

The Internets

Tubes

The internets

Announcements

- Midterm tomorrow (9/29) at 6:15 or 8:00 in TPL 203
- Review session tonight at 9:00 (earlier?)
- Optional homework due today
- Lab 6 data sheets due today

Review

- Switched networks
 - Ethernet (broadcast nets) insufficient
 - Circuit switching
 - Message switching
 - Packet switching

The Internets

Tubes

The internets

Today's Plan

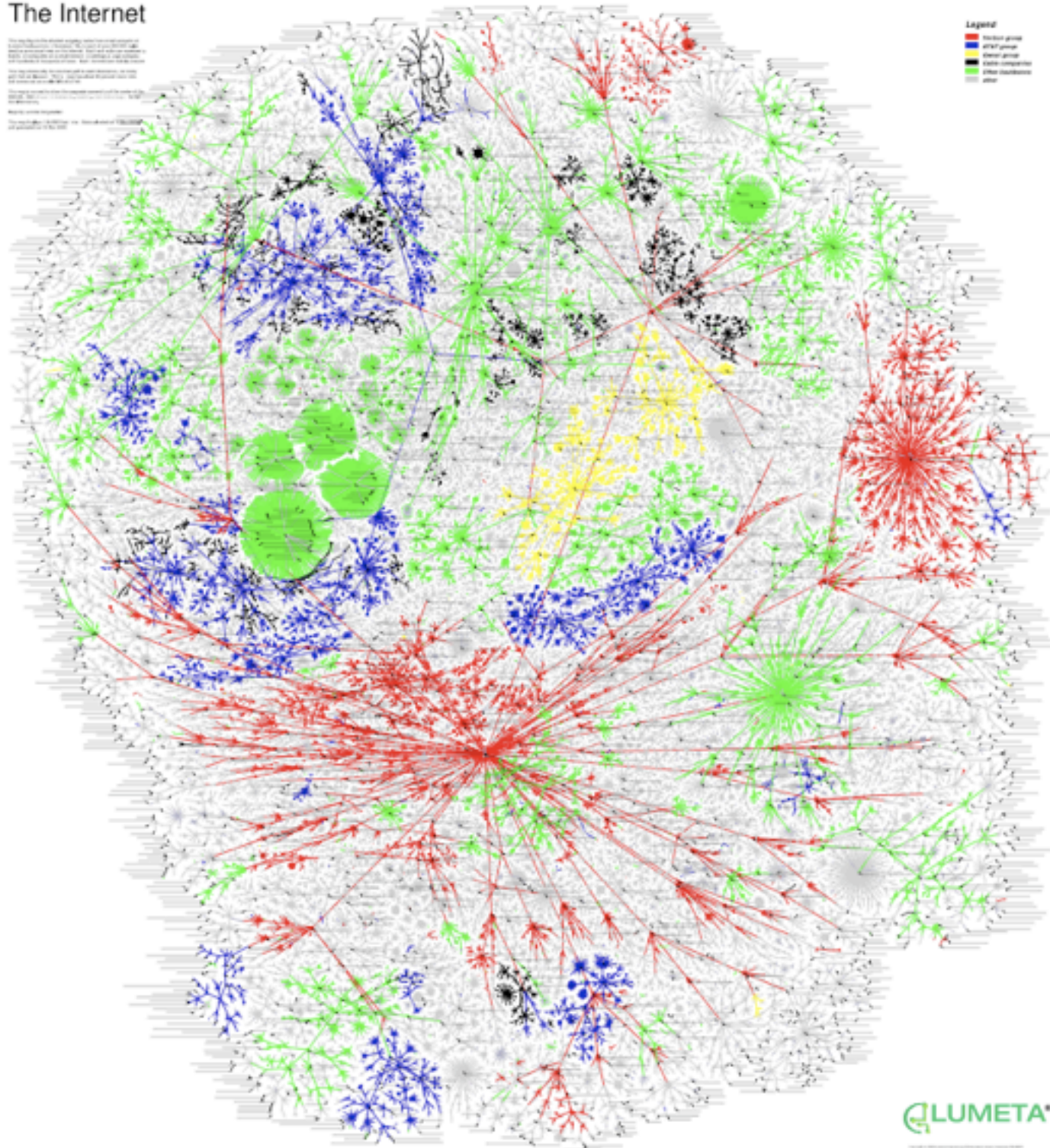
- internetworking
- Multiple network technologies inevitable
- Costs of incompatible networks
- IP – a common language
- The role of the operating system
- Encapsulation

The Internet

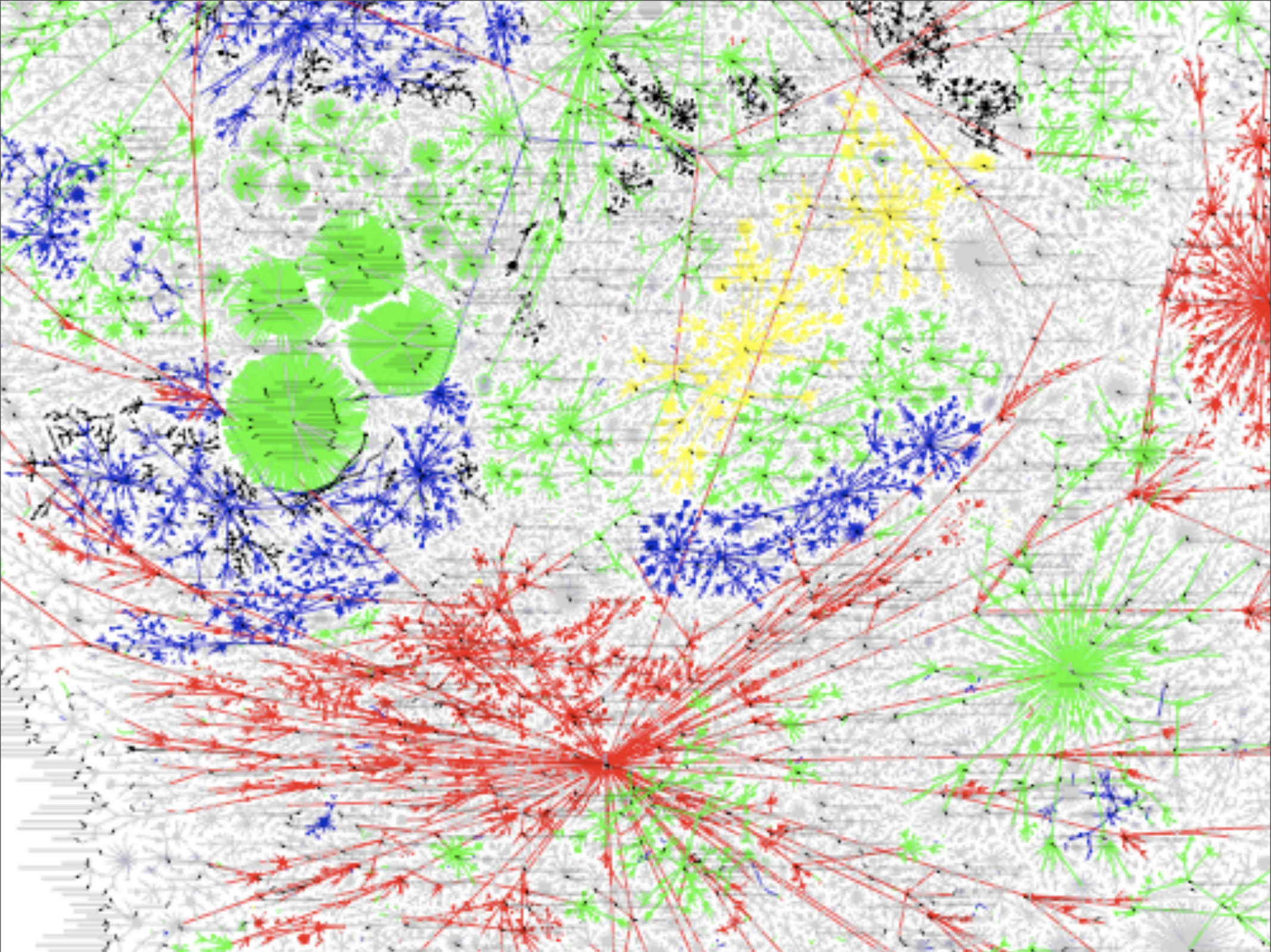
This visualization shows the structure of the Internet as a complex network of nodes and connections. The nodes are color-coded by their function or role in the network, and the connections represent the physical or logical links between them. The visualization is a circular force-directed graph, where the nodes are positioned based on their relationships and the forces between them. The background is a light gray grid, and the overall shape is roughly circular.

Legend

- Red: Internet group
- Blue: Other group
- Green: Other group
- Black: Other group
- Yellow: Other group

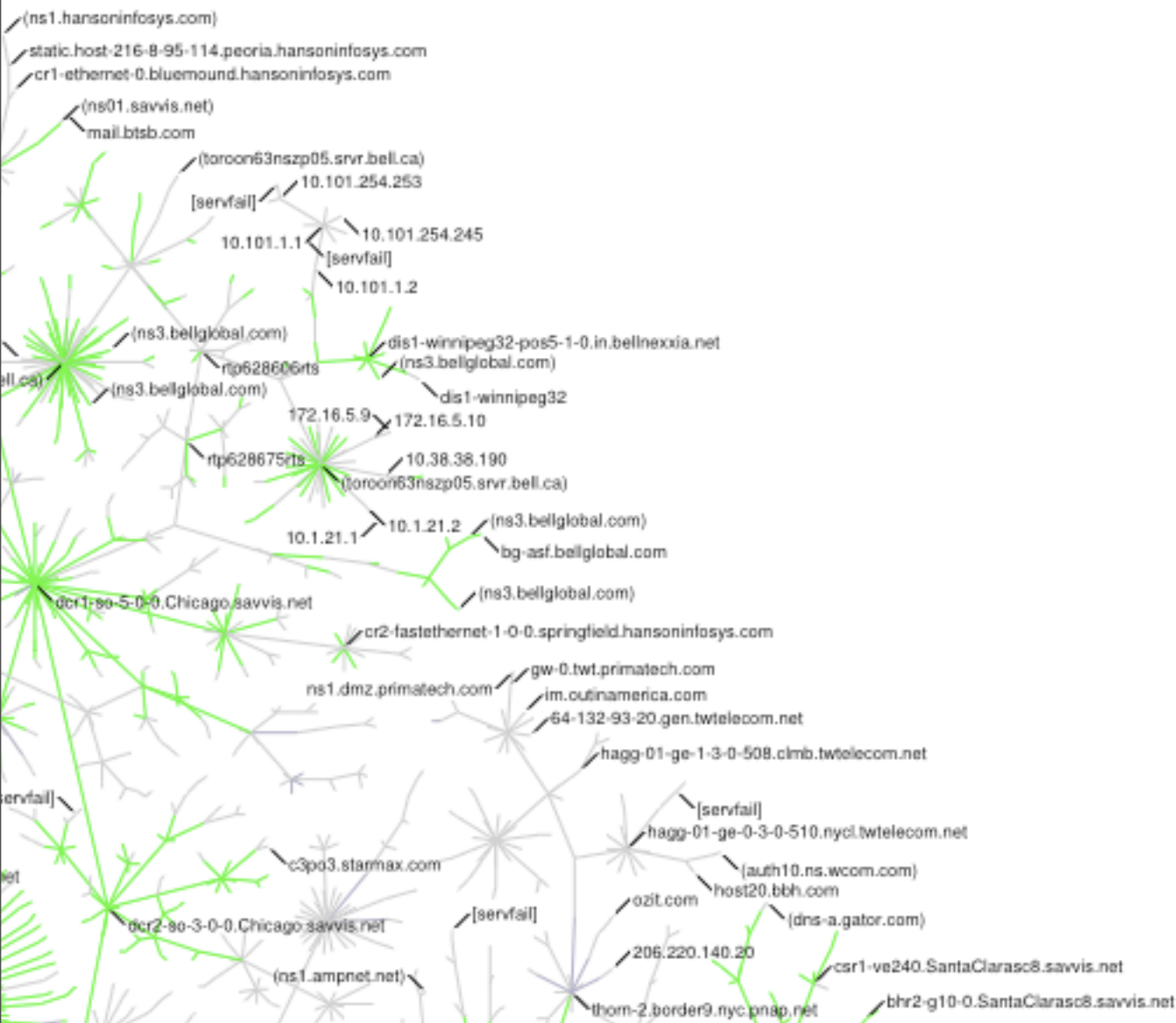


LUMETA®



Sunday, November 1, 2009

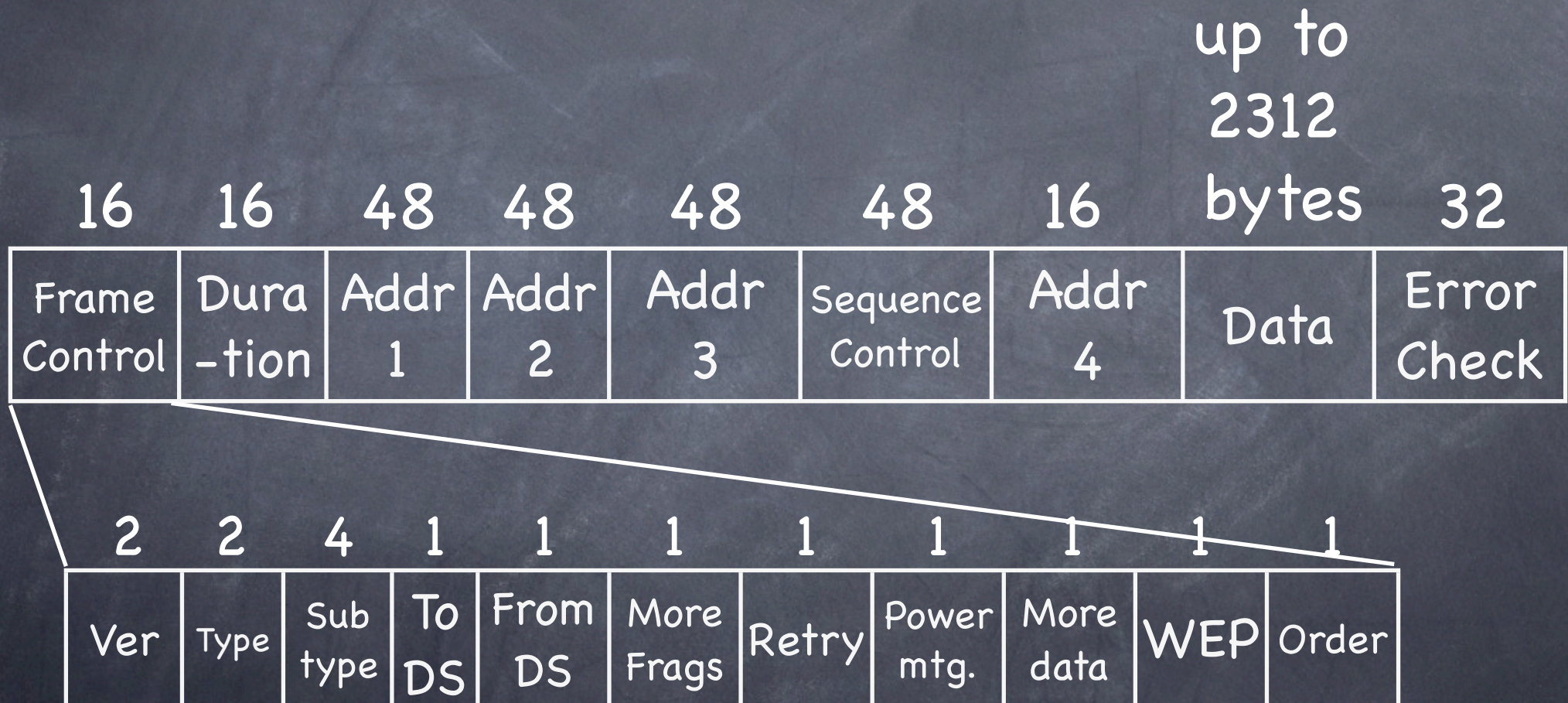
- *Verizon group*
- *AT&T group*
- *Qwest group*
- *Cable companies*
- *Other backbones*
- *other*



Ethernet Frame Format

PREAMBLE	TO	FROM	LENGTH/ TYPE	DATA	ERROR CHECK
64	48	48	16	variable	32

802.11 (WiFi) Frame Format



http://hsi.web.cern.ch/HSI/fcs/spec/overview.htm#b5_2

FDDI Frame Format





Who invented the Internet?



Who invented the Internet?



VINT CERF + ROBERT KAHN

IP = ESPERANTO?

IP Datagram Format

4	4	8	16
IP version	Hdr len	Service class	Packet Length
Packet Number			Fragment Number
TTL		Protocol	Error Check
From Addr			
To Addr			
DATA (up to 65516 bytes)			

4	4	8	1
IP version	Hdr len	Service class	Packet Length
Packet Number		Fragment Number	
TTL		Protocol	Error Check
From Addr			
To Addr			
DATA (up to 65516 bytes)			



PREAMBLE	TO	FROM	LENGTH/ TYPE	DATA	ERROR CHECK
64	48	48	16	variable	32

IP Encapsulation

