SIGNAL TIMING SOFTWARE
and COMMUNICATION
in KYTC

Telma Lightfoot, E.I.T.
Staci Timol, P.E.
Division of Traffic Operations
Engineer = Problem Solver
What’s The Problem?

• Multiple Sets of Timing
• Which Timing is Correct?
• Limited Comm
• Field and Office Uses
• New Signal Timing Features
• Real Time Clocks Are Wrong
• Statewide System
Signal Timing Software

- Intended For Cities
- Centralized Systems
IF YOU WANT SOMETHING DONE RIGHT, DO IT YOURSELF
TransPHAT is Born!

• Everything that KYTC Needs
• Tailored to Our Changing Needs
• Works With Multiple Types of Comm
• Automatic Monitoring
Who Uses TransPHAT?

• Central Office Traffic
• District Office Traffic
• Multiple Cities Around Kentucky
• Consultants Working For KYTC or Cities
• KTC Research Center

Approximately 100 Users Statewide
TransPHAT Access

• KYTC
  – All files located on N:\
  – One set of timing
  – Tightly controlled access
  – User vs. Superuser
  – District users only access their own district timing

• Cities/Consultants/Researchers
  – Maintain Own Database and Access Rights
What Can TransPHAT Do?

• View and Modify Timing
• Upload and Compare Timing From Field
• Download Saved Timing
• Observe, Set, and Check Real Time Clocks
• SuperClock
• Observe Current Controller Actions
• Upload Field Logs
• Info Tab
Modes

WAN (Network)
• Must Have Read/Write Access
• All Features Functional

Field
• Timing on SD Card
• No Timing Changes
Coordinating Software Programs

- TransFIX
  - Mobile version of TransPHAT on PDA
  - Transition to TransPHAT on netbooks
- TransFUR
- TransPRINT
- TransCLOCK
- TransSIM
Field Communication

- **Equipment**
  - Wireless Router
  - Radio
  - Antenna

- **Installation**
  - Contractors
  - Districts
  - Projects

- **Maintenance**
Communication Modes

• Modem
• 3G Wireless
• Fiber Optic
  – Bowling Green
• Cable TV
  – Glasgow
• KYTC WAN
  – Frankfort
State Owned Signals
Wireless Routers

- Signals
- Cameras
- Dynamic Message Boards
- Roadway Weather Information System
Statewide Communication

- # Signals with No Comm.: 48%
- # Signals with Comm.: 52%
Automatic Monitoring

- TransSET
  - Sets Controller Clock
- TransLEAH
  - Monitors Communication
- TransACT
  - Compares Signal Timing (Field vs. Network)
System Scan Report

• Generated from TransLEAH
• Web Interface
• E-mailed Daily
• Multiple Checks
  – Clock
  – Current Coordination Plan
  – Firmware Version and Protocol
Timing Comparison Report

- Generated from TransACT
- Web Interface
- Field and Network Timing Match
- Communication Percentage
- Number & Location of Timing Differences
Timing Report

• Manually Run TransSCAN
• Generates *.csv file
• Scans Network Timing
• Results
  – Specific Phase Timing Constraints
  – Coordination Timing
  – FYLTA Timing
• Sort or Filter Results
Future of TransPHAT
Link TransPHAT to GIS

• Integrate Mapping Feature
• Combine Multiple Databases into One Geodatabase
  – Existing TransPHAT Database
  – Existing Geodatabase
• Provide Comm Info Geographically
• Access File Directory
  – Phasing Diagrams
  – Photographs
  – Conflict Card Info
Other Equipment

- IP Radios
- Mesh Radios
- Bluetooth Devices for Travel Time Monitoring
Thank You!

• For More Information
  – Telma.Lightfoot@ky.gov
  – Staci.Timol@ky.gov