

## Proposal of Software Architecture Seminar

1. **Title: Software Architecture. Its Design and Evaluation**
2. **Name and affiliation of speaker + short bio**

**Speaker:** José L. Fernández-Sánchez

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### **Short Bio:**

Jose L. Fernandez-Sanchez has a Ph.D in Computer Science, and an Engineering Degree in Aeronautical Engineering, both by Madrid Technical University (UPM).

He has over 28 years of experience in industry as system engineer, project leader, researcher and department manager. He was involved in projects dealing with software development and maintenance of large systems, specifically real-time systems for air traffic control, power plants Supervisory Control and Data Acquisition (SCADA), avionics and cellular phone applications.

During 1993, he was visiting scientist at the SEI, Carnegie Mellon University, Pittsburgh, USA.

He is the author of the PPOOA architectural style for real-time systems.

Currently, he is consultant, researcher and part time professor at the Industrial Engineering School of the Madrid Technical University (UPM). His areas of interest are systems engineering, real-time systems, software engineering, CASE tools and project management.

He participated as author in the book, "Business Component-Based Software Engineering", Kluwer Academic Publishers, Boston, October 2002. He has published more than 40 papers in conferences and workshops.

Selected for inclusion in Who's Who in the World and Who's Who in Science and Engineering.

### **3. Abstract**

The goal of the seminar is present best practices and methodologies for architecting software intensive systems.

We mean:

- Use a vocabulary of building elements,
- follow a defined process for architecting a new system,
- use tactics as a mean of implementing non-functional requirements
- and define architecture views and models using UML notation.

The architectural descriptions developed should allow their assessment using a combination of scenario based and measurement based techniques.

### **4. Target audience**

System and software engineers developing systems, where timing properties are a main concern.

Understanding of basic UML notation is required

### **5. Duration: 3 days**

## 6. Seminar outline

### 1. Software architecture

- What is software architecture?
- Concepts related to software architecture
- Architecture views and models in UML
- Architecture styles
- Quality attributes and software architecture

### 2. Domain modeling

- Goal of domain modeling
- The class diagram
- Domain classes, their attributes and responsibilities
- Domain analysis for reuse and product lines

### 3. The process of architecting and documenting a software intensive system

- Architecting processes.
- Architecture patterns
- Documenting the software architecture

### 4. Design tactics

- What is a design tactic?
- Using design tactics in the architecting process
- Catalog of design tactics

### 5. Architecture evaluation

- Scenario based techniques
- Measurement and simulation based techniques
- Hybrid techniques

### 6. Conclusions

7. **Location:** Customer facilities or other

8. **Maximum number of participants:** 15

9. **Training material**

- An annotated copy of seminar slides (in paper format)
- An example architecture to be developed during the seminar

10. **Price:** To Be Negotiated