TCP/IP Packet Descriptor

Detailed Design

Welcome

Mr. Ken Swarner

EdgeTech Members

Matt DeCrescente - Librarian
Eric Fish - Lead Programmer
Jill Foster - Team Leader
John Mooney - Consultant
Das Nobel - Webmaster

Detailed Design

Roger Bacon Room 328

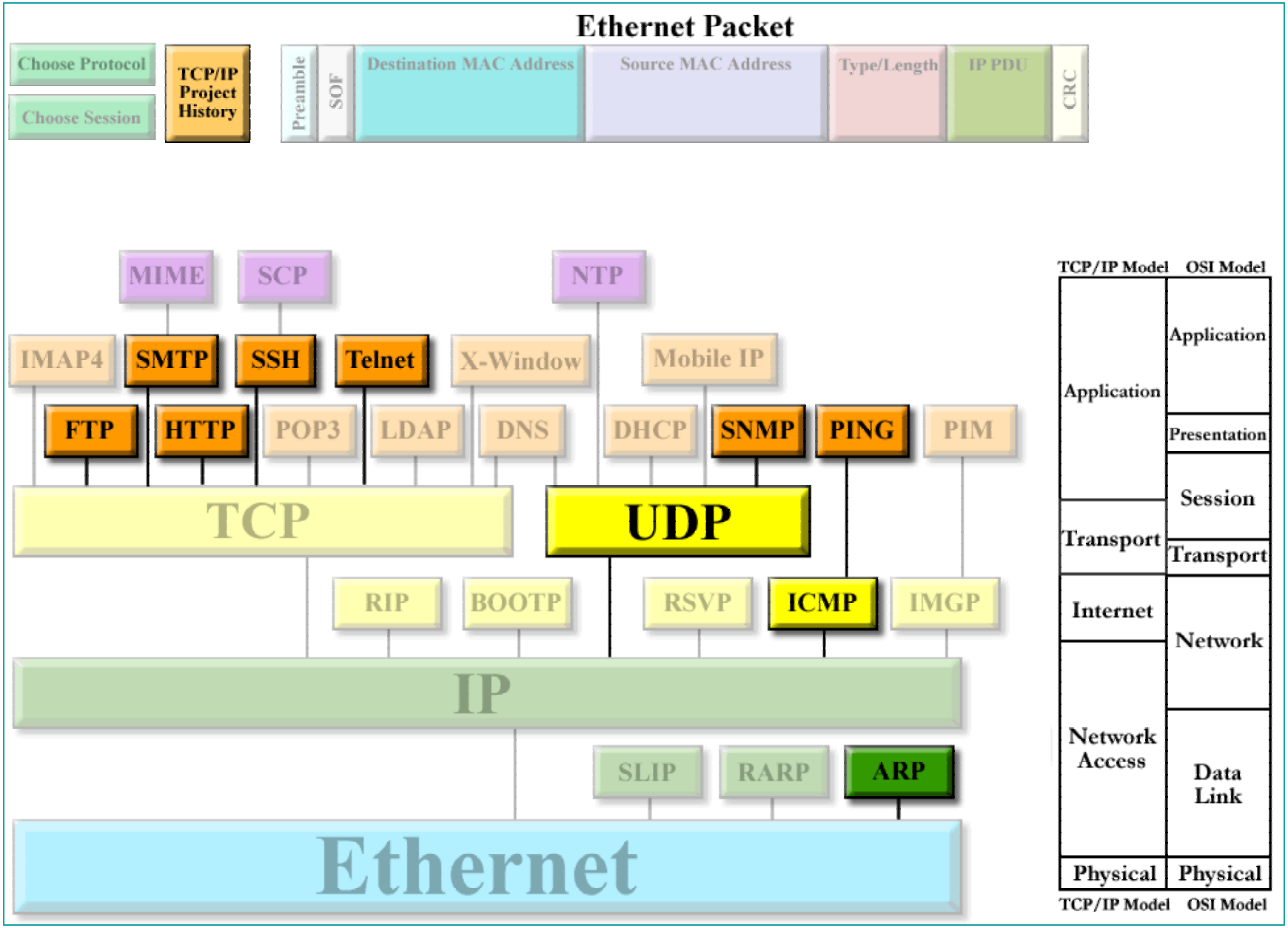
March 1, 2005

- Jill Foster — Introduction & Conclusion
- John Mooney — Prototypes
- Matt DeCrescente — Testing Plan

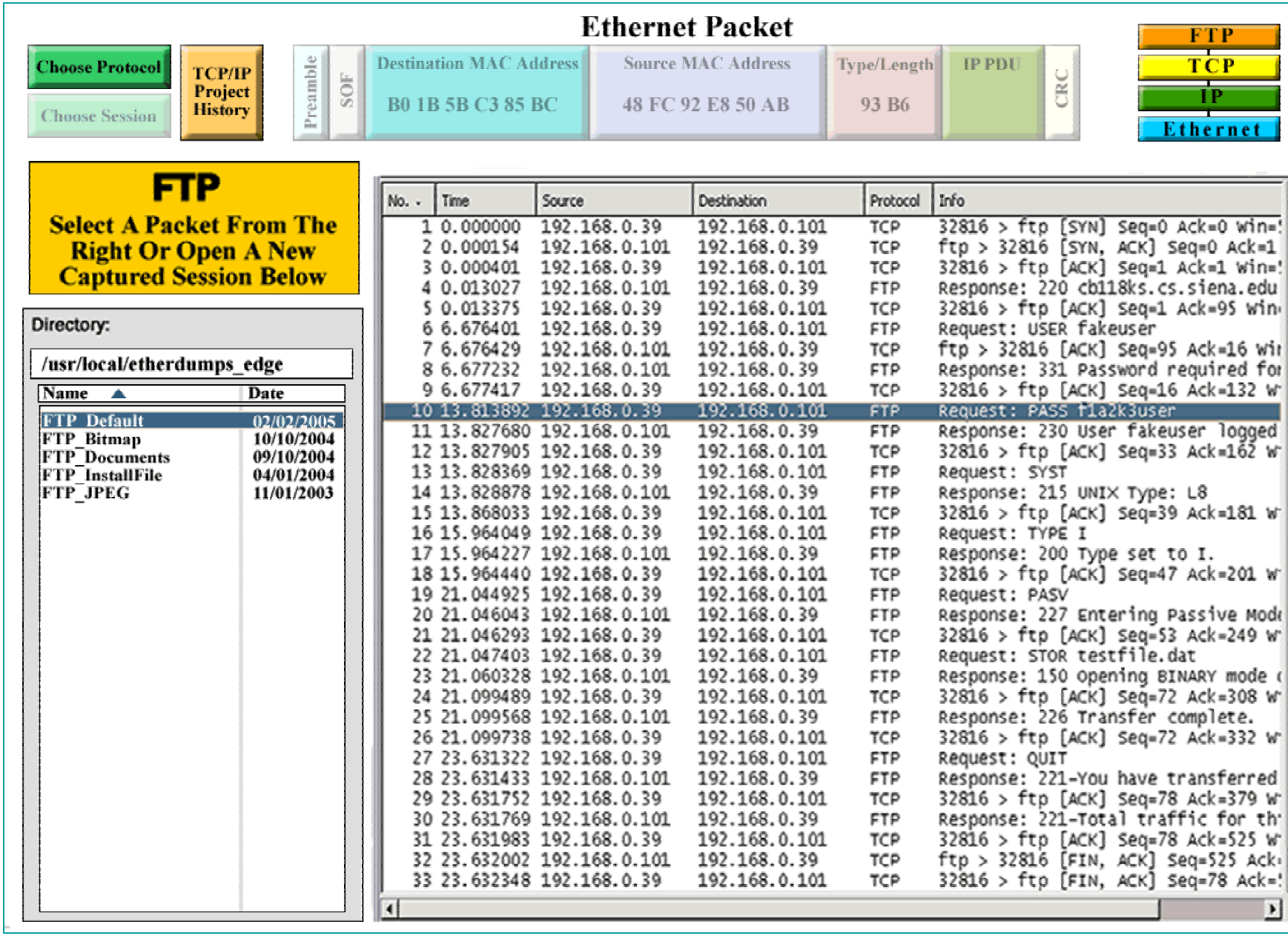
Agenda

- **Prototypes**
- Testing Plan
- Conclusion

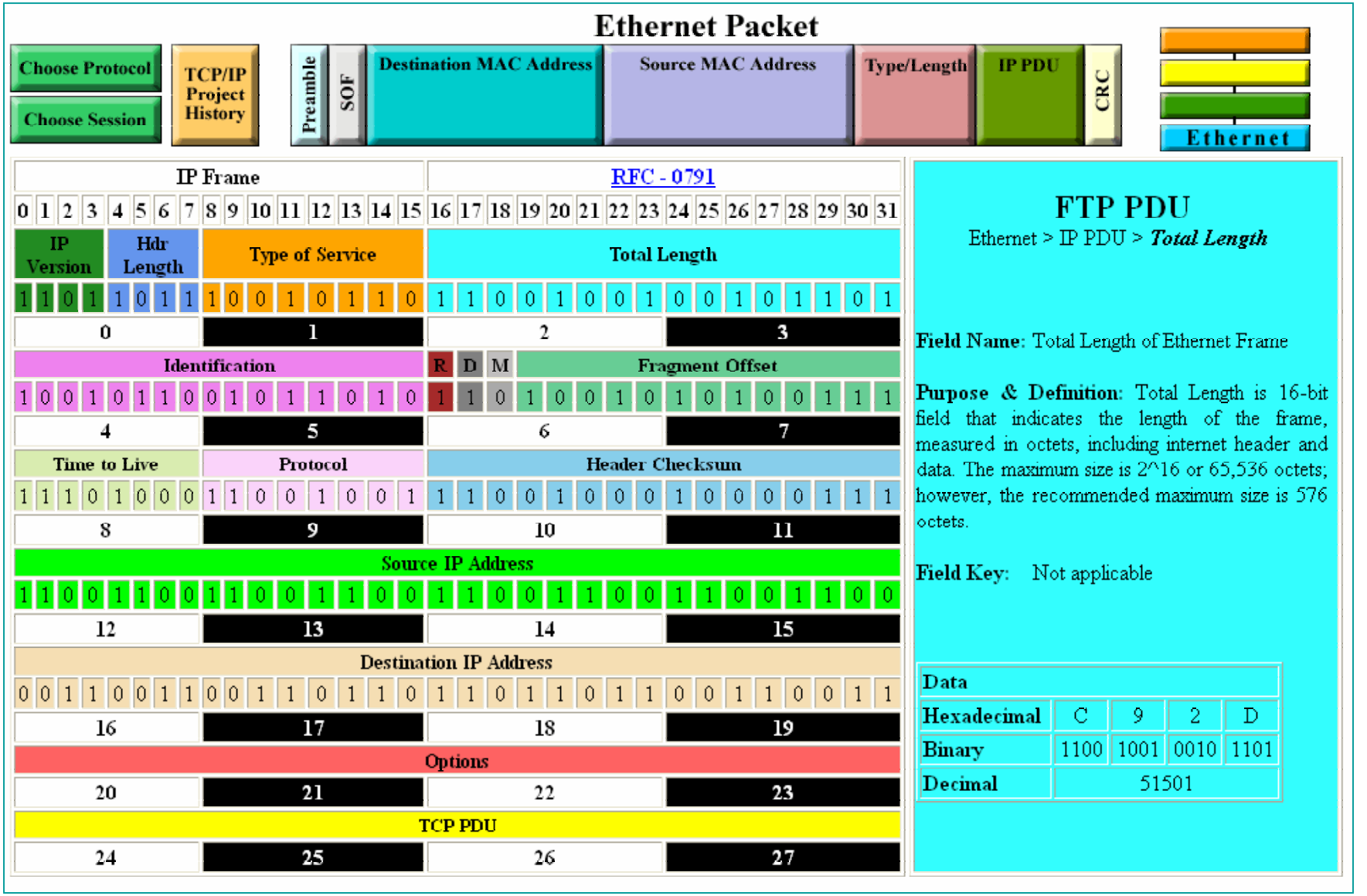
Protocol Selector Screen



Packet Selector Screen



Info Display Screen



History Screen

Choose Protocol | Choose Session | TCP/IP Project History

Ethernet Packet

Preamble | SOF | Destination MAC Address | Source MAC Address | Type/Length | IP PDU | CRC

History of TCP/IP Packet Descriptor

Two teams from the Class of 2004's Software Engineering class developed TCP/IP Packet Descriptors. Both gave graphical expressions and informative knowledge about different Internet Protocols. However, the packet information was hard-coded into the program, allowing the user to see the protocol data units of one packet for each different protocol.

For the Class of 2005's Software Engineering class, our team, EdgeTech Development, was asked to enhance the program. The enhancements were to combine the best design points of both programs and combine them into one. Another enhancement was to allow the user to take an Ethernet dump file from an external program and open it up in our TCP/IP Packet Descriptor, and allowing the user to pick any packet from the dump file and have the program break it up into its different data units.

The links below will take you to last years team websites and programs from Blue Technologies and Mirage Inc.

EdgeTech Development

TCP Descriptor

Mirage Inc.

"The Descraptor"

Blue Technologies Inc.

TCP Descriptor

Client: Mr. Ken Swarner
Teacher/Silent Partner: Dr. Timoth Lederman

Class: Software Engineering
School: Siena College

Back

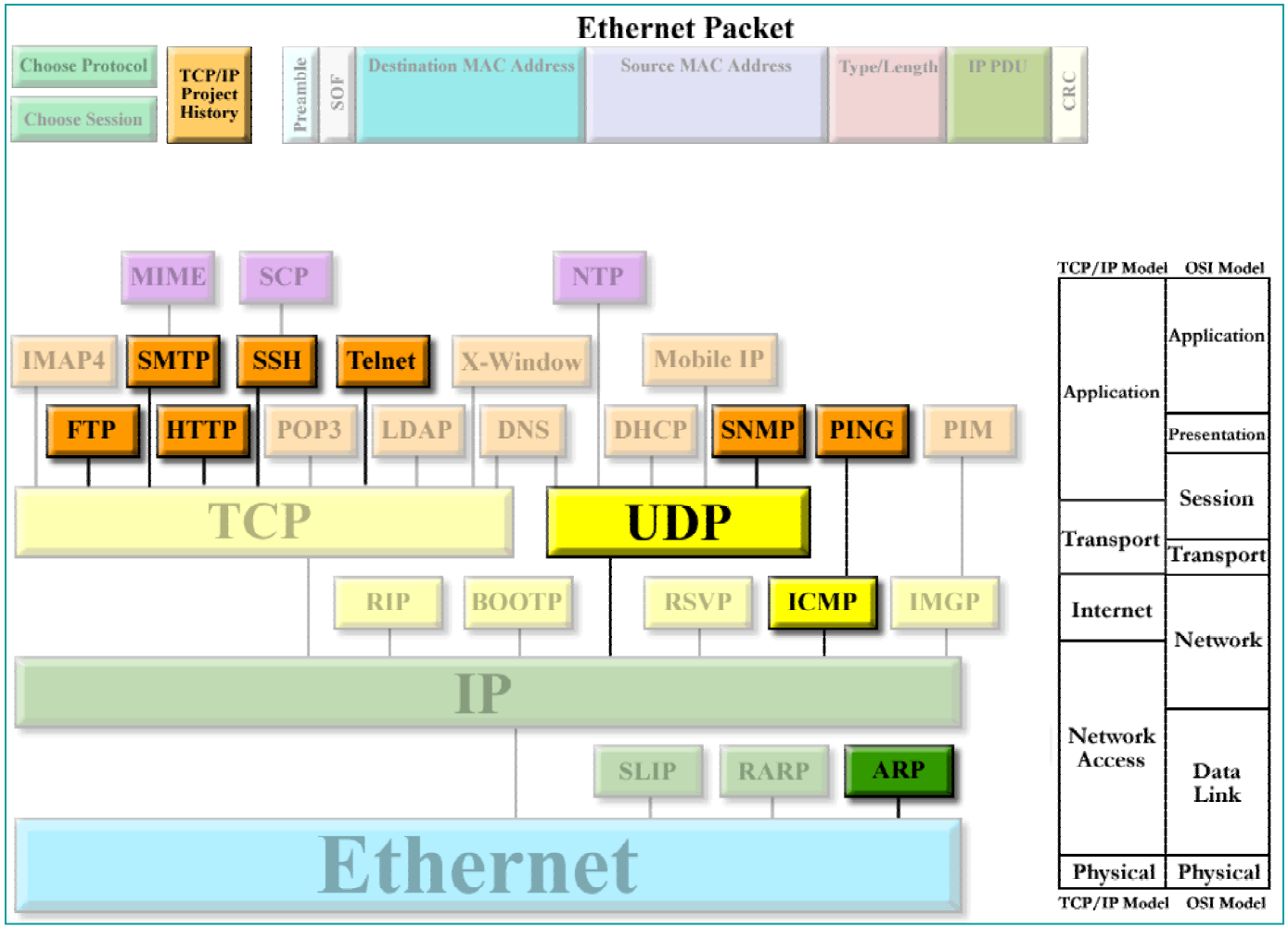
Agenda

- Introduction
- **Testing Plan**
- Conclusion

- Graphical User Interface (GUI):
  - Is the GUI clearly visible on 1024x768 projectors?
    - Is it visible from the farthest corners in the room?
  - Are all colors easily distinguishable?
  - Are information boxes placed so that the current PDU is not covered?
  - When a field is clicked, is the information box the same color as the field?
  - Does each protocol have a link to its RFC?

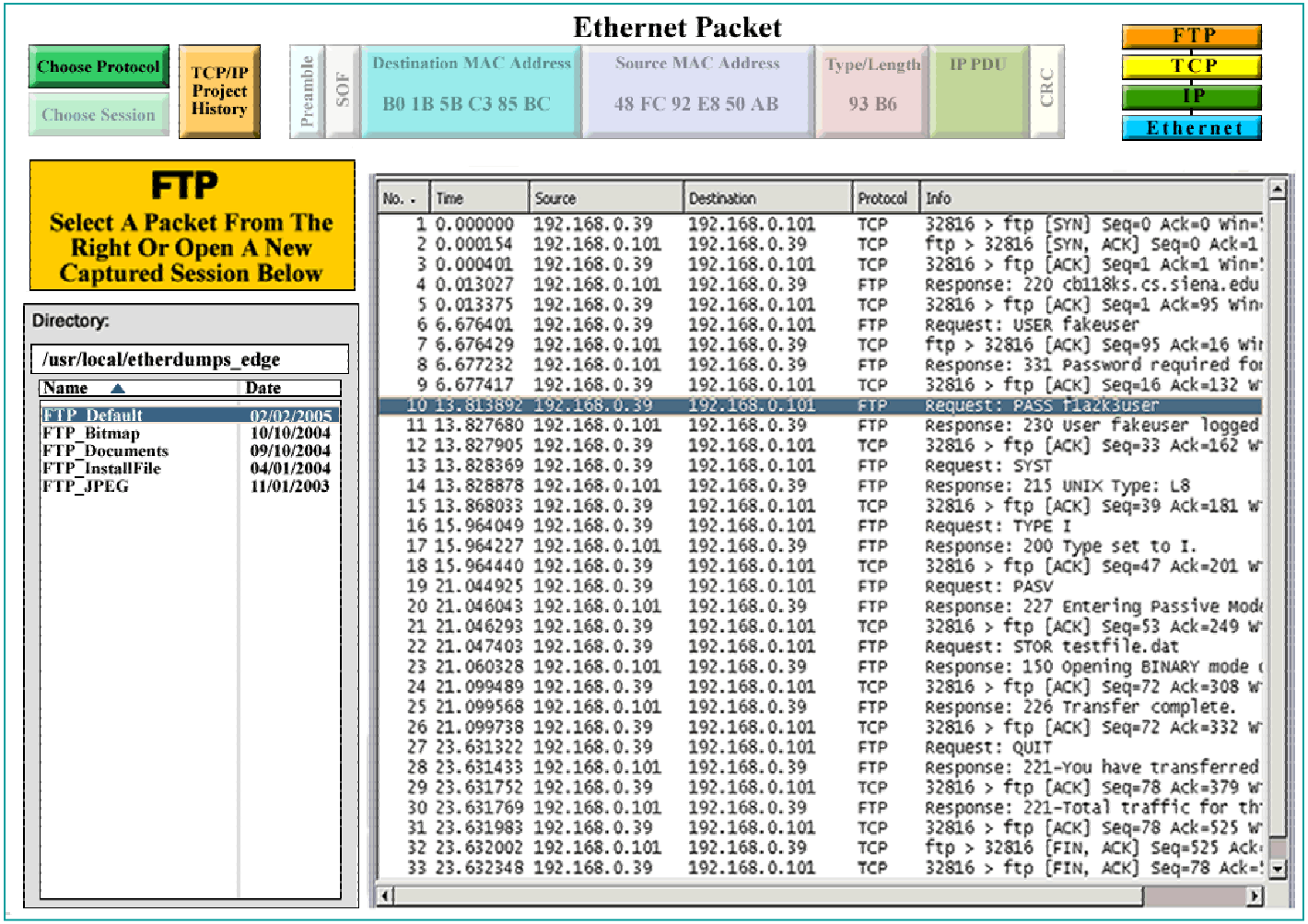
- Testing Examples:
  - Do the buttons bring you to correct/next logical screen/PDU?
  - Is the hierarchical tree dynamic?
  - Is the “Choose a Protocol” hierarchical tree displayed when the user clicks “Choose a Protocol?”
  - Are the inactive buttons dimmed and easily distinguishable from the active links?

Testing Plan



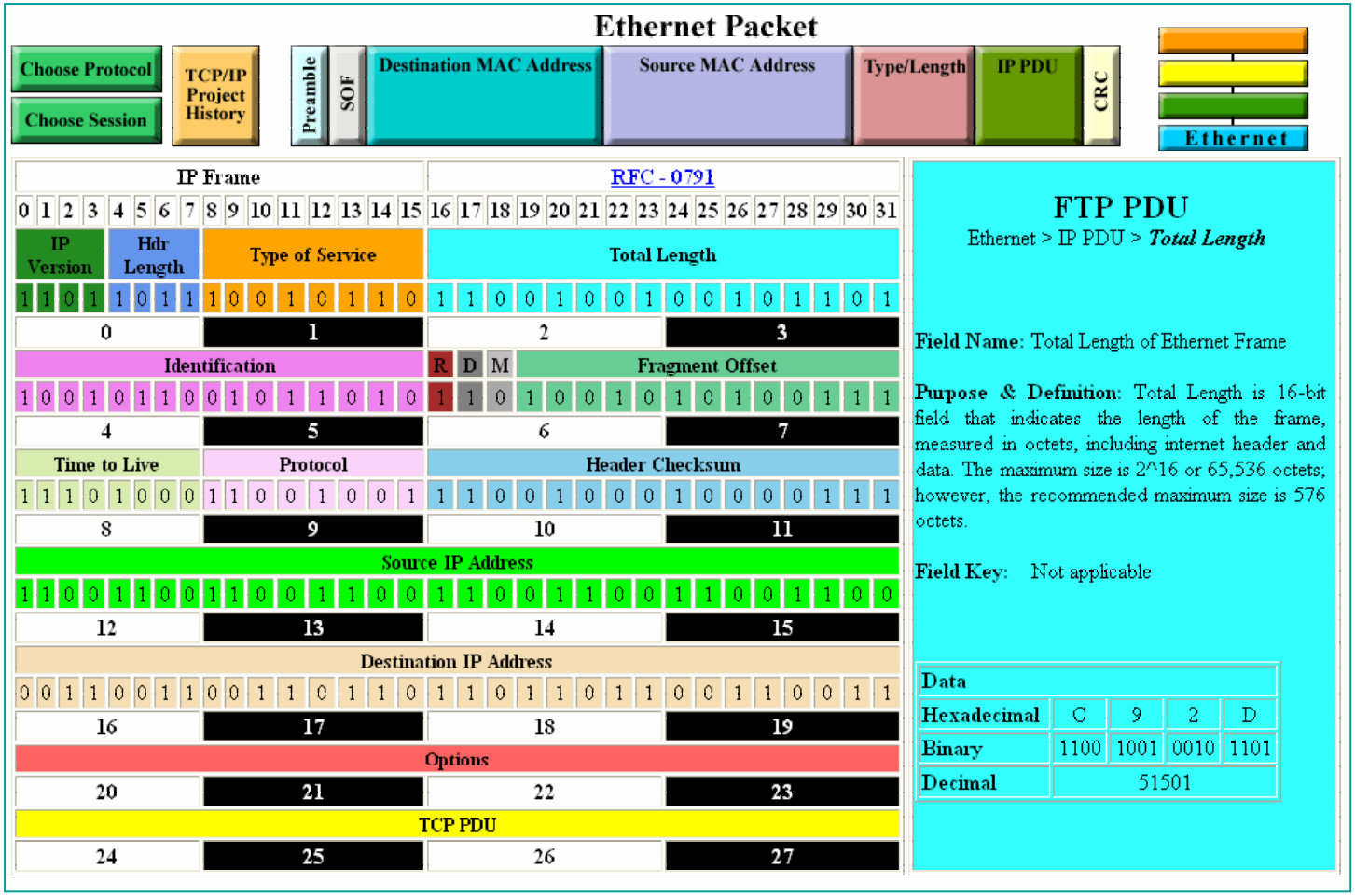
- Functional Buttons
  - Choose Protocol
  - Choose Session
  - TCP/IP Project History
  - FTP
  - SMTP
  - HTTP
  - SSH
  - Telnet
  - SNMP
  - PING
  - UDP
  - ICMP
  - ARP

Choose Session Screen



- Functional Buttons
  - Choose Protocol
  - Choose Session
  - TCP/IP Project History
  - Name (To sort)
  - Date (To sort)
  - Any File
  - Any Packet
  - Preamble
  - SOF
  - Destination MAC Address
  - Source MAC Address
  - Type/Length
  - IP PDU
  - Cyclic Redundancy Check
  - Ethernet
  - IP
  - TCP
  - FTP

Info Display Screen - TCP



- Functional Buttons
  - Choose Protocol
  - Choose Session
  - TCP/IP Project History
  - Ethernet
  - IP
  - TCP
  - FTP
  - Preamble
  - SOF
  - Destination MAC Address
  - Source MAC Address
  - Type/Length
  - IP PDU
  - CRC
  - RFC Link
  - Source Port Number
  - Destination Port Number
  - Acknowledgment Number
  - Length
  - Reserved
  - U, A, P, R, S, F
  - Window Size
  - TCP Checksum
  - Urgent Pointer
  - Options
  - FTP PDU

History Page

Functional Buttons

- Choose A Protocol
- Choose Session
- TCP/IP Project History
- Ethernet Packet
- Hierarchy Tree
- EdgeTech Links
- Mirage Links
- Blue Technologies Links
- Software Link
- Siena College Link
- Back Button

Sample Test Sheet

Screen: TCP PDU

Date: _____
Tester: _____
Screen: **Pass** **Fail**

Field Name: ***RFC Link***

Attempted	Expected Result	Pass	Fail	Comments
1. Right Click	Nothing pops up			
2. Left Click	Takes the user to the RFC website for the chosen protocol			

Field Name: ***Source Port***

Attempted	Expected Result	Pass	Fail	Comments
1. Right Click	Nothing pops up			
2. Left Click	Source Port information field pops up in the appropriate colored box			

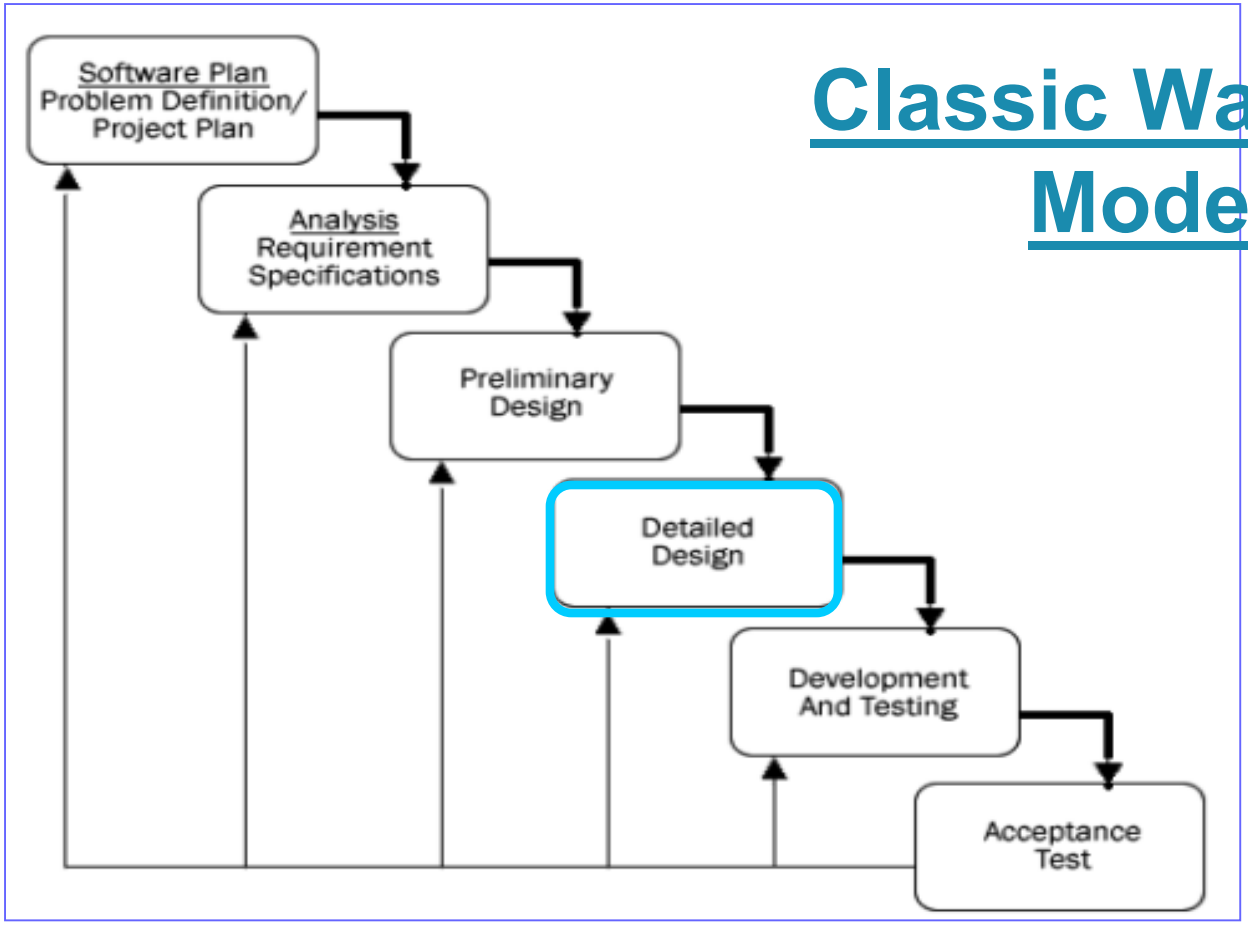
Field Name: ***Destination Port***

Attempted	Expected Result	Pass	Fail	Comments
1. Right Click	Nothing pops up			
2. Left Click	Destination Port information field pops up in the appropriate colored box			

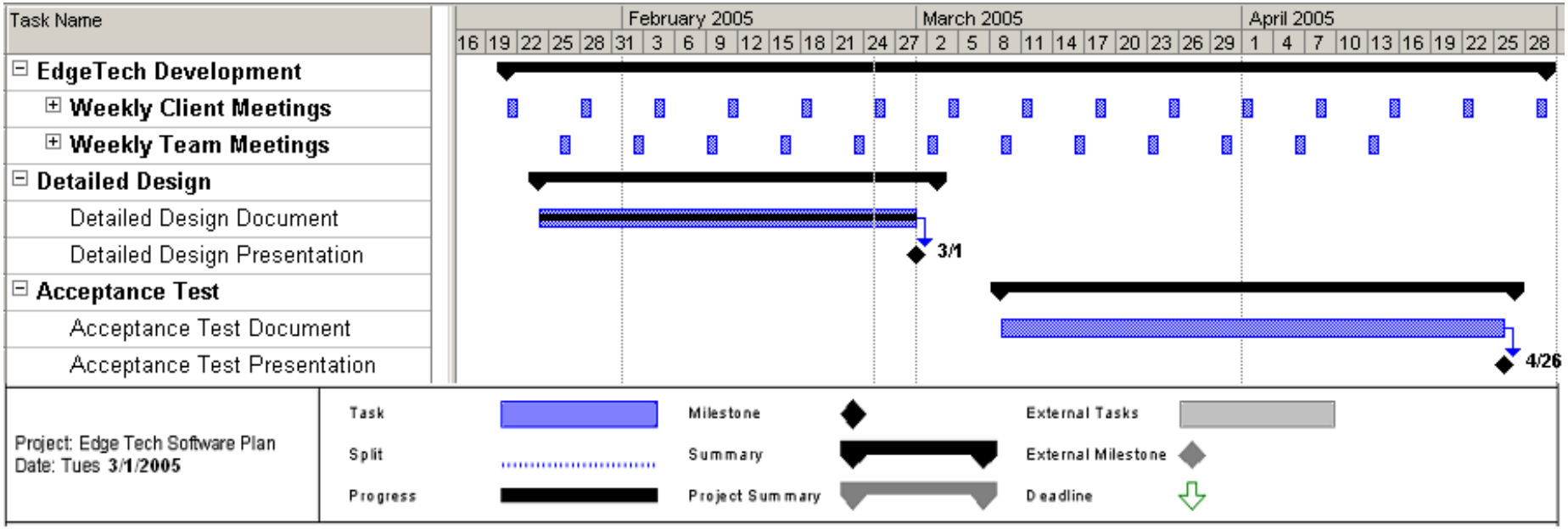
Overview

- Interface Design
- Testing
- **Conclusion**

Classic Waterfall Model



Gantt Chart


Task Name
February 2005
March 2005
April 2005
16 19 22 25 28 31 3 6 9 12 15 18 21 24 27 2 5 8 11 14 17 20 23 26 29 1 4 7 10 13 16 19 22 25 28
EdgeTech Development
Weekly Client Meetings
Weekly Team Meetings
Detailed Design
Detailed Design Document
Detailed Design Presentation
Acceptance Test
Acceptance Test Document
Acceptance Test Presentation
3/1
4/26
Project: Edge Tech Software Plan
Date: Tues 3/1/2005
Task
Split
Progress
Milestone
Summary
Project Summary
External Tasks
External Milestone
Deadline

- Important Dates
  - April 25th – Acceptance Test Document
  - April 26st – Acceptance Test Presentation
  - April 29th – Academic Celebration
  - May 3rd – CS Party in Boland Room

Any Questions?

Thank You!