STAKING TO GIS MULTISPEAK INTEGRATION FOR FIELD INVENTORY DATA COLLECTION

Presented by Jason Wright

Wheatland REA

Wheatland, WY

Wheatland REA Background and Description

- Incorporated 1936
- 4,400 Square miles in 4 counties
- 20 employees
- 10 linemen
- 1,539 miles of overhead lines
- 229 miles of Primary URD
- 109 miles of Transmission Lines

Wheatland REA Background and Description (cont.)

- 15 Substations
- 4,122 meter 257 are idle

Existing Infrastructure

- Paper maps
- SEDC Accounting
- TWACS AMR
- Paper Staking
- Milsoft Model – best guess
- Trouble calls handled manually

Reasons for Change

- Paper Maps – Always out of Date
- Double Data Entry to SEDC and TWACS
- Limited Accessibility to Information Stored in SEDC
- Need to optimize staking process for better record keeping
- High cost of Engineering studies
- Difficulty isolating outages

Reasons for Change (cont.)

- Age of existing work force
- Tracking information for RUS
  - Need for system inventory
  - Need to Reconcile Tax information
  - Lack of information on system age
- Opportunity to use existing work force and experienced contractor to gather system information

Choosing Partners for Change Timeline and Process

- Initially sought to manage project alone but found the need for a consultant
- ESC Engineering
  - February 2007
- Partner Software – Partner Staking Software
  - August 2008
    - Integration with existing systems
    - Ease of use
- Tri-Global Technologies – MobileStaker
  - August 2008
    - Ability to use mobile GPS solution with staking
    - Real-time decimeter accuracy
    - Relationship with Partner Software

Choosing Partners for Change Timeline and Process (cont.)

- Staking Software Implementation
  - Oct. 2008
- Milsoft WindMilMap –
  - March 2009
    - Living WindMil model as GIS
- Field Inventory
  - June 2009
    - Thayer Pole Testing
    - Linemen Collection URD

Vendor Integration Commitments

- Vendors all understood WREA vision for their technology and committed to the development
  - MobileStaker – Partner Staking integration (non-MultiSpeak)
  - Partner Staking – WindMilMap (MultiSpeak)
  - Enhanced by Business Partnership between Tri-Global, Partner Software and Milsoft

Challenges and Solutions

- Using Staking to GIS MultiSpeak Interface to Build a GIS
  - Staking Software
    - Pole testing and Damage Assessment information unsupported
    - Used MultiSpeak "Extenstions" to integrate
  - WindMilMap GIS
    - All unphased conductors and equipment come in as 3 phase
    - Partner Software created autophasing technology to assign a phase if none is present
    - Overhead primary created extra phase because of neutral conductor unphased
    - Partner Software created "odd-man-out" technology to designate which conductor is neutral if all are not the same
    - Phase were incorrect because phasing was not collected
    - Phasing autopopulated in WindMilModel via phasing information from TWACS
  - Software Upgrades
    - WindMilMap 8
    - Partner 4.4.6
    - Two edged sword – improved integration, bleeding edge
  - Existing Integration In Development – see software Upgrades

Challenges and Solutions (cont.)

Integrating External Data with GIS

- Populating transformer equipment information from SEDC to WindMilMap

- Used LUA script to integrate electrical information for transformers from SEDC to WindMil model

- Matching Map Location numbers from real world collection to SEDC consumer data

- Algorithms written to decipher exact Map Location number in SEDC, data merged via Access queries and scripts

Where We Are Now

- 18% of OH Lines collected
- All substations done
- 20% URD collected
- Integration between Partner-Milsoft 95% complete
- Data merging to WindMilMap from SEDC

Where We Are Going

- TWACS-SEDC MultiSpeak Integration
- TWACS integration for Outage Viewing
- Possibility of Inspection Software

Any Questions?

- ESC Engineering Booth #933
- Tri-Global Technologies @ Partner Software Booth
- Partner Software Booth #1030
- Milsoft Booth #1031