



Intro to APRS®

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by

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Intro to APRS®

- ◆ What is APRS?
- ◆ What is its history?
- ◆ What do we use it for?
- ◆ What equipment and software do we use?
- ◆ What is APRS's future?
- ◆ Where to find more information?

What is APRS?

- ◆ Automatic Packet Reporting System
- ◆ Developed by Bob Bruninga WB4APR
- ◆ Digital Packet Protocol based on AX.25
- ◆ Real-Time Information Distribution System
- ◆ Packets move thru repeater network and reach INTERNET
- ◆ Uses Objects and Messages
- ◆ Position messages viewed on maps

What is its history?

- ◆ Bruninga's early implementations from 1984 to 1993
- ◆ Bruninga published APRS at TAPR DCC 1993
- ◆ Bruninga path WIDEn-n idea in 1994
- ◆ Data available on INTERNET in 1997
- ◆ TAPR APRS Working Group Chartered 14 May 1999
- ◆ APRS Spec 1.0.1 adopted 29 August 2000
- ◆ APRS Spec 1.1 Addendum 30 July 2004

What do we use it for?

- ◆ Situational awareness at the local level
- ◆ Vehicle tracking
- ◆ Weather data reporting
- ◆ Messaging, APRSLink from TH-D7, TM-D700 (<http://www.winlink.org/aprslink>)
- ◆ EmComm resource tracking
- ◆ Balloons- data collection and tracking
- ◆ Others...

What equipment and software do we use?

- ◆ TNC- Terminal Node Controller
- ◆ Trackers
- ◆ GPS
- ◆ Repeaters
- ◆ IGATE- Gateway to INTERNET
- ◆ APRServers- INTERNET repositories
- ◆ Smart APRS Digipeater- uSmartDigi
- ◆ D-STAR to APRS Gateway- uSmartDigi D-Gate
- ◆ PC + Sound Cards

TNC- Terminal Node Controller

- ◆ Is a Modem
- ◆ Controls TX PTT on Analog Radio
- ◆ Has a TXDELAY
- ◆ Modem audio in to Radio TX
- ◆ Radio RX audio out to Modem
- ◆ Interface to computer (RS232, USB)
- ◆ KISS Mode

Trackers

- ◆ In vehicles, on persons, assets, resources
- ◆ Is a TNC in part or uses TNC
- ◆ Must at least send packets
- ◆ May also receive packets (full TNC)
- ◆ Uses GPS position, speed as input
- ◆ Connects to Analog Radio
- ◆ Transmits APRS packet periodically

Software

- ◆ AGWPE (Software for Sound Card, KISS TNC)
- ◆ APRS (Bob's software)
<http://www.aprs.org/aprs.html>
- ◆ APRSDigi (linux, requires KISS TNC)
<http://aprsdigi.sourceforge.net/aprsdigi.html>
- ◆ APRS-SA (Windows PC)
<http://www.tapr.org/~kh2z/aprsplus/Download.htm>

Software

- ◆ DIGI_NED (DOS, Linux, requires KISS TNC)
<http://digined.pe1mew.nl>
- ◆ UI-View (requires KISS TNC) <http://www.ui-view.org>
- ◆ Uidigi (firmware for YNC2)
<http://www.ir3ip.net/iw3fqg/uidigi.htm>
- ◆ WinAPRS (Windows PC) <http://www.winaprs.com>

Hardware

- ◆ Argent Data Systems
<http://www.argentdata.com>
Tracker3, OpenTracker+ (Trackers)
- ◆ Byonics <http://www.byonics.com>
TinyTrak3, TinyTrak4 (Trackers)
TinyTrak4 (KISS TNC)
Micro-Trak TinyTrak4 (Tracker/Digipeater)

Hardware

- ◆ Coastal ChipWorks, Painter Engineering
<http://www.tnc-x.com>
<http://usmartdigi.com>
 - μSmartDigi/TNC-X (Smart APRS Digipeater)
 - μSmartDigi D-Gate D-STAR Gateway
 - X-Digi/TNC-X (Digipeater)
 - X-Track/TNC-X (Tracker)

Hardware

- ◆ Elcom Research
<http://www.elcomresearch.com>
USB TNT (KISS TNC)
- ◆ Kantronics <http://www.kantronics.com>
KPC-3+ (TNC, KISS TNC, Digipeater)
MT1200 (Tracker)

Hardware

- ◆ MFJ Enterprises
<http://www.mfjenterprises.com>
MFJ-1270D TNC-2 (TNC)
- ◆ NTG (Germany)
<http://www.tnc7multi.de>
TNC7-Multi (KISS TNC)

Hardware

- ◆ Paccomm Wireless Radio Systems
<http://www.paccomm.com>
 - Tiny-2 MK-II (KISS TNC, Tracker)
 - PicoPacket (KISS TNC, Tracker)
 - SPIRIT-2 (KISS TNC)
 - HandiPacket (KISS TNC)

Hardware

- ◆ SCS (Germany) <http://www.scs-ptc.com>
Tracker/DSP TNC (KISS TNC, Tracker)
- ◆ Timewave Technology
<http://www.timewave.com>
DSP-232+ (KISS TNC)
PK-96 (TNC, KISS TNC, Tracker)

What is APRS's future?

- ◆ Open ended
- ◆ APRS Spec needs updating
- ◆ Overcrowded RF channel
- ◆ Aging hardware/software implementations
- ◆ New hardware/software
- ◆ APRStt
- ◆ APRS Spec 1.2 Addendum proposed
- ◆ APRS Spec 1.3 Addendum proposals?

Where to find more information?

- ◆ Google APRS
- ◆ <http://www.tapr.org/aprs.html>
- ◆ <https://www.tapr.org/cgi-bin/mailman/listinfo/aprssi>
- ◆ <https://lists.tapr.org/cgi-bin/mailman/listinfo/ax25-layer2>
- ◆ http://en.wikipedia.org/wiki/Automatic_Position_Reporting_System
- ◆ <http://www.aprs.org/doc/APRS101.PDF>
- ◆ <http://www.aprs.org/aprs11.html>
- ◆ <http://www.aprs.org/aprs12.html>
- ◆ <http://www.winlink.org/aprslink>

Where to find more information?

- ◆ <http://aprs.org/APRS-docs/ARTICLES.TXT>
- ◆ <http://www.winaprs.com/APRShist.htm>
- ◆ <http://groups.yahoo.com/search?query=tnc>
- ◆ <http://groups.yahoo.com/search?query=aprs>
- ◆ <http://www.aprsworld.net/>
- ◆ <http://www.findu.com/>
- ◆ <http://www.jfindu.net/>

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