

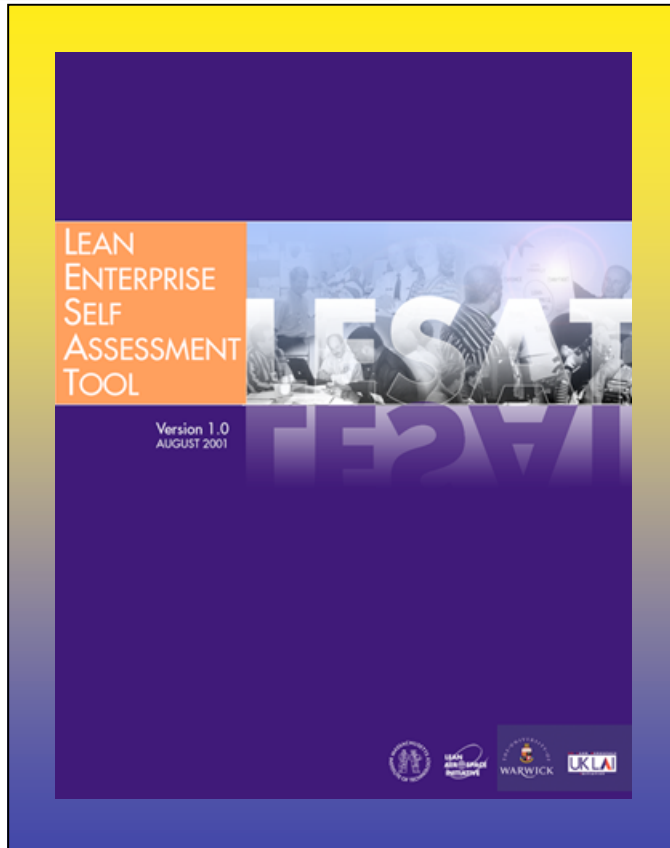


**Government  
Lean Enterprise Self Assessment Tool**

**May 2005**



# What Is the Lean Enterprise Self-Assessment Tool (LESAT)?



Source: Lean Aerospace Initiative, MIT © 2001

- A tool for self-assessing the present state of “leanness” of an enterprise and its readiness to change
- Comprised of capability maturity model for assessing
  - (1) Enterprise leadership
  - (2) Life cycle and enabling processes
  - (3) Enabling infrastructure
- LESAT supports both
  - “As- Is” Analysis  
AND
  - “To-Be” Vision



# Government Lean Enterprise Self-Assessment Tool



***LESAT revised making it more appropriate for government organizational use***

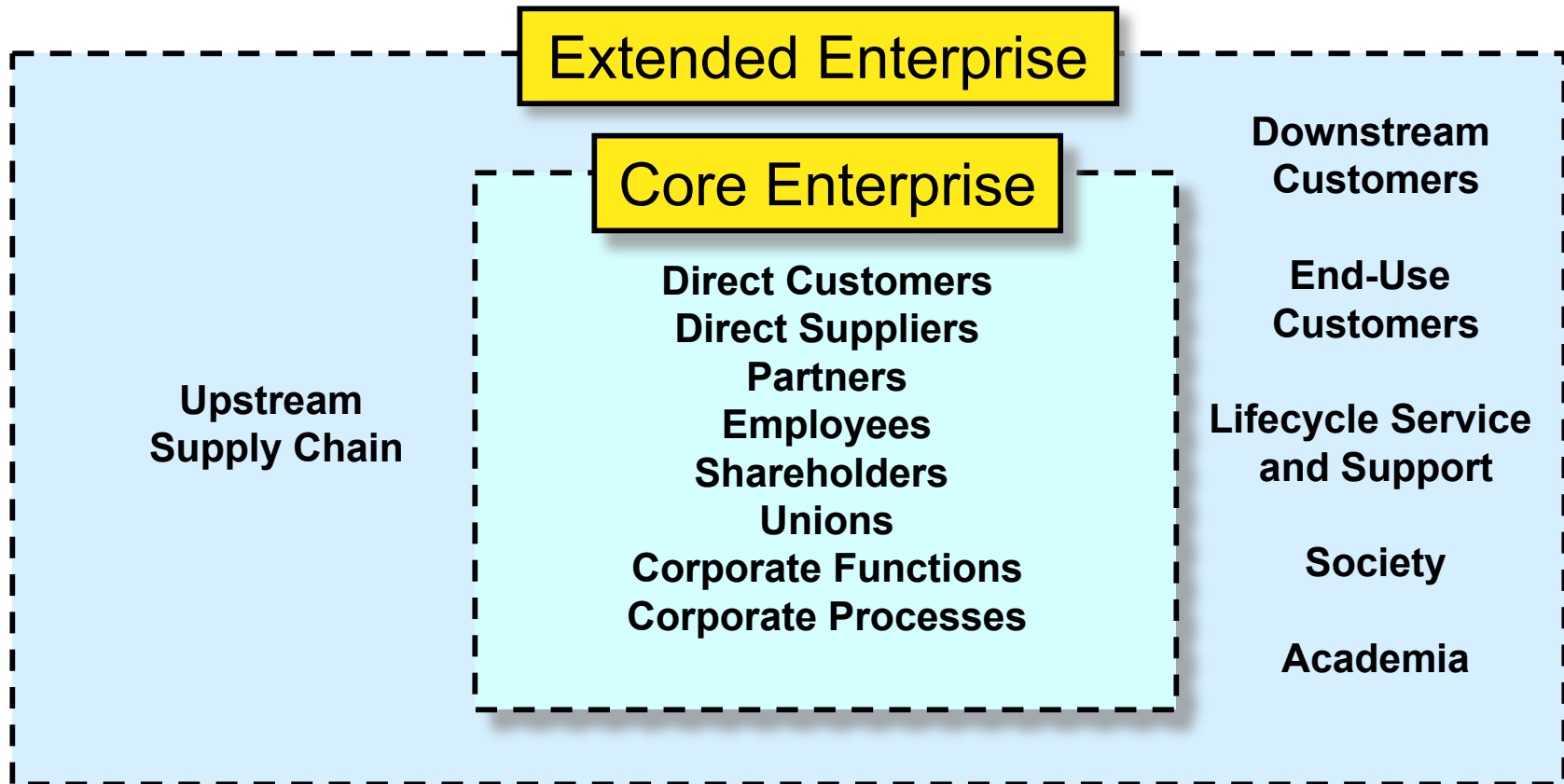
Source: Lean Aerospace Initiative, MIT ©  
2001 as modified by MIT on 5/15/05

- Background:
  - Review of LESAT relative to SPO operation indicated 60-70% of LESAT usable in government context
  - Developed with small team
- Primary focus for use is:
  - SPOs
  - Government organizations with multiple functions needed to fulfill mission

**Successfully tested with Global Hawk  
& C-17 SPOs**



# Lean Transformation Requires an Enterprise Approach





## Perspectives on Assessment

- Most LAI members have launched “lean change initiatives”
- Many have used LAI’s Transition to Lean (TTL) Roadmap
- Experience with TTL led early adopters to ask:
  - How lean are we?
  - How do we know how much progress we have made?
  - Where should we focus next?

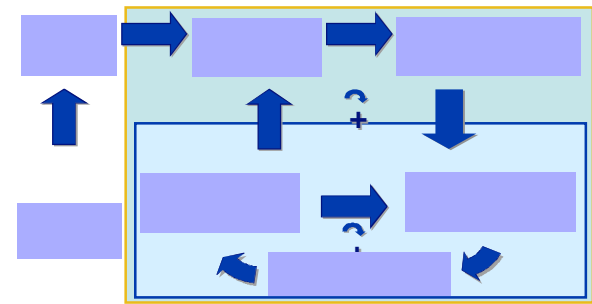
**LESAT is intended to address these questions**



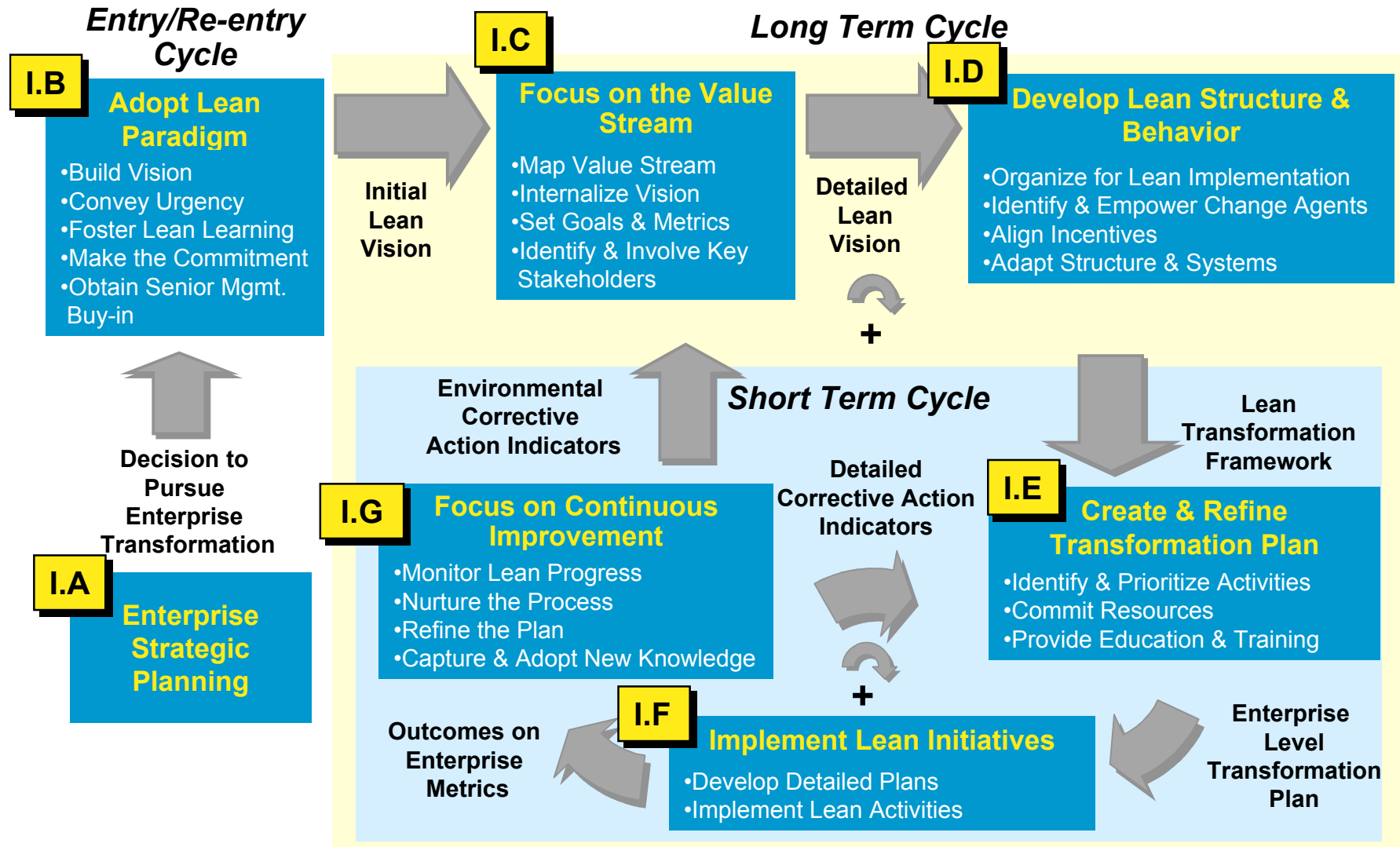
# LESAT Section I Links Directly with Enterprise TTL

## Section I: Lean Transformation/Leadership

- Practices directly linked to enterprise Transition to Lean Model (TTL)
- Assesses the following elements:
  - Strategic integration
  - Leadership and commitment
  - Value stream analysis and balancing
  - Change management
  - Structure and systems
  - Lean transformation planning, execution and monitoring

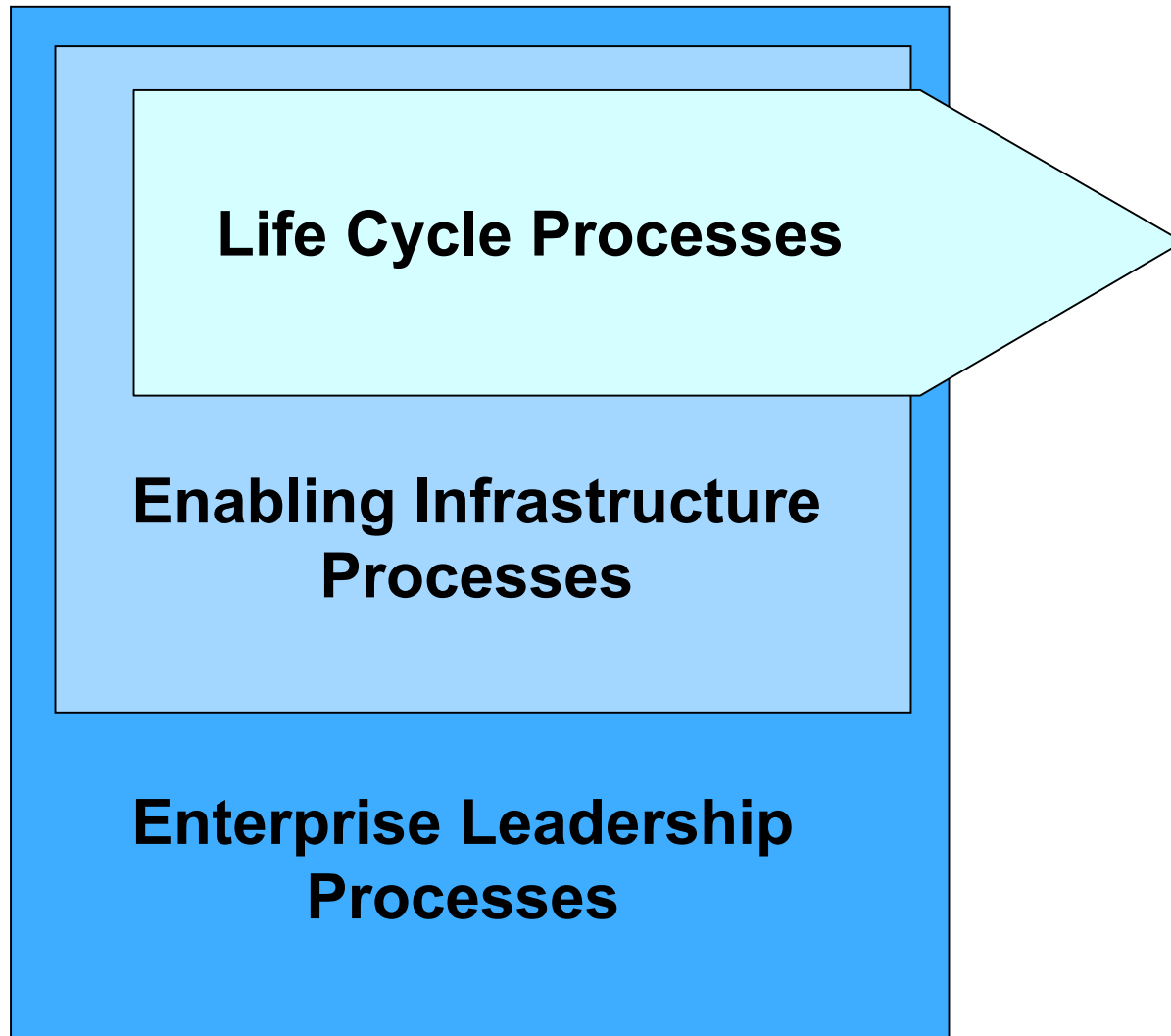


# Enterprise Level Roadmap





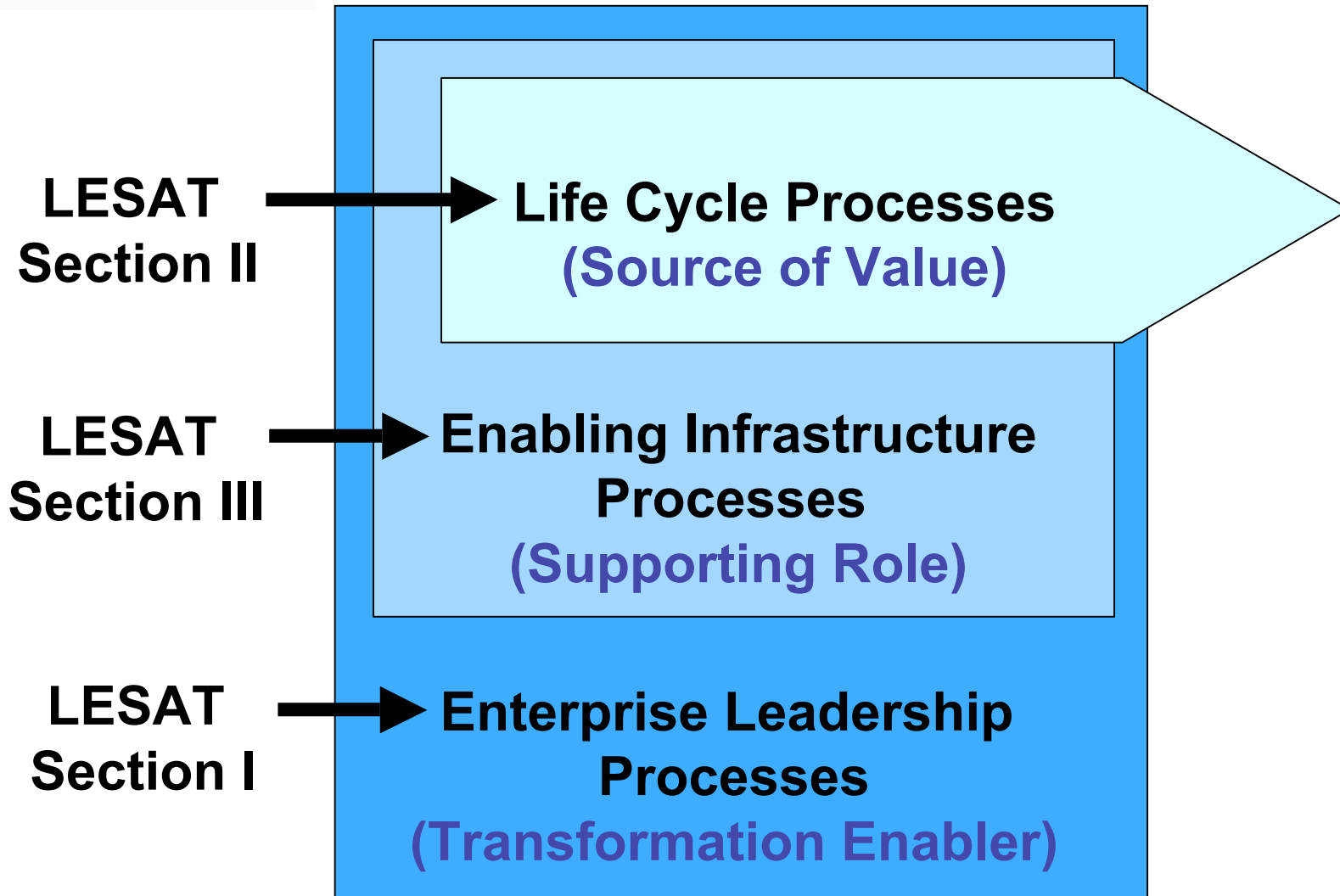
# LAI Process Architecture View of the Lean Enterprise



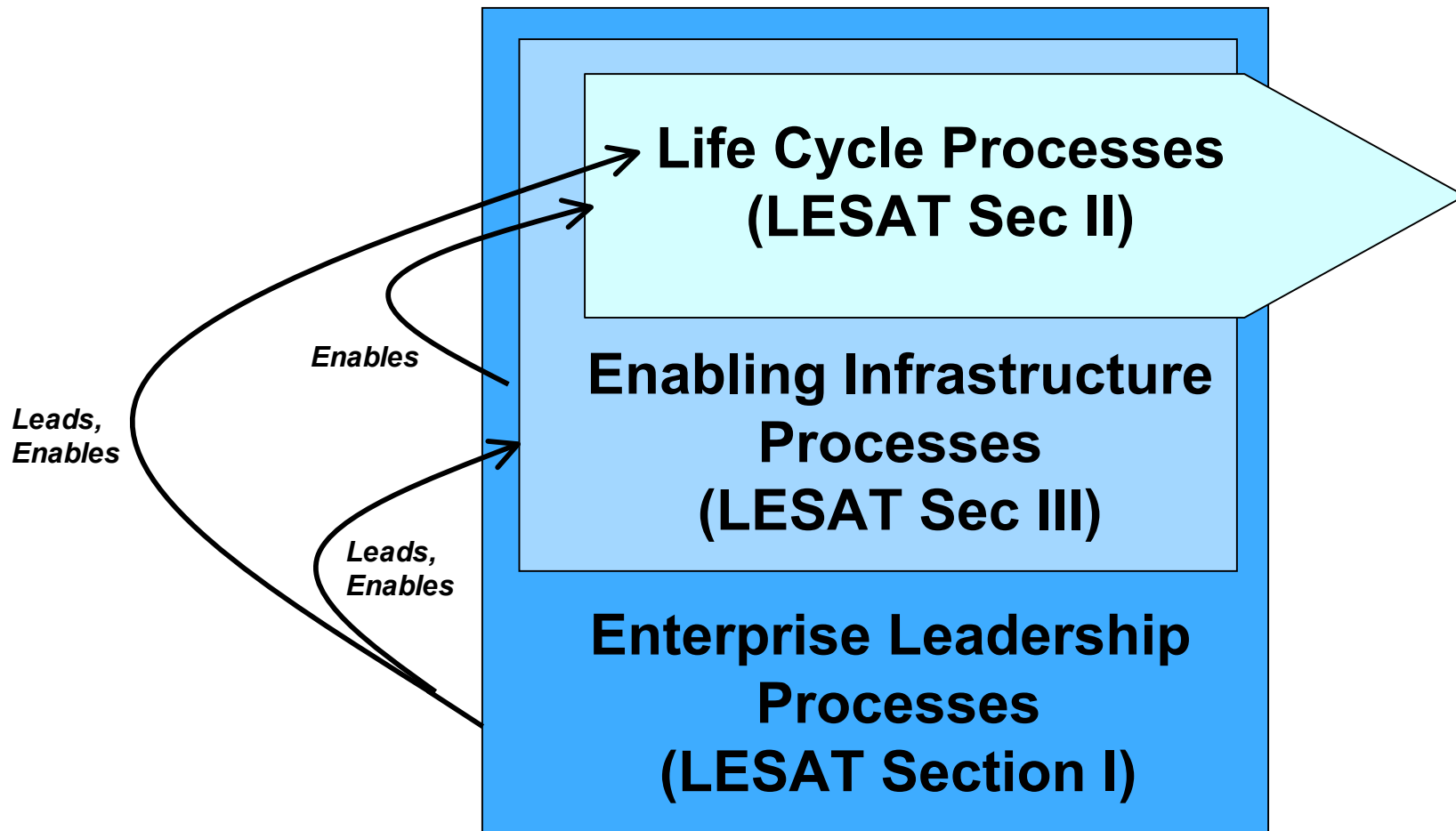




# LESAT is Consistent with a Process Architecture View of the Lean Enterprise

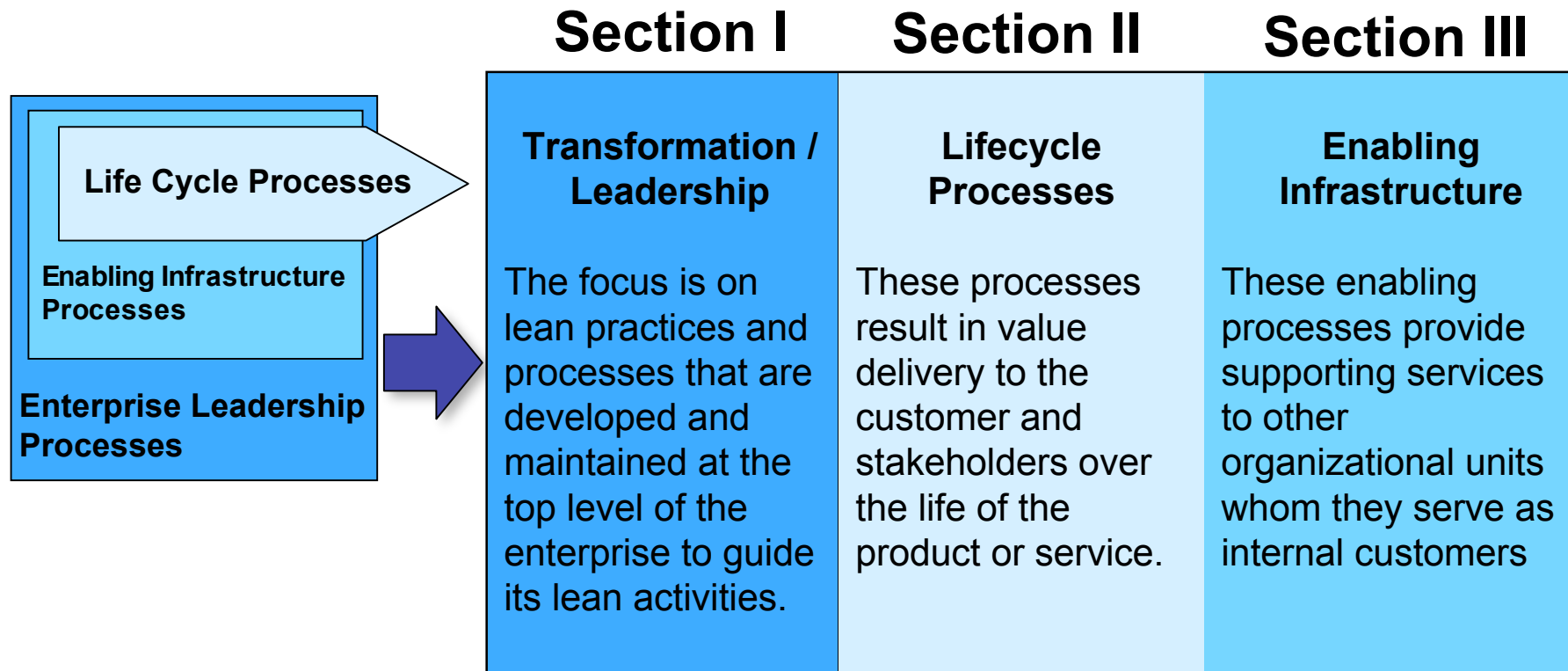


# Research Supported Causal Relations in Lean Enterprise Transformation





# LESAT Structure is Consistent with Enterprise Architecture



Source: Lean Aerospace Initiative, MIT © 2001

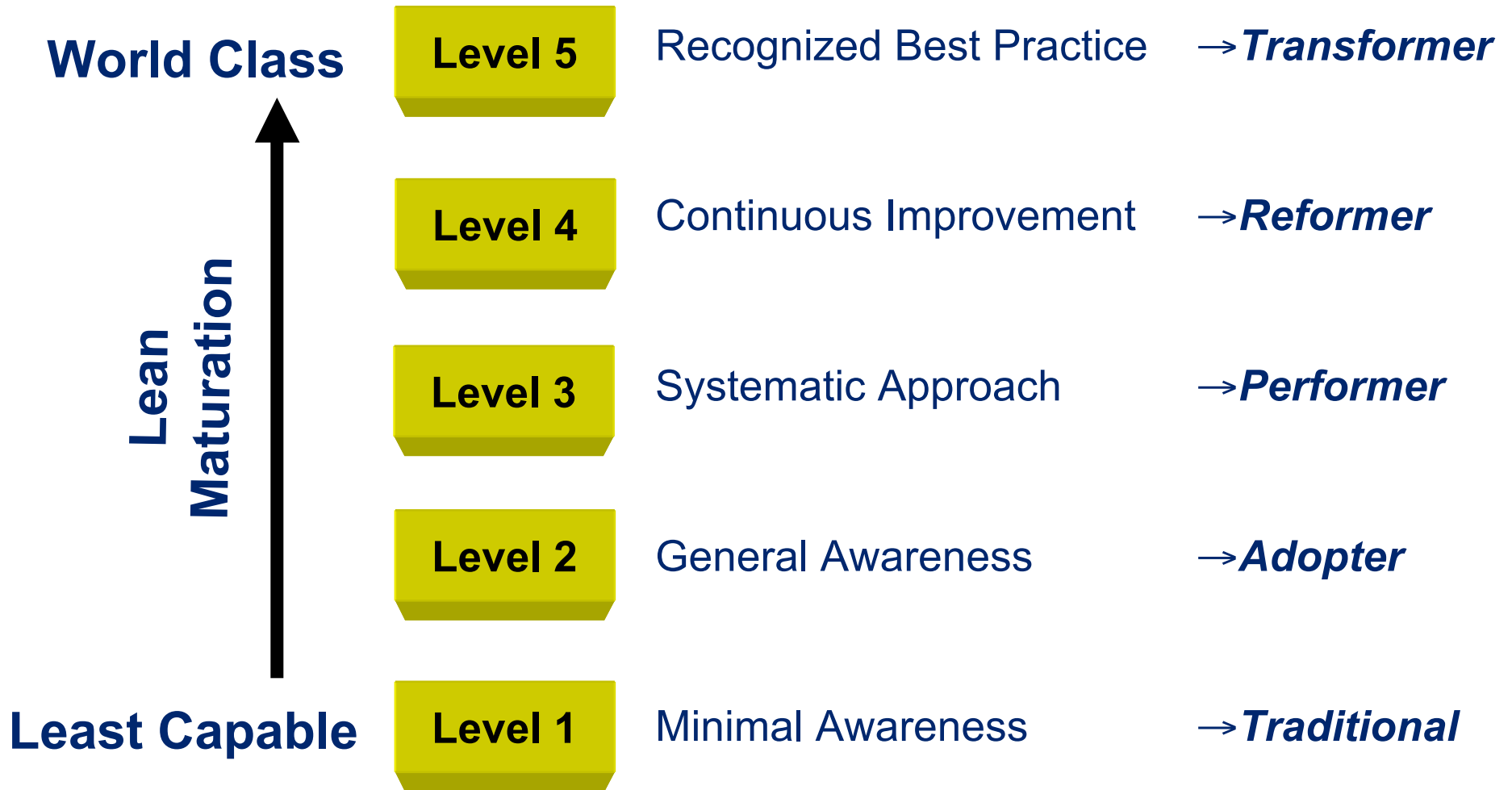


# Lean Enterprise Practices

- There are 55 lean enterprise practices in the assessment, divided amongst the three major sections
  - Section 1 Leadership/Transformation (28 practices)
  - Section 2 Lifecycle Processes (19 Practices)
  - Section 3 Enabling Infrastructure (8 Practices)
- Each practice is assessed on a capability maturity scale of 1 to 5
- There is a practice maturity definition for every maturity level in every practice, provided on a maturity matrix assessment sheet



# Maturity Level Definitions





# Generic Capability Maturity Levels

(Facilitator's Guide, pp.13)

## Level 5

Exceptional, well-defined, innovative approach is fully deployed across the extended enterprise (across internal and external value streams); recognized as best practice.

## Level 4

On-going refinement and continuous improvement across the enterprise; improvement gains are sustained.

## Level 3

A systematic approach/methodology deployed in varying stages across most areas; facilitated with metrics; good sustainment.

## Level 2

General awareness; informal approach deployed in a few areas with varying degrees of effectiveness and sustainment.

## Level 1

Some awareness of this practice; sporadic improvement activities may be underway in a few areas.



# What can LESAT Do?

- Simple, easy to use by enterprise leadership
- Focuses on lean attributes and interactions
- Tests alignment with enterprise planning
- Provides guidance for “next steps”
  - Gap analysis capability
  - Easy way to capture change opportunities
- Ability to accommodate both single and aligned organizations (gov’t-contractor, gov’t-gov’t)
- Can be integrated with an enterprise change initiative (Enterprise Transition to Lean Roadmap)
- Directly supports your strategic planning
- Can be repeated to measure progress



# Methodology for Employing LESAT

(Description - Facilitator's Guide pp.21)



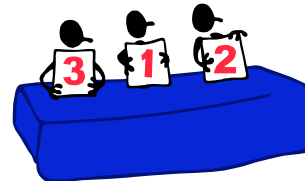
Step 1: Facilitate a meeting to introduce the tool. Identify and hear from the enterprise leader and lean champions



Step 2: Enterprise leaders and staff conduct LESAT assessment. Facilitator answers questions and compiles data for leadership review



Step 3: Leadership reconvenes to jointly review results of present maturity level



Step 4: Leadership identifies and agrees on actionable items



Step 5: Team is formed to develop action plans and prioritize resources for lean enterprise improvement





# Generic LESAT Maturity Matrix Template

(blue text changes for each practice, green text entered by assessor for each practice)

<b>Section, Group # and Group Name:</b> Brief description of this Group number. In Section I, the Group is one of the Primary Activities from the Transition-to-Lean (TTL) Roadmap (blue)											
<b>Diagnostic Questions</b>		1.0 Generic questions regarding the performance of the enterprise relative to this Group of practices (blue)									
LP#	Lean Practices	Capability Levels									
		Level 1		Level 2		Level 3		Level 4		Level 5	
	A specific lean practice associated with this Group Sound bit phrase (blue)	Statement describing little awareness of this lean practice (blue)								Statement describing world-class behavior for this lean practice (blue)	
		C	D	C	D	C	D	C	D	C	D
	Lean Indicators	Outcomes and lean behaviors that an enterprise will exhibit as it proceeds on its Lean transformation (blue)									
	Evidence	Supporting data utilized in assessing the current capability level of the Enterprise on this lean practice (green)									
	Opportunities	Inputs to plans of action to leverage opportunities or to move to the desired level of capability (green)									

# LESAT Section I

## Section I

## Section II

## Section III

### Transformation / Leadership

The focus is on lean practices and processes that are developed and maintained at the top level of the enterprise to guide its lean activities.

- I.A Enterprise Strategic Planning
- I.B Adopt the Lean Paradigm
- I.C Focus on the Value Stream
- I.D Develop Lean Structure and Behavior
- I.E Create and Refine Transformation Plan
- I.F Implement Lean Initiatives
- I.G Focus on Continuous Improvement



# LESAT Section I - 28 Lean Practices

## **I.A. Enterprise Strategic Planning**

- I.A.1 Integration of Lean in strategic planning process
- I.A.2 Focus on customer value
- I.A.3 Leveraging the extended enterprise

## **I.B. Adopt Lean Paradigm**

- I.B.1 Learning and education in “Lean” for enterprise leaders
- I.B.2 Senior management commitment
- I.B.3 Lean enterprise vision
- I.B.4 A sense of urgency

## **I.C. Focus on the Value Stream**

- I.C.1 Understanding current value stream
- I.C.2 Enterprise flow
- I.C.3 Designing future value stream
- I.C.4 Performance measures

## **I.D Develop Lean Structure and Behavior**

- I.D.1 Enterprise organizational orientation
- I.D.2 Relationships based on mutual trust
- I.D.3 Open and timely communications

- I.D.4 Employee empowerment
- I.D.5 Incentive alignment
- I.D.6 Innovation encouragement
- I.D.7 Lean change agents

## **I.E. Create & Refine Transformation Plan**

- I.E.1 Enterprise-level Lean transformation plan
- I.E.2 Commit resources for Lean improvements
- I.E.3 Provide education and training

## **I.F. Implement Lean Initiatives**

- I.F.1 Development of detailed plans based on enterprise plan
- I.F.2 Tracking detailed implementation

## **I.G. Focus on Continuous Improvement**

- I.G.1 Structured continuous improvement processes
- I.G.2 Monitoring lean progress
- I.G.3 Nurturing the process
- I.G.4 Capturing lessons learned
- I.G.5 Impacting enterprise strategic planning



# Example LESAT Practice - I.B Adopt Lean Paradigm -

**I.B. Adopt Lean Paradigm** - Transitioning to lean requires a significant modification to the business model of the enterprise. It is imperative that the enterprise leadership understands and buys into the lean paradigm since they will be required to create a vision for doing business, behaving and seeing value in fundamentally different ways.

**Diagnostic Questions**

- Do enterprise leaders and senior managers understand the lean paradigm at the enterprise level?
- Do all senior leaders and management enthusiastically support a transformation to lean?
- Has a common vision of lean been communicated throughout the enterprise and within the extended enterprise?
- Has a compelling case been developed for the Lean transformation?

LP#	Lean Practices	Capability Levels				
		Level 1	Level 2	Level 3	Level 4	Level 5
I.B.3.	<b>Lean Enterprise Vision</b> <i>New mental model of the enterprise</i>	Senior leaders have varying vision of lean, from none to well-defined.	Senior leaders adopt common vision of lean.	Lean vision has been communicated and is understood by most employees.	Common vision of lean is shared by the extended enterprise.	Stakeholders have internalized the lean vision and are an active part of achieving it.
		C   D	C   D	C   D	C   D	C   D
	<b>Lean Indicators</b>	<ul style="list-style-type: none"> <li>•The role that lean plays in achieving the vision is clearly defined</li> <li>•The vision has been communicated to all levels and has extensive buy-in by most employees.</li> <li>•The vision incorporates a new mental model of how the company would act and behave according to lean principles and practices</li> </ul>				
	<b>Evidence</b>					
	<b>Opportunities</b>					



# Diagnostic Questions for I.B - Adopt the Lean Paradigm

**I.B. Adopt Lean Paradigm** - Transitioning to lean requires a significant modification to the business model of the enterprise. It is imperative that the enterprise leadership understands and buys into the lean paradigm since they will be required to create a vision for doing business, behaving and seeing value in fundamentally different ways.

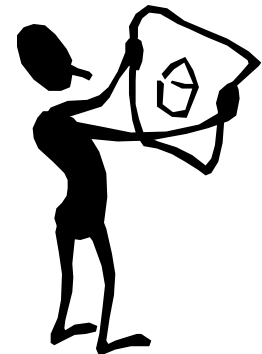
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	<b>Evidence</b>										
	<b>Opportunities</b>										



## Diagnostic Questions for I.B - Adopt the Lean Paradigm

- Do enterprise leader and senior managers understand the lean paradigm at the enterprise level?
- Have all senior managers made a commitment to enthusiastically support a transformation to lean?
- Has a common vision of lean been communicated throughout the enterprise and within the extended enterprise?
- Has a compelling case been developed for the lean transformation?





# Maturity Definitions for Practice

## I.B.3 - Lean Enterprise Vision

**I.B. Adopt Lean Paradigm** - Transitioning to lean requires a significant modification to the business model of the enterprise. It is imperative that the enterprise leadership understands and buys into the lean paradigm since they will be required to create a vision for doing business, behaving and seeing value in fundamentally different ways.

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	<b>Evidence</b>										
	<b>Opportunities</b>										



# Maturity Definitions for Practice

## I.B.3 - Lean Enterprise Vision

### I.B.3 Lean Enterprise Vision - new mental model of the enterprise

#### Level 5

Stakeholders have internalized the lean vision & are an active part of achieving it

#### Level 4

Common vision of lean is shared by the extended enterprise

#### Level 3

Lean vision has been communicated and is understood by most employees

#### Level 2

Senior leaders adopt common vision of lean

#### Level 1

Senior leaders have varying visions of lean, from none to well-defined

Source: U.S. and U.K. Lean Aerospace Initiative, © 2001





# Lean Indicators for Practice

## I.B.3 - Lean Enterprise Vision

**I.B. Adopt Lean Paradigm** - Transitioning to lean requires a significant modification to the business model of the enterprise. It is imperative that the enterprise leadership understands and buys into the lean paradigm since they will be required to create a vision for doing business, behaving and seeing value in fundamentally different ways.

### Diagnostic Questions

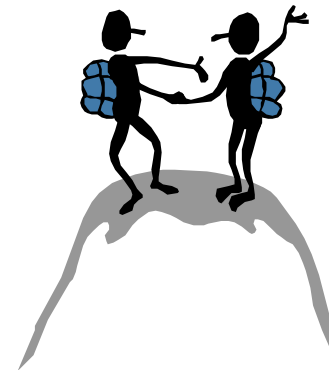
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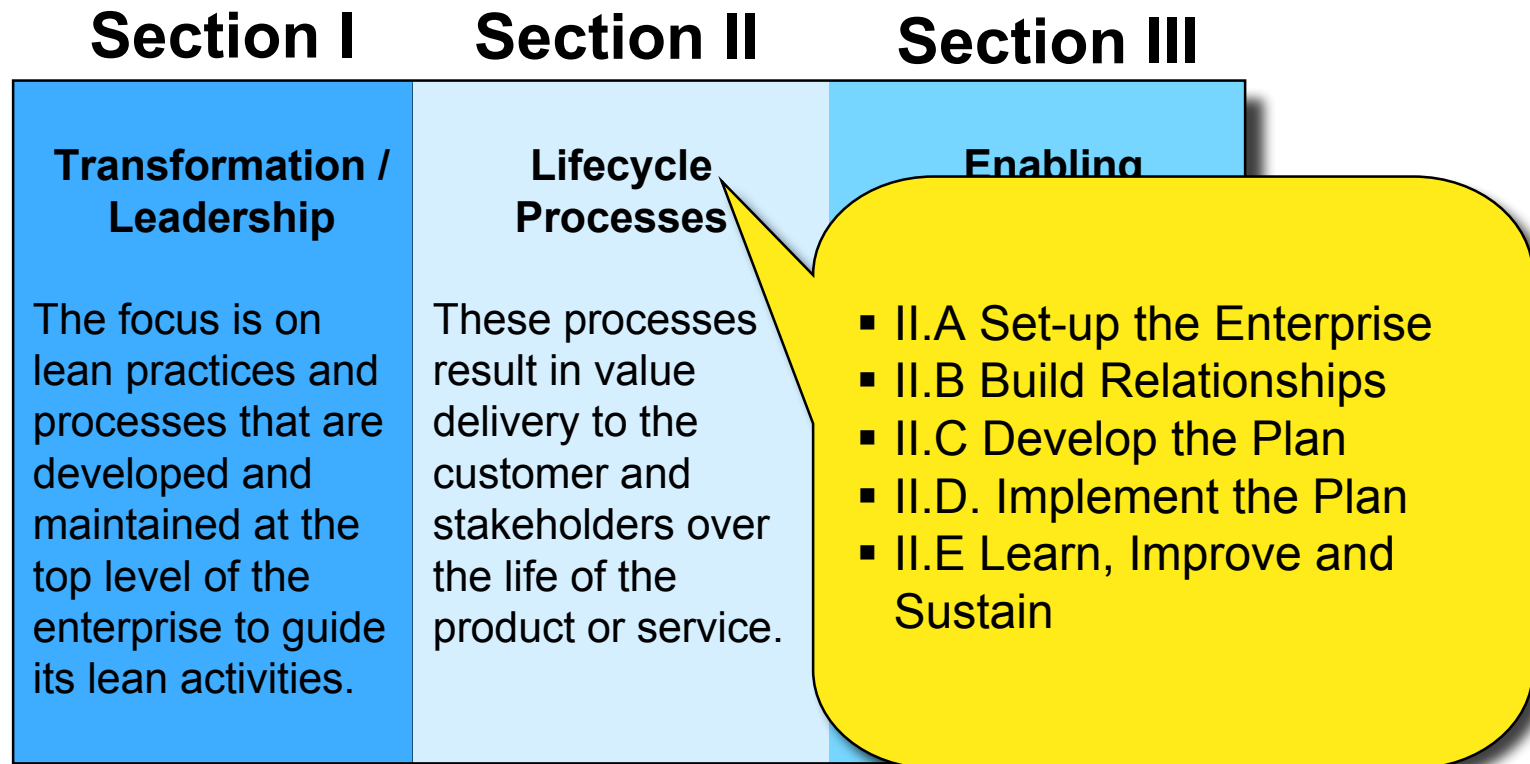


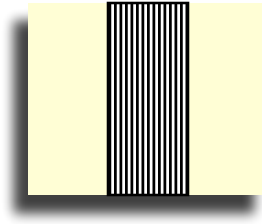
## Lean Indicators for Practice I.B.3 - Lean Enterprise Vision

- The role that lean plays in achieving the vision is clearly defined
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- The vision incorporates a new mental model of how the company would act and behave according to lean principles and practices



# LESAT Section II





## LESAT Section II

### Section II: Life Cycle Processes

#### Assess:

- Enterprise level core processes
  - Capability to use resources
  - Program Management
  - Relationship Development
  - Requirements Definition
  - Lean Behavior throughout the Value Stream
  - Alignment of Expectations
  - Service, Support and Sustainability
- Key integrative practices



# LESAT Section II - 19 Lean Practices

## II.A. Set-up the Enterprise

- II.A.1 Leverage Lean capability for new opportunities
- II.A.2 Optimize the capability and utilization of assets
- II.A.3 Provide capability to manage risk, cost, schedule and performance
- II.A.4 Allocate resources for program/project development efforts

## II.B. Build Relationships

- II.B.1 Define and develop relationships with stakeholders
- Optimize the relationship
- Foster innovation and knowledge-sharing

## II.C. Develop the Plan

- II.C.1 Establish a requirements definition process to optimize lifecycle value
- II.C.2 Capture data from the extended enterprise to optimize future requirements definitions
- II.C.3 Incorporate stakeholder value into design of products and processes
- II.C.4 Incorporate downstream stakeholder values into products and processes
- II.C.5 Create a multidisciplinary approach  
*lean.mit.edu*

## II.D. Implement the Plan

- II.D.1 Utilize knowledge and capability in decision making
- II.D.2 Foster lean behavior throughout the value stream
- II.D.3 Align customer requirements and expectations with the extended enterprise capabilities
- II.D.4 Transition product/service to the customer in a lean fashion

## II.E. Learn, Improve and Sustain

- II.E.1 Enhance value of delivered products and services to customers and the enterprise
- II.E.2 Provide post delivery service, support and sustainability
- II.E.3 Maintain challenge of existing processes



# Example LESAT Practice - II.D Implement the Plan -

**II. D. Implement the Plan** - The plan must be designed and managed according to the principles and practices of the lean paradigm

**Diagnostic Questions**

- Is lean knowledge and capability regarded as a strategic capability?
- Has enterprise strategy been aligned to capitalize on lean capability?
- Are products pulled in accordance with customer demand in real-time?
- Are production schedules and capacity considered prior to making a contract commitment?
- Have the enterprise processes been ordered and adapted for flow?
- Is the customer ready to effectively use and deploy the product/service when it is received?
- Is there a process to identify and eliminate bottlenecks in the work flow?

LP#	Lean Practices	Capability Levels														
		Level 1		Level 2		Level 3		Level 4		Level 5						
II.D.2	<b>Foster Lean Behavior Throughout the Value Stream</b> <i>Promoting stakeholder innovation and flexibility</i>	Processes and relationships based on past/historical norms.	There are pockets within the value stream where the objectives of the task, program or mission influence creation of new processes to maximize value.	All members of the value stream have established processes that foster open sharing of information with “no spin” assessments	Senior leadership involvement allows stakeholders to develop innovative approaches that are flexible to changing conditions.	Stakeholders along the value stream are empowered to develop flexible and innovative processes based on value delivered to the extended enterprise.	C	D	C	D	C	D	C	D	C	D
	<b>Lean Indicators (Examples)</b>	<ul style="list-style-type: none"> <li>• Conversion to lean has freed up resources for re-deployment.</li> <li>• Bottlenecks have been identified and eliminated to allow processes to flow seamlessly.</li> <li>• Work is performed only when “pulled” from subsequent “customers” in the value chain.</li> </ul>														
	<b>Evidence</b>															
	<b>Opportunities</b>															



# Diagnostic Questions for - II.D Implement the Plan -

**II. D. Implement the Plan** - The plan must be designed and managed according to the principles and practices of the lean paradigm

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	<b>Evidence</b>										
	<b>Opportunities</b>										



## Diagnostic Questions for II.D - Implement the Plan

- Is lean knowledge and capability regarded as a strategic capability?
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- Are products pulled in accordance with customer demand in real-time?
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- Have the enterprise processes been ordered and adapted for flow?
- Is the customer ready to effectively use and deploy the product/service when it is received?
- Is there a process to identify and eliminate bottlenecks in the work flow?







# Maturity Definitions for Practice II.D.2 -

## II.D.2 Foster Lean Behavior throughout the Value Stream

**II. D. Implement the Plan** - The plan must be designed and managed according to the principles and practices of the lean paradigm

**Diagnostic Questions**

- Is lean knowledge and capability regarded as a strategic capability?
- Has enterprise strategy been aligned to capitalize on lean capability?
- Are products pulled in accordance with customer demand in real-time?
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	<b>Evidence</b>										
	<b>Opportunities</b>										



## Maturity Definitions for Practice II.D.2

### II.D.2 Foster Lean Behavior throughout the Value Stream - *Promoting stakeholder innovation and flexibility*

#### Level 5

Stakeholders along the value stream are empowered to develop flexible and innovative processes based on value delivered to the extended enterprise.

#### Level 4

Senior leadership involvement allows stakeholders to develop innovative approaches that are flexible to changing conditions.

#### Level 3

All members of the value stream have established processes that foster open sharing of information with “no spin” assessments.

#### Level 2

There are pockets within the value stream where the objective of the task, program, or mission influence creation of new processes to maximize value.

#### Level 1

Processes and relationships are established based on past/historical norms



# Example LESAT Practice - II.D Implement the Plan -

**II. D. Implement the Plan** - The plan must be designed and managed according to the principles and practices of the lean paradigm

**Diagnostic Questions**

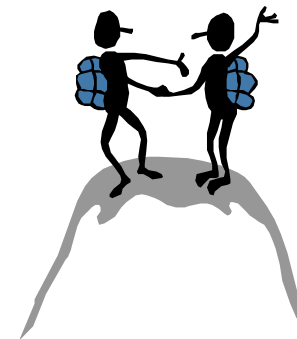
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		Level 1		Level 2		Level 3		Level 4		Level 5	
II.D.2	<b>Foster Lean Behavior Throughout the Value Stream</b> <i>Promoting stakeholder innovation and flexibility</i>	Processes and relationships based on past/historical norms.		There are pockets within the value stream where the objectives of the task, program or mission influence creation of new processes to maximize value.		All members of the value stream have established processes that foster open sharing of information with “no spin” assessments		Senior leadership involvement allows stakeholders to develop innovative approaches that are flexible to changing conditions.		Stakeholders along the value stream are empowered to develop flexible and innovative processes based on value delivered to the extended enterprise.	
		C	D	C	D	C	D	C	D	C	D
	<b>Lean Indicators (Examples)</b>	<ul style="list-style-type: none"> <li>• Conversion to lean has freed up resources for re-deployment.</li> <li>• Bottlenecks have been identified and eliminated to allow processes to flow seamlessly.</li> <li>• Work is performed only when “pulled” from subsequent “customers” in the value chain.</li> </ul>									
	<b>Evidence</b>										
	<b>Opportunities</b>										



## Lean Indicators for Practice II.D.2 - Foster Lean Behavior throughout the Value Stream

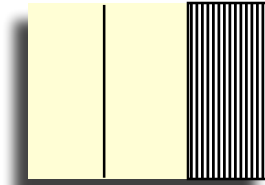
- **Conversion to lean has freed up resources for re-deployment**
- **Bottlenecks have been identified and eliminated to allow processes to flow seamlessly**
- **Work is performed only when “pulled” from subsequent “customers” in the value chain**



# LESAT Section III

Section I	Section II	Section III
<p><b>Transformation /</b></p> <p>lean practices and processes that are developed and maintained at the top level of the enterprise to guide its lean activities.</p>	<p><b>Lifecycle</b></p> <p>result in value delivery to the customer and stakeholders over the life of the product or service.</p>	<p><b>Enabling Infrastructure</b></p> <p>These enabling processes provide supporting services to other organizational units whom they serve as internal customers</p>

- III.A Lean Organizational Enablers
- III.B Lean Process Enablers



# LESAT Section III

## Section III: Enabling Infrastructure

### Assess critical supporting processes

- Finance
- Information Technology
- Learning
- Human Resources
- Environmental Health & Safety



# LESAT Section III - 8 Lean Practices

## III.A. Lean Organizational Enablers

III.A.1 Financial system supports Lean transformation

III.A.2 Enterprise stakeholders pull required financial information

III.A.3 Promulgate the Learning Organization

III.A.4 Enable the Lean enterprise with information systems and tools

III.A.5 Integration of environmental protection, health and safety into the business

## III.B. Lean Process Enablers

III.B.1 Process standardization

III.B.2 Common tools and systems

III.B.3 Variation reduction



# Example LESAT Practice

## III.A - Lean Organizational Enablers

**III.A. Lean Organization Enablers** - The support units of an enterprise infrastructure must support the implementation of lean principles, practices and behavior.

**Diagnostic Questions**

- Do the finance and accounting measures support the implementation of lean?
- How well have the financial and accounting systems been integrated with non-financial measures of value creation?
- Can stakeholders retrieve financial information as required?
- Are human resource practices reviewed to assure that intellectual capital matches process needs?
- Are the information technology systems compatible with stakeholder communications and analysis needs?
- Do processes created the least amount of environmental hazards practical?

LP#	Lean Practices	Capability Levels				
		Level 1	Level 2	Level 3	Level 4	Level 5
III.A.1	<b>Financial System Supports Lean Transformation</b> <i>Lean requires appropriate financial data</i>	Finance system provides basic budget and cost accounting data; there is little awareness and exploration of broader support roles for finance.	Initial efforts are underway to adapt or modify systems to compensate for the inadequacies of the formal financial system.	Finance system is overhauled to provide data and financial information to support and enable a lean transformation at any level.	Financial system scope is expanded to integrate with non-traditional measures of value creation (e.g., intellectual capital, balanced scorecard, etc.).	Financial systems provide seamless information exchange across the extended enterprise, with emphasis on value creation for all stakeholders.
		C   D	C   D	C   D	C   D	C   D
	<b>Lean Indicators</b>	<ul style="list-style-type: none"> <li>• Financial measures that conflict with lean activity are no longer used to measure progress and performance.</li> <li>• The financial system handles a balanced set of financial and non-financial measures to assist decision-making.</li> <li>• The financial system has been overhauled to ensure fast and efficient processing of information as required.</li> </ul>				
	<b>Evidence</b>					
	<b>Opportunities</b>					





# Diagnostic Questions for III.A - Lean Organizational Enablers

**III.A. Lean Organization Enablers** - The support units of an enterprise infrastructure must support the implementation of lean principles, practices and behavior.

**Diagnostic Questions**

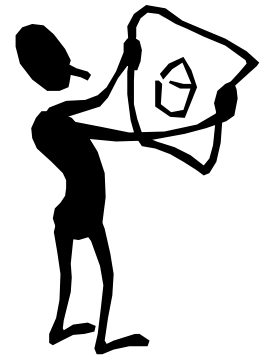
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	<b>Evidence</b>					
	<b>Opportunities</b>					



## Diagnostic Questions for III.A - Lean Organizational Enablers

- **Do the finance and accounting measures support the implementation of lean?**
- **How well have the financial and accounting systems been integrated with non-financial measures of value creation?**
- **Can stakeholders retrieve financial information as required?**
- **Are human resource practices reviewed to assure that intellectual capital matches process needs?**
- **Are the information technology systems compatible with stakeholder communications and analysis needs?**
- **Do processes create the least amount of environmental hazards practical?**





# Maturity Definitions for Practice

## III.A - Lean Organizational Enablers

**III.A. Lean Organization Enablers** - The support units of an enterprise infrastructure must support the implementation of lean principles, practices and behavior.

**Diagnostic Questions**

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	<b>Evidence</b>					
	<b>Opportunities</b>					



## Maturity Definitions for Practice III.A - Lean Organizational Enablers

### **Financial system supports lean transformation** - *Lean requires accurate assessment of value stream activities*

#### **Level 5**

Financial systems provide seamless information exchange across the extended enterprise, with emphasis on value creation for all stakeholders.

#### **Level 4**

Financial system scope is expanded to integrate with non-traditional measures of value creation (e.g., intellectual capital, balanced scorecard, etc.).

#### **Level 3**

Finance system is overhauled to provide data and financial information to support and enable a lean transformation at any level.

#### **Level 2**

Initial efforts are underway to adapt or modify systems to compensate for the inadequacies of the formal financial system.

#### **Level 1**

Finance system provides basic budget and cost accounting data; there is little awareness and exploration of broader support roles for finance.



# Lean Indicators for Practice

## III.A - Lean Organizational Enablers

**III.A. Lean Organization Enablers** - The support units of an enterprise infrastructure must support the implementation of lean principles, practices and behavior.

**Diagnostic Questions**

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	<b>Evidence</b>					
	<b>Opportunities</b>					



## Lean Indicators for Practice III.A - Lean Organizational Enablers

- Financial measures that conflict with lean activity are no longer used to measure progress and performance.
- The financial system handles a balanced set of financial and non-financial measures to assist decision-making.
- The financial system has been overhauled to ensure fast and efficient processing of information as required.
- Financial and performance measurement data can be accessed as needed in user-defined format.
- Financial information can be extrapolated to forecast outcomes.
- System provides up to date information on request and rationalizes information no longer used.





# Self-Assessment Process

- **Questions**
- **Pick up assessment tool**
- **Do assessment**
  - Check maturity level (C box)
  - Check desired maturity level (D box)
- **Enter evidence as appropriate**
- **Enter opportunities that come to mind**
- **Hand in to \_\_\_\_\_**