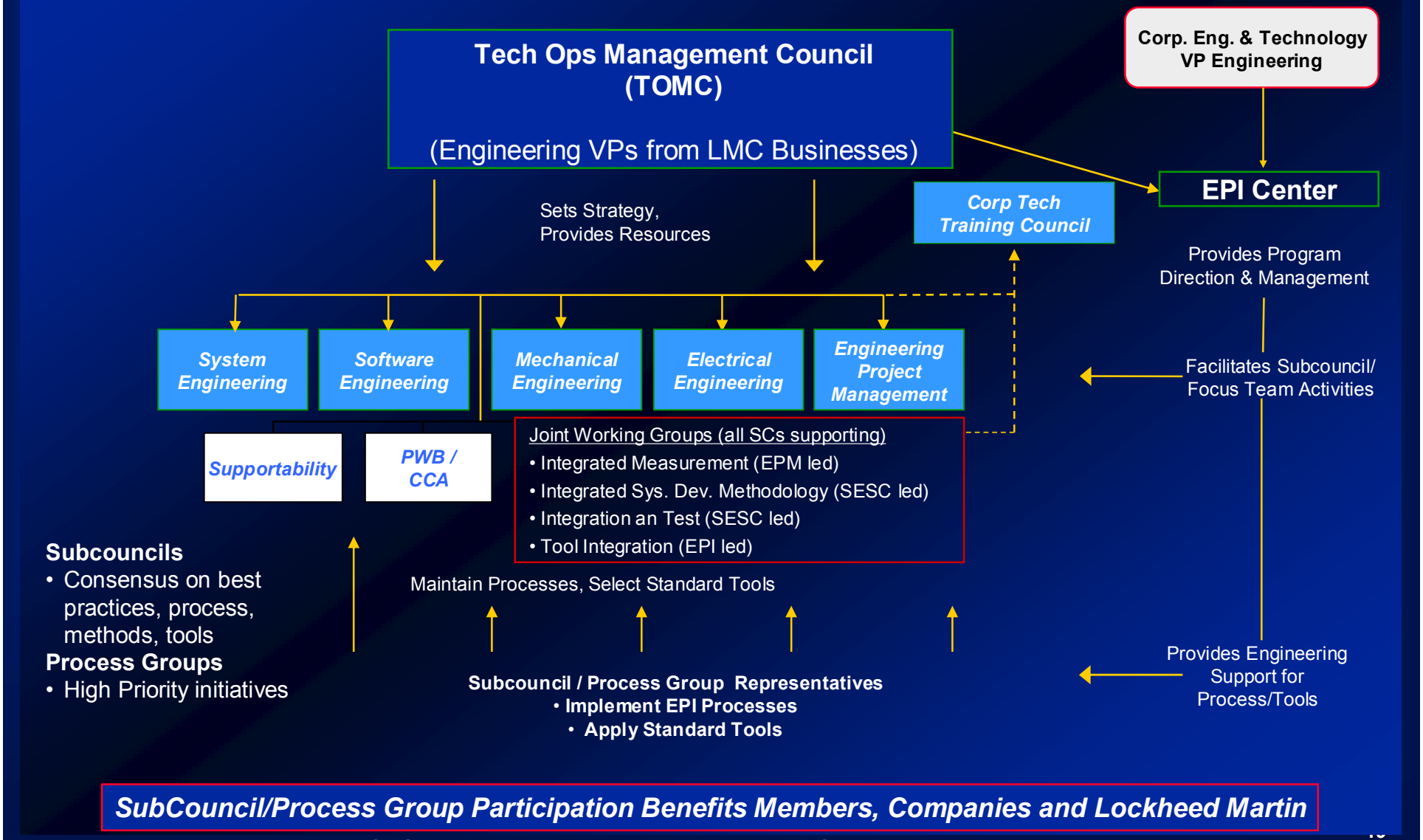
TAKE HOME

assets / solutions

Business Unit Infusion

- Improve Productivity
- Lower Cost to Programs & Business
- Implement SC Assets
- Connect Local users to help network

EPI Program Infrastructure: 2005



SubCouncil/Process Group Participation Benefits Members, Companies and Lockheed Martin

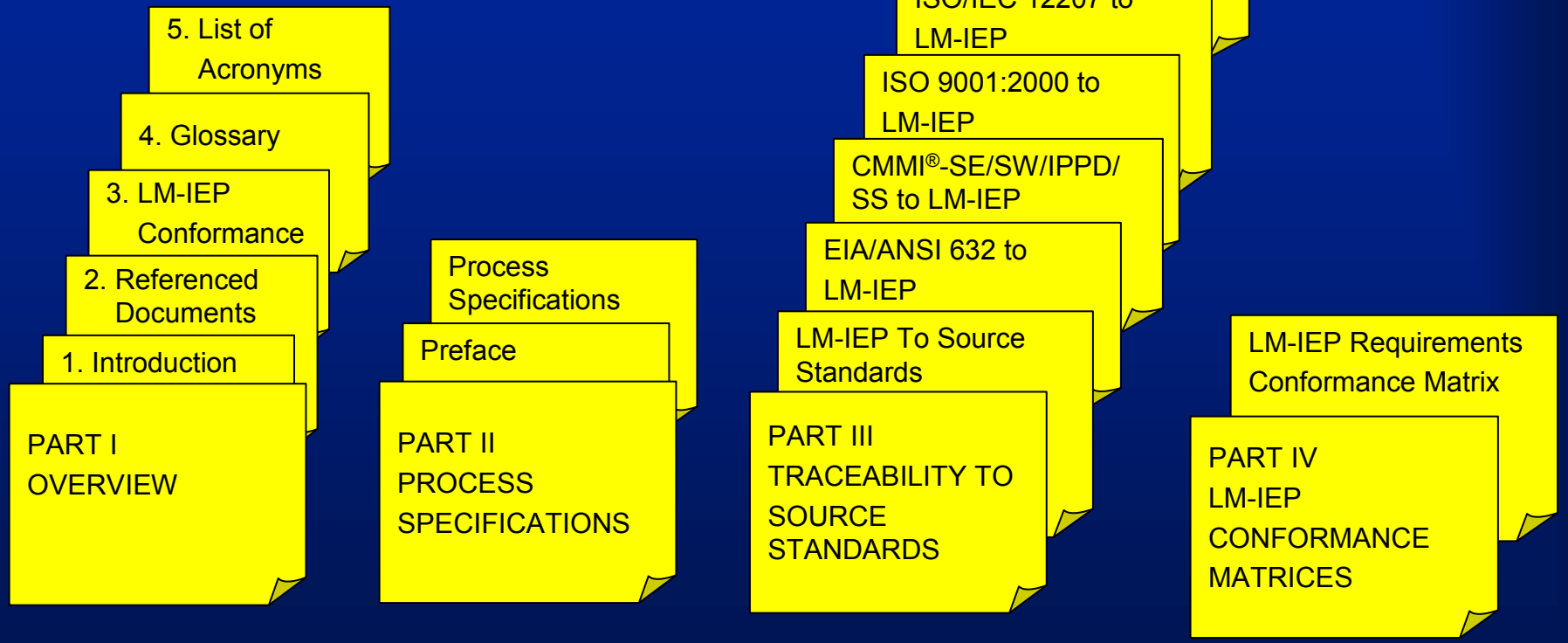
Summary

- *Selecting the "right" process for a program is non-trivial and requires*
  - *Having the "right" OSP*
  - *Using the "right" assets to support the process*
- *Supporting infrastructure facilitates deploying the process "right"*
  - *Process checkpoints linked to program milestones*
  - *Strategic investment to leverage across businesses*
  - *Infrastructure support (e.g., participation in corporate-level councils)*

BACKUP

LM-IEP Standard

Defines "what" level of processes versus "how"
- **LM-IEP Standard specifies <u>what</u> is to be performed**
- **Company processes, methods and tools specify <u>how</u>**



Standard (280-01) available on the EPI web-site at http://www.epic.lmco.com/docs/280-01all/index.htm