



Transitioning To ALERT2 In Harris County

ALERT User's Group Conference

2016

Transitioning To ALERT2 In Harris County

- History
- Upgrade Process
- Benefits
- Testing The System
- What The Future Holds



History

- ▶ 7/23/79 – Tropical Storm Claudette drops 43” of rain
- ▶ 7/24/79 – Need for flood warning system recognized
- ▶ 1982 – 12 stations installed in 5 watersheds
- ▶ 1989 – 68 stations installed in 22 watersheds



History

- 1999 – 105 stations installed
- 2001 – Tropical Storm Alison drops +40” of rain
- 2004 – 129 stations installed
- 2015 – Upgrade from ALERT to ALERT2
- 4/17/2016 – Completed upgraded system gets tested



History

- 2 Base Stations
- 3 Repeaters
- 139 Remotes
 - Tipping Bucket Rain Gauge
 - Bubblers, Radar, Pressure Transducers
 - Wind Speed, Wind Direction
 - USGS ‘Sniff’





Upgrade Process

Upgrade Process

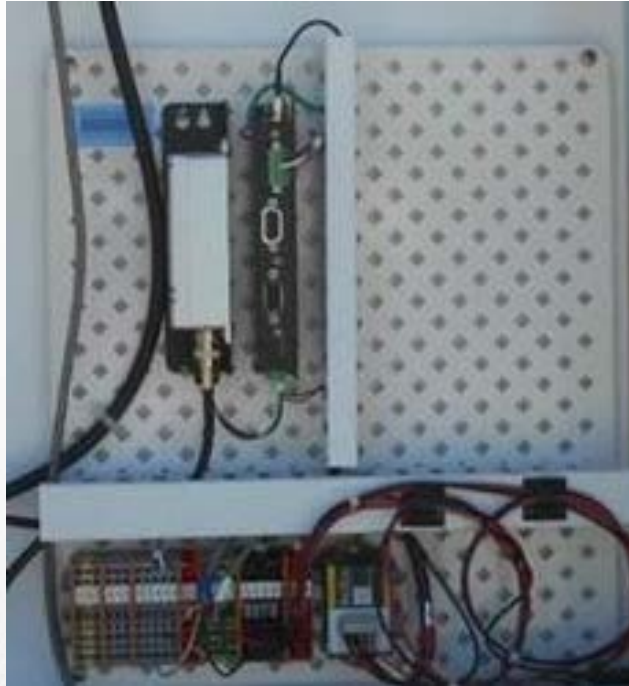
- 1/15/2015 – RFP released
- 2/3/2015 – Bid awarded
- 6/29/2015 – Upgrades begin
- 7/3/2015 – 10 beta sites installed
- 8/7/2015 – First ALERT2 units delivered
- 10/29/2015 – 90 ALERT2 upgrades complete
- 12/7/2016 – Upgrade process completed



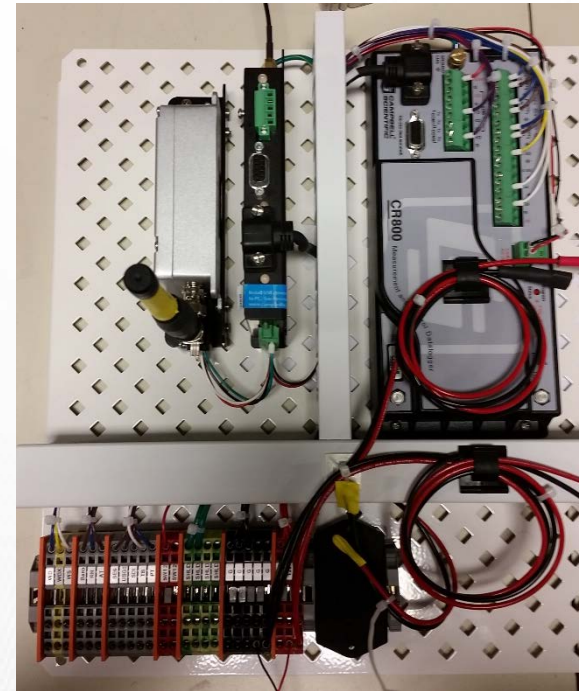
Upgrade Process

▶ Two Standard Types Of ALERT2 TX'er

A2 DCP Type A



A2 DCP Type B



Upgrade Process

▶ Standard Components

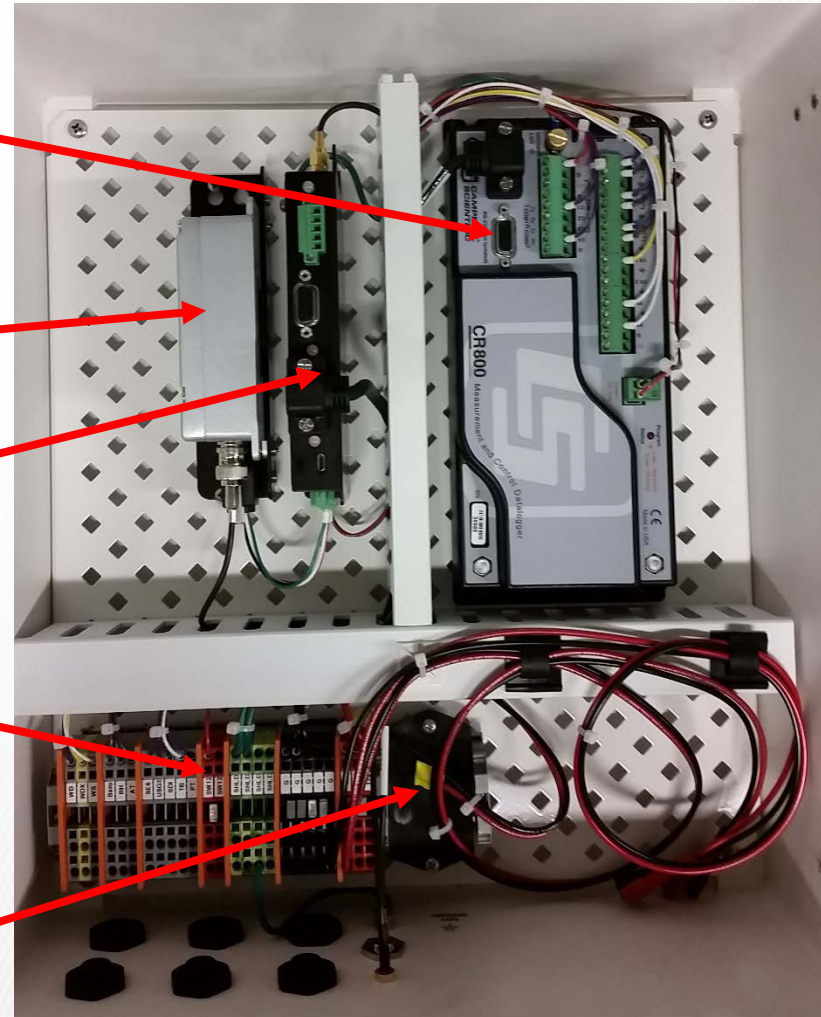
Data Logger
(Type B Units)

Maxon
SD-125EL V2

AL200

Power & Sensor
Terminal Blocks

ProTech Regulator



Upgrade Process

Before



After



Upgrade Process



Install GPS Antenna



Replace VHF
Antenna & Cabling

Upgrade Solar
Panel



Upgrade Process

Before



After



Upgrade Process

Before



After





Benefits

Benefits – Better Data

- › Error reduction
- › Knowing when new data will be available
- › No value rollovers
- › Faster interpretation of conditions

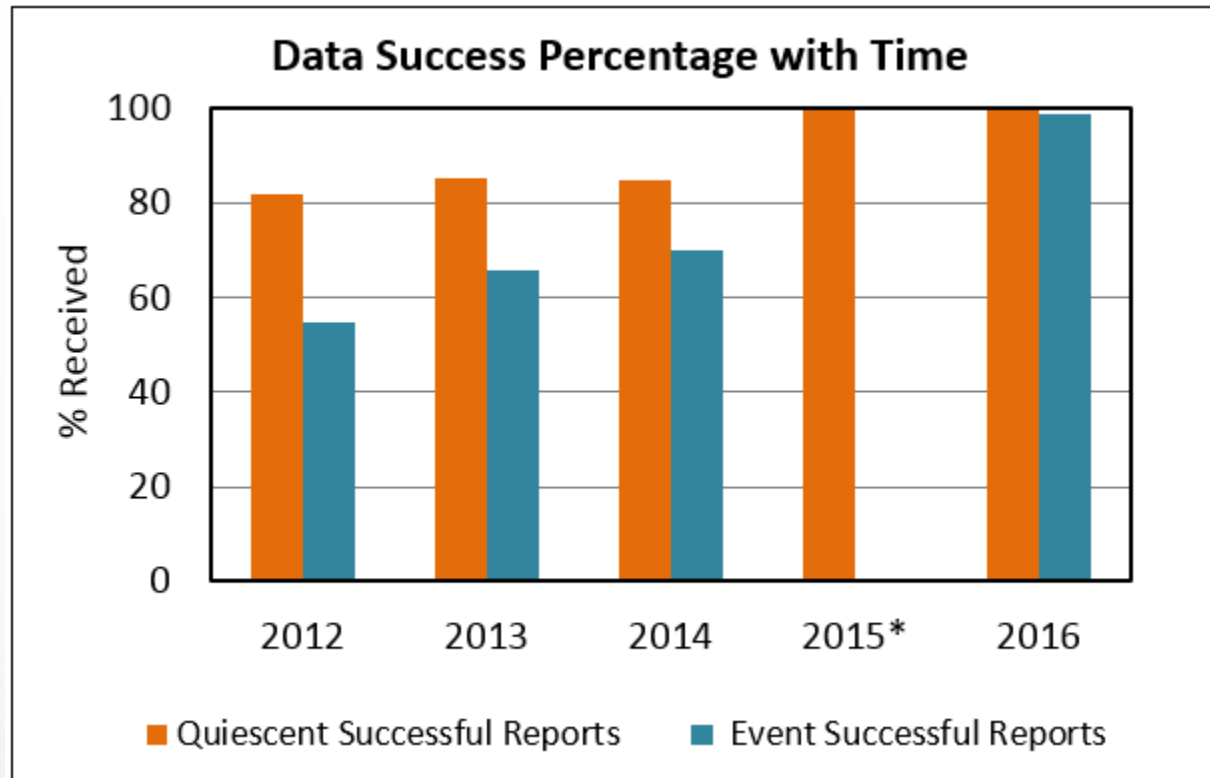


Benefits – Better Data

- ▶ 5/25/2015 – +7” rain event. 100% data capture from ALERT2 test site, 65% from neighboring ALERT stations.
- ▶ October 2015 – +8” rain event. 99.6% data capture from 90 upgraded stations.
- ▶ March 2015 - +7” rain event. 99.8% data capture from 139 stations
- ▶ April 2016 - +15” rain event.....



Benefits – Better Data



Benefits – Technician POV

- › Less time on site
- › Troubleshooting done in the office
- › Problems are easier to diagnose



Benefits

- ▶ *“In the larger picture, the performance of the Houston system with A2 is simply stunning for those of us used to ALERT. I will try to do some metrics, but it is clear that the data capture at rainfall rates exceeding 4" per hour were better than 99% - probably a lot better.”*
- ▶ Event generated ~64,000 messages





Questions

Thanks To:

- › Steve Fitzgerald – HCFCD
- › Jeff Linder – HCFCD
- › Jim Greeson – HCFCD
- › Jeremy Justice – HCFCD
- › Valerie Lomas – HCFCD
- › Richard Velasco – HCFCD
- › Ronald Havran – HCFCD
- › Mark Moore – HCFCD
- › David Haynes – Distinctive AFWS Designs
- › Don Van Wie – Telos Services
- › Barb Utley – Campbell Scientific





Thank You

Thursday @ 2:30 PM

“Optimizing Water Quality Measurements Within an ALERT2 Network”
w/ Barb Utley