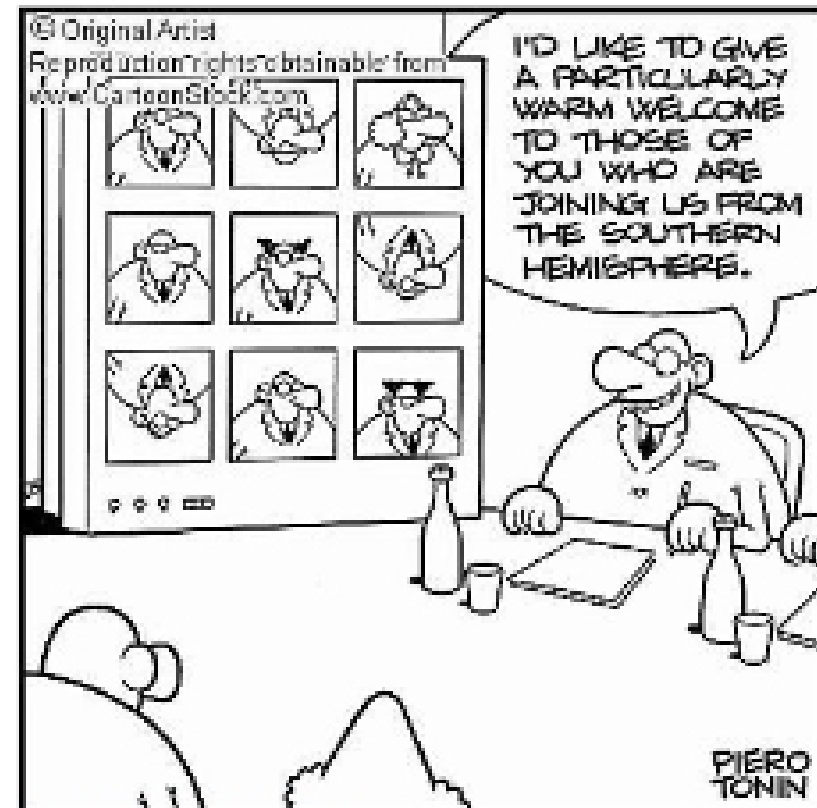


Videoconferencing Project

- Project Concept and Background
- Checkpoint Structure
- Bells and Whistles



CS 150 - Spring 2007 - Lec. #11: Course Project - 1

Objectives

- Broad "brush" overview of the project
- Details will be covered in the lab lectures, starting next week
- NOTE: anything discussed in the lab lectures and project checkpoint write-ups supercedes what I describe here!
 - Neil and Allen have a working implementation of the project
 - They know the project better than I do! Listen to them!

CS 150 - Spring 2007 - Lec. #11: Course Project - 2

Course Project: Videoconferencing System

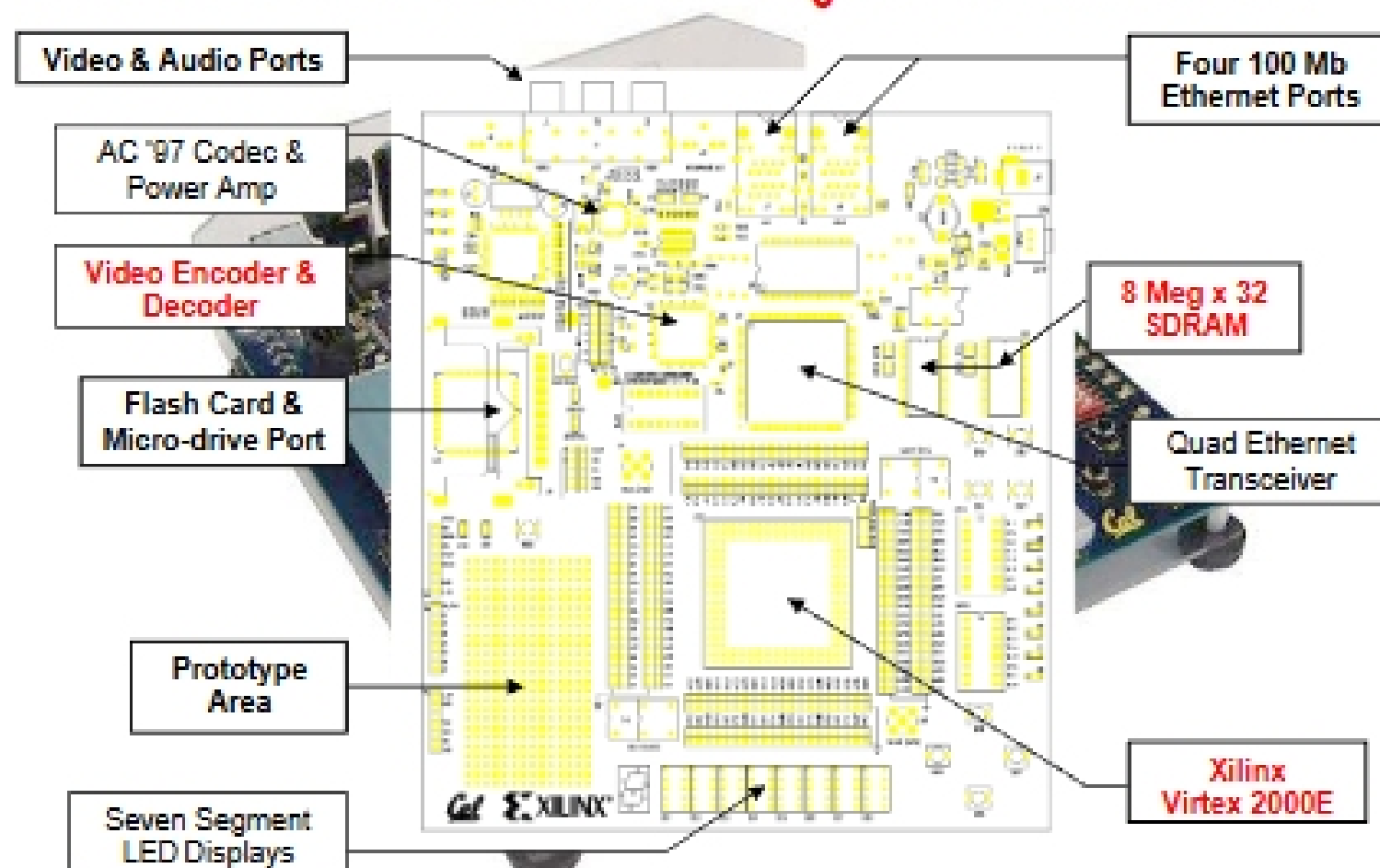
■ Not quite this ... but:

- Video camera capture
- CRT video display
- Serial compressed video 2-way transmission between two stations
- *Wireless communications*
- (no audio this semester)
- Implemented in a Xilinx FPGA on the Calinx boards in the lab
- Groups of two -- your Lab #4/#5 partner
- Commit to a TA now for grading purposes



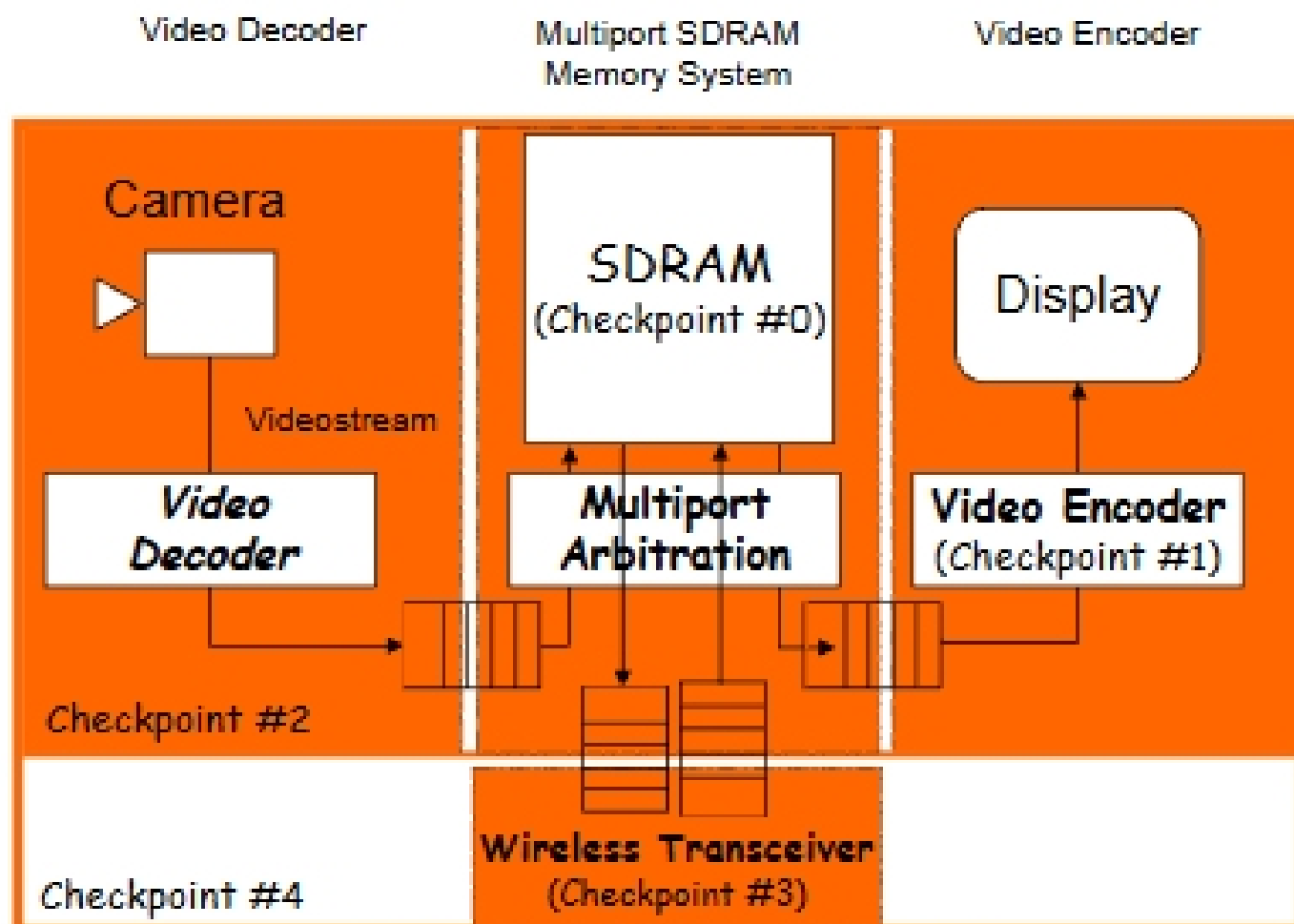
CS 150 - Spring 2007 - Lec. #11: Course Project - 3

Calinx EECS 150 Lab/Project Protoboard



CS 150 - Spring 2007 - Lec. #11: Course Project - 4

Complete Videoconferencing System



CS 150 - Spring 2007 - Lec. #11: Course Project - 5

Checkpoint #0/#1/#2: SDRAM Interface



- Memory protocols
 - Bus arbitration
 - Address phase
 - Data phase
- DRAM is large, but few address lines and slow
 - Row & col address
 - Wait states
- Synchronous DRAM provides fast synchronous access current block
 - Little like a cache in the DRAM
 - Fast burst of data
- Arbitration for shared resource

CS 150 - Spring 2007 - Lec. #11: Course Project - 6