

# OVERVIEW OF IEEE 802 LMSC CONFERENCE NETWORK

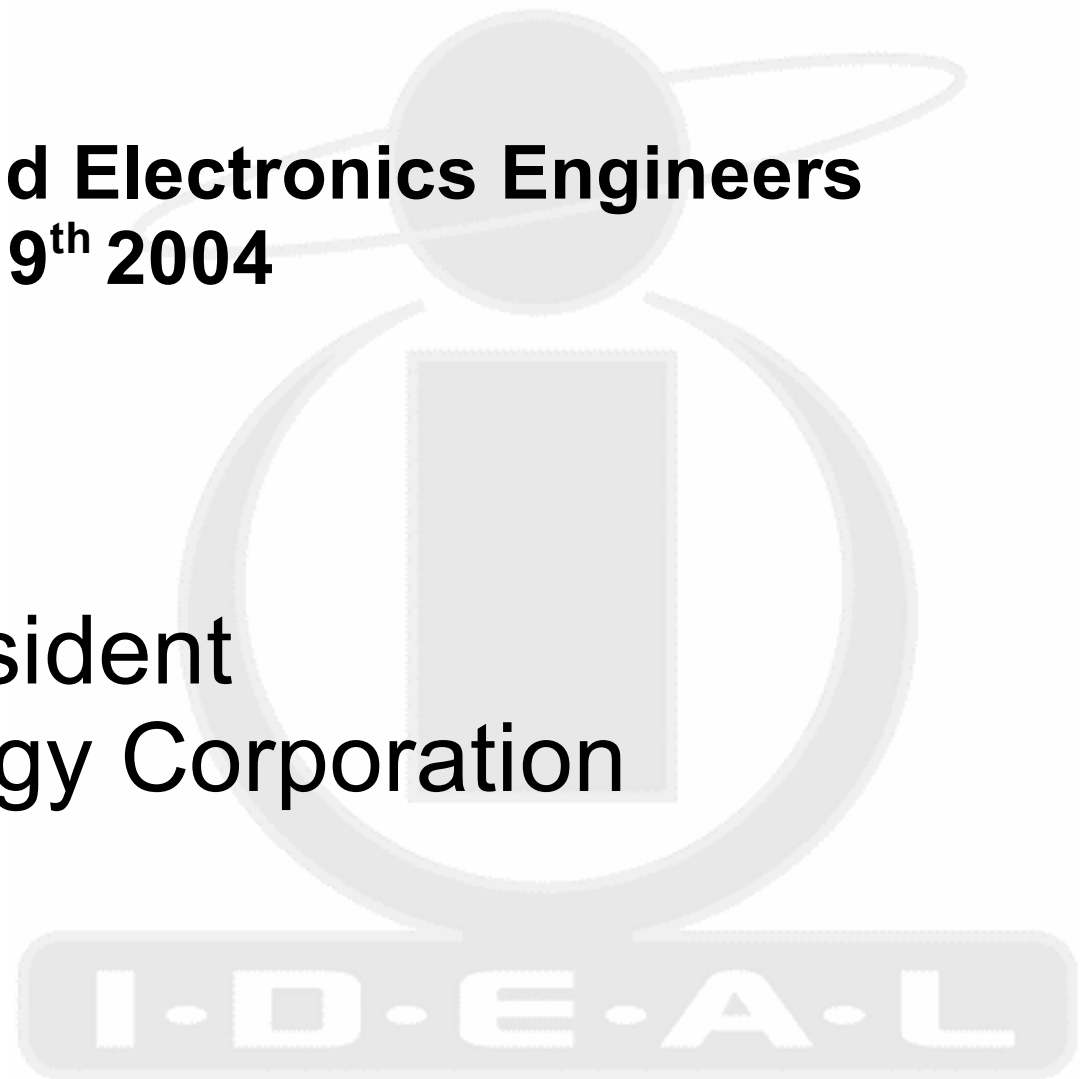
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# INITIAL GOALS

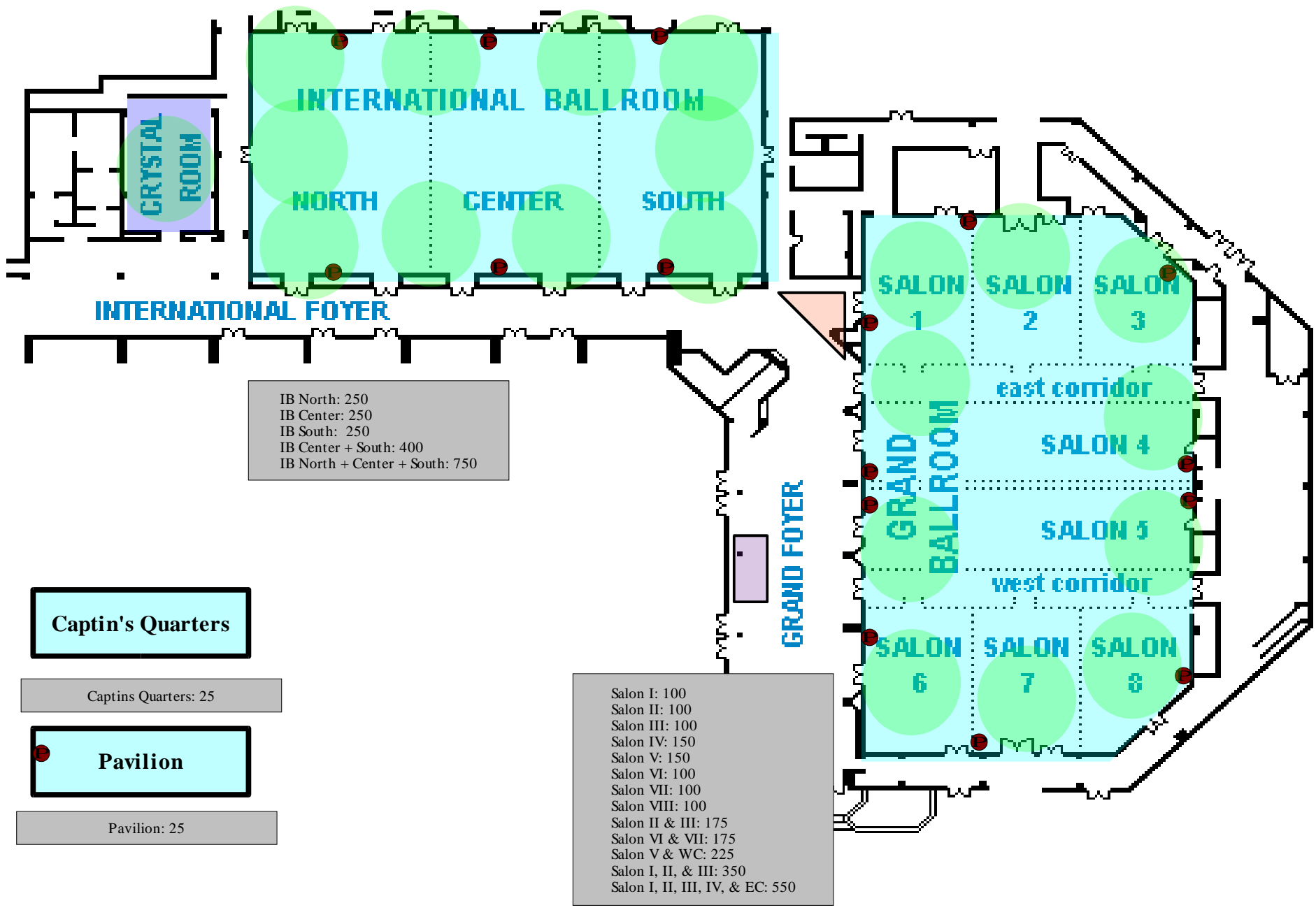
- Provide network support for conference
  - Network topology design and implementation
  - Management of network resources
  - Facilitate Internet access
  - File and print server access
- Provide end user support for conference
  - Wireless and wired client configuration
  - Diagnose and resolve VPN issues
- Communicate with all members any network disruptions or notable network issues

# SERVICE AVAILABILITY

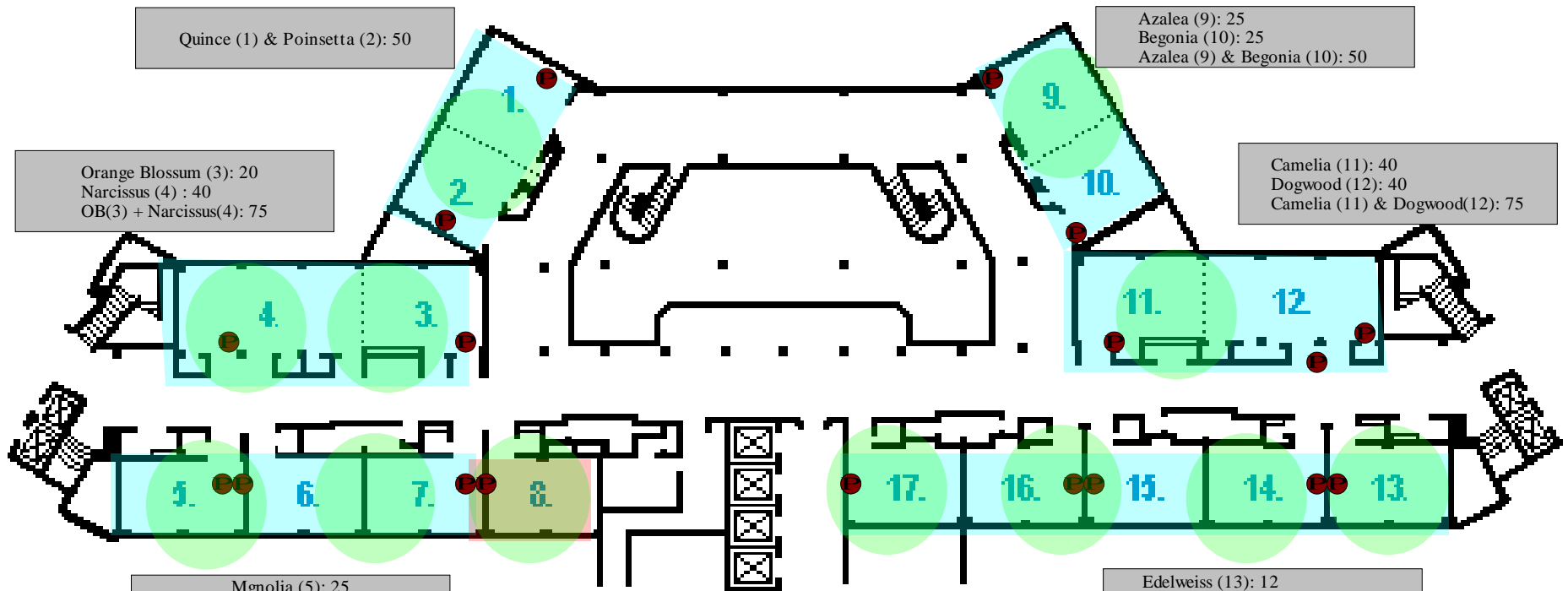
- Worked with Internet service providers and Hyatt staff to facilitate Internet access by 12:00pm Saturday
- Deployment of access points at Hyatt complete by 2:00am Monday
  - Delay due to scheduling conflict with other conference at this facility
- All services available on time for conference



# Hilton in the WALT DISNEY WORLD Resort - Lobby Level



# Hilton in the WALT DISNEY WORLD Resort - Mezzanine Level



Quince (1) & Poinsetta (2): 50

Azalea (9): 25  
Begonia (10): 25  
Azalea (9) & Begonia (10): 50

Orange Blossum (3): 20  
Narcissus (4) : 40  
OB(3) + Narcissus(4): 75

Camelia (11): 40  
Dogwood (12): 40  
Camelia (11) & Dogwood(12): 75

Mgnolia (5): 25  
Lilly (6): 25  
Kahili: (7): 25

Edelweiss (13): 12  
Fuschia (14): 25  
Gardenia (15): 25  
Hibiscus (16): 25  
Iris (17): 25  
Gardina (15) & Fuschia (14): 50

- |                          |                      |
|--------------------------|----------------------|
| <b>1. QUINCE</b>         | <b>9. AZALEA</b>     |
| <b>2. POINSETTA</b>      | <b>10. BEGONIA</b>   |
| <b>3. ORANGE BLOSSUM</b> | <b>11. CAMELIA</b>   |
| <b>4. NARCISSUS</b>      | <b>12. DOGWOOD</b>   |
| <b>5. MAGNOLIA</b>       | <b>13. EDELWEISS</b> |
| <b>6. LILY</b>           | <b>14. FUSCHIA</b>   |
| <b>7. KAHILI</b>         | <b>15. GARDENIA</b>  |
| <b>8. JASMINE</b>        | <b>16. HIBISCUS</b>  |
|                          | <b>17. IRIS</b>      |

# NETWORK STATISTICS

(Statistics accurate as of 4:00pm 03-18-2004)

- Unique devices requesting IP address: 1672 (1350 attendees)
- Total web requests served: 24,800,425
- Total bytes of web data delivered: 185,456,174,854
- Max simultaneous Masq sessions: 13,500 (8,805 avg)
- Max simultaneous IPSEC tunnels: 288 (69 avg)
- Max simultaneous PPTP tunnels: 325 (261 avg)
- Max Internet access utilization: 1247KB/s (10.2Mb/s)
- Average daily bandwidth consumed: 33GB

# CLIENT MAC VENDORS

Vendor	#	Vendor	#	Vendor	#
3 Com Corporation	36	Dell Pcba Test	20	Philips Components	25
3E Technologies Int., Inc.	1	Delta Networks, Inc.	10	Portable Systems, Ibm Japan Co, Ltd	1
Abocom Systems, Inc.	1	Elecom Co., Ltd. (Laneed Div.)	1	Prime Electronics & Satellitics Inc.	1
Accton Technology Corp.	1	Enterasys Networks	5	Private	1
Acer Technologies Corp.	2	Epigram, Inc.	3	Proxim, Inc.	19
Actiontec Electronics, Inc.	29	Ericsson Group	3	Quanta Computer, Inc.	1
Agere Systems	223	Farallon Computing/Netopia	17	Realtek Semiconductor Corp.	1
Airgo Networks, Inc.	3	Fujitsu, Ltd	18	Samsung Electro-Mechanics Co., Ltd.	28
Aironet Wireless Communication	42	Gemtek Technology Co., Ltd.	65	Sharp Corporation	2
Airvast Technology Inc.	1	Global Sun Technology, Inc.	3	Siemens Ag	1
Allied Telesis K.K.	1	Hewlett-Packard Company	8	Smc Networks, Inc.	16
Alps Electric Co., Ltd.	1	I-O Data Device, Inc.	5	Sony Corporation Ltd.	24
Ambicom, Inc.	1	Ibm Corporation	31	Sychip Inc.	3
Ambit Microsystems Corp.	89	Inpro Comm	3	Symbol Technologies, Inc.	8
Ani Communications Inc.	11	Intel Corporation	206	Test-Um Inc.	1
Apple Computer, Inc.	39	Intersil Corp.	7	Texas Instruments	2
Askey Computer Corp.	8	Leichu Enterprise Co., Ltd.	2	The Linksys Group, Inc.	112
Asustek Computer Inc.	3	Lucent Technologies	24	Toshiba Corporation	6
Atheros Communications, Inc.	6	Marvell Semiconductor, Inc.	1	Tribe Computer Works, Inc.	1
Atmel Corporation	2	Matsushita Electric Ind. Co	3	U.S. Robotics, Inc.	4
Belkin Components	7	Megahertz Corporation	6	Usi	7
Broadcom Corporation	2	Melco Inc.	8	Vmware, Inc.	3
Bromax Communications, Ltd.	1	Microsoft Corp.	8	Wistron Corp.	1
Cabletron - Yago Systems, Inc.	2	Mmc Technology, Inc.	2	Wistron Neweb Corp.	2
Cameo Communications, Inc.	1	Module Department	1	Xircom	53
Cisco Systems, Inc.	167	National Datacomm Corporation	3	Z-Com, Inc.	7
Cnet Technology Inc.	1	Nec Access Technica,Ltd	2	02:00:00	1
Compal Electronics, Inc.	3	Nec Corporation	3	02:20:E0	1
Compaq Computer Corporation	39	Netgear, Inc.	63	0A:00:1F	1
Conexant Systems, Inc.	1	No Wires Needed Bv	1	22:62:8F	1
Corega K.K.	1	Nokia Wireless Business Commun	11	22:FD:BC	1
D-Link Systems, Inc.	37	Nortel Networks	7	62:23:6C	1
Dell Computer Corp.	23	Palm Inc.	1		
<b>Total</b>	<b>785</b>	<b>Total</b>	<b>551</b>	<b>Total</b>	<b>336</b>
				<b>Grand Total</b>	<b>1672</b>

# CONFERENCE ISSUES

- 802.11 and 802.15 attendance website had issues Tuesday morning
  - FTP File services still available despite web site outage
  - Service restored Wednesday and attendance was enabled for missed sessions
- Network and worm abuse detection has proved very effective
  - **172 disruptive network events detected** representing issues ranging from virus / worm infestations, clients running peer-to-peer systems, abusive network activity including deliberate scanning of local equipment and zombie denial of service attacks against public web sites
  - **25 clients removed** from network for abuse (2% of attendees)
    - Client count includes one Sony PalmOS-based device which was removed with an undetermined worm



# CONFERENCE ISSUES (CONT)

- Some minor issues with network equipment being unplugged
  - Active monitoring of network equipment reduced impact of localized outages
- No global network or Internet outages detected
  - This conference sustained the highest network utilization on all metrics (i.e. clients, number of connections, bandwidth etc.) of any conference to date
  - Some minor issues observed due to network saturation or connectivity during heightened periods of network abuse
  - Internet access delivered significantly more bandwidth than was purchased



# UPCOMING CONFERENCES

- Preparation for July plenary conference in Portland on schedule and initial contacts have been made with potential service provider
- Preparation for November plenary conference in San Antonio in progress
- The impact on the network performance due to worms, viruses and other disruptive activities seems to be increasing
  - It would be worthwhile for the IEEE LMCS to consider how it and its members would feel about implementing additional access control mechanisms to allow more control over detection and removal of unauthorized and/or abusive client systems



Any questions?  
Any suggestions?

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