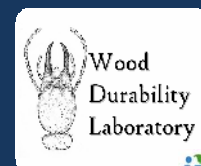


Collecting and storing data using RFID technology for the utility industry

Kevin W. Ragon, PhD

2010 Annual Meeting
Southern Pressure Treaters' Association
Memphis, TN
February 19-21, 2010



RFID

Radio Frequency Identification

is a term used for technologies that use radio waves to automatically identify objects.

RFID

takes many forms



www.Rf-id.com



RFID

tag

- Known as a transponder
- Microchip, to store data, attached to an antenna
- Antenna enables the chip to transmit info to a reader



By zhoukia

RFID

reader

- Readers convert radio waves reflected back from RFID tags into digital information
- Scanning antenna
- Transceiver



RFID

simple overview

- RFID tag holds data
- Reader reads the tag collects the data.
- Database reports or reworks data to be placed back on tag.



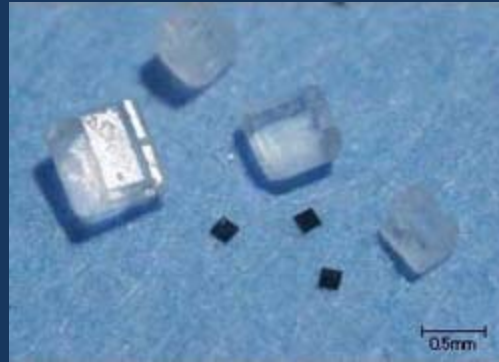
* software and programmer quality are critical

Attributes

	ACTIVE RFID	PASSIVE RFID
TAG POWER SOURCE	Internal to tag	Energy transfer from reader
TAG BATTERY	Yes	No
AVALIABILITY OF POWER	Continuous	Only in the field of the reader
REQUIRED SIGNAL STRENGTH TO TAG	Very Low	Very High
RANGE	Up to 100m	Up to 3-5m
MULTI-TAG READING	1,000's of tags-up to 100 mph	Few hundred
DATA STORAGE	Up to 128 Kb read/write	128 kb read/write



RFID in Research

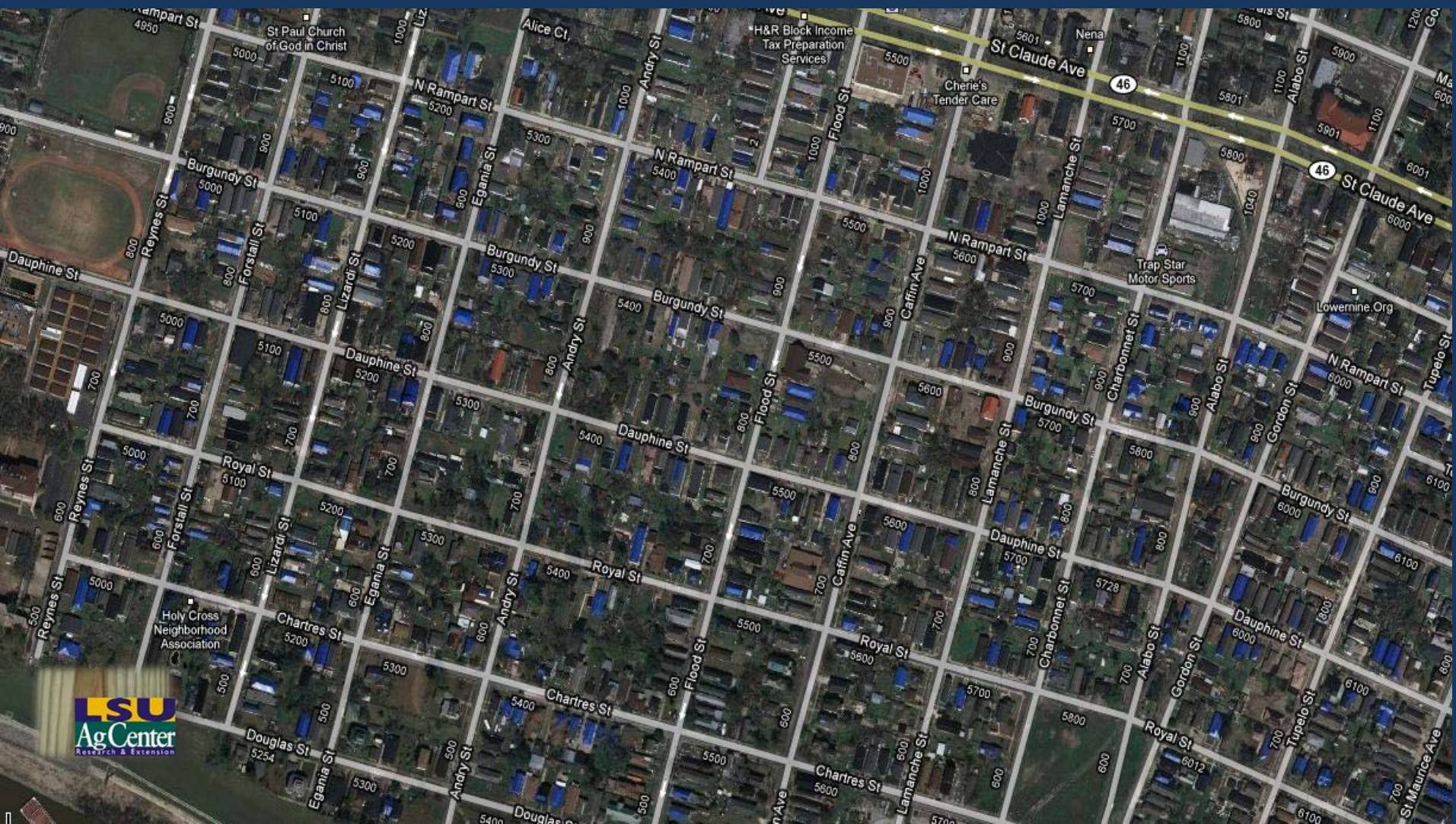


University of Bristol

RFID Feasibility

- Keep and update infrastructure inspections and maintenance using RFID and GIS information.
- Storm Recovery.
- Possibly sending and updating work orders.

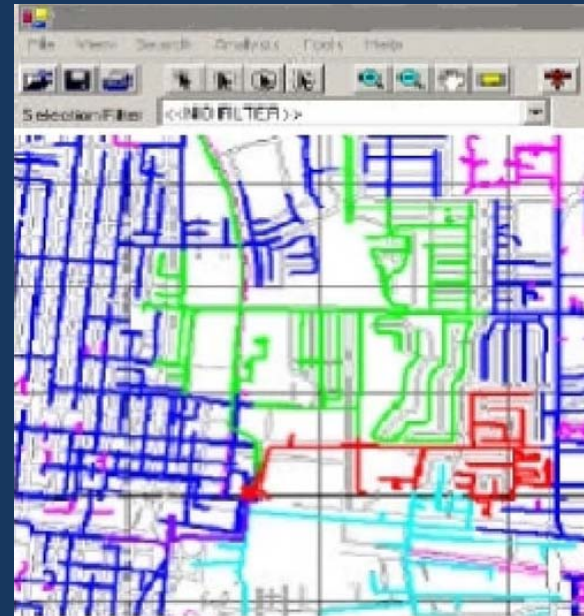
RFID Feasibility

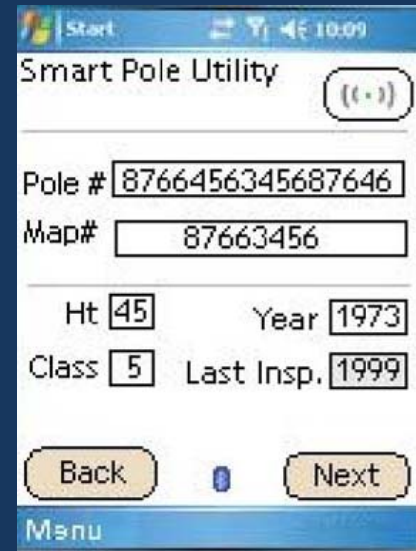
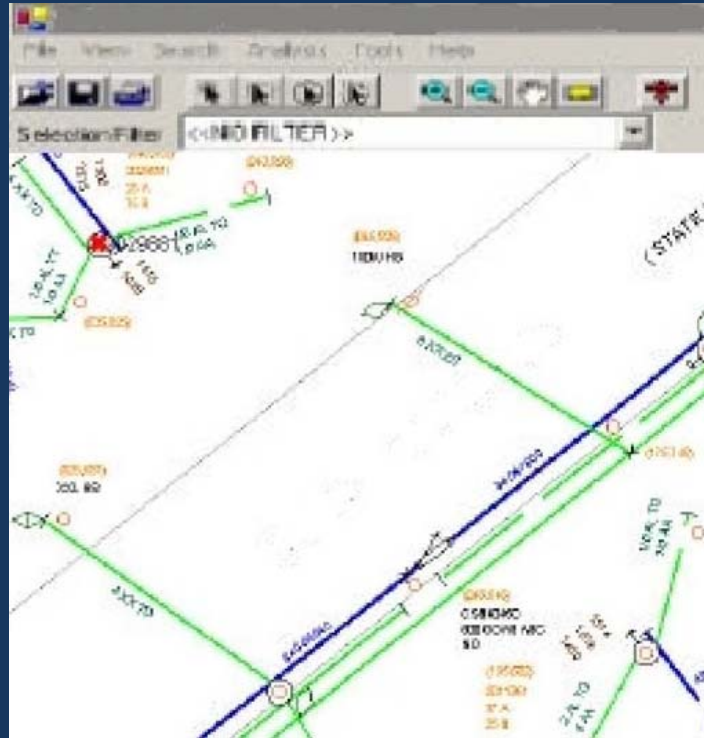


Smart Nail

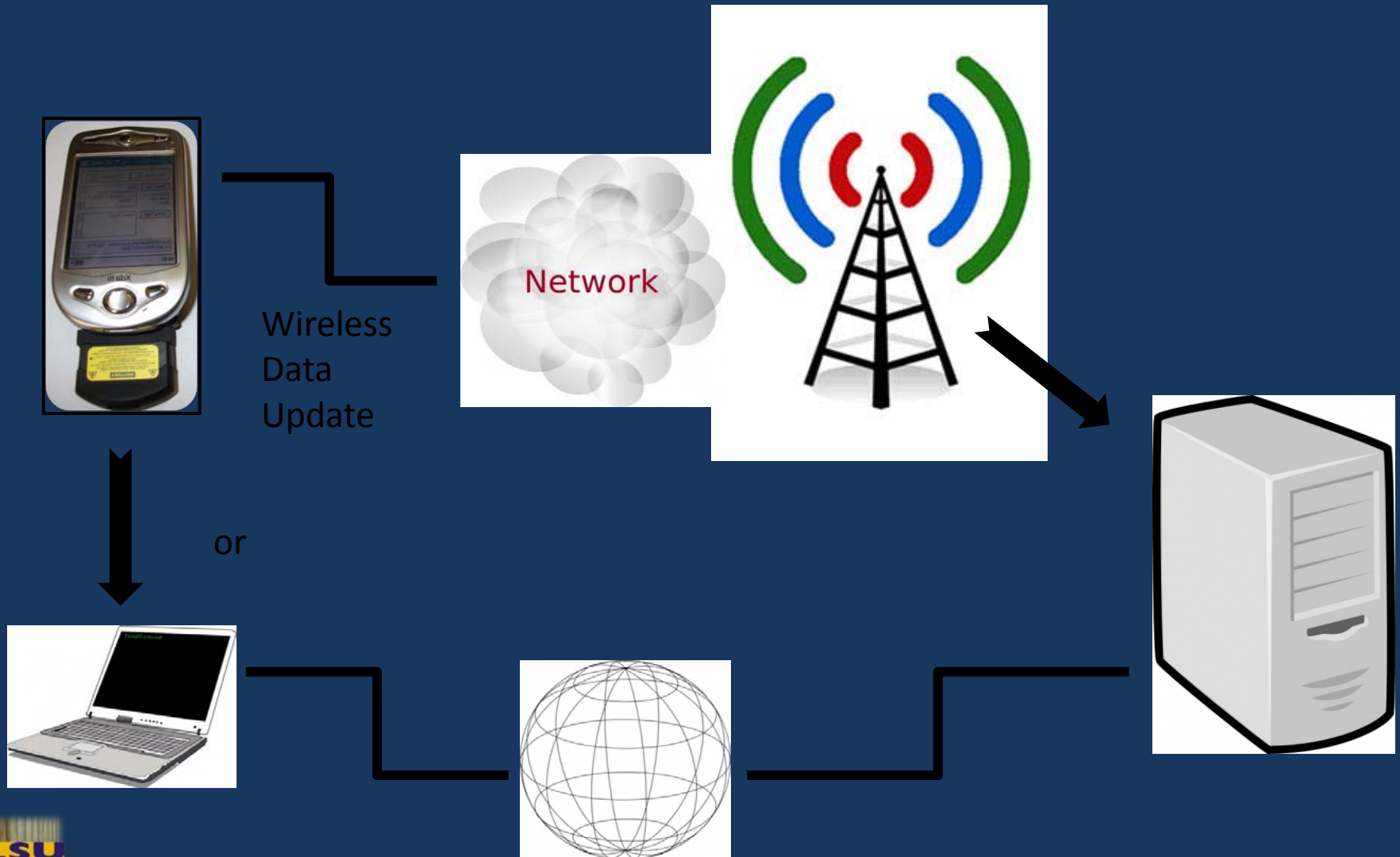
LBWP technologies








Architecture



Software Designs Reports

Mile	Structure	Direction	Vintage Year	Year Est	Height/Class	H/C Est	Pole Type	Manufacturer	Treatment Code	Reinforceable	Year Last Treated	Treated By	Original Circ.	Effective Circ.	Loss	Internal Treatment	Fume Holes	Cable Digs	Repair Ground Wire	Apply Guy Guards	Latitude	Longitude	Remarks	Decay Diagram
	T341		1967	Y	55/3	Y	SPC	XXX	Treated reject	No	1999		44	32	12	1	0	0	0	0	32.85	-96.777		
	T354		1963	Y	60/2	Y	SPC	XXX	Treated reject	No	1999		45	35	10	1	0	0	0	0	32.8524	-96.7802	HEART ROT; HEART ROT ABOVE GL; SHELL ROT;	
	T356		1963	Y	60/2	Y	SPC	XXX	Treated reject	Ye	1999		46	36	10	1	5	0	0	0	32.8526	-96.781	DECAY POCKET; 6 INCH X 9 INCH	
	T416		1977	N	50/2	N	SPC	INP	Sound & drill reject		1999		43	43	0	1	4	0	0	0	32.8526	-96.8069	HEART ROT; PAVEMENT; SHELL ROT ABOVE GL;	

question:



will lunch be provided?

