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Consulting & Engineering

Training and Consultancy Services Catalogue

2022

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Table of Contents

Training Programs

Consultancy Services

Semiha YAŞAR
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As your reliable business partner, we reflect our excitement for your company to achieve process excellence in all of our training and consultancy services, and support your enterprise transformation to gain competitive advantage.

CM2 Training Programs

CM2-01	Foundation of Operational Excellence
CM2-02	Requirements and the CM2 Baseline
CM2-03	Fundamentals of Change Management
CM2-04	The CM2 Change Process
CM2-05	Optimizing the Digital Thread
CM2-06	Achieving Enterprise CM2 Implementation
CM2-07	Executing The Digital Thread And Twin
CM2-08	Enabling Digital Transformation
CM2-09	Application Workshops For Achieving Operational Excellence
CM2-13	Optimizing The Software Lifecycle with CM2
IpX-20	Universal Document Control

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CM2-01
Foundation of Operational Excellence

- 2 DAYS -

How an organization identifies, structures, links and assigns ownership to its requirements and internal processes directly affect its ability to successfully and efficiently perform the intended mission or achieve its business objectives.

If this activity is ignored or done incorrectly, an organization pays severe penalties in the form of intervention resource expenditure. Those expenditures are the unplanned time, money, and resources expended to compensate for quality and schedule problems.

When quality and schedule problems dominate the energy an organization expands on a daily basis, corrective action becomes the standard “way of working”. Changing that environment requires an understanding of how current processes relate to best practices and the culture change that is needed to make the transition.

This course presents a structured and effective methodology for documenting, validating, releasing, and changing requirements. In addition, it provides methods for reducing intervention resource costs. It addresses the process enhancements that an organization must make in order to accommodate change and keep all requirements clear, concise, and valid.

Course Outline

- The Business of Running a Business
- Hierarchical Structure of the Digital Thread
- Magnitude of Corrective Action
- Basis for the CM2 Model
- Framework of an Enterprise
- Untangling the Chaos of an Organization
- Developing World-Class Products
- Managing the Flow of Requirements
- Managing Your Requirements as Datasets
- Change Process and Key Decision Points
- Elements of the CM2 Change Process
- Siloed CM Failures and Enterprise CM2 Successes
- Optimizing CM for the Enterprise
- The Path for CM2 Implementation

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CM2-02
Requirements and the CM2 Baseline

- 2 DAYS -

Requirements management is the foundation for the Digital Thread. Organizations struggle with the ability to define and maintain the digital architecture needed to support Software, Hardware, Systems, Facilities, and Infrastructure throughout the entire lifecycle. The inability to effectively manage the Digital Thread creates a high level of corrective action in every phase of the lifecycle. Configuration management is the major backbone of requirements management and requirements management is a major building block in the creation and management of the Digital Thread. Understanding that relationship is imperative when defining the future mode of operating.

This course establishes the roadmap that facilitates an organization's ability to create a world-class enterprise Digital Thread. This is achieved through the application of a set of proven principles and techniques. When properly applied, this improved business model enhances the development, structuring, and managing of requirements throughout the enterprise.
This course focuses on the foundational elements of requirements management including the structuring and ownership of all product, solution, and business requirements. It will detail the first steps in the creation of the Digital Thread...the concept and development phases of any project.

Course Outline

- Best Practices for Naming, Numbering, and Attribute Utilization
- Effective Techniques for Managing Requirements
- Enriching Your Development Process
- Application Requirements and Dynamic Linkages
- Design Basis Requirements and Dynamic Linkages
- Establishing Functional Work Packages and Schedules
- Increasing the Potential for Reuse and Interchangeability
- The Detailed Plan Drives the Detailed Design
- Managing Options and Variants of Product Configurations
- Project Planning with Functional Work Packages
- Differing Views and Perspectives on How to Define Quality
- Having a Positive Impact on the Financial Bottom-Line
- Achieving True North Enterprise Calibration
- Operating Standards and Core Procedures

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CM2-03
Fundamentals of Change Management

- 2 DAYS-

Organizations continually struggle to define a fast and efficient change management process. Many organizations have changed or replaced their change process multiple times without understanding the dynamics of change or the building blocks needed to facilitate change management.

Struggles with item re-identification decisions and the required level of visibility of changes directly impact the ability to develop and maintain the digital twin. The management of change includes understanding its impact throughout the entire organization and the total product/solution lifecycle.

This course introduces a closed-loop change process and identifies several enabling building blocks that reside outside the scope of the change process. The concept of Enterprise Configuration Management (ECM) is dependent upon those building blocks. It also provides a decision tree that defines the proper rules for managing re-identification and ensuring full visibility of the digital twin.

This course also addresses the cultural changes that must be understood and implemented to facilitate the needed improvements in the change process. The end goal is to always present the organization with requirements that are clear, concise, and valid. That can only be achieved by a fast and efficient process that accommodates change.

Course Outline

- Business Transformation Requires Change
- The CM2 Model for Enterprise Success
- Communications and Decisions Relative to Change
- The Rules of Re-identification
- Objects for Authorizing and Managing Work
- Investigation Request and Change Request
- Change Notice, Impact Matrix and DCR
- Standardized Objects Used to Procure, Produce or Modify
- Deliverable Level Visibility of Changes
- Post Production Visibility and Product Modifications
- Effectivities, Release and Effective Dates
- Proper Use and Misuse of Effectivities

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CM2-04
The CM2 Change Process

- 2 DAYS -

The inability of an organization to successfully manage the digital thread ties directly back to their inability to effectively manage change. Most organizations have subject matter experts (SMEs) identified for each key discipline but rarely do organizations have a SME focused on the management of change.

This course will address the importance of Enterprise Configuration Management and introduce the roles, responsibilities, and workflows required for a world-class organization to efficiently manage change. Thereby ensuring that the digital thread remains intact throughout the entire lifecycle of the product/solution and that the digital twin is accurate.

This course introduces the power and efficiency of the CM2 closed-loop and fast-track change processes. Those processes are dependent on the building blocks and enabling principles defined in Course 01 through 03.

Once the methodology defined in this course is implemented, an organization's view and perspective of their change management process will shift from it being a "necessary evil" to it being a true competitive advantage.

Course Outline

- The CM2 Change Leader (CL)
- Enterprise Change Assessment (ECA) and Change Owner (CO)
- Change Review Board (CRB) and Business Decisions
- The CM2 Change Implementation Leader (CIL)
- Change Implementation Board (CIB)
- Supply Chain Impact and Management
- The CM2 Audit and Release Analyst (ARA)
- Managing Change to Changes
- Revision Levels and Out of Sequence CNs
- Understanding the Execution Status of Activated Changes
- Capacity Planning and Priority Control
- Insight to Change Process Improvement
- Dataset Organization and Practices
- Self Assessment

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CM2-05
Optimizing the Digital Thread

- 2 DAYS -

All organizations struggle with the ability to manage information accurately for the enterprise or throughout the product/solution lifecycle. This failure creates a high level of intervention resource expenditure and an inability to track fielded configurations. This drives significant warranty, recall, and concession costs that can have devastating impacts on the business.

To tap the power of the Digital Thread and to facilitate a true Digital Twin, all facets of the organization and all lifecycle phases are reliant upon the Enterprise Configuration Management (ECM) process.

This course introduces critical additions to the process flows and roles previously defined in the Enterprise Configuration Management process. These additions are critical to the management of the Digital Thread and visibility of the Digital Twin in the operation and maintenance lifecycle phase.

This course also identifies the differences and challenges associated with managing the Digital Twin as it progresses through each of the lifecycle phases. The role of ECM in the management of the supply chain is also shown to be critical to managing the digital thread.

Course Outline

- Lifecycle Controls and Datasets
- Integrated Logistics Support
- Replacement Item Issues and Solutions
- Supply Chain Management for ILS
- Understanding Logistics Complexity
- Additional Product Identifiers
- Allowable ILS Asset Configurations
- ILS Upgrades and Modifications
- Overhaul, Refurbish and Recertify
- Proposed Changes and Lifecycle Costs
- Change Implementation Planning
- Planning Changes for ILS
- Insight to Change Process Improvement
- Executing Changes for ILS
- Design Reconstitution of Existing Facilities
- Decommissioning and Environmental Management

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CM2-06

Achieving Enterprise CM2 Implementation

- 2 DAYS -

Organizations continue to be disappointed with the results of efforts to implement improvements to legacy PDM, PLM, and/or ERP systems. Even when opportunities for specific improvements are identified, they struggle with the ability to achieve successful implementation. These improvement projects are oftentimes reduced in scope and still experience cost overruns and missed schedules.

The negative experiences described above are also realized when an organization launches a process reengineering project. These common failures are not the problem...they are simply symptoms of an underlying bigger issue, an inability to properly manage and implement changes.

This course provides the path to achieving Enterprise Configuration Management (ECM), the enabling process needed to improve an organization's tools and other core business processes. It includes a step-by-step simulation for establishing the proper foundation to successfully implement any identified tool or process improvement opportunity.

This course also shows how to evaluate the strengths and weaknesses of current business practices, where to focus attention, how to develop a transition plan, and how to manage and ensure that the project meets its stated goals and yields the intended results.

Course Outline

- Driving Successful Implementation
- Team Selection, Destination and Goals
- Assessment of Existing Practices
- Creating the Initial Transition Plan
- Transition Plan Execution
- Enabling Software Tools
- Plans for Organizational Realignment
- Application and Performance Metrics

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CM2-07

Executing The Digital Thread And Twin

- 2 DAYS -

The number of organizations that have achieved integrated process excellence is smaller than it should be. This is because most organizations continue to use configuration management (CM) in a limited role, only applying it to design information. Those organizations process a high volume of deviations and waivers; use redlines and assume firefighting is normal business practice.

In order to achieve Integrated Process Excellence, an organization must break the many paradigms generally associated with configuration management's limited role. The phased transition from that limited approach to CM2 is a major culture change that must be carefully planned and managed.

The foundation of that new culture is the ability to change faster and document better. The application of that ability is extended beyond design information to include all requirements for the enterprise, and the enterprise deliverables throughout all of the lifecycle phases. Keeping all of those requirements clear, concise, and valid at all times is the goal...a very achievable goal.

This course introduces a 2-phase approach to be used for creating the foundation to enhance the efficiency of each core business process. It will identify the key elements that must be in place and reaffirm that the proper approach is to define the process first, then select the enabling tool.

Course Outline

- Process Improvement; What, Why and How
- CM2 Phased Process Improvement
- First Article Validation and Verification
- CM per the Quality and CM Standards
- Business Transformation Requires Culture Change
- Quality Problems and Root Causes
- Quality and Defect Prevention Techniques
- Organizational Roles and Realignment
- Why Requirements Get No Respect
- Plan & Create Detailed Designs/Processes
- Creator/User Teams and Work Flows
- Importance of Records & Data Integrity
- The CM2 Closed-Loop Change Process
- Change Process Steps, Quality and Timing

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CM2-08
Enabling Digital Transformation

- 2 DAYS -

Product Lifecycle Management (PLM) tools excel in two major areas...managing documented product requirements and change process workflows — areas that ERP tools historically have not addressed. PLM tools should be able to provide the functionality needed to support as-planned/ as-released baselines and the closed-loop change process.

How to maintain the Digital Thread from the baseline to the planning bill, then from the planning bill to the order bill, and finally from the order bill to the actual as-built record is a major challenge. Knowing which requirements, at which revision level, to use at any point in time is another.

This course will describe how planning bills and order bills are created and maintained within the PLM, ERP, ALM, and CLM tools. It will describe how to use work authorizations to close the loop on order bills and ensure that the correct documents are utilized. It will describe the CM2 approach for managing and leveraging metadata and how to optimize reuse.

This course will establish a detailed process for defining the core elements that must be present in a successful tool implementation. It describes the standard CM2-600 Enabling Tool Pre-Assessment Guide for assessing and certifying the ability to enable tools to support the IPE/CM2 model.

Course Outline

- CM2 Enterprise DNA Integrated with Enabling Solutions
- Ensuring End-item Traceability with CM2, PLM, and ERP
- Metadata and Validation of Order Bills
- Leveraging Metadata & Optimizing Reuse
- Product Baselines Used in Development
- Other Physical Item-Oriented Baselines
- Baseline for the Business Enterprise
- Regulatory Requirements & Compliance
- Baseline Change Process and Work Flow
- Objects for Authorizing and Managing Work within PLM
- PLM-Aided CN Implementation Planning
- PLM-Aided CM Implementation Management
- CM2-500: PLM Functionality Requirements
- CM2-600: Enabling Tool Assessment Guide

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CM2-09

Application Workshops For Achieving Operational Excellence

- 3 DAYS -

This hands-on course focuses on shifting the paradigms that are most important and also the most challenging to those implementing CM2. Course participants will perform a variety of roles and, by the end of the third day, they will have performed all facets of the CM2 process.

As Upper management, they will review an enterprise baseline and validate its content, format, naming, and numbering conventions. As core business process owners, they will create enterprise operating standards and procedures and populate the enterprise baseline. As Cross-functional development team members, they will develop a product, create its design basis and hierarchy, and populate its baseline. As CRB members, they will make changes to the enterprise baseline and the product baselines. In support of supply chain specialists, they will ensure that change effectivities remain synchronized with build schedules. As Process specialists, they will transform complex workflows into closed-loop phases with each managed by a process specialist. As Part of 3-member creator/user teams, they will manage and execute individual administrative workflows and product workflows.

Course Outline

Administrative Hierarchy And Enterprise Baseline
- How a Manufacturer Does What it Does
- Enterprise Baseline: Lessons Learned

Product Development And Product Baseline
- Product Development Team and Process
- Product Baselines: Lessons Learned

Production, Integrated Logistic Support/O & M
- Configuration Management workflows
- Workflow Management: Lessons Learned

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CM2-13

Optimizing The Software Lifecycle with CM2

- 3 DAYS -

This course describes how the CM2 model for configuration management (CM) can be applied to software. The challenge boils down to what an organization believes. Organizations either expect software code to come out right the first time, or they do not. Its process will be designed accordingly.

The CM2 model is designed to ensure that code comes out right the first time. This does not mean software development is not an iterative process. It is where the iterations take place that is most important. With CM2, the customer and the developer gain a good grasp of what the overall product is going to be at an early point in its lifecycle. With CM2, the development effort is led by a cross-functional team whose members have the full range of needed expertise. The same members serve as the Change Review Board (CRB). Change decisions are made quickly and, if approved, implemented promptly. CM2 for software is a scaled agile iterative methodology that ensures that software design definition is clear, concise, and valid. Source code is not written until the design to be achieved has been documented, validated, and released by its co-owners.

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- Managing The Flow Of Requirements
- Managing your Requirements as Datasets
- The CM2 Model for Enterprise Success
- Change Process and Key Decision Points
- Elements of the CM2 Change Process
- Change Review Board (CRB) and Business Decisions
- Effectivities Release and Effective Dates
- Best Practices For Naming, Numbering, & Attribute Utilization
- The Rules of Re-identification
- Blockchain – Trusting and Sharing Data
- Enriching Your Development Process
- Application Requirements and Dynamic Linkages
- Design Basis Requirements and Dynamic Linkages
- The Detailed Plan Drives the Detailed Design
- Establishing Functional Work Packages and Schedules
- Project Planning with Functional Work Packages
- Managing Options and Variants of Product Configurations
- Software Version Management
- Allowable ILS Asset Configurations

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IpX-20

Universal Document Control

- 2 DAYS -

Although document control is an aged-old profession and is widely implemented in various activity sectors, most have difficulty defining it effectively. As digital solutions have advanced so have the capabilities and processes needed to ensure proper document security, analysis, control, and digital storage.

Contrary to common belief, a document does not have to exist in the form of paper or any other hard copy format. Regardless of the media and/or digital solution, your documents are the mechanism used to communicate all requirements and information within an organization.

Requirements or information once captured as a document are subject to the information and document management rules and processes of the organization. All product-related requirements, from the Application Requirements level down, must be properly documented. All administrative requirements, from the Business Regulations level down, must be properly documented.

The types of documents related to products will vary from organization to organization. Several factors will influence the types of documents required such as type of end deliverable, type of industry, applicable regulatory agency, etc. Regardless of the source of the document creation, all product-related documents must be managed through a standard Document Control process.

Course Outline

- What Is a Requirement, What Is a Document
- Requirements and Document Control
- Poor Document Quality and Resulting Corrective Action
- Organizational Performance and Document Management
- Establish Proper Ownership and Linkages
- Document Repository vs. Technical Research Library
- Process of Document Evolution
- Document Management Beyond Product Definition
- Maintaining Document Quality and Correctness
- Managing Changes to Released Documents
- Management of Documented Workflows
- Operating Standards vs. Supporting Procedures
- Document Validation and Release
- Documented Requirements and the Supply Chain
- Document Control Rules and Standards as Protocols
- Course Review and Summary

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Fundamentals of Systems Engineering

- 3 DAYS -

Systems Engineering is a transdisciplinary and integrative approach to enable the successful realization, use, and retirement of systems by defining, verifying and validating the requirements, architecture and design.

With the Fundamentals of Systems Engineering training, it is aimed for engineers and engineering managers to understand the fundamentals of the system engineering discipline and its applications and apply them in their projects. The training covers the fundamentals of systems engineering throughout the product lifecycle, from the first need of the system to the disposal of the product.

The training is compatible with the following documents:

- ISO/IEC/IEEE 15288:2015 Systems and software engineering - System life cycle processes
- INCOSE (International Council of Systems Engineering) (2015) Systems Engineering Handbook: A Guide for System Life Cycle Process and Activities (4th ed.)

Course Outline

Fundamental Concepts of Systems Engineering

- Definition of System
- Definition of Systems Engineering
- Value of Systems Engineering

System Lifecycle

- Life Cycle and the Life Cycle Model
- Generic Life Cycle Stages
- Life Cycle Approaches

Technical Processes

- Business and Mission Analysis
- Stakeholder Needs and Requirements Definition
- System Requirements Definition
- Architecture Definition
- Design Definition
- Implementation
- Integration
- Verification
- Transition
- Validation
- Operation
- Maintenance
- Disposal

Technical Management Processes

- Project Planning
- Project Evaluation and Control
- Decision Management
- Risk Management
- Configuration Management
- Information Management
- Measurement
- Quality Assurance

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Model Based Systems Engineering

- 3 DAYS -

Model Based Systems Engineering (MBSE) envisages transferring characteristic information created by different disciplines into a specific mathematical format and then into the shared system model. Thus, all disciplines always have access to a consistent and up-to-date model.

MBSE is a modeling method that supports requirements, designs, analysis, verification and validation activities starting from the conceptual design phase of a product project and continuing throughout its entire life cycle.

MBSE is not an alternative to Systems Engineering processes. With MBSE, traditional Systems Engineering methods are reinterpreted and modeled using current modeling techniques. This course covers the fundamentals of the MBSE methodology used to support the requirements, design, analysis and validation of a complex system development.

The training is compatible with the following documents:

- ISO/IEC/IEEE 15288:2015 Systems and software engineering - System life cycle processes
- INCOSE (International Council of Systems Engineering) (2015) Systems Engineering Handbook: A Guide for System Life Cycle Process and Activities (4th ed.)
- OMG Systems Modeling Language V1.6 (2019)

Course Outline

Fundamentals of Model Based System Engineering

- Introduction to MBSE
- Definition of Model
- Necessity of MBSE

Evaluation of Model Based System Engineering

- Phases of MBSE

Definition of SysML

Definition of Structure Diagram

Definition of Behaviour Diagram

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Project Management Theory and Applications

- 3 DAYS -

Project management is a methodology developed to ensure the success of projects by applying knowledge, skills, tools and techniques.

Various projects, small or large, are carried out in almost every sector and organizations, from defense to automotive, design to production, public to private sector or civil organizations. The role of project success is important in the success of business and even in the sustainability of their existence.

Studies still draw attention to the low success rates of the projects. The root causes of this low success are the deficiencies and inadequacies in the project management processes.

In this training, the foundations of this methodology, which has its own place among the management disciplines, will be explained. Main reference of the theoretical level is the Project Management Information Guide developed by PMI (Project Management Institute), a leading organization in project management. On the other hand, a practical perspective (real solutions to real problems, project stories, scenarios, applications) will be provided to project management with the aim of responding to the tangible problems of organizations in practical life.

Course Outline

- Project Management History and Concepts
- Getting Started and Planning
- Scope Management
- Calendar Management
- Budget and Cost Management
- Project Manager and Team
- Internal and External Communication
- Risk management
- Monitoring and Control
- Successful Concluding of Projects

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Integrated Logistic Support

- 5 DAYS -

All products must be supported throughout their lifetime. Integrated Logistics Support (ILS) is the managerial and technical processes in which support activities and support elements are planned, procured, tested, delivered and implemented in the field with time, quality and cost effectiveness.

The main goal of ILS is to develop a Support Solution where the product can achieve the required performance and balance the supportability and life cycle cost. For this, many different activities are carried out in 7 phases throughout the life cycle. Using the Support Solution, providing input to design development during the early stages is one of the most important activity to balance product technical performance and supportability performance. The earlier supportability can impact the design, the easier and more cost-effective the changes will be. In order not to encounter any support problems during the use of the products, the Support Solution must be prepared in advance according to the operation plan. During the support phase, the gathered data is recorded and the Support Solution is reviewed and updated if necessary. After the Disposal phase at the end of the life cycle, the Support Solution is completed. One of the most important activities at this stage (unfortunately one of the most neglected) is to make an overall assessment of the Support Solution and transfer lessons learned to future projects.
The materials used in the training have been prepared by the trainer specifically for this training, with his own knowledge and reference to the ILS-related standards of different countries and organizations (ASD, DEF-STAN, JSP, MIL-STD, NATO) and widely accepted books.

Course Outline

ILS Intro
- ILS and Support Solution Definition
- Life Cycle Cost
- Why ILS?
- Supportability and Support Definitions
- ILS Process - Overview

Life Cycle Management Phases
- Pre-Concept
- Concept
- Development
- Production
- Use
- Support
- Remove from Inventory

ELD Elements
- Care
- Support and Test Equipment
- Material Support
- Workforce and Personnel
- Facilities and Infrastructure
- Packaging, Handling, Storage, Transport (PHST)
- Computer Resources
- Design Influence
- Education and Training Support
- Technical data
- Sustainability Engineering
- Product Support Management
- Possible element: Environmental Factors and Recovery

ILS Planning and Analysis
- ILS Plan (ILSP) and Sub-Plans
- Logistics Support Analysis (LSA)
- Reliability, Maintainability, Maintainability (RMM)
- Reliability Centered Maintenance (RCM)
- Out of Date
- Life Cycle Cost Analysis (LCCA)

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PLM Project Management & PLM Selection

- 2 DAYS -

PLM (Product Lifecycle Management) is the approach that enables the management of every phase of the product, from the idea stage that reveals a product to the completion of the product's life cycle, and the systems that bring together every information that emerges in this process in a way that ensures continuity are called PLM systems.

With this training; the process and organizational benefits that PLM will provide to companies, the capabilities of PLM systems, the determination of the company's selection requirements in accordance with the process and purpose of doing business are discussed in terms of the role and scope of PLM projects.

Course Outline

PLM: Basic Concepts
- PLM paradigms and basic concepts
- The place and importance of PLM in organizations
- Elements of active PLM platforms and functions of PLM
- Expanding reach of PLM
- Trends and challenges of PLM at the global level
- The benefits of PLM

PLM: Benefits and Potential Value
- The potential benefits of PLM
- Defining and measuring PLM costs
- Measuring the PLM value
- Introduction to the methodology for evaluating PLM benefits
- Identifying and using PLM metrics

PLM Strategy and Solution Description
- PLM strategy development
- High-Level Planning
- PLM strategy, PLM vision and mission definition
- Defining requirements
- Define the PLM project goals and objectives
- PLM implementation plan and strategy

PLM Solution and Evaluation
- Evaluating and selecting PLM solutions
- Developing the right business requirements
- Developing technical requirements
- Choosing the most suitable PLM system

Adapting, Monitoring and Continuous Improvement of the PLM System
- Why do projects fail?
- PLM project management skills
- Creating the project plan and project organization
- Making the adaptation plan
- Project communication
- Managing PLM expectations
- Evaluation of the adaptation

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Product Lifecycle Management

- 2 DAYS -

Management of every phase of the product's life cycle, from the concept to disposal of the product is called PLM (Product Lifecycle Management), and the system that bring every information together to ensure continuity is called PLM system.

With the Product Life Cycle Management training, it is aimed for understanding the general PLM concepts; the impact of PLM on businesses to support of product management-oriented business management approach; the standard features in different PLM systems. These concepts are grouped as commodity, product, process, project, change and requirement.

Course Outline

Introduction
- PDM, PLM, ALM, SysLM, DEPLM concepts
- Development and history of PLM
- Impact of PLM on businesses
- Product management-oriented business management
- ERP & PLM evaluation

PLM Concepts
- Meta management
  - Searching for information
  - Object lifecycles and state protocols
  - Object revision management
  - Roles & Authorities
  - Integrations
  - Document management
  - CAD document management
  - CAD visualization
  - Audit Trail
- Process management
  - Workflows
  - Workflow / PLM object context
- Project management
  - Project Plans
  - Project Tasks
  - Checklists
  - Checklist Types
  - Project resource / cost management
  - Relationship of projects with other PLM concepts
- Product management
  - “Part” as PLM object
  - “Part” and “Document” relationship
  - BOM management
  - “Product” as PLM object
- Change Management
  - Change process and workflows
  - Relationship between CM2 and PLM change processes
- Requirements management
  - Specifications
  - Requirements
  - ReqIF and ReqMAN applications

Industrial IoT
- PLM as an IoT platform
  - Digital Twin
  - Digital Thread
- Systems engineering
  - MBSE - Model-based systems engineering
  - PLM as an MBSE platform

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CIMdata PLM Certificate Program

- 5 DAYS -

For 35 years, CIMdata has been working in the Product Lifecycle Management (PLM) industry. Our consulting services and research expertise are known around the world for their best-practice-based content. CIMdata has leveraged its first-hand, working knowledge and experience to create the CIMdata PLM Certificate Program—the PLM industry's most comprehensive non-biased education and training offering for today's PLM professionals.

CIMdata's PLM Certificate Programs are assessment-based and are delivered through a series of education and training sessions that have been designed to ensure that those involved in a PLM project have a strong understanding of PLM concepts and industry best-practices.

Earn Your PLM Leadership Certificate with CIMdata's PLM Certificate Program for Industrial Users, PLM Software, and PLM Services Providers

Course Outline

- PIntroduction to PLM - Key Concepts & Learnings
- PLM Benefits & Potential Value
- PLM Strategy & Solution Definition
- PLM Solution Evaluation & Selection
- PLM Implementation, Monitoring & Continuous Improvement
- PLM Process Development & Testing
- Integrating PLM within the Enterprise
- Expanding PLM Across the Value Chain
- The Role of Configuration Management in PLM

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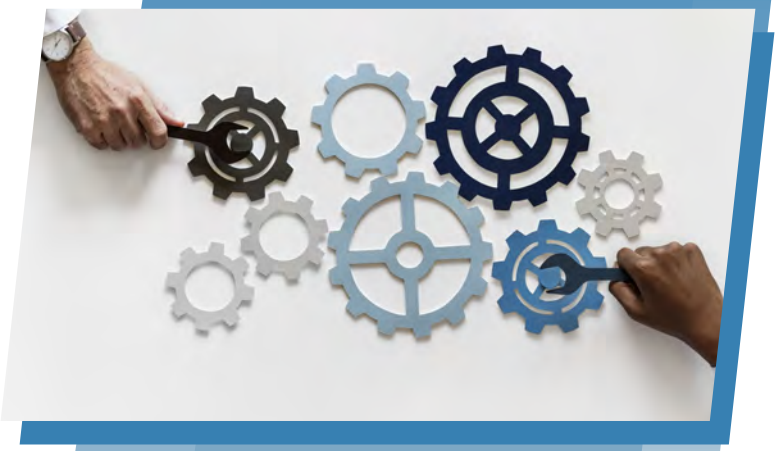
SAE EIA-649 Configuration Management



- 2 DAYS -

The SAE EIA-649 Configuration Management Standard and the complementary SAE GEIA 649A Handbook are universal Configuration Management (CM) standards used in defense and aerospace industries. These standards define the basis of CM principles. EIA-649 contains the rules for identifying and managing product configuration items.

In this training, Planning, Defining, Change Management, Configuration Due Diligence and Inspection, which are the 5 knowledge areas of Configuration Management, are explained within the scope of current EIA-649 principles. In addition, it is explained how related areas are designed for product management in rapidly developing digital environments.

Course Outline

Basic concepts
History of Configuration Management
Configuration Management Standards
Structure of EIA-649
Functions and Principles of Configuration Management

Configuration Identification (CI)
- Configuration Identification Process
- Configuration Descriptors
- Product Structure and Release
- Product Baseline & Interfaces

Configuration Change Management
- Classification and Modification
- Modification Confirmation and Variants

Configuration Status Assessment
Configuration Verification and Audit
Configuration Management and Planning

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A Methodology for Lean Management of Organizations; Establishing Enterprise Baseline

- 2 DAYS-

Most of the companies are dealing with the gaps contained in the business processes designed for managing their products and services. Sempro proposes a method for creating an Enterprise Baseline to identify these gaps. Within the methodology, the main purpose is to find answers to the following questions: “Who We are”, "What We Do" and “How We Do” in order to identify the gaps and missing processes, and creating a roadmap to complete these gaps. With the aforementioned roadmap, the current status of the company and the potential improvement areas with high priority are identified.

Scope

- Assessment of the studies (business model, processes, etc.) carried out in order to manage the corporate and administrative structure of the company.
- Determining the relevant sections and information for the establishment of the Enterprise Baseline. (Suggested Enterprise Outline sections to work on are described in the next section.)

Method

Enterprise Baseline sections should be created as described below.

WHO WE ARE

- The current **“Vision”, “Mission” and “Who We Are”** statements that the company has.
- Organizational structure of the company: hierarchical structure of the company and the interfaces between the departments
- **Company Divisions:** Departments and their functions
- **Business Partners:** Corporate collaborations and management of the relationships
- **Relationships with External Resources:** Information about the subcontractors and other external parties that provide support for the company's activities other than its core competency processes (eg website design, law firm, financial advisor, etc.)
- **Company Policies:** policies of the company (e.g. ethical rules, anti-bribery and anti-corruption policy, quality policy, compliance policy, values and principles, human resources policy, etc.)
- **Core Competencies:** The core competecies that provide competitive advantage for the company (engineering, project management, production, testing, quality, etc.).

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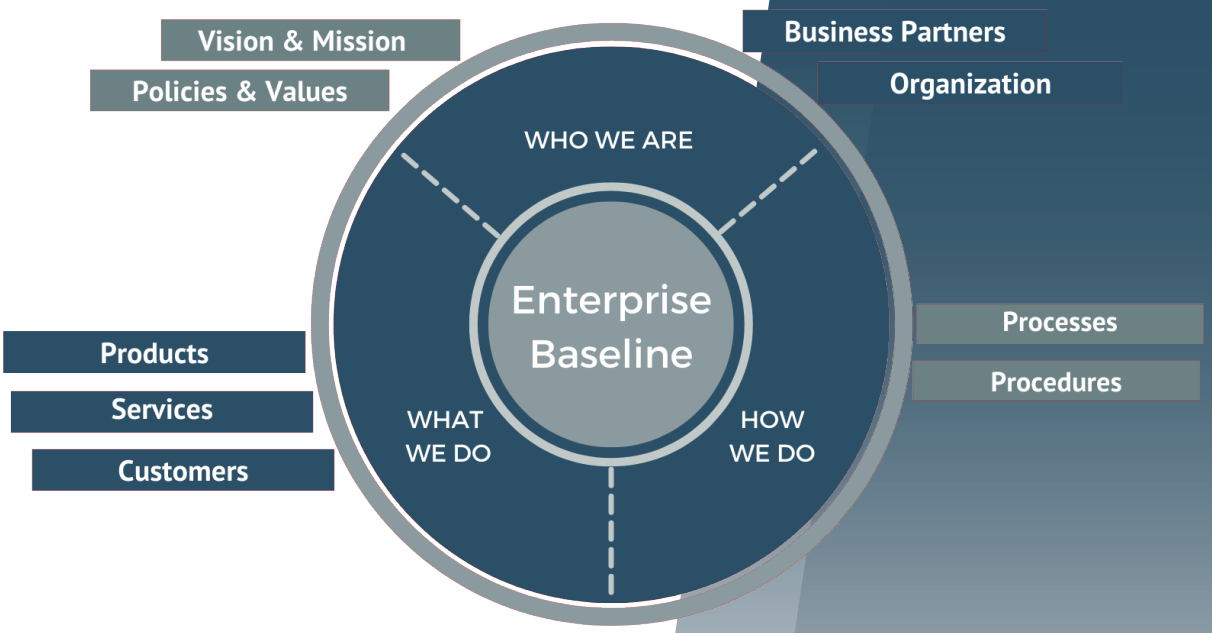

WHAT WE DO?

- **Products** : Information and documents related to the company's products, information and documents shared with third parties (eg catalogs, product information on the website, etc.)
- **Services** : Information and documents related to the services provided by the company and shared with third parties.
- **Clients** : How the company does business and keeps information and records related to its customers

STRATEGIC BUSINESS PLAN AND BUSINESS GOALS

- The current strategic direction of the company
- Business goals that are aligned to the mission and vision
- Business goals cascaded to business units or processes
- Identified measures for measuring and tracking the goals

HOW WE DO?

Key Business Processes

- Business Development and Marketing Process (social media, exhibition and fair participation, customer relationships, management of printed documents, Website management, proposal management)
- Project Management Process (Project Management, Risk Management).
- Product Development Process (Requirements Management, Design, Design Verification and Validation, Specialty Engineering (Reliability, Maintainability, etc.)
- Product Configuration Management Process (Management of Product Baselines, Product Naming and Numbering, Management of Data and Records, Change Management)
- Information Systems Infrastructure and related processes
- Facility and Asset Management and related processes
- Measurement and Continuous Improvement

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Enterprise Transformation Model

The sustainability of organizations is possible by constantly reviewing and renewing their way of doing business in today's global and competitive world. To achieve this, strategies need to be designed and renewed in parallel with the requirements.

Every organization has its inputs and outputs. Input costs contain controls, resources and capabilities, infrastructure/equipment/IT. The main goal is to increase the ratio of the value of outputs to the cost of inputs. However, in the accomplishment of products and services, the inability to define the requirements correctly leads to deficiencies in the design and implementation of the processes and an increase in input costs.

Processes are the core element of control inputs. Priority is always the correct functioning of the process. If the processes do not work correctly, they return to the companies as corrective actions and losses.

Corrective action is the effort required to correct and/or compensate for something wrong. Time spent resolving an uncertainty about what to do or how to do it is also a corrective action. It is called "intervention resources" which have been spent extra for corrective actions. The purpose of the saving resources is to catch the quality and schedule despite the mistakes made. Many companies face unplanned costs when trying to meet quality and calendar goals. These unplanned costs are the rescuing resource costs and it is known that more than forty percent of resources are spent on these salvage resources.

The way to reduce corrective actions and consistently achieve consistent results is to ensure that the published data sets are clear, concise, and valid. Companies underestimate the effect of data correctness with employee effectiveness. Intervention resources are spent to compensate for the drop in employee productivity as data integrity declines. Therefore, data integrity is the important to ensure the operational efficiency of a company, and the accuracy of the targeted data must be 100%. It is essential to give importance to the enterprise configuration management process as much as the product configuration management process in order to reach the %100 correct data sets.

Sempro offers the Enterprise Transformation Model, which consists of four modules and supporting processes, to enable businesses to work lean and efficient. With the Enterprise Transformation Model, it is aimed to increase the value of the outputs by ensuring the correct structuring of the inputs, to reduce the losses and to define the correct set-up in the transition to digitalization.

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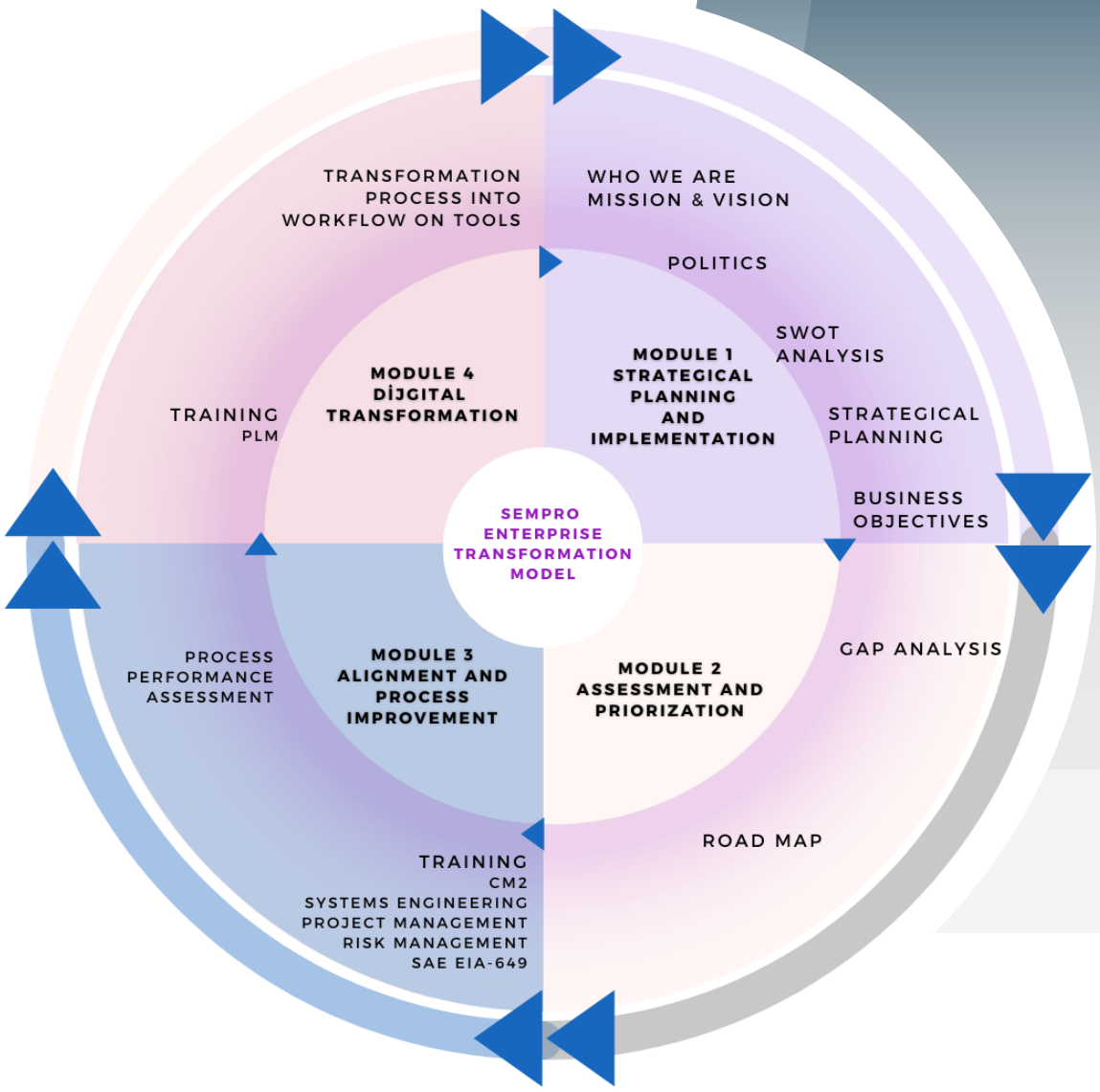

With the Enterprise Transformation Model;

- Company strategies and objectives are developed. (Module 1: Strategic Planning and Implementation)
- In order to reach the targets determined in accordance with the developed strategies, the current situation of the company is evaluated and the areas that need to be corrected are identified as a priority. (Module 2: Assessment and Prioritization)
- In order to develop or recreate the defined processes, the 'Enterprise Business Processes Adaptation Plan' is created, and the related processes are developed/reformed according to this plan. (Module 3: Alignment and Process Improvement)
- Digital tools are defined in order to make the developed processes workflow in digital tools and the processes are adapted to digital tools as workflow. (Module 4: Digital Transformation)

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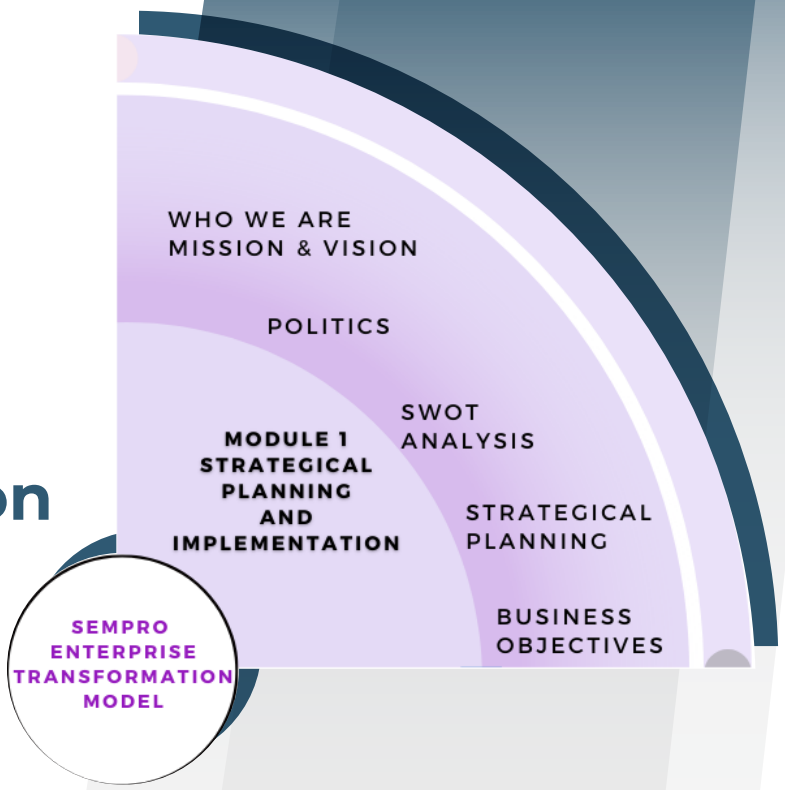

Module 1: Strategic Planning and Implementation

Strategy is the definition of how the organization will get from its current state to the point it wants to reach. However, organizations limit the strategy to the vision statement and have difficulty in constructing a structure that can be followed at detailed levels. There are problems/defects in defining the strategic goals correctly, transferring them to the people in the organization and observing their effects on daily decisions.

The Sempro Strategic Planning and Implementation process aims to improve the company's goals, strategic goals and initiatives by using effective methods by ensuring that they communicate and harmonize with each other.

Strategic Planning provides a systematic and collaborative process of planning, execution (or implementation) and review.

A well-defined Strategic Planning and Implementation process ensures that all units of the company adopt the same goals and work collaboratively to achieve these targets.

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Scope

1 - Who We Are, Mission and Vision
2 - Company Policies

- Quality Policy
- Sustainability
- Ethical Rules or Codes of Conduct
- Anti-bribery and Anti-corruption Policy,
- Cohesion Policy
- Values and Principles,
- Human Resources Policy,
- etc.

3 - Identification of Strategic Business Plans and Objectives supported by the SWOT analysis

- Strategic Objectives
  - Product
  - Service
  - Innovation and R&D
  - Technology and Competency
  - Operational Excellence - Digitalization
  - Human Resources
- Key Performance Indicators
- Strategic Projects and Activities
- Management Review Process
  - Goals and Performance
  - Processes and Quality System
  - Digitalization
  - Competencies
  - Certification
  - Measurement Systematics

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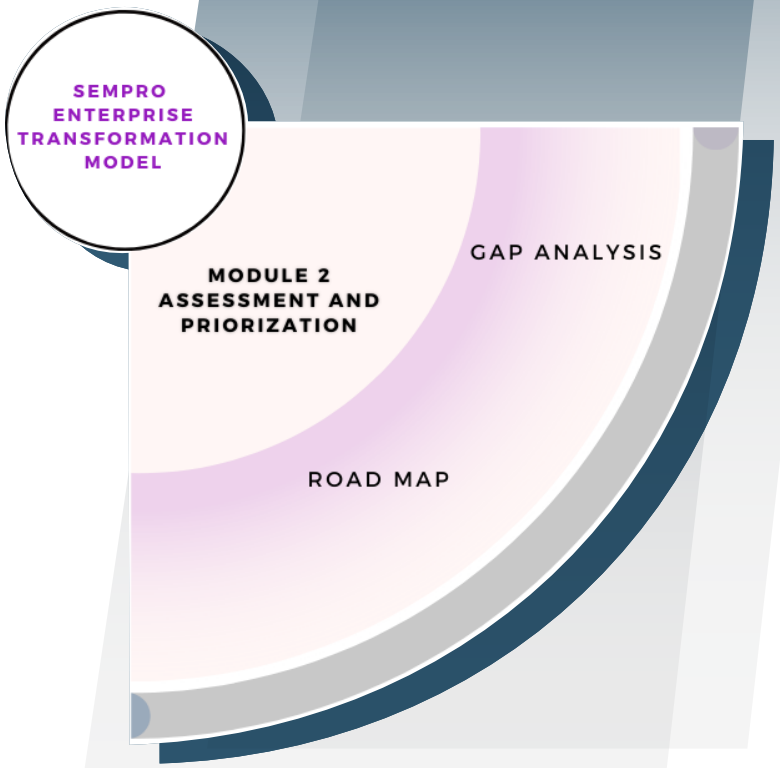

Module 2: Assessment and Prioritization

There are gaps between the processes and applications of businesses for the realization of their products and services. Sempro recommends the Assessment and Prioritization Method to identify these gaps and establish appropriate processes. In this context, the main purpose is to answer the “Who We Are”, “What We Do” and “How We Do” questions for the company, determining the deficiencies and creating a road map to eliminate them. With the preparation of the aforementioned road map, the current situation of the company and the areas that need to be corrected as a priority are defined. In order for the assessment to be set up correctly, previous studies by the relevant company are examined, deficiencies are determined together, priorities are defined to complete these deficiencies, tasks and deadlines are assigned.

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Scope

1 - Assesment

- Enterprise Identity of the Company: WHO WE ARE
  - Who We Are, Mission and Vision
  - Organization
  - Business Partners
  - External Resources
  - Core Competencies: The company's competitive advantage (engineering, project management, production, testing, quality, etc.)

- What the Company Does: WHAT WE DO, FOR WHOM
  - Products and Services
  - Customer Relationship Management (CRM)

- Company's Business Processes: HOW WE DO
  - Reviewing the enterprise business processes of the company and the applications of these processes
  - Establishing the Organization's Strategic Business Plan in which the organization and processes are defined
  - Strategic Business Plan is the top-level data sets that define the enterprise identity of the organization, the works it does and the processes and infrastructure it uses to perform these works.
  - Perform gap analysis by comparing existing processes with best practices.
  - Determination of processes.

2 - Prioritization and Roadmap

Developing an adaptation plan that defines scope, tasks and priorities for all assessed areas.

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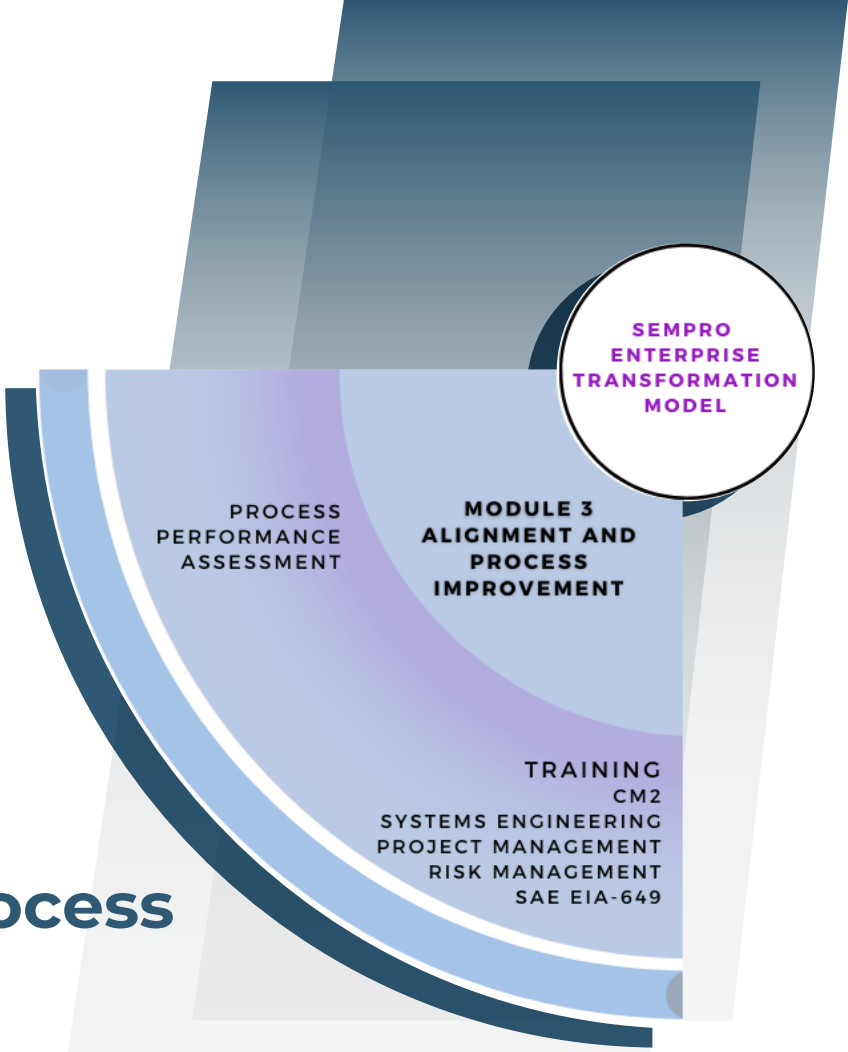

Module 3: Alignment and Process Improvement

The processes that are missing or need to be corrected in the companies are determined and a roadmap is drawn up to develop/recreate these processes. A prioritization is made by analyzing the benefits of each step in the roadmap to the company by taking into account the company's resources. According to this prioritization, the 'Enterprise Business Processes Implementation Plan' is created in order to develop or re-create the processes.

Developing processes with their users increases the performance of processes. For this reason, before starting the process development studies, the training deficiencies of the process users are determined and after the necessary trainings are provided, all the studies are carried out together.

All processes related to product management of companies are gathered under one roof, a product and configuration management culture is created, and all information about projects is evaluated within the scope of product configuration management.

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Scope

1 - Process Assessment

- Starting with the Strategic Business Plan, which includes the mission and vision of the companies, reviewing the implementation of all business processes and processes related to the creation of products and services.
- The comparison of existing processes with best practices and implementation gap analysis,
- Determining the processes to be worked on,
- Creation of the Process Map in which high-level and detailed processes are defined,
- Regarding the evaluated processes; Developing an Adaptation Plan, which also defines scope, tasks and priorities.

2 - Training

Technical knowledge is needed in order to accurately fill the gaps identified in the existing processes or to create new processes on a solid basis in the companies. It is aimed to provide the necessary technical information to the company employees and to put the processes on solid foundations with the trainings given.
The trainings are concentrated in 6 basic areas to ensure process excellence. These areas are;

- Configuration Management CM2
- SAE EIA-649 Configuration Management
- Fundamentals of Systems Engineering
- Product Lifecycle Management
- Project Management
- Enterprise Risk Management

3 - Process Development

Starting from the strategic business plan that includes the mission and vision of the companies, all business processes related to the creation of products and services are reviewed, corrections are defined, and processes are re-created if necessary.

- Business Development and Marketing
- Program Management
- Project Management
- Risk Management
- Development Process
- Product Configuration Management
- Information Systems (Technology) Infrastructure Assessment
- Facility and Asset Management

4 - Process Performance Assessment

The performance of processes is a critical factor for business performance. There is no need to make changes to processes that are not used. Therefore, promoting the use of the process and the changes must be followed.

- Determining metrics to measure process performance,
- Evaluation of the efficiency of the developed processes,
- Correct identification of the stakeholders who carry out the process and are affected by its results,
- Keeping records, or record-keeping,
- Analysis of processes according to determined metrics,
- If necessary, improvement in processes or determination of new metrics.

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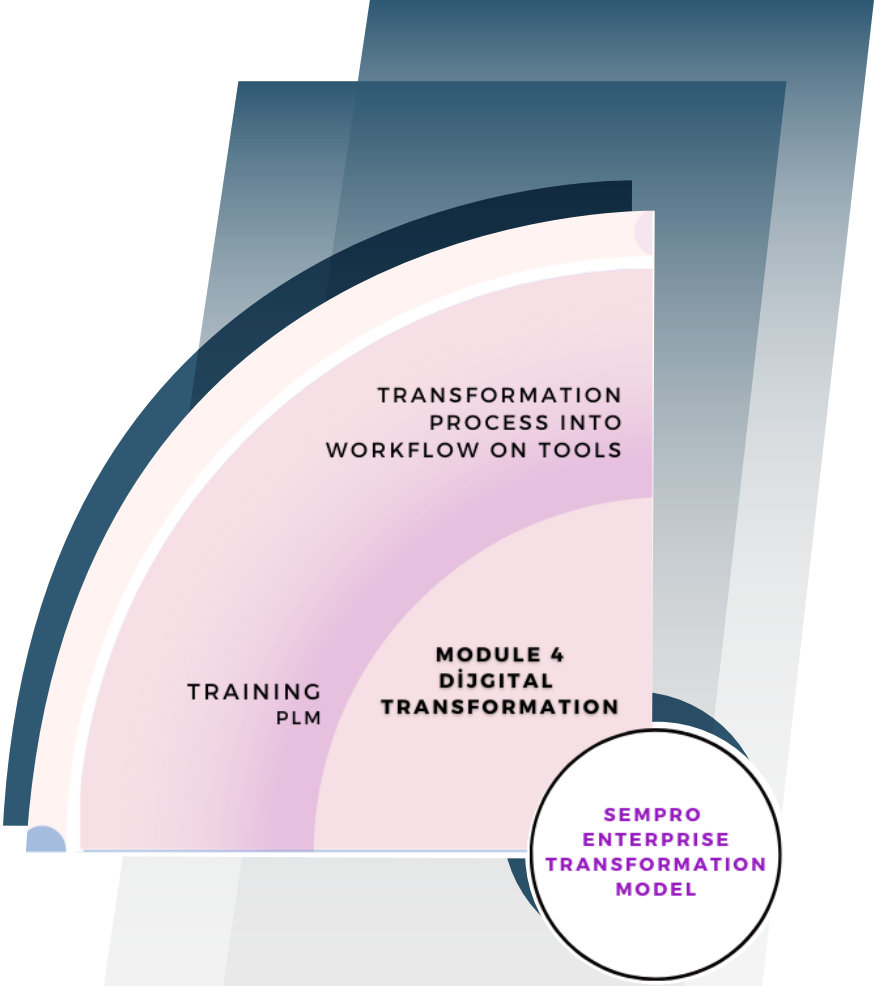

Module 4: Digital Transformation

In today's digital environment, running processes through digital tools eliminates errors and facilitates the creation of data and records. For this reason, companies invest in digital transformation and try to reduce errors by turning manual processes into workflows in digital tools. However, in order to turn the developed processes into a workflow in digital tools, the processes and digital tools need to be defined correctly and then the processes should be adapted to digital tools as a workflow.

Scope

1 - Defining the Information Systems Baseline

2 - Determination of needs for PLM/ERP/CLM solutions

3 - Evaluation of existing software tools

4 - Determination of PLM/ERP/CLM requirements

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