Introduction to APRS®

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Presentation available at www.indyhams.org/aprs
APRS is a registered trademark of Bob Bruninga WB4APR

Introduction to APRS

- What is APRS?
- What can you do with APRS?
- What do you need for APRS?
- Where can you learn more about APRS?

What is APRS?

- Automatic Packet Reporting System
  - also known as Automatic Position Reporting System
  - can be used for more than just beaconing a station's position
- Developed by Bob Bruninga WB4APR in the 1990s
- Based on AX.25 packet protocol
- Real-time information distribution system
- Packets can move through RF or the Internet
- Stations, objects, and data can be displayed on a map

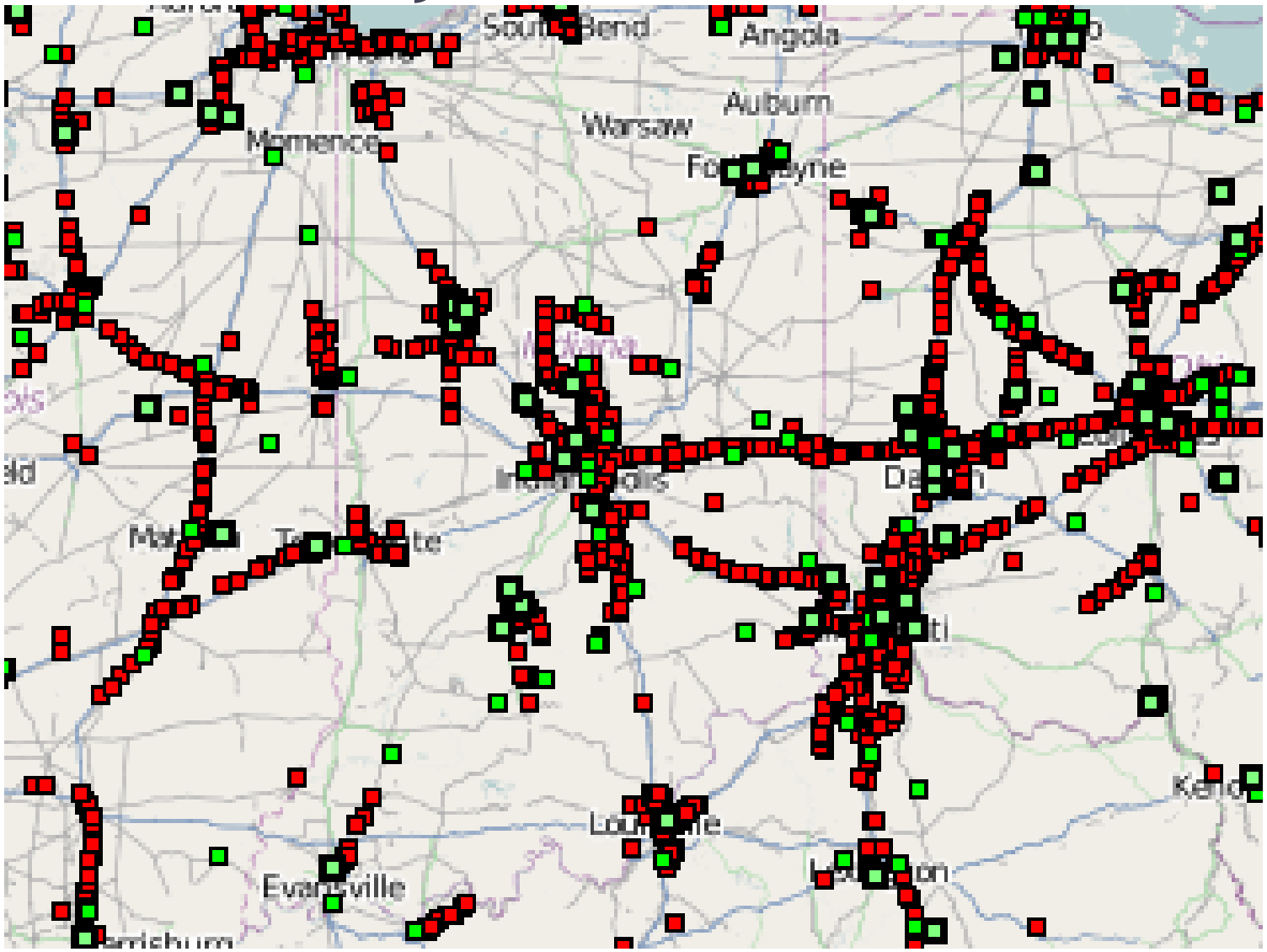
What can you do with APRS?

- Vehicle tracking
  - cars, trucks, boats, balloons, airplanes
- Locate resources
- Announce repeaters, hamfests, meetings, nets
- Weather data reporting
- Short messages

How does all this work?

- Stations transmit their positions
- Stations transmit objects
- Most operations are on 144.390 MHz
- Digipeaters repeat positions and objects
- I-Gates send positions and objects to APRS-IS

APRS activity



Digipeater paths

- Digipeater paths – determine how many “hops” your packet will make
- Suggested paths
  - Mobile: WIDE1-1,WIDE2-1
  - Base: WIDE2-2
- Don’t abuse the system

What do you need for APRS?

- Radio
- TNC
- GPS receiver
- Computer

But you don’t need all of these at the same time.

Radio

- Rx signal
  - detector preferred
- TX signal
- PTT

6-pin mini-DIN connector on many newer radios

TNC

- Any TAPR TNC2 clone
  - AEA PK-88, PK-96, or PK-232
  - Kantronics KPC2 or KPC3 ($230)
  - MFJ 1270B
  - PacComm Tiny-2, PicoPacket, HandiPacket
- KISS-only TNCs
  - TNC-X, now available as MFJ 1270X ($130)
- Sound Card TNCs
  - AGWPE

Trackers

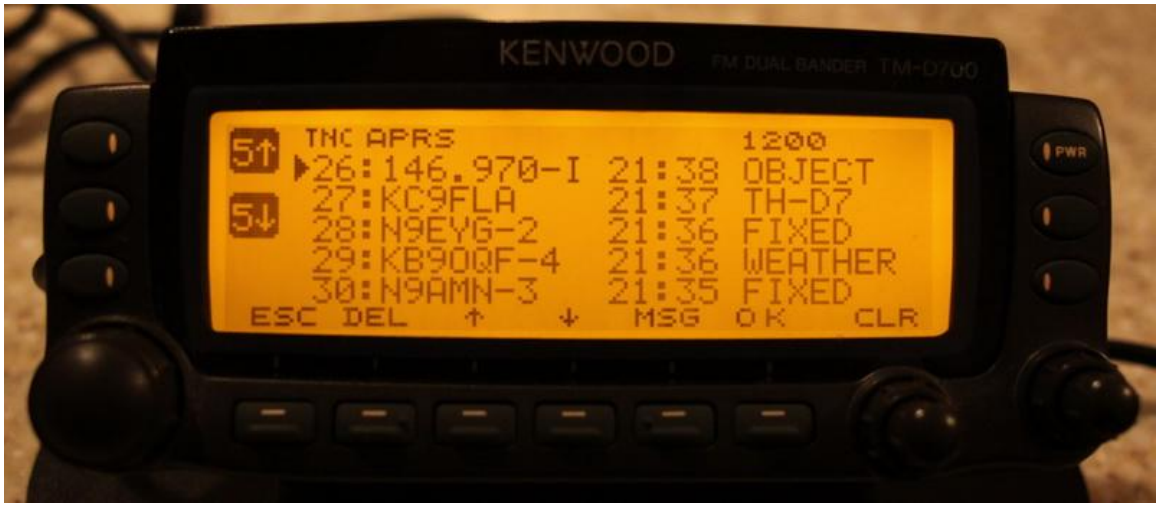
Specialized TNCs with features dedicated to APRS tracking

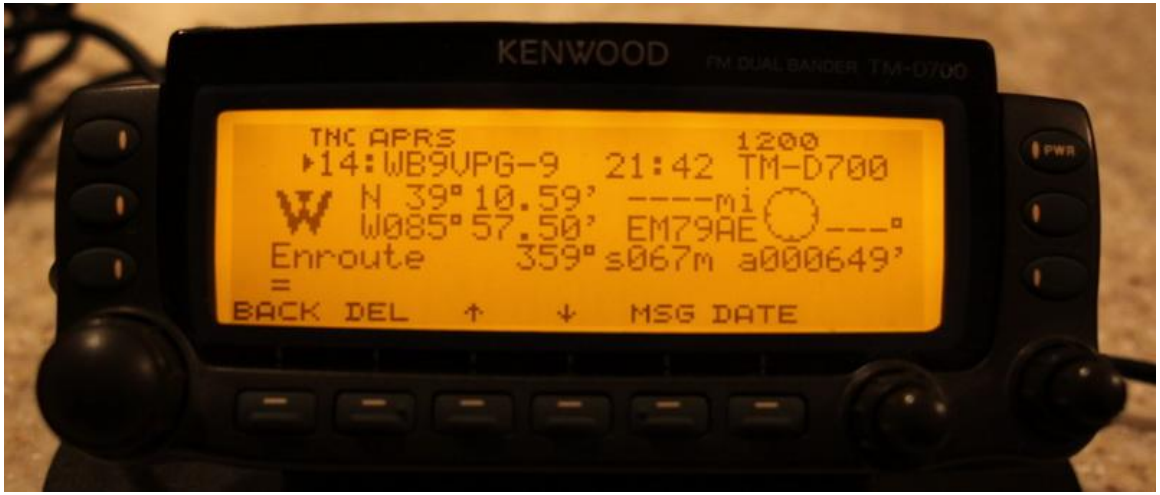
- Argent Data OpenTracker ($32-55), Tracker2 ($95)
- Byonics TinyTrak3 ($33-42), TinyTrak4 ($65-75)
- Kenwood RC-D710 ($300)

Radio/TNC combos

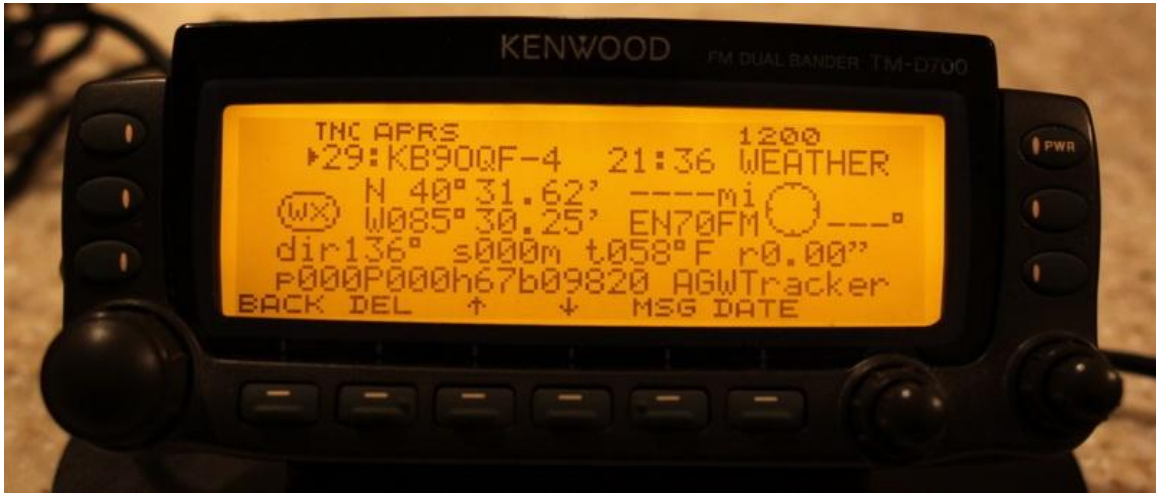
- Alinco
  - DR-135T w/ Argent Data T2-135 ($170 + $85)
- Argent Data
  - T2-301 ($230)
- Byonics
  - MicroTrak RTG (TT3) ($120-150)
  - MicroTrak AIO (TT3) ($260)
- Kenwood
  - TH-D72 ($480)
  - TM-D710 ($540)
- Yaesu
  - FTM-350 ($530)
  - VX-8DR ($410), VX-8GR ($350)

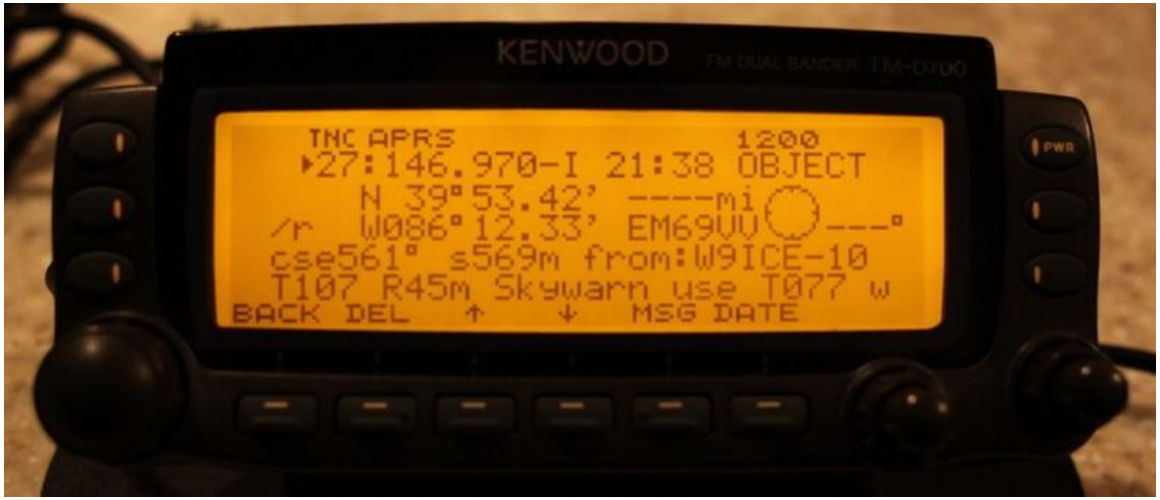
Kenwood TM-D700 screen samples





Kenwood TM-D700 screen samples





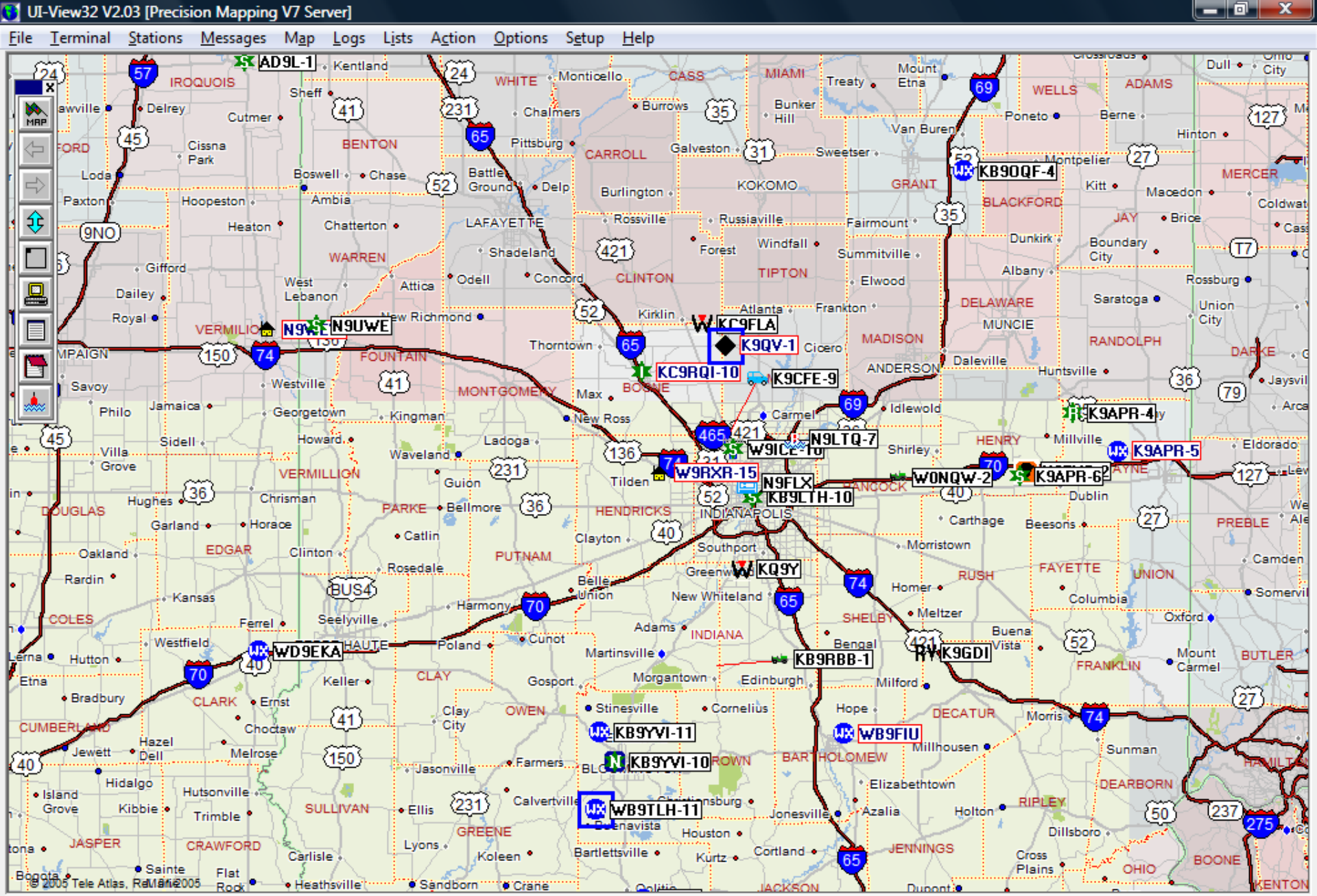
GPS receiver

NMEA0183 output over RS-232 serial port

- Garmin GPS18, GPSmap 60C
  - Most of Garmin's marine GPS's have NMEA output
- Argent Data and Byonics offer "hockey puck" GPSr ($53-69)

Computer

- APRSDOS
  - DOS, static maps, free
- APRSpoint
  - Windows, good maps, $77, no KISS support
- UI-View
  - Windows, good maps, free, no longer developed
- APRSIS32
  - Windows, good maps, free
- Xastir
  - Linux, free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File Terminal Stations Messages Map Logs Lists Action Options Setup Help
AD9L-1
N9UWE
KC9FLA
K9QV-1
KC9RQI-10
K9CFE-9
N9LTQ-7
W9RXR-15
N9FLX
KB9LTH-10
W0NQW-2
K9APR-4
K9APR-5
K9APR-6
KB9QQF-4
KQ9Y
WD9EKA
KB9RBB-1
K9GDI
KB9YVI-11
KB9YVI-10
WB9FIU
WB9TLH-11
INDIANAPOLIS
© 2005 Tele Atlas, Rel. 6/2005
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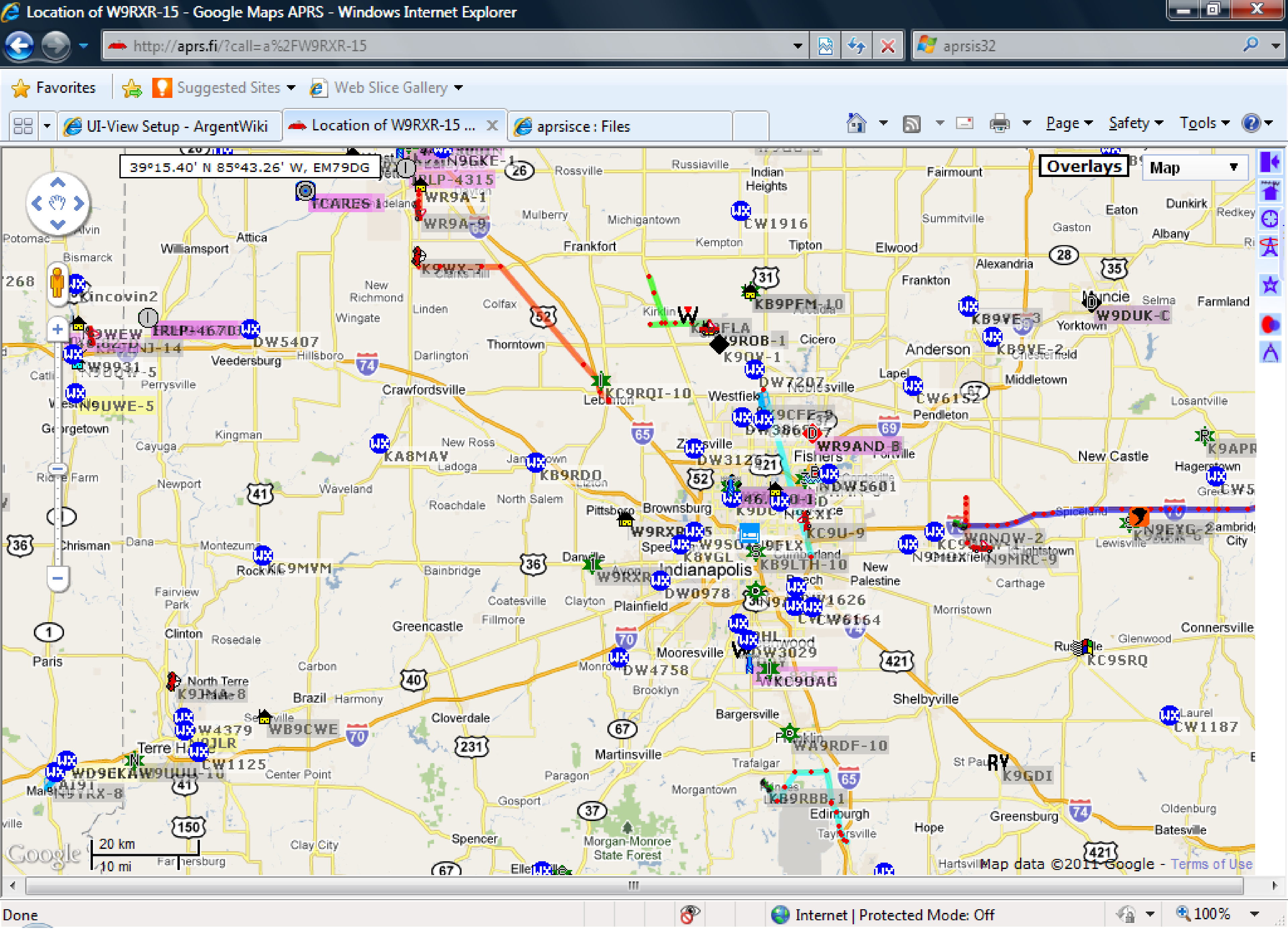
Internet

- FindU.com
- APRS.fi
- OpenAPRS.net
- dbØanf.de/app/aprs



Location of W9RXR-15 - Google Maps APRS - Windows Internet Explorer
http://aprs.fi/?call=a%2FW9RXR-15
aprsis32
Favorites
Suggested Sites
Web Slice Gallery
UI-View Setup - ArgentWiki
Location of W9RXR-15 ...
aprsisce : Files
Page
Safety
Tools
39°15.40' N 85°43.26' W, EM79DG
Overlays
Map
Indianapolis
Anderson
Fishers
Westfield
Lebanon
Frankfort
Crawfordsville
Greencastle
Martinsville
Shelbyville
New Castle
Muncie
Terre Haute
Brazil
Mooresville
Plainfield
Danville
Noblesville
Greensburg
Connersville
Paris
Edinburgh
Franklin
Morgan-Monroe State Forest
W9DUK-C
KB9PFM-10
KC9RQI-10
WR9AND-B
KA8MAV
KB9RDO
KC9MVM
WB9CWE
WA9RDF-10
KB9RBB-1
KC9SRQ
K9GDI
CW1187
CW1916
DW5407
DW5601
DW0978
DW4758
CW6164
20 km
10 mi
Map data ©2011 Google - Terms of Use
Done
Internet | Protected Mode: Off
100%

Where can you learn more about APRS?

- www.aprs.org
- info.aprs.net
  - Wiki with hardware and software information, best practices
- www.nwaprs.info
- tapr.org/aprs.html
- wa8lmf.net/aprs
  - Tips and tricks
- naprs.co.uk/radiocmp.html
  - radio comparison