

## The Instructors

**John FAVARO** has more than twenty years of experience in the information technology field. After spending several years at CIT-Alcatel in Paris and Siemens AG in Germany, he joined Intecs where he has been the leader of different projects to develop UML-based methods and tools. He now coordinates R&D activities at Intecs and is on the steering committee for the International Conference in Software Reuse. Mr. Favaro took his degrees in computer science at Yale University and the University of California at Berkeley.



**Silvia MAZZINI** has more than twenty years of experience in the Software Engineering field. She is involved both in technical and management activities in the context of several international industrial and research projects. She participates to the ECSS E40 and Q80 working groups. She is Methodologies and R&D Manager at Intecs. Mrs. Mazzini took his degree in computer science at Pisa University in Italy.



## The Company

Intecs is a Software-House providing leading-edge technological support to the major European organizations in the design and implementation of complex electronic systems.

Intecs was born in October 2000, through a spin-off by Intecs Sistemi, founded in 1974, from which it has inherited staff and experiences. Today Intecs HRT belongs to the Intecs Group, and has about 100 employees.

Intecs has been one of the first Italian software firms to obtain the ISO-9000 certification in 1994. The current certification is **ISO 9001:2000 for software development of defence, space and civilian applications.**



## General Information

### Hours

9:00 – 17:30

### Location

Courses may be arranged in-house at the customer site upon request.

### Contact

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the Brainware company

## ECSS E40 Software Engineering Standards

*A two-day modular course*



The course material has been prepared by Intecs under ESA/ESTEC contract.

## ECSS Software Engineering Standards

The European Cooperation for Space Standardization (ECSS) is a cooperative effort of the European Space Agency, national space agencies and European industry associations for the purpose of developing and maintaining a coherent, single set of user-friendly standards for use in all European space activities.

Software is addressed in the ECSS by two standards: ECSS-E-40 for Software Engineering and ECSS-Q-80 for software Product Assurance. They are both based on ISO/IEC 12207 and available at the ECSS Web site: <http://www.estec.esa.nl/ecss/>. They are applicable to software activities of ESA projects..

### The Course

The objective of the course is twofold: one is to present the basic principles of the ECSS-E-40 software engineering standards (E-40 and related level 3 standards), and the other is to provide a detailed knowledge of the ECSS standards and the required software engineering processes and activities.

The course is organized in two days:

- Day1: An overview of the ECSS software standards. This includes a recall on the ECSS family of standards, the role of software in the overall system, a roadmap to E40 and the software documentation.
- Day2: A detailed look at the E40 level 3 standards, the keys to tailoring, and migration from PSS-05 to ECSS, basic rules and the overall principles of space project management and engineering.

### Intended audience

At least Day 1 should be selected by:

- project managers and system engineers who need to understand how the software standards can help them to manage the software part of their project or system,
- software project managers and software engineers who need to understand the software standards, with a view toward tailoring and applying them in their project.

Both Day 1 and Day 21 should be selected by:

- software project managers who want to have in addition a deeper view and knowledge of the new standards and be able to tailor them and applying them in their project,
- software engineers who will be operationally involved in the requirement analysis, design, development and test of Space software systems.

### Prerequisites

The participants are expected to be familiar with the fundamental concepts of software project management and software standards, and have some experience as practicing software development engineers

### Benefits

The Day 1 course will primarily familiarize the managers and engineers with the specific approach and terminology found in the ECSS standards as well as the structure and nature of the inter-relationship between software processes and system processes, so that they will be able to interact with higher-level project managers, and with their development teams. They will know where to find more detailed material when necessary for further study in an operational context.

In the Day 2 course software project managers and software engineers will understand the other important concepts and terminology of the ECSS standards suite.

### Material

The participants are provided with copy of the following material:

- Course handouts
- ECSS-E -ST- 40C Software Standards
- ECSS-E-HB-40A Software Handbook

## Course Outline

### Day 1

An Overview of the ECSS Standards	9.00
The Role of Software in the Overall System	9.30
A Road Map to the E40 Standard (first part)	10.00
<b>Break</b>	<b>10.30</b>
A Road Map to the E40 Standard (second part)	11.00
<b>Break</b>	<b>12.30</b>
A Road Map to the E40 Standard (third part)	14.00
<b>Break</b>	<b>15.30</b>
Documentation	16.00

### Day 2

Tailoring the E40 Standard	9.00
Space Project Management	10.00
<b>Break</b>	<b>11.30</b>
Space Project Engineering	12.00
<b>Closure</b>	<b>13.00</b>