

A decorative graphic consisting of a horizontal line that transitions from a dark purple on the left to a bright yellow on the right, ending in a large, teardrop-shaped glow that tapers to a point on the right side.

ITAC Meeting
Working Without a Wire

Information Services

January 18, 2007

Topics



- Wireless Connectivity Services Policy Review
- Update - Wake County Wireless Initiatives:
 - Mobile Wireless Deployment
 - 802.11 Wireless Deployment (in-building service)
 - MESH Network Deployment
 - Internet Café in Wake County Libraries

Wireless Connectivity Services Policy Review



- Policy details wireless connectivity services offered by Wake County:
 - 802.11 wireless network services
 - Sprint CDMA wireless network services
 - Public WiFi network services - County Libraries (will be added when service comes online)

Wireless Connectivity Services Policy Review



- Policy - 802.11 Wireless Network Services:
 - Hardware and software requirements for utilizing the On-Net and Off-Net service
 - Request/approval process
 - Hardware/software costs
 - County policy related to 802.11 wireless home network support

Wireless Connectivity Services Policy Review



- Policy - CDMA Mobile Wireless Network Services:
 - Hardware and software requirements for utilizing the On-Net service
 - Request/approval process
 - Hardware/software costs for Wake County and Municipal Users (Sprint and NetMotion)

Wireless Connectivity Services Policy Review



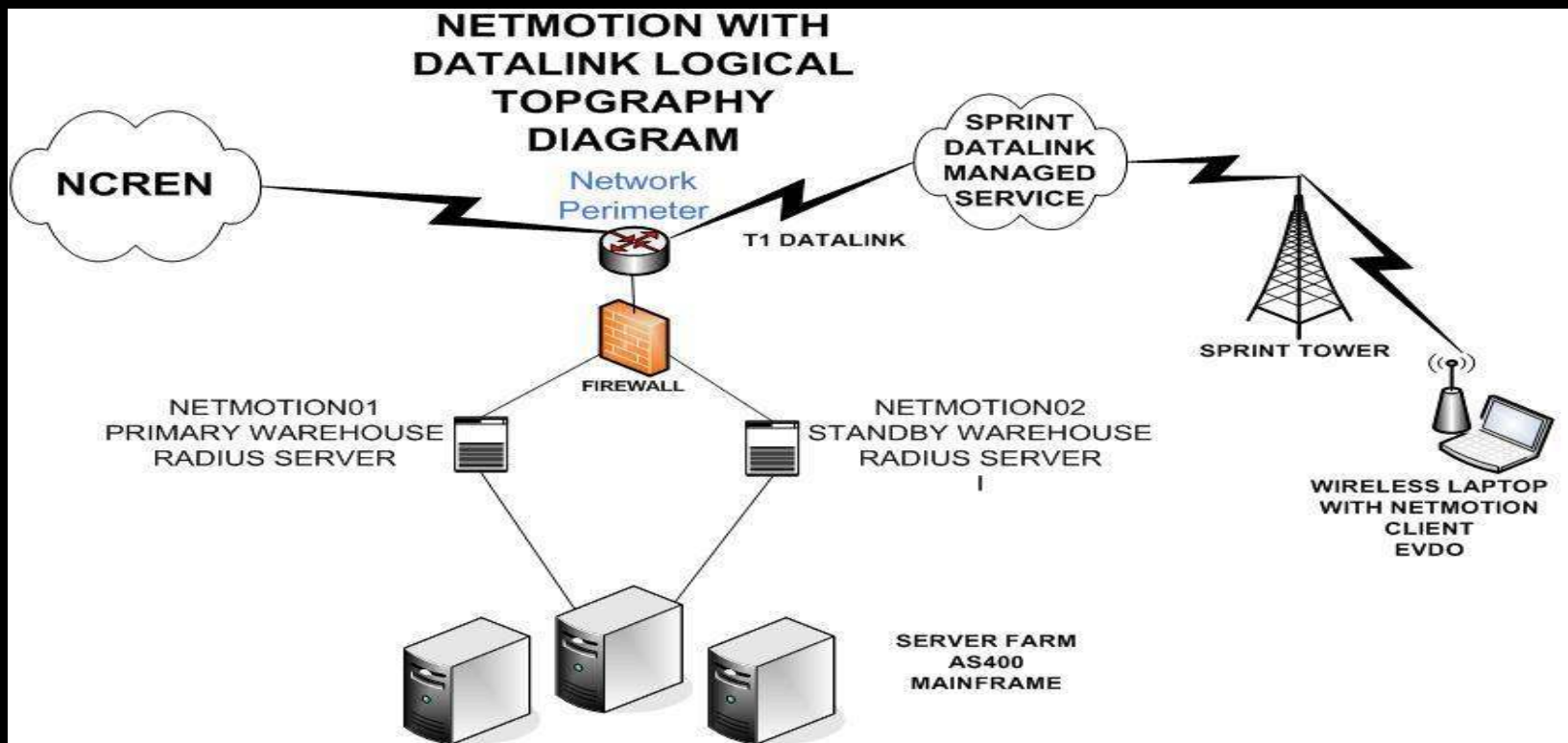
- Questions?
- Suggestions?
- Comments?

UPDATE: Mobile Wireless Deployment



- Required to replace old Verizon CDPD network
- Selected Sprint/NetMotion in early 2005
- Utilizing Sprint DataLink (frame relay circuit) so traffic does not traverse Internet
- On-Net service only
- Network live July of 2005

UPDATE: Mobile Wireless Deployment



UPDATE: Mobile Wireless Deployment



- Majority of Users online by December 2005
 - Wake County Units:
 - Sheriff: 300
 - CCBI: 17
 - Inspections: 33
 - Environmental Services/Animal Control/Solid Waste: 65
 - Raleigh Police Department: 490 Units

UPDATE: Mobile Wireless Deployment



- Apex: 45 Units
- Garner: 57 Units
- Knightdale: 15 Units
- Morrisville: 23 Units
- Wake Forrest: 36 Units
- Wendell: 16 Units
- Zebulon: 13 Units

UPDATE: Mobile Wireless Deployment

- All Users running at EV-DO speed:

		CDMA NETWORK		
		Alltel, Sprint, Verizon		
Generation	1xRTT	1xEV-DO	1xEV-DV(A)	1xEV-DV (D)
Speed	60-80 Kbps	300-500 Kbps	1.8-3.1 Mbps	1.8-3.1 Mbps
Availability	Avail Now	EOY 2005	EOY 2006-07	EOY 2007-08

UPDATE: Mobile Wireless Deployment



- Applications Running on Sprint Network:
 - Access to Sheriff's Office RMS/JMS
 - Access to Mugshots
 - Access to Lotus Notes (email/calendaring)
 - Access to Internet
 - Access to network Drives (this is On-Net service)
 - Automatic Vehicle Location (AVL)
 - In Vehicle Navigation (IVN)
 - CAD Dispatch data
 - FireHouse
 - All Mainframe applications (Inspections...)

UPDATE: 802.11 Wireless Deployment



- GOALS of 802.11 Wireless Network Service:
 - Wireless LAN access - in building coverage only
 - On-Net and Off-Net service offered
 - Will be used in special cases where circumstances warrant the use of a wireless network (large conference rooms, meeting rooms, training rooms or employee collaboration areas in Wake County facilities)
 - **Standards Based Approach**: 802.11b/g support with **encryption** following the 802.11i standard and **authentication** following the 802.1x standard

UPDATE: 802.11 Wireless Deployment

- Current Deployments:

Wake County Office Building	
IS, Mezzanine conference rooms	M-4, M-8, M-13
IS, Ground floor	G19A, G22
Emergency Management, 14th Floor	Entire Floor
Ground Floor Conference room	G23, G25, G27
HR, 2nd floor Training room	204, 209
HR, 3rd floor Conference Rooms	316, 341
Applied Technologies, 3rd floor Conference room	340F
GIS Conference Rm, 5th floor Conference room	523
Wake County Court House	
Board of Commissioners meeting rooms	700, 704
Commons Building	
EMS Training room	B10
Commons - Rooms A, B, & C.	100A, 100B, 100C
GSA	
GSA - Fleet	Garage Area
GSA -Conf. Rm (covers Training Rm)	106
GSA - Physical Plant	S119, S122

UPDATE: 802.11 Wireless Deployment

- Current Deployments:

Library Administration Building	
Computer room	Book Area, training, & Comp. Rm.
Public Safety Center	
PSC - CCBI Booking	CCBI Booking area
PSC - Computer room	PSC Computer room
PSC - Ground floor conference room	C170
Swinburne	
5th floor Conference room	5032
Sunnybrook	
3rd floor (Bioterrorism wireless support)	344, 302
East Regional Center	
Conference Rooms	145, 146, 156, 158A&B, 167, 168
Southern Regional Center	
Conference Rooms	180, 183, 184, 104

UPDATE: 802.11 Wireless Deployment

- Scheduled Deployments:

Wake County Office Building	
9th floor conference room	927
Swinburne	
2nd floor - Various rooms	2118, 2050, 2107, 2062, 2132, 2149, 2093
3rd floor - Various rooms	3112
2nd floor training rooms	2139, 2142
5th floor conference room	5040
Sunnybrook	
Ground floor conference rooms	G35A, G35B, G35C, G36
Register of Deeds	
Public Deeds Vault	Public Deeds Vault
Emergency Management Warehouse	
Emergency Management Warehouse	Office area and general warehouse floor

UPDATE: 802.11 Wireless Deployment



- Based on high demand for 802.11 wireless network services:
 - Wake County partnered with Dimension Data to perform a LWAPP (Light Weight Access Point Protocol) wireless LAN Migration
 - Will allow for a centrally managed 802.11 platform based on Cisco's Unified Wireless Network Architecture

UPDATE: 802.11 Wireless Deployment



- Will install Cisco Wireless LAN Controllers (WLC)
- Will install Cisco Wireless Control System (WCS)
- Will install redundant Cisco Access Control Server (ACS)
- Will convert all existing “stand alone” Access Points to the LWAPP based IOS code (uses existing equipment)
- Scheduled to be completed by June 30, 2007

UPDATE: MESH Network Deployment



- **MESH Network Project History:**
 - Utilizing MESH networking, extend wireless data connectivity across the Fairgrounds area, Carter Finley Stadium and RBC Center area
 - Enable data access across that entire ribbon for WakeNet connectivity, IP video (surveillance) and other applications
 - Utilize existing 800 Mhz infrastructure to provide back haul from the Blue Ridge Tower to the PSC (at T1 X 4 speed)
 - Canopy backhaul from Blue Ridge Tower to MESH network

UPDATE: MESH Network Deployment



- MESH Network Project History:
 - Competative bid awarded to Motorola for their MotoMESH product in July of 2005
 - Initial system configuration consisted of 5 wireless routers and 4 cameras - online prior to NC State Fair, October 2005
 - Covers approximately 3 square miles
 - Platform utilizes 4.9 Ghz band reserved by FCC for Public Safety (Wake County had license)
 - **First 4.9 Ghz MotoMESH system online in the world!**

UPDATE: MESH Network Deployment

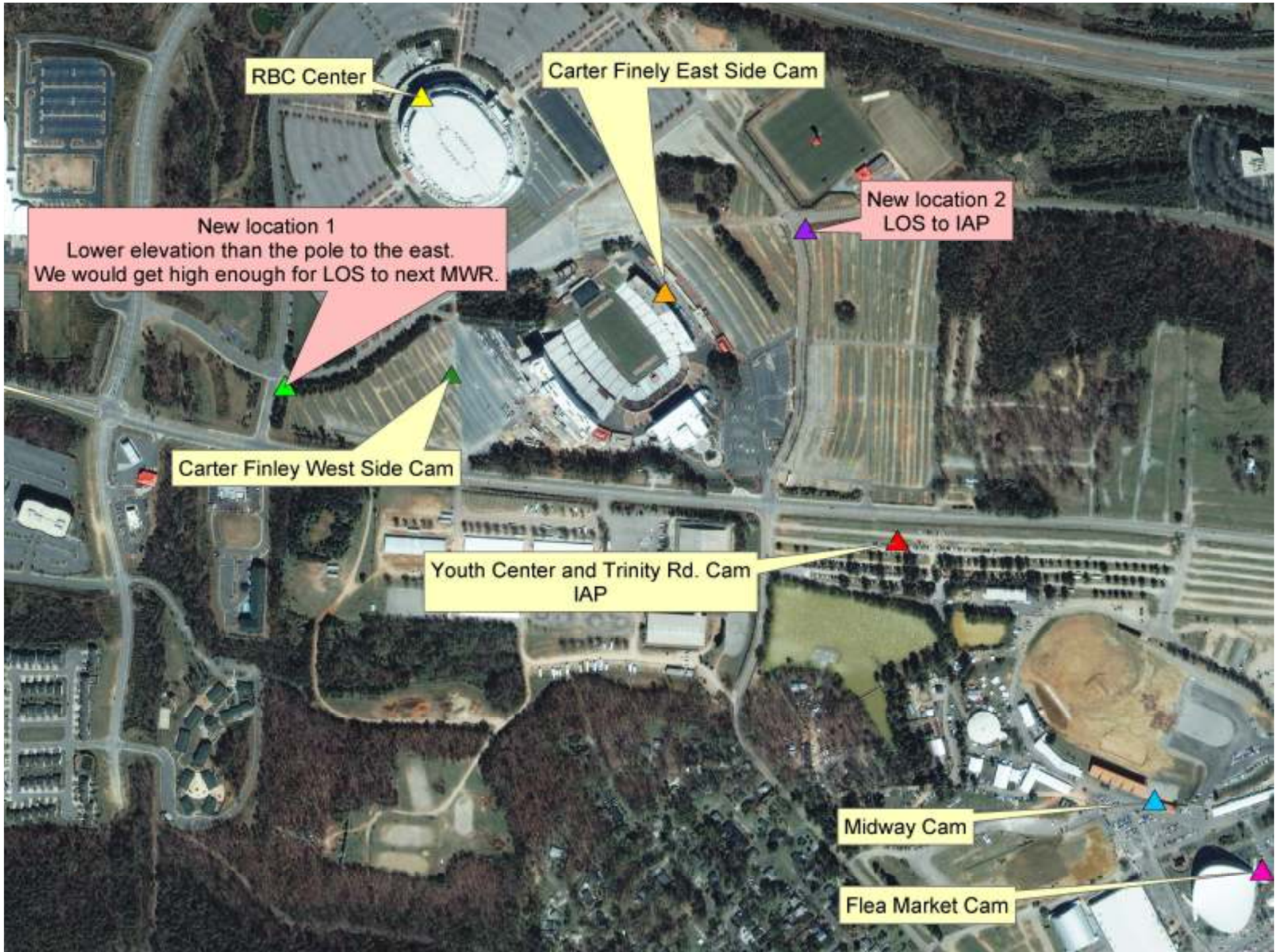


- **Since Initial Install:**
 - 3 additional wireless routers and 3 additional cameras installed
 - NetGuard Video server installed to capture/archive video
 - Connection made to RBC network to pass their security camera feeds across network to video server
 - DOT cameras integrated into video server
 - System upgraded to release 2 of software

UPDATE: MESH Network Deployment



- Usage:
 - Heavily utilized by NC State Campus police for all Carter Finley stadium activities
 - NC Fairgrounds police utilizes system for NC State Fair, flea market and other events
 - RBC center security utilizes system for video surveillance of remote parking lots
 - CCBI manages video server (video treated as evidence)



RBC Center

Carter Finely East Side Cam

New location 2
LOS to IAP

New location 1
Lower elevation than the pole to the east.
We would get high enough for LOS to next MWR.

Carter Finley West Side Cam

Youth Center and Trinity Rd. Cam
IAP

Midway Cam

Flea Market Cam

UPDATE: MESH Network Deployment



- **Next Steps:**
 - Address bandwidth utilization across the 800 Mhz infrastructure (Microwave link) from the Blue Ridge Tower to the PSC tower – currently maxing the T1 X 4 speed
 - Work with additional Public Safety agencies to grant access to platform

UPDATE: Internet Café in Libraries



- Project History:
 - Library approached IS about WiFi access in the public libraries
 - Security is a significant issue when allowing non-County managed devices to connect to WakeNet
 - Existing library public PC's run AV, LANDesk, lockdown software
 - Need to protect PAT address from propagation of malicious traffic

UPDATE: Internet Café in Libraries



- Project History:
 - Wake County IS recommended an isolated network with separate Internet connection for Library WiFi service
 - IS/Library staff coordinated successful pilot from March 1, 2005 – October 31, 2005 at Cameron Village branch
 - Library staff recommended implementing WiFi access in all public libraries and gained approval from County

UPDATE: Internet Café in Libraries



- **Project Status:**
 - Competative bid process won by Time Warner Cable last fall
 - Currently in contract negotiations (expect to be completed by 1/31/07)
 - Implementation will begin immediately after contract signing

UPDATE: Internet Café in Libraries



- Project Status:
 - 19 Wake County Library sites to be outfitted for 802.11b/g capability (all libraries except Athens)
 - Schedule is to tackle larger regional libraries first, then move to the remainder
 - Project completion date estimated to be April 30, 2007

Working Without a Wire



- Questions?
- Suggestions?
- Comments?
- Thanks!