

ECGR 6185 - 2/22/10 - Test Review

①

Review by each of the presenters:

- 1) Suraj
- 2) Zehale
- 3) Sunil
- 4) Haitao
- 5) Onkar

- 6) Vasanth
 - 7) Suganya
 - 8) Ashwin
 - 9) Steve
 - 10) Siddharth
-

1) - Real Time Networking using Linux

- Linux networking stack.
- Xenomai as Real time patch.
- RTnet as the real time network protocol.

- Suraj Swami

2) Transforming ordinary Surfaces into Multi-touch controllers.

- Can transform an ordinary flat surface into a multi touch controller.
- used basic hardware like ^{two} IR camera & sensors, projector.
- Designed a music controller which can control music with touch gestures.

Sunil

ECGR 6185 - 2/22/10 - Test Review

②

Project Mgmt

* Requirements → what

* Work Breakdown structure → what/how/who

"Deconstructing" problem

* Scheduling → order of tasks

Dr. C

1. Advantages of smart sensor standard.
2. Subsystems of IEEE 1451.
3. Typical Application of Smart Sensor.
4. Wireless Communication Technology with IEEE 1451.

Hattao.

5) Different Resources for C.V.

→ Constraints

→ 3 versions of CMUCAM.

→ Interface.

→ Algorithms

→ Applications.

- Onkar.

ECGR 6185 - 2/22/10 - Test Review

(3)

- * Lab on a chip, Electrowetting
- * Drawbacks of Earlier Testing Methods { Capacitive Sensing }
- * Online Testing - { Built-in Self Test }
- * Algorithm for Online Testing
 - ↳ Microfluidic AND gate
- * Applications → Compaction.

- Vasanth

SMART GRIDS

What? — Electrical + Communication

Why? — Effective / Efficient energy use and distribution.

Properties — Eg: self-healing

Technology — Metering, sensing equipment
Adv. components

Visualization methods

Integrated communication

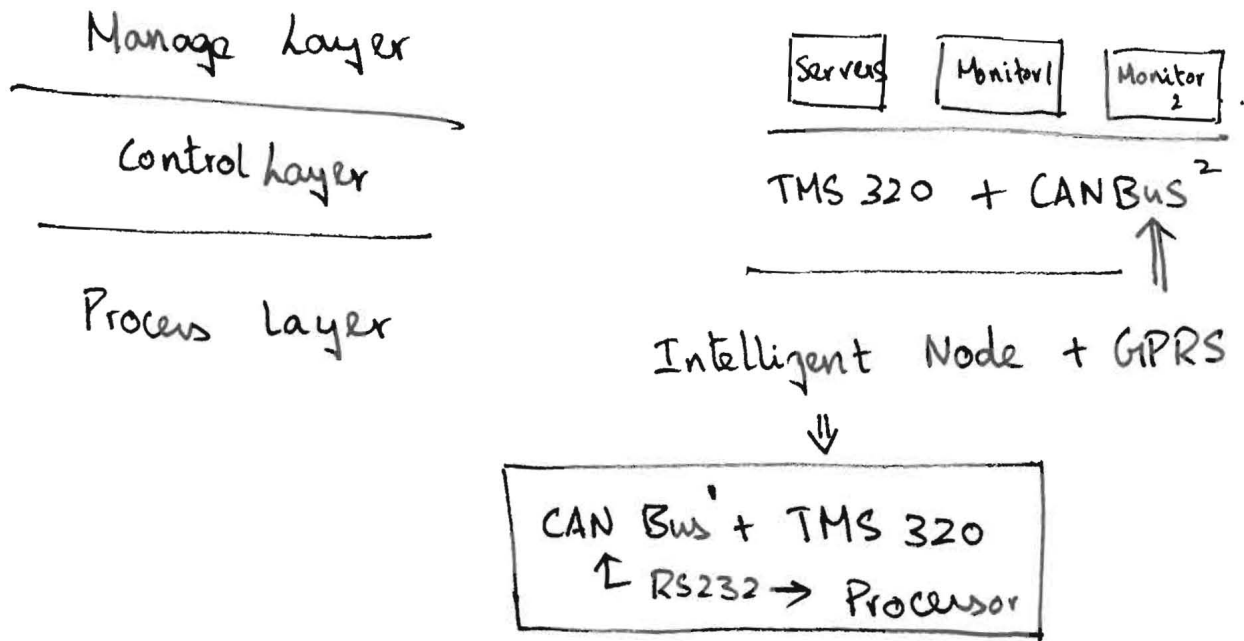
Benefits — Eg: Easy monitoring of energy use and distribution.

- SUGANYA

ECGR 6185 - 2/22/10 - Test Review

4

* Hybrid Network Control System.



- 1 - Receiver + Transmitter
- 2 - Receiver.

Appln.

* Heat Exchange Station - Dalian in China where Multiple Analog + Digital I/Os were necessary.

— Aswin.

ECGR 6185 - 2/22/10 - Test Review

Real Time Operating System for Robots (5)

- Examples of existing systems
- Why a RTOS for robots?
- Layered model

Steven Etkwaniczki

uclinux on FPGA.

- Advantage.
- uclinux as an OS.
- DE270 development
- mPEG2 player.
- performance analysis.

- Sidharth

PLC

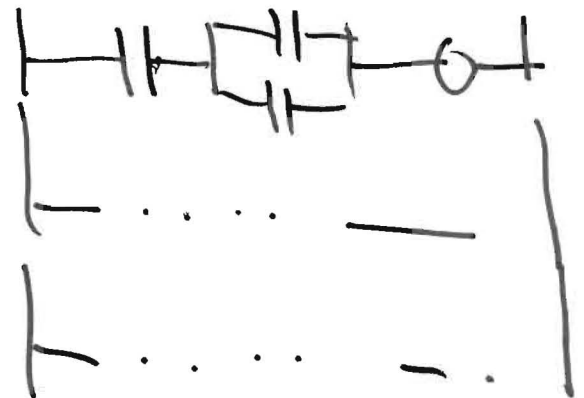
- simple embedded

I/O, memory, control unit.

- Ladder logic

- series - 'and' conn

- parallel - 'OR' logic



- Zehaie

ECGR 6185 - 2/22/10 Test Review (6)

- * Requirements
- * Block diagram
- * Algorithm / software / OS

Interfaces to a microcontrol

UART

Wireless

I²C

Analog (ADC, DAC)

Digital (buttons)

LED → Digital

CAN

SPI

USB