ESI European Software Institute

Implementing Reuse with Flexible Components

ESI Training Services:

Practical Implementation Courses

This workshop shows how to implement reuse practices in a company using the approach of the RBSF (**Reuse-based Software Factory**). The emphasis of the workshop is in putting the reuse strategy into practice in an organizational context. This includes creating a set of reusable flexible components and establishing the conditions for their effective use.

The course reports on experiences showing that, in less than half a year, an organization may obtain reuse rates of more than 60% using a limited set of 30-40 flexible components. Finally, course participants will have the opportunity to develop a mini-pilot reuse project.

The course combines instructor presentations with hands-on exercises and uses a workshop style to promote participation and build on the participant's experiences.

Flexible Components: a Key Technology for Software Reuse

A flexible component is a representation of a set of similar software components. Open decisions are explicitly captured in a flexible component by means of parameters of variation. Component instances are derived from the flexible component by binding the parameters of variation to valid values.

You do not need to change programming language to enjoy the benefits of using flexible components. Flexible components technology is increasingly used in factory-oriented software development and since it makes no assumptions on your development or design languages, it may be used with absolutely any programming language, including COBOL, C, C++, Visual Basic, UML etc.

Flexible components are at the core of the Reuse-based Software Factory (RBSF) approach, fostering software production in an industrial way to drastically reduce the cost of software production, exploiting similarities among developed applications.

INSIDE

Information & Registration

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Who Should Attend?

- Technical Directors
- Software Department Managers
- Project Leaders responsible for teams of software developers
- Experienced analysts, designers and programmers (using any programming language) with the responsibility of implementing software systems, promoting a component-based, cost-effective and quality-driven approach

Benefits of the Course

The course provides a comprehensive set of proven methods and techniques for the definition, design, implementation and usage of flexible components, including the realisation of a mini-pilot project to demonstrate their effectiveness.

You will learn how to:

- Increase reusability through standardization and normalization
- Design flexible components to enforce commonality and to optimize on variable aspects
- Construct programs as an assembly of flexible components
- Deploy the approach in a company through a pilot project

> "Experiences show that in less than half a year, an organization may obtain reuse rates of more than 60% using a limited set of 30-40 flexible components"

Prerequisites

Participants are expected to have attended one of the following courses in advance: "Reuse for Senior Managers" or "Introduction to Systematic Reuse: The Benefits of Reuse", or to demonstrate familiarity with the concepts of reuse engineering.

Presenters

The course instructors are members of ESI's Continuous Improvement training team and have extensive experience in Software Process Improvement. They specialise in component-based software development and in product-line based reuse and have been working with industry in this area for a number of years. The instructors also have experience in implementing the Reuse-based Software Factory in client organisations.

Key Topics

- **The Industrialization of the Software Production**
- **The Reuse Based Software Factory as an implementation approach for the company's software reuse strategy**
- **Flexible Components:**
  - definition
  - examples
  - exercises
- **The Organization of the Reuse Based Software Factory:**
  - Domain Engineering
  - Application Engineering
  - Management and Administration
  - Examples and exercises
- **A Reuse Based Software Factory case study**

The European Software Institute (ESI) is one of the world's leading independent authorities on software process improvement. We help businesses design, implement and measure improvement programmes that achieve real commercial goals such as reduced effort and costs and increased product quality.

About ESI

Established in 1993 and with its headquarters in Spain, ESI is a non-profit organisation, which offers consultancy and training services, supported by a highly qualified team of experts and an extensive network of international alliances.

ESI offers a broad **training portfolio** that will help meet your needs, whether you are a beginner seeking an introduction to SPI or an expert looking for more advanced SPI diagnosis and implementation programmes.

ESI's Training Philosophy

Our training is developed in line with ESI's work in emerging, cutting-edge technologies. Our philosophy is always to help turn theory into actual implementation in the work environment, calling on industry experience, case studies and ESI's Best Practice Repository.

In addition to its open programme, ESI also offers in-company training and consultancy packages and is developing a number of Internet-Based Training products.

For further information contact **ESI Training Services Unit.**

ESI can offer in-company training in SPI,
or combine training with consultancy activities to
offer an **integrated service** approach
to support the implementation of SPI
in your organisation.

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