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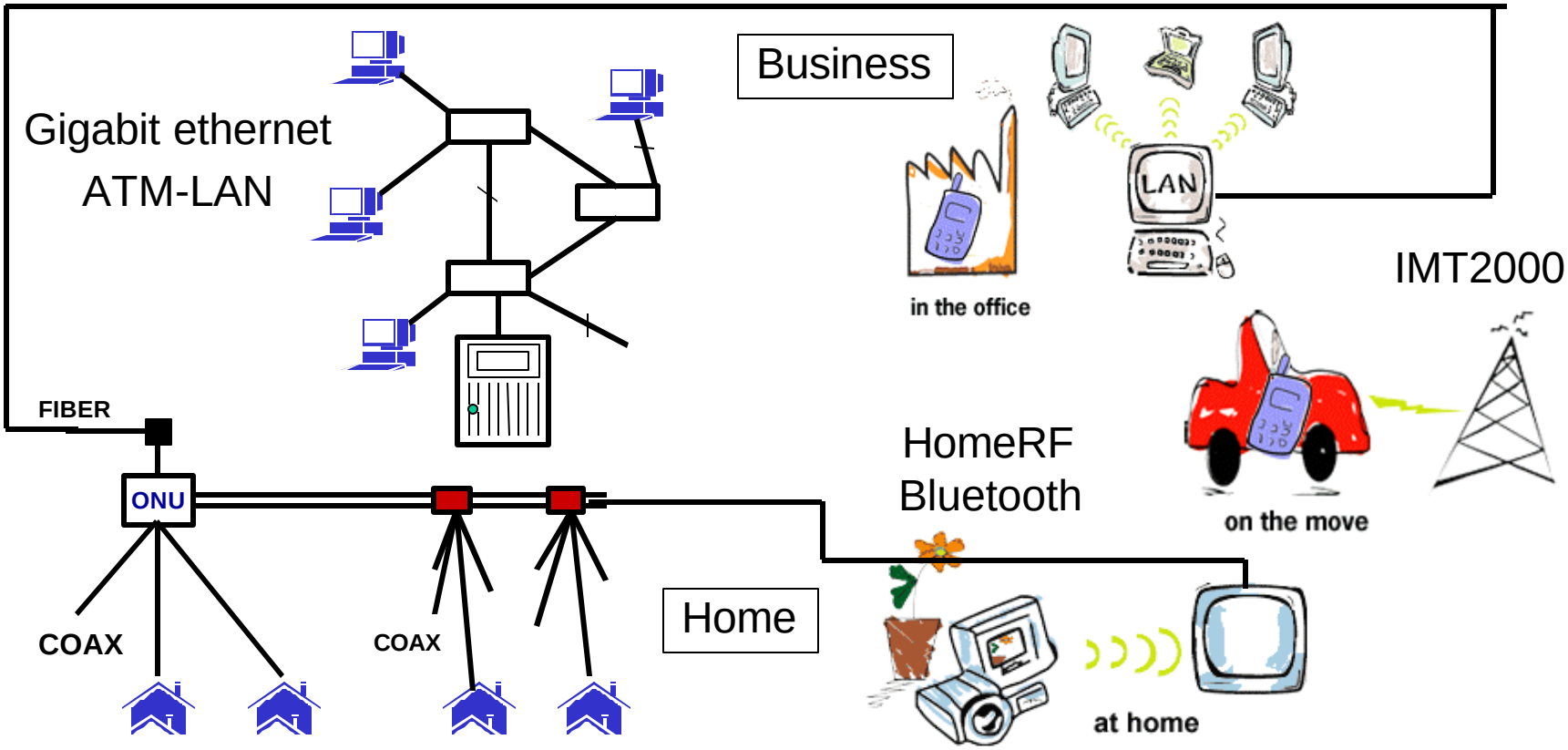
The Information Age

A Connected World

The world is wired… …and wireless.



xDSL/Cable modems

ecommerce, telelearning, telemedicine, distributed design teams

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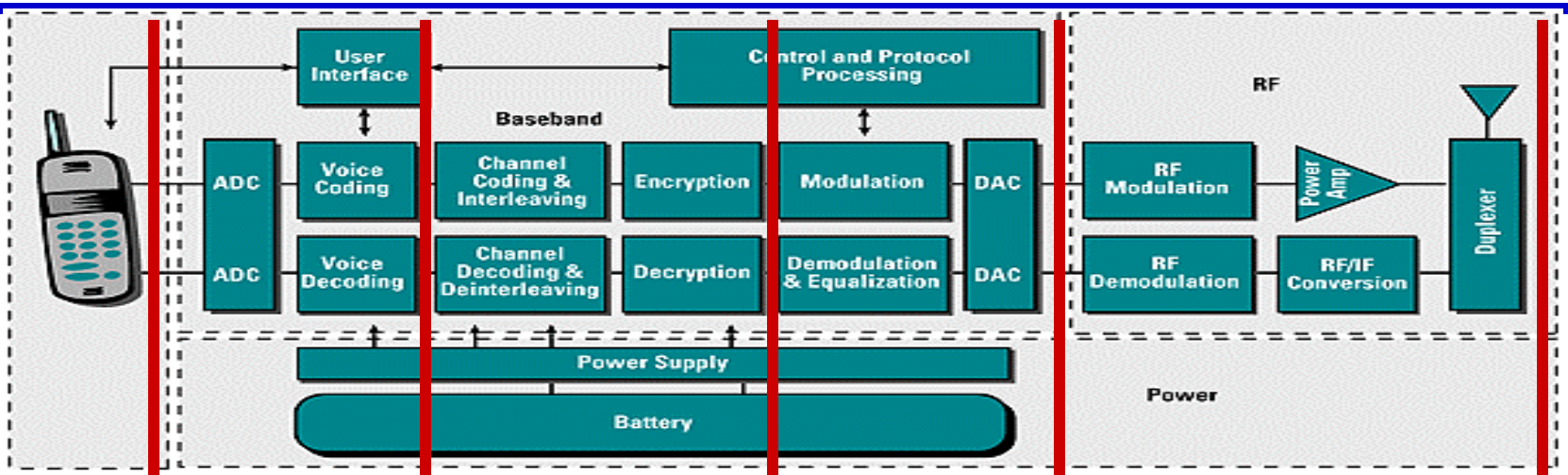
Multimedia Systems-on-a-Chip (SOC)



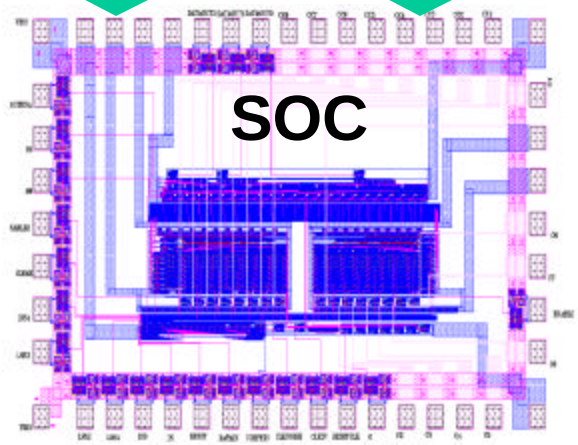
Source (video/ speech/ data)

Source Proc./ Coding

Channel Coding

Modulation

RF



VLSI Circuits Group

Circuits Group Faculty and Students

URL: http://www.icims.csl.uiuc.edu

- **Faculty:**
  - **Prof. Ibrahim N. Hajj**
  - **Prof. Amit Mehrotra**
  - **Prof. Sung-Mo (Steve) Kang**
  - **Prof. Elyse Rosenbaum**
  - **Prof. Naresh R. Shanbhag**
  - **Prof. Timothy N. Trick**
- **Graduate Students: 40**
- **Research Grants: SRC, DARPA, JSEP, NSF, USAF, AT&T, IBM, TI, DEC, Analog Devices, Motorola, Intel, McDonnell-Douglas, HP, Rockwell, Samsung**

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Research Areas

URL: http://www.icims.csl.uiuc.edu

- **CAD for VLSI: (Hajj, Kang)**
  - **Low-power design, Reliability prediction, Signal integrity, Simulation, Test and Diagnosis, Statistical & Physical Design, Opto-circuits**
- **Integrated Circuits Reliability: (Rosenbaum, Kang, Hajj)**
  - **Reliability Physics, Reliability Simulation/Prediction, ESD & EOS, Oxide Breakdown, Hot-Carriers, SOI Devices and Circuits**
- **Analog Integrated Circuits: (Mehrotra)**
  - **RF circuit simulation, noise analysis, RF circuit circuit design for wireless communications.**
- **VLSI for DSP and Communications: (Shanbhag)**
  - **Low-Power, High-Performance Algorithms, Architectures, Digital circuits, System and ASIC design for xDSL, LAN, wireless, and video**

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Jobs

URL: http://www.icims.csl.uiuc.edu

- **Digital IC Designer:**
  - **ASICs (modems, graphics); Processors (microprocessors, programmable DSPs, media proc.); Memory: (DRAMs, SRAMs)**
- **Analog IC Designer:**
  - **Converters: digital <-> analog; Consumer electronics;**
- **System Architect: algorithm, system and architecture design**
- **CAD Tool Developer: tools and methodology**
- **Process Engineer: process development**
- **Start-ups!** : ASICs for communications, Cores for SOCs etc.

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Courses: Main

URL: http://www.icims.csl.uiuc.edu

- **Main:**
  - **ECE325: Introduction to VLSI System Design**
  - **ECE326: Advanced VLSI System Design**
  - **ECE382: Large Scale Digital IC Design**
  - **ECE383: Linear IC Design (Analog Circuits)**
  - **ECE452: Computational Techniques for Circuit Analysis**
  - **ECE482: Physical VLSI Design**
  - **ECE484: Reliability Engineering for Integrated Circuits**
  - **ECE497ER: Characterization, Design, Modeling of CMOS Devices**
  - **ECE497NS: VLSI for Signal Processing and Communications**
  - **ECE490S: Circuits Group Seminar**

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Other Courses

URL: http://www.icims.csl.uiuc.edu

- **Graduate:**
  - **ECE452, 482, 484, 497ER, 497NS, 490S**
- **Other ECE:**
  - **Signals, Systems and Control: ECE-310, 386, 390, 415, 451**
  - **Computer Engineering: ECE-311, 362, 441, 442, 443, 474**
  - **Communications: ECE-361, 434, 461**
  - **Electromagnetics: ECE-353, 359, 420**
  - **Physical Electronics: ECE-344, 435**

- **Other non-ECE:**
  - **Computer Science: CS-339, 358, 359, 373, 457, 458**
  - **Mathematics : MATH-312, 317, 318, 347, 361**