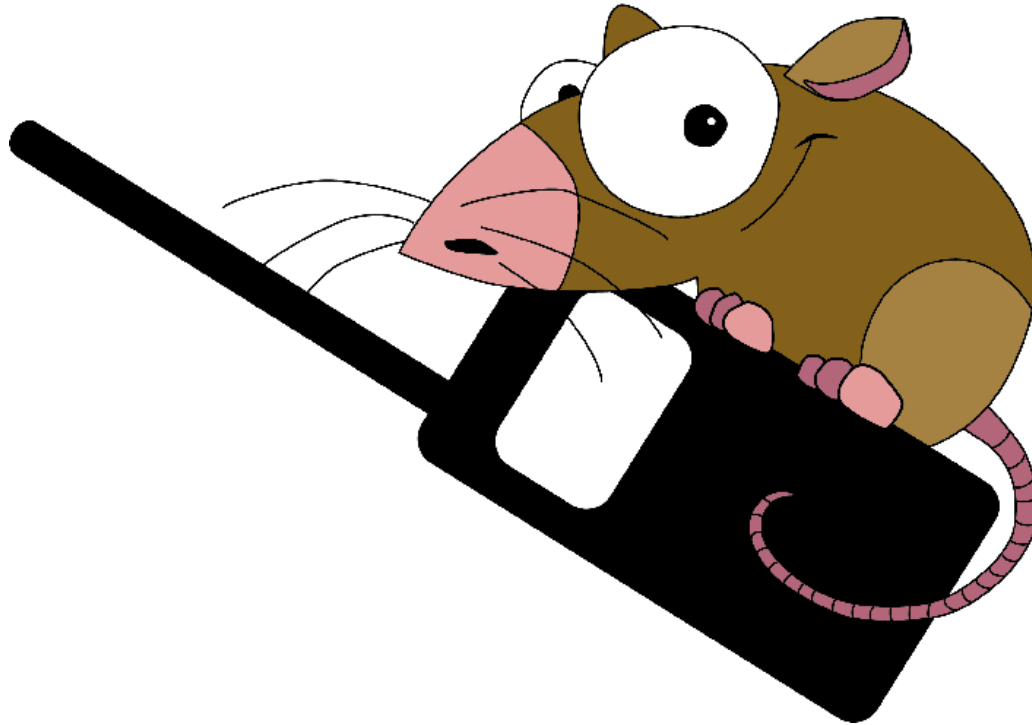


D-RATS



Dayton D-STAR Forum 2009

Dan Smith - KK7DS

Outline

www.d-rats.com

- Goal
- Messaging
- Files and Images
- Positional Awareness
- Ratflector
- Future (D-RATS 0.3)
- Implementation

Goal

- All-in-one tool for D-STAR data ops
- Provide real uses for data channel
- Oriented at EmComm
- No dependence on infrastructure
 - Originally targeted for simplex
 - All network interaction at endpoints



Messaging

- Free-form multicast chat messages
 - Checksum-protected
 - No ACK/NAK from remote stations (yet)
- Structured messages (Forms)
 - Use XML to convey structure and content
 - XSL at the endpoints for presentation
- Email gateway
 - Crafted headers for interaction with regular users
 - Embedded form attachments for bridging

Form

X

Radiogram

| | | | |
|-------------------|----------|----|------|
| Number | 1 | | |
| Precedence | Routine | | |
| HX | C | | |
| Station of Origin | KE7FTE | | |
| Check | 5 | | |
| Place of Origin | Home | | |
| Time | 15 | 12 | 46 |
| Date | Mar | 08 | 2008 |
| To | KK7DS | | |
| Recipient Phone # | 555-1212 | | |

Message

This is a test radiogram

Path

X

Cancel

Save

Save

Export

Printable

Mozilla Firefox

File Edit View History Bookmarks Tools Help

THE AMERICAN RADIO RELAY LEAGUE

RADIOGRAM

VIA AMATEUR RADIO

| NUMBER | PRECEDENCE | HX | STATION OF ORIGIN | CHECK | PLACE OF ORIGIN | TIME | DATE |
|--------|------------|----|-------------------|-------|-----------------|----------|-------------|
| 1 | Routine | C | KE7FTE | 5 | Home | 15:12:46 | 08-Mar-2008 |

TO

KK7DS

TELEPHONE NUMBER

555-1212

THIS RADIO MESSAGE WAS RECEIVED AT

AMATEUR STATION

NAME

STREET ADDRESS

CITY, STATE, ZIP

This is a test radiogram

| RECEIVED FROM | RECEIVED DATE | RECEIVED TIME | SENT TO | SENT DATE | SENT TIME |
|---------------|---------------|---------------|---------|-------------|-----------|
| | 08-Mar-2008 | 15:12:46 | | 08-Mar-2008 | 15:12:46 |

Done

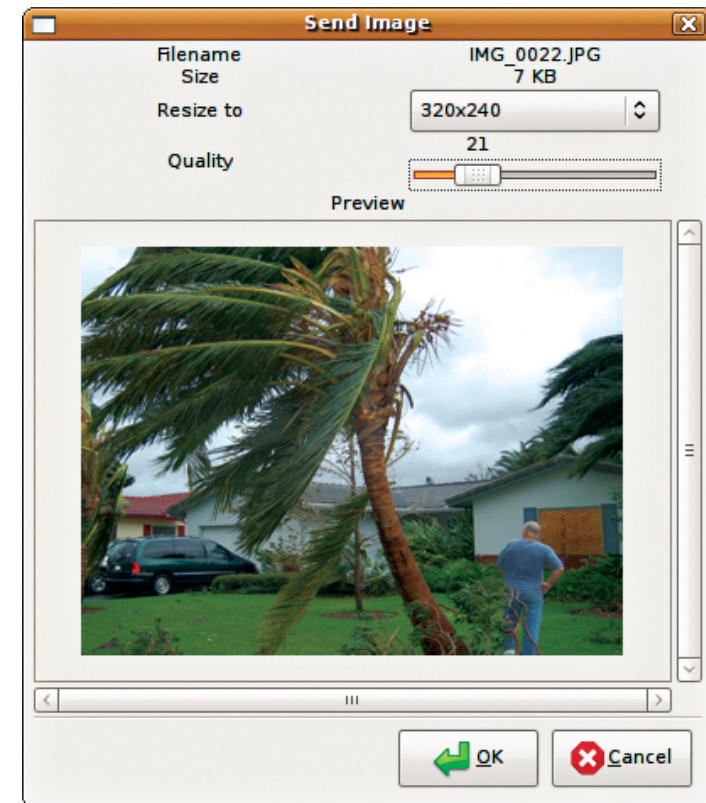
| HICS 260 - Patient Evacuation Tracking Form | | | |
|---|--|---|---|
| Date 01-May-2009 | | Unit ER | |
| Patient Name L. Smith | | Age 13 | MR# 987654321 |
| Diagnosis Fever | | Admitting Physician D. Smith | |
| Family Notified <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO | | | |
| 9. ACCOMPANYING EQUIPMENT | | | |
| <input checked="" type="checkbox"/> Hospital Bed | <input type="checkbox"/> IV Pumps | <input checked="" type="checkbox"/> Isolette/Warmer | <input type="checkbox"/> Foley Catheter |
| <input checked="" type="checkbox"/> Gurney | <input checked="" type="checkbox"/> Oxygen | <input type="checkbox"/> Traction | <input type="checkbox"/> Halo-Device |
| <input type="checkbox"/> Wheel Chair | <input checked="" type="checkbox"/> Ventilator | <input checked="" type="checkbox"/> Monitor | <input type="checkbox"/> Cranial Bolt/Screw |
| <input type="checkbox"/> Ambulatory | <input type="checkbox"/> Chest Tube(s) | <input type="checkbox"/> A-Line/Swan | <input type="checkbox"/> IO Device |
| 10. DEPARTING LOCATION | | 11. ARRIVING LOCATION | |
| Departure Room # 123 | Departure Time 13:04:00 | Arrival Room # | Arrival Time 13:04:00 |
| ID Band Confirmed <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO | Confirmed By T. Smith | ID Band Confirmed <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO | Confirmed By |
| Medical Record Sent <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO | | Medical Record Sent <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO | |
| Addressograph Sent <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO | | Addressograph <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO | |
| Belongings With Patient | | Belongings Received <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO | |
| Valuables Left in Safe | | Valuables Received <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO | |
| Medications With Patient | | Medications Received <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO | |
| PEDS/INFANTS | | | |
| Bag/Mask w /Tubing Sent <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO | | Bag/Mask w /Tubing Received <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO | |
| Bulb Syringe Sent <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO | | Bulb Syringe Received <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO | |
| 12. TRANSFERRING TO ANOTHER FACILITY | | | |
| Time to Staging Area 13:04:00 | | Time Departing to Receiving Facility 13:04:00 | |
| Destination | | | |
| Transportation | | | |
| ID Band Confirmed <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO | | | |
| Departure Time 13:04:00 | | | |
| Facility Name | | | |

Shelter version 3.0 Generated by D-KATB

Files and Images

www.d-rats.com

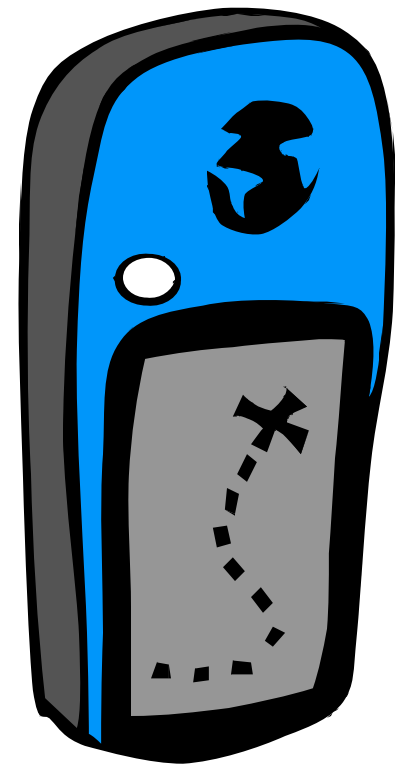
- Arbitrary file transfers with sliding window, compression, and resume
- “File server” for remote retrieval
- Integrated resize/resample of image files



Positional Awareness

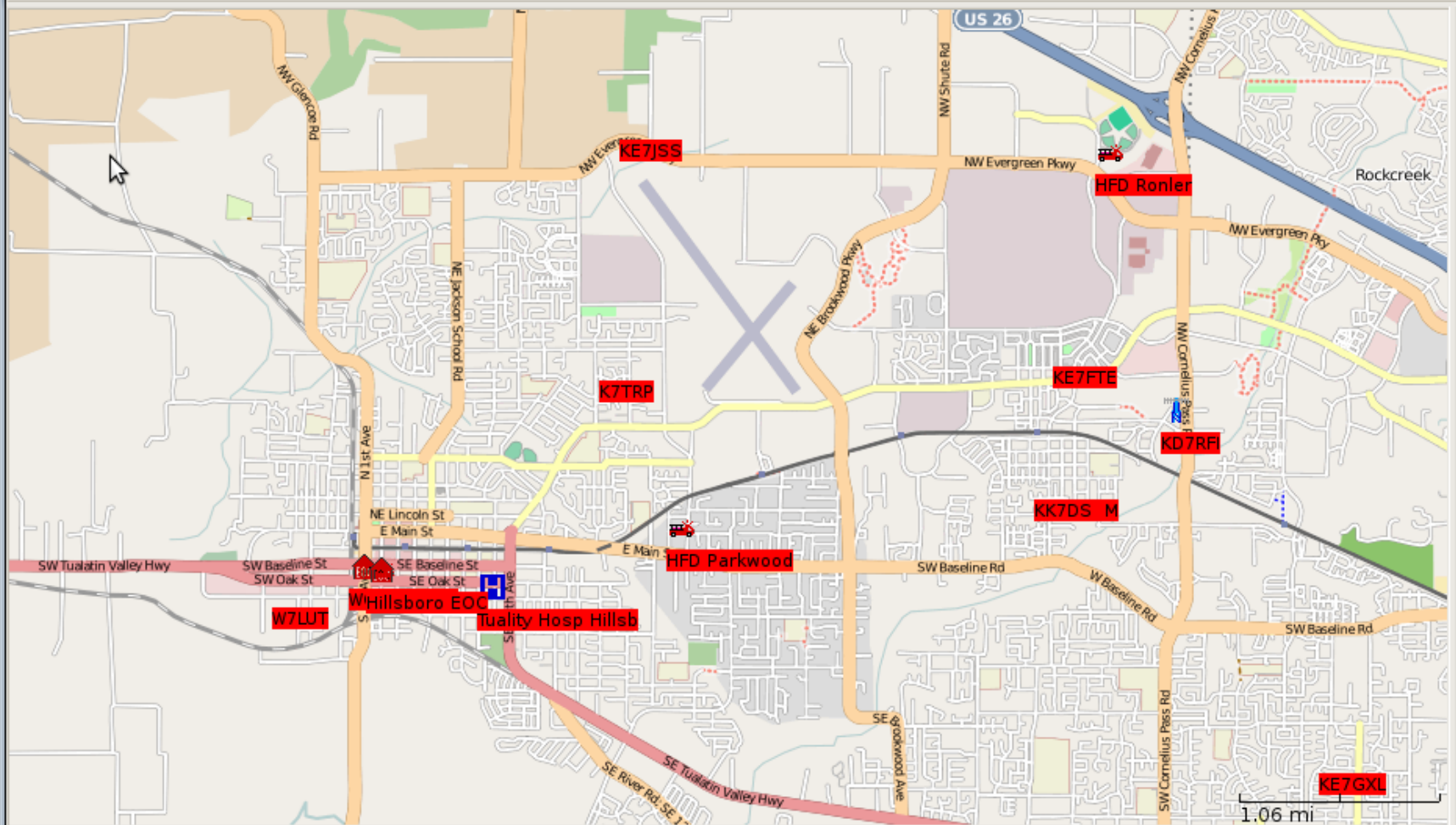
www.d-rats.com

- Captures and sends ICOM GPS strings
- Distance and direction calculation
- Integrated (free!) map display
- External GPS to multiplex the port
- Moving stations updated in real-time



D-RATS Map Window

Map



| Show | Station | Latitude | Longitude | Distance | Direction |
|-------------------------------------|---------------------|----------|-----------|----------|-----------|
| <input checked="" type="checkbox"/> | WC Hospitals | | | | |
| <input checked="" type="checkbox"/> | Tuality Hosp Hillsb | 45.5195 | -122.9775 | 0.00 | 138.79 |
| <input checked="" type="checkbox"/> | Tuality Hosp FG | 45.5171 | -123.0911 | 5.51 | 268.31 |
| <input checked="" type="checkbox"/> | Prov. St. Vinc Hosp | 45.5094 | -122.7716 | 10.00 | 93.93 |
| <input checked="" type="checkbox"/> | D-STAR Gateways | | | | |

45.5365, -122.9265 Center: Tuality Hosp Hillsb

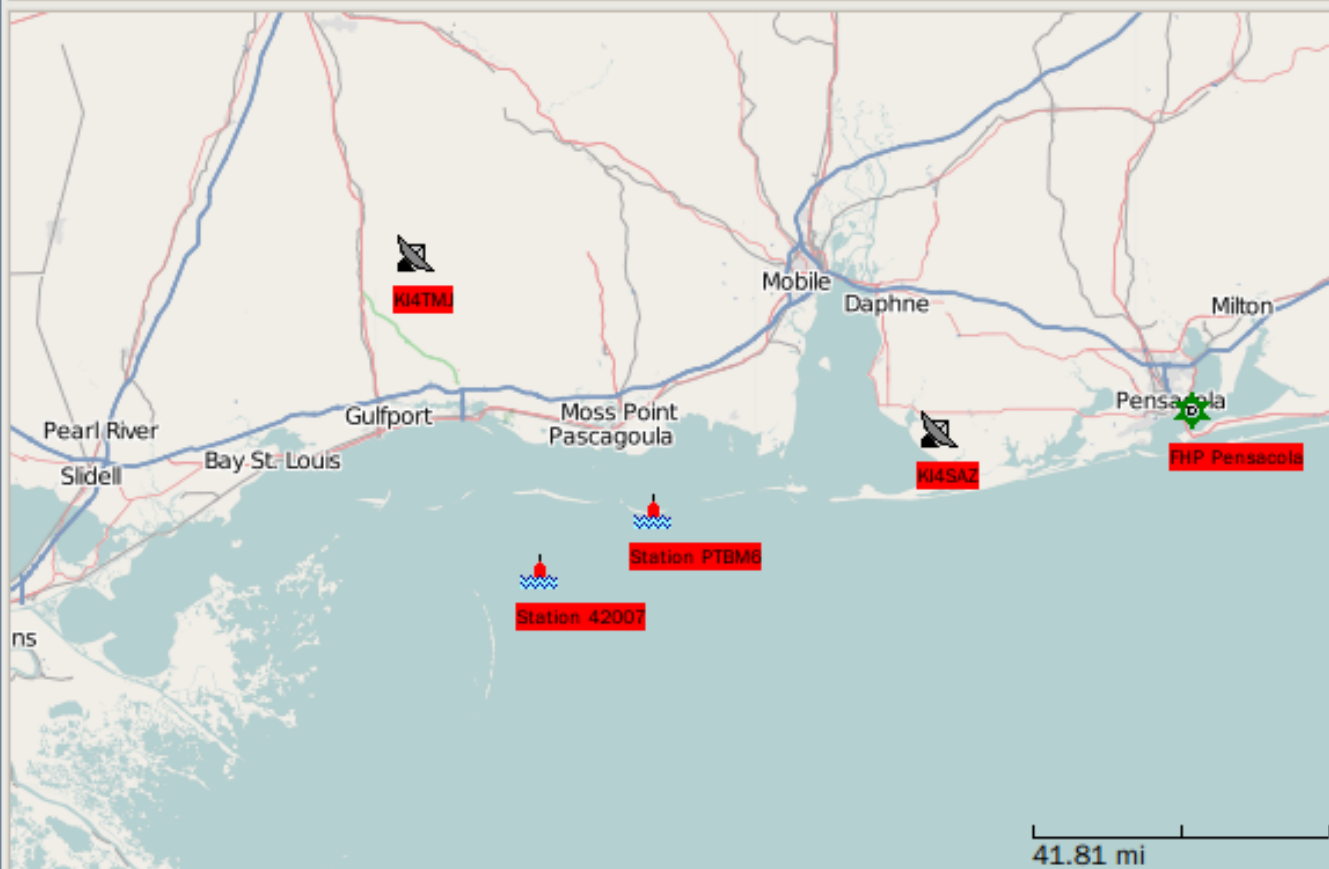
Zoom (13)

Min Max

☐ Track center

D-RATS Map Window

Map



| Show | Station | Latitude | Longitude | Distance |
|-------------------------------------|------------------------|----------|-----------|----------|
| <input checked="" type="checkbox"/> | Buoys | | | |
| <input checked="" type="checkbox"/> | Station 42007 | 30.0900 | -88.7690 | 0.00 |
| <input checked="" type="checkbox"/> | Station PTBM6 | 30.2130 | -88.5000 | 0.00 |
| <input checked="" type="checkbox"/> | Campgrounds | | | |
| <input checked="" type="checkbox"/> | City Fire Stations 0-4 | | | |

Zoom (8)

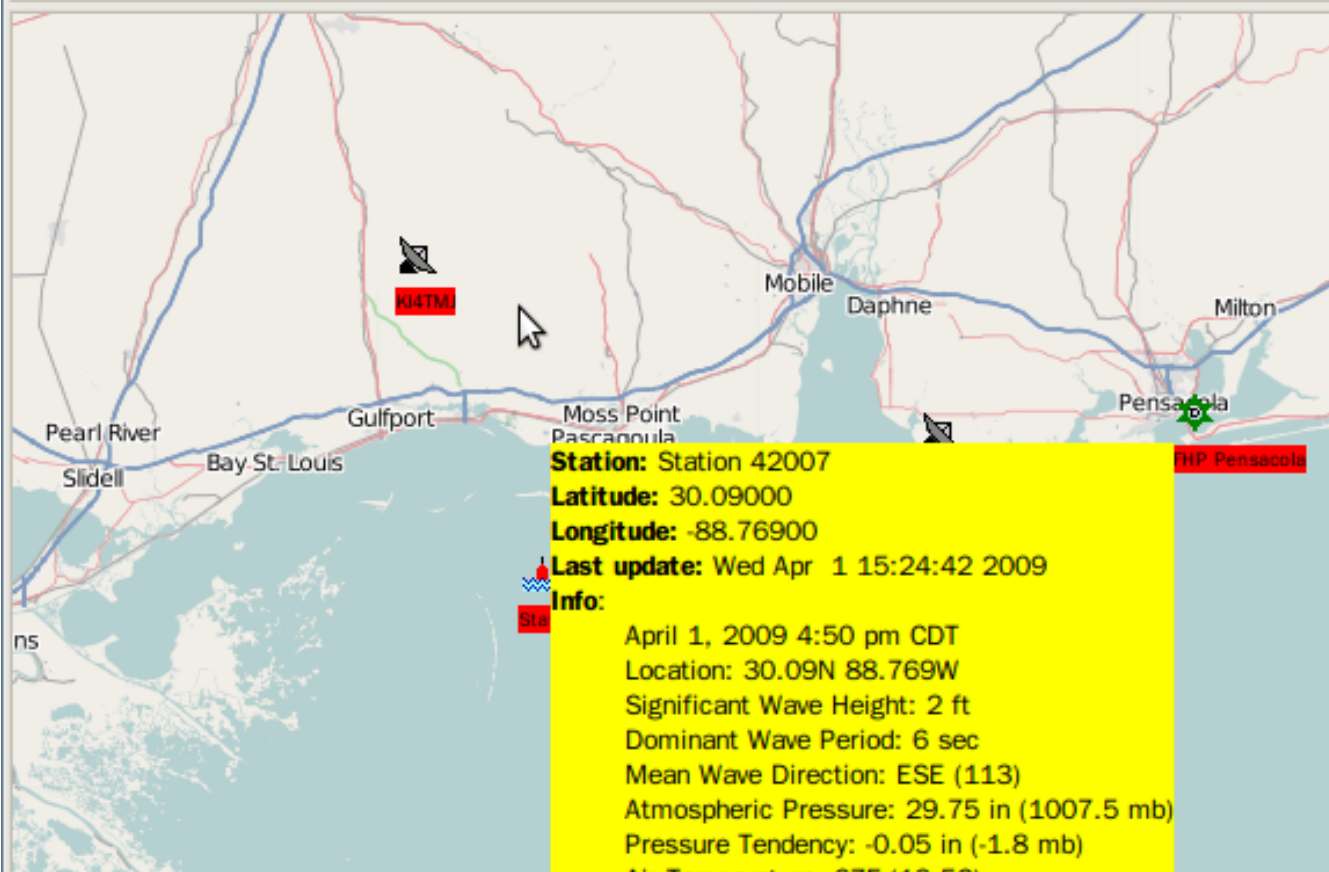
Min Max

☐ Track center

31.1975, -87.7533

Center: Station 42007

Map

**Station:** Station 42007**Latitude:** 30.09000**Longitude:** -88.76900**Last update:** Wed Apr 1 15:24:42 2009**Info:**

April 1, 2009 4:50 pm CDT

Location: 30.09N 88.769W

Significant Wave Height: 2 ft

Dominant Wave Period: 6 sec

Mean Wave Direction: ESE (113)

Atmospheric Pressure: 29.75 in (1007.5 mb)

Pressure Tendency: -0.05 in (-1.8 mb)

Air Temperature: 67F (19.5C)

Dew Point: 60F (15.5C)

Water Temperature: 68F (19.8C)

Show

Station

Latitude

Zoom (8)



Buoy



Station 42007

30.0900

-88.7690

0.00



Station PTBM6

30.2130

-88.5000

0.00



Campgrounds



City Fire Stations 0.1



30.0296, -88.7201

Center: Station 42007

Min

Max

☐ Track center

Ratflector

www.d-rats.com

- Connect to other D-RATS users via Internet
- Easy and clean for testing
- Data-only reflector
- Configure D-RATS serial port for:
 - `net:ref.d-rats.com:9000`

Future (D-RATS 0.3)

www.d-rats.com

- Move to more BBS-centric behavior
 - Email-client-like messaging interface
 - FTP-client-like file transfer interface
 - Better event capture and logging
 - Email transport of forms (interface with WinLink)
- Mapping improvements, dynamic data, speed
- Multiple data ports (use multiple radios, networks)

File View Help

Messages

Chat

Files

Event Log

Stations

KK7DS-H



New



Send



Email



Reply



Delete



Mark Read



Mark Unread

Inbox

Outbox

Sent

Trash

Sender

Subject

Type



Date



KK7DS

Need more water

ICS213_US_OS

17:01:19 2009-04-30



KK7DS

Test Message

email

16:59:33 2009-04-30

My Status

Online



Available

D-RATS

File View Help

Messages

Chat

Files

Event Log



Local



kk7ds-h



| Filename | Size | Date |
|------------------------|-----------|-----------------|
| radiogram_fillable.png | 29.7 KB | 17:03:43 2009-0 |
| radiogram.png | 34.6 KB | 17:03:30 2009-0 |
| Test-1.txt | 38.2 KB | 12:43:16 2009-0 |
| Test-2.jpg | 3487.6 KB | 12:43:38 2009-0 |
| test-3.txt | 1.2 KB | 10:33:15 2009-0 |
| test-4.txt | 2.1 KB | 10:39:05 2009-0 |

| Filename | Size | Date |
|-----------------------------------|---------|---------|
| eoc.csv | 347 B | 07:07:2 |
| Mass Casualty Triage Tag.html | 16.0 KB | 13:29:0 |
| N7QQU.txt | 2.0 KB | 07:05:5 |
| ocem-logo-sm.JPG | 5.0 KB | 07:19:4 |
| resized_Water lilies.jpg.jpg.part | 0 B | 07:36:3 |
| Test-3.txt | 19 B | 16:00:2 |
| Test-4.txt | 18 B | 16:00:1 |
| test.doc | 221 B | 12:22:3 |
| WashCo SitRep.txt | 7.0 KB | 10:11:2 |
| WashCo SitRep.txt.part | 0 B | 10:14:5 |

Connected to KK7DS-H

Future (D-RATS 0.3)

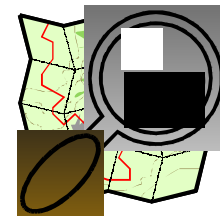
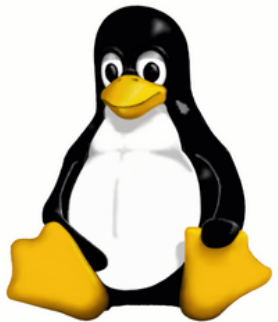
www.d-rats.com

- Currently available in a beta
- Active community discussion on mailing lists
- 2-3 months to actual release

Implementation

www.d-rats.com

- Written in Python/GTK
- Runs on Linux, Mac, and Windows
- Full session stack protocol
- OpenStreetMap.org for free maps



References

www.d-rats.com

- D-RATS Website
 - <http://www.d-rats.com>
- D-RATS Mailing List
 - <http://lists.danplanet.com>