Essence Training Offerings

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1.0 Purpose

This document provides information on PEM Systems' Essence based training offerings. The document includes an Executive Summary, Corporate History and Philosophy, Essence Introductory Course Overview, Who the Course Is Intended for and Length, Detailed Course Description and Structure, Advanced Course Options, and Testimonials.

2.0 Executive Summary

At PEM Systems we believe software training should involve participants in their own learning experience. We also believe that once fundamentals are understood, the best training is tailored to the specific needs of each client. Consistent with these beliefs, we offer both an Essence half-day Introductory Training Course, as well as more advanced interactive workshops tailored to the specific needs of each client. Tailored interactive workshops range in length from 1 to 3 days.

Paul E. McMahon, the Co-Author of "**The Essence of Software Engineering**" and Author of "**15 Fundamentals for Higher Performance in Software Development**" delivers all PEM Systems training courses. Paul has successfully delivered past workshops to multiple clients over the past seventeen years including Raytheon, L3 Communications, BAE, Alion Science and Technology, Northrup-Grumman and the Department of the US Navy.

3.0 Corporate History and Philosophy

Paul E. McMahon**,** Principal, PEM Systems, has been an independent consultant since 1997 helping software intensive organizations improve their management and development practices and techniques. He has taught software engineering at Binghamton University, State University of New York; has conducted workshops on engineering processes and management; and has published more than fifty articles on software development. He is the author of multiple books including, **"Virtual Project Management: Software Solutions for Today and the Future,"** which provides the basis for his distributed development training offerings, and he is the author of **"Integrating CMMI and Agile Development,"** which is the basis of his software process and management training offerings. Paul's training courses reflect his 24 years of engineering and management experience working for companies such as Link Simulation and Lockheed Martin as well as his seventeen years of consulting experience.

Paul's approach to training is to involve his participants in learning optimum solutions by employing real world scenarios, facilitating participant brainstorming, and follow up reinforcement through sharing of proven best practices and pitfalls. Paul's philosophy reflects a goal of continual improvement which he often accomplishes by staying actively involved on real projects working closely with many of his clients subsequent to training sessions. This approach provides critical on-the-job coaching and reinforcement of best practices and principles.

4.0 Essence Introductory Course Overview

Essence is an Object Management Group (OMG) software standard developed specifically to help software development practitioners and teams with the common challenges they face each day on the job. Essence is different from past frameworks and in this introductory Essence course participants learn the fundamentals of Essence along with multiple examples of how they can use the framework to improve both their own personal and team performance.

What is particularly attractive about the Essence approach is that it can be used with whatever software method and tools an organization is already using. Essence is not a new method. It has been designed to help practitioners and teams power whatever approach they are currently using to raise their performance. The course is interactive including both tutorial material and interactive exercises.

4.1 Who the Course is Intended for and Length

This course is intended for software practitioners, project leaders, process improvement professionals and anyone interested in learning the fundamentals of Essence and how it can help teams in ways that past software process aids have fallen short. The introductory course is a half day workshop. More advanced tailored courses are available.

4.2 Detailed Course Description

The course is structured into two parts. In Part I attendees learn specific features of the Essence framework that could help software teams improve performance in ways previous frameworks, including the CMMI, Lean Six Sigma, and Scrum, have fallen short. Emphasis is placed on how Essence differs from many common frameworks and aids that have been used in the past. Multiple examples of how teams can apply the Essence framework to help power whatever approach they are currently using are provided.

In Part II of the course attendees learn common mistakes many organizations make when trying to implement defined processes with a goal of improving software practitioner performance. Attendees learn a more effective approach to improvement by focusing on patterns where software practitioners often make mistakes. A practical approach to develop patterns guided by the Essence framework, along with multiple pattern examples are provided. Attendees take away practical and easy-to-use techniques to identify and overcome repeating poor patterns specific to their own organization and their own personal performance.

Through the workshop exercises participants learn how the Essence framework can be applied to help organizations capture their own best patterns and share them across the organization leading their less experienced practitioners to learn faster what their experience practitioners already know. Participants learn that fundamental to the Essence approach is not to make drastic changes to what their organization is currently doing, but rather to make small changes continuously that can provide rapid and continual improvement to practitioner and team performance.

Through the interactive discussions that occur within the exercises participants learn different approaches to handle common software team challenges.   Participants will be challenged to compare how their organization operates today and what might be different if they decide to introduce the Essence framework to a wider group within their organization. Participants also learn practical techniques for introducing Essence in a gentle non-intrusive way that can be tested and measured to verify payback prior to more extensive organizational commitment to applying the model.

By getting the participants to discuss their own real project scenarios the value of the Essence framework and the value of developing your own patterns quickly becomes apparent. This approach to training-- where participants learn by doing--   allows them to leave the workshop with a good sense for how they could introduce Essence gradually into their organization proving out the benefits by gaining feedback and support of project practitioners and teams.

4.3 Detailed Course Structure and Topics Covered

- **Part I:** *Essence: A "Thinking Framework" to Power Team Performance*
- Course Overview, Who Course Is For, Objectives, Benefits
- The Problem the Software Engineering Community Faces
- Essence Fundamentals and How It is Different
    - Alphas, States and Checklists
    - An Example of a Team Applying the Work Alpha
    - Multiple Examples of how a team applies the checklists
    - The 15 Activity Spaces
    - The 6 Competencies
- Common Questions and Answers
    - Example Scenario of a Team Using Essence for Assessment Poker
    - Example of a Team Using Essence to conduct a root cause analysis
    - Example of a Team Using Activity Spaces
    - Example of a Team Using Essence Competencies
- Identifying process gaps and overlaps

- **Part II:** *Applying Essence to Find Your Own Best Patterns*
- Objectives for Part II
- Background and Motivation for Patterns
- Motivating "Thinking Patterns"
- Practice Slice and Thinking Pattern Definitions
- Examples of Past Mistakes when Implementing defined processes
- The two kinds of information practitioners need
- Keys to Implementing Thinking Patterns
- Exercise Pattern #1: "I don't understand a requirement"
    - Questions, Tips and Warnings
- Exercise Pattern #2: "My testing is taking too long"
    - Questions, Tips and Warnings

- Exercise Pattern #3: "How should I handle a design risk?"
  - Questions, Tips and warnings
- Comparing "thinking patterns" and checklists
- What practitioners need beyond training for high performance
- More interactive scenarios/exercises to kick-start your own pattern development
  - Pattern #4: "Tell me what to do"
  - Pattern #5: "The non-engaged stakeholder"
  - Pattern #6: "Are we really getting better?"
- Summarizing the steps to discover your own best patterns
- Using Cards to Support Practitioners with Daily Challenges
- Conclusion and Wrap Up

5.0 Essence Advanced Course Options

Essence advanced courses are tailored to the needs of each client. Advanced courses typically address specific client issues supported by client specific patterns/ anti-patterns and exercises. Advanced course options can include such topics as how to apply Essence in an organization that is using the CMMI model, Lean Six Sigma and/or agile approaches and how to apply Essence to help an organization that is transitioning from a traditional waterfall software development approach to an agile/Scrum-like approach. Advanced courses can vary in length from 1 to 3 days, and can include additional follow-on consulting support.

6.0 Testimonials from Past Attendees of Paul E. McMahon Workshops

"Paul E. McMahon (PEM Systems), is a gifted instructor and ideal mentor for software companies of various experience levels. He tailors his lessons for each training audience and combines industry-wide best practices to keep everyone engaged and collaborating well beyond the end of a session. He is a catalyst for continuous improvement for any company or organization; a game changer!"

Michael "Quaker" Oakes, PhD
Advanced Modeling and Simulation Technology Operation (AMSTO)
Alion Science and Technology

"…allowed many individuals from various organizations to come to a common understanding of the path forward…had not been accomplished in prior two years…Enabled the seemingly impossible to become probable."
LCDR Dylan Schmorrow, PHD, Office of Naval Research

"…the tailored workshop addressing a specific project is absolutely fantastic...would like to have this workshop attended by the leaders of all my projects!"
Denise Lyons, PHD, NAWCTSD