This two days course presents the challenges for electromagnetic compatibility of integrated circuits. A set of basic concepts is proposed as an introduction, covering specific units, parasitic impedance of interconnects, origin of noise, noise margins, time/frequency conversion and 50 Ω adaptation. The second focus concerns parasitic emission, how to design low emission circuits and how to measure the IC emission using standard IEC 61967 methods. A third topic concerns susceptibility, with focus on measurement methods (IEC 62132) and hardware/software techniques to improve immunity to interference. The fourth part is related to modeling approaches for predicting EMC (IEC 62433), based on standards such as IBIS, ICEM and ICIM. Finally, roadmaps and future challenges are briefly reviewed. Illustrations of these concepts are made using IC-EMC, a freeware including unique features and tools for efficient EMC simulations of integrated circuits.

Benefits
At the end of this course, you will understand the mechanisms of parasitic emission; take part in a global emission and susceptibility reduction strategy; handle standard measurements of emission and susceptibility; and design circuits with reduced interference problems.

Audience
IC users, IC designers, Students in electronics and IC design, Researchers in CMOS design

Program
- Day 1 (Monday Jan. 28, 2013)
  - EMC of ICs – An Overview
  - EMC Basics concepts
  - Measurement methods
  - Practical session
- Day 2 (Tuesday Jan. 29, 2013)
  - EMC Models
  - EMC Guidelines
  - EMC Challenges
  - Practical session

Accreditation
As a National Engineering School, in French top 10 best institutes among 200 engineering schools, INSA Toulouse is leading in International Exchange, Bachelor-Master-PhD structure, and ECTS-based programs. The course EMC of ICs is part of a International Master “Embedded Systems” (2 years complete program) and validated through a written exam and fully eligible for 1 ECTS credit.

Registration Fees
- 750 EUR per person;
- 500 EUR for IEEE or SEE members;
- 250 EUR for PhD or Master Students.

The registration fee includes the PPT slides, the 2 lunches and coffee breaks.

Registration
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