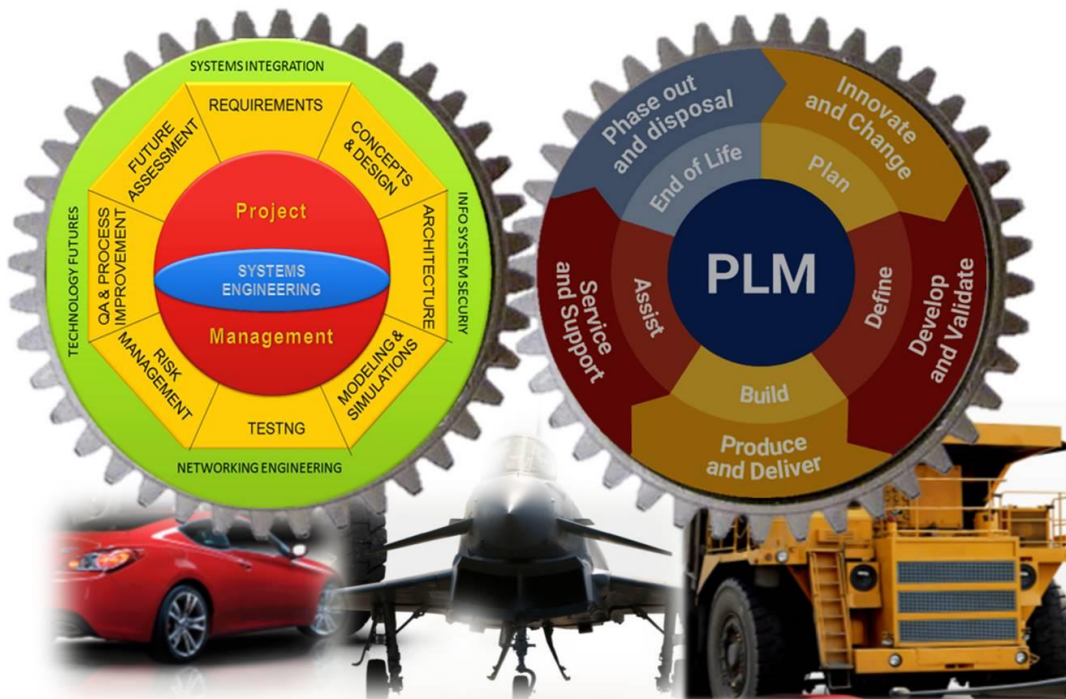


**Management and Technology Division**

Continuing Professional Development Programme on

# Product Cycle Management of Systems

11-15 March 2019



*“Watch the product life cycle; but more important, watch the market lifecycle.” It’s not just products that come to an end but markets can too”.*

Philip Kotler, the world famous marketer’s, advice



(An ISO 9001:2015 Certified, AICTE & CEA Recognized Institution)

**Centre for Promotion of Professional Excellence**

## INTRODUCTION

The fast and multidiscipline technological growth has led to large and complex Product Systems Development and deployment. conventional approach to the product design and development does not provide efficient, economical and optimal solution. System made of multiple sub systems employing multiple technologies need global understanding of product system requirements and operation in addition to the functional and interface requirements of the smallest sub-sub systems. The solution lies in Integrate Integrated Systems Engineering approach at all stages in the entire life cycle of the system.

## OBJECTIVE

This 5-day programme on Product-Life Cycle Management of System aims at providing guidance to a business as it progresses a product from introduction, through growth and maturity to decline. It is not designed to be a rigid tool and it is important that common sense and general understanding of the market be used alongside the product-life cycle in order to get the most value from it. Designers and developers are most likely to be involved with the stages of introduction, growth and maturity and be moving on to new projects when a product is in decline. Concept of Systems engineering will also be introduced to have PLM driven by system

## COURSE COVERAGE:

The 5 day programme will cover a range of high-end Product Systems Engineering and Product Life Cycle Management Systems topics as mentioned below:

### Introduction to Product System Engineering:

- Definition of Systems Engineering
- Origins of Systems Engineering from concept to expiry
- Interfaces
- Complex Product Systems
- Complexity Theory
- Structure of Complex Product System
- Product System Life Cycle
- System Development Processes
- Systems Engineering Management
- Systems Engineering Standards

### 1. Concept Development Stage:

- Needs Analysis
  1. Operations Analysis
  2. Functional Analysis
  3. Feasibility Definition
  4. Needs Validation
  5. Systems Operational Requirements
- **Concept Exploration**
  1. System Requirements Development
  2. Maintenance Requirement formulation
  3. Operational Requirements Analysis
  4. Performance Requirements Formulation
  5. Implementation Concept Exploration
  6. Performance Requirements Validation
- **Concept Definition**
  1. System Concept Selection
  2. Performance requirements Analysis
  3. Functional Analysis and Formulation
  4. Concept Selection
  5. Concept Validation
  6. Product Development Planning
  7. Product Functional Specifications

### 2. Engineering Development Stage:

- **Advanced Development**
  1. Programme Risks and Reduction
  2. Requirements Analysis
  3. Functional Analysis and Design
  4. Prototype Development
  5. Development Risk Reduction
- **Engineering Design**
  1. Testing Implementation of Product Building Blocks
  2. Requirements Analysis
  3. Functional Analysis and Design

4. Component Design

5. Design Validation

### ● Configuration Management **Integration Testing and Evaluation**

1. Integrating, Testing and Evaluating the Total System Test Planning and Preparation
2. System integration
3. Development of System Testing
4. Operational Test and Evaluation

### 3. Post Development Stage:

#### ● **Production**

1. Systems Engineering in the Factory
2. Engineering for Production
3. Technology Transfer and Transition from Development to Production
4. Production Operations
5. Acquiring a Production Knowledge Base

#### **4. Operation and Support**

1. Installing, Operating, maintaining and Upgrading the System
2. Installation and Test
3. In-Service Support
4. Major System Upgrades: Modernization
5. Operational Factors in System Development
6. Developmental System Testing
7. Operational Test and Evaluation

### 5. Software Systems Engineering:

1. Complexity and Abstraction Management
2. Nature of Software Development
3. Software Concept Development: Analysis and Design
4. Software engineering Development: Coding and Unit Test
5. Software integration and Test
6. Software Engineering Management

### 6. Systems Engineering Decision Tools:

- Modeling Throughout System Development
- Modeling
- Simulation
- Trade-Off Analysis

**Note:** the programme includes case studies and good practices experienced in the Industries and Development centers **along with Practical Demonstration on PTC PLM Software**

## METHODOLOGY:

Methodology of the programme includes class room Sessions with Lecture/discussion with audio visual aid, benched marked video shows, Chalk & Talk sessions, group discussions, case studies, debates, sharing of experiences, group activities and exercises etc. All the sessions will be interactive demanding active participation from all the members. Case Method of Instruction (CMI) will be the main method of instruction

## TARGET PARTICIPANTS

Marketers, management practitioners, designers, Manufacturers, Maintenance Engineers Product Managers, Product owners, Scientists, Engineers from R&D set up Research & Industries.

## PROGRAMME ADVISOR & RESOURCE PERSONS

Other Faculty consists of experts from industry, research establishments, academia and experts who are into Systems Engineering and Product Designers are included, besides that from ESCI.



**Mr. Surendra Kumar**  
Former Lab Director and  
Outstanding Scientist –Armament  
Res & Dev Establishment, Pune  
(A DRDO Systems Lab)

## BENEFITS

This 5-day programme will equip the participants with a powerful set of tools, skills and knowledge. It aims to provide :-

- An appreciation of complexities involved in a complete product system from concept, formulation to expiration.
- Necessary management skills and an understanding of the relationship between project management and systems engineering.
- Understanding of Risk assessment, Management and reduction
- Understanding of the stages of a product goes through in the total life time, thereby consideration for design, development integration and testing of the product systems and maintenance.
- Utilization simulation-based engineering to optimize development and deployment efforts.

## PROGRAMME VENUE, DATES & TIMINGS

**VENUE:** Engineering Staff College of India (ESCI) Campus, Old Bombay Road, Gachibowli, Hyderabad. 500032. TS, India.

**DATES :** 11 - 15 March 2019

### TIMINGS

On the first day Registration will commence at 0900 h. On all other days the programme timings will be from 0945-1715 h with breaks in between for tea and lunch.

## COURSE DIRECTOR



**Gp. Capt. (Retd) BS Phillora** BE (ETC), AE (L), MMS (DS), M Phil, FIE, Chartered Engineer, Certified Lead Auditor ISO 9001: 2015  
Dean of Studies ESCI &  
Sr. Faculty, Management & Technology Division, ESCI

## COURSE FEE

- **Rs. 25,000/- (Residential Fee)** per participant. Fee includes, course material, course kit, twin-sharing/single AC accommodation as per availability, breakfast, lunch, dinner, tea / coffee and snacks during the actual days of training programme.

### DISCOUNTS:

- ❖ **Non-Residential Fee-** 10% discount on course fee is allowed for non-residential participants.
- ❖ **Group Discount:** Additional 10% discount for three or more participants, if sponsored by the same organization.

(All discounts are applicable only if fee is received at ESCI before the commencement of the programme.)

**Goods and Services Tax @ 18%** is to be paid extra over and above the training fee. PAN Card No AAATT3439Q;

**GST No. 36AAATT3439Q1ZV.**(Under commercial training or coaching services).

Programme fee is to be paid in favour of “**IE (I)-Engineering Staff College of India**” in the form of demand draft payable at Hyderabad at par cheques payable at any Bank Branches.

Alternatively, the payment may be made by Electronic Fund Transfer (EFT) to ESCI - **SB A/c No.0432104000039631 with The IDBI Bank Ltd., Gachibowli Branch, Plot No. 2-53/2, JNIBF, IIIT Junction, Gachibowli, Hyderabad-500032 by RTG's/ NIFT / IFSC Code No: IBKL0000432. ESCI PAN No. is AAATT3439Q.** While using EFT/ Draft method of payment, kindly forward a covering letter giving details on the names of the participants, Title and the programme schedule so that proper accounting can be done.

## REGISTRATION:

Online registration shall be available on ESCI website.([URL:www.esci.org](http://www.esci.org)), click link:<http://www.esci.org/index.php/mt-upcoming-trainings>

To register, manually please send your nominations giving details of name, designation, contact address, email address, mobile no, telephone and fax number of the participant along with the details of mode of payment of fee, addressed to:

### Head, Management & Technology Division

Engineering Staff College of India  
Old Bombay Road, Gachibowli, Hyderabad 500 032, TS, India

**Phone :** Direct 040 6630 4111 & 6630 4112 & 6630 4105

**Fax :** 04066304103 & 914030995227

**Email:** [mt@esci.org](mailto:mt@esci.org),

### Contact for registration:

**Mr. L.V. Rao**

Programme Manager,

Land line 040 66304105

Mob: 09949145865

## **CERTIFICATION**

**A certificate of participation will be awarded to each participant on conclusion of the programme.**

## **GENERAL INSTRUCTIONS:**

- ESCI encourages participants to present case studies from their respective organizations.
- For the convenience of outstation participants, ESCI will facilitate pick-up and drop from Airport / Railway Stations / Bus Stations, if travel plans are received at least 3 days in advance along with mobile number by fax or email. The charges shall be paid by the participant directly to the Cab.
- ESCI provides complimentary accommodation and boarding to the participants one day before commencement (Check-in 1200 h) and one day after conclusion (Check-out 1200 h) of the programme duration. Overstay charges will be applicable as per ESCI rules (subject to availability of accommodation)
- Well-developed Information Centre and Internet facilities are available to the participants.

**Nominating authorities are requested to kindly send the contact details of the participants while sending their nomination letter. This will help us in making necessary administrative arrangement for them.**