SUBJECT	Standard Guidelines for APRS in IARU, Region 1		
Society	EDR	Country:	Denmark
Committee:	C5	Paper number:	CT08_C5_09
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This proposal contains guidelines on maximising the capacity of the IARU, Region 1, APRS network on144.800Mhz.

The APRS network in Europe in many areas is unreliable due to the same lack of consistent user settings and network digipeater settings that had evolved in the USA forcing us to finally implement the New-EU Paradigm and get consistency and traceability throughout the network.

The GOOD news: Clearly TRACEn-n is favoured *and* about half of the users are being considerate and keeping their QRM down with 3-3 and 2-2 packets. Also simplifying the network to only use TRACEn-n can be done with no impact to existing users. And simply swapping the TRACEn-n support over to the UITRACE parameter will allow all TRACEn-n paths to be traceable like i.e. in the UK and Denmark.

The BAD news: The biggest LOAD, however, is caused by the huge numbers of 7-7 and 5-5 packets and packets with BOTH WIDEn-N and TRACEn-N in the same packet! Remember, for each additional hop, the number of QRM copies can triple! And for only a few 7-7 users, they can cause QRM over much of the continent.

TRACEn-n works now and will always work. It is just that it will become more traceable as more and more digis implement the New Paradigm.

Here then is the suggestion for the New Paradigm:

1) The best path for fixed stations is TRACE3-3
2) The best path for Mobiles is RELAY,TRACE2-2
3) Change the digis so WIDE and WIDEn-n should be disabled in your digi set up and removed from your unproto path.
4) IGATE RULES: IGates should set their path to their local area only (usually one hop, TRACE1-1) and should not flood their area with unwanted QRM.

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New Paradigm DIGIPEATER RULES:
1) In saturated areas, TRAP large values of N-N by setting call-substitution aliases of TRACE7-7, 6-6, etc. These will digi once and then stop further routing.

2) Home stations should *not* be digipeaters UNLESS:
    a) Station is high and is -not- covered by a BIG digi.
    They should support TRACEn-N, and regional SSn-N.
    b) -or- Station is needed for a fill-in digi for nearby mobiles who is not heard by the big digi.
    Support ***only*** the RELAY alias.

3) For NETWORK reliability, All digipeaters should:
    a) Put their PHG in their position comment
    b) Put "TRACEn-N, SSn" also to show the largest N they support
    c) The SSn shows what regional or sectional SSn-N they support
    d) Use the DIGI symbol with "T" overlay to show it is new-N Paradigm.
    e) -or- use the "R" overlay for RELAY ONLY home digis or fill-in digi

4) Support for WIDEn-N is not needed anymore. Replace UIFLOOD parameter if needed with SSn-N for your local state or regional traffic to contain its impact to only that net's area of Interest. So this then left UIFLOOD unused. So we put the STATE or LOCAL or REGIONAL alias of SSn-N in its place so that the "untraceable" UIFLOOD parameter would still be useful without adding QRM out of the area.

5) With time, TRACEn-N will become fully traceable as DIGIowners move TRACEn-N support over to the UITRACE parameter.

6) Set station beacon rates to 1 every 30 minutes if using a path of N=3 or greater. Set to every 20 minutes or more if using N=2. Set to 10 minutes if using N=1 or 0.

TRACKERS: All future mobile GPS tracker designs should consider the Proportinal-Pathing algorithm that sends 1 minute updates local-direct, every 2nd minute via one hop, every 4th minute via 2 hops and optionally every 8th minute via 3 hops.

The New Paradigm on APRS:

WIDE and WIDEn-n Deprecated
WIDE and WIDEn-n are no longer required on the APRS network and should be disabled in all digi set-up and removed from all unproto path

Home Stations:

Set your unproto Address to APRS,TRACE3-3 (UI-View Style)

Mobiles:

Universal path for mobiles is RELAY,TRACE2-2 (Kenwood / TinyTrack 3 Style)

IGates:

Set your unproto Address to TRACE1-1
Universal path for IGates is APRS,TRACE1-1 (UI-View Style)
IGates that spew out lots of traffic are killing our network.
IGates should be mostly passive; perhaps just sending out beacons/messages for local (<30 miles) stations who are not on RF.

By simplifying the network to only TRACEn-N and RELAY, TRACEn-N guidance and telling users to limit their N's to the minimum needed in their area, then a vast improvement in reliability and throughput can be achieved in a common IARU, Region 1, System.

Check: http://www.apritch.myby.co.uk/uiview_neweu.htm
- for a graphic presentation of the new Paradigm.

Appendix to: Standard Guidelines for APRS in IARU, Region 1.

APRS SSID

Since there are 30,000 APRS users on the air, the APRS maps and data can get very cluttered. Also, most operators have multiple stations on the air, such as their HOME, CAR, BOAT, and HT. It is very convenient to be able to recognize these typical applications at a glance.

It has been discussed, which SSID should be used for which type of APRS station and the following conclusion could be reached which should help to clear up APRS a little bit:

SSID -0 (no SSID) should be used for all fixed stations (home-qth)
SSID -1 should be used for all sorts of gateways (IGATE, Sat-Gate, HF-Gate and so on)
SSID -2 should be used for APRS-TRACE-Digipeater (which are all digipeaters with aliases of
         (RELAY,TRACE and TRACEn-N)
SSID -3 should be used for APRS-RELAY-digipeaters (aliases of RELAY only)
SSID -4 2nd fixed stations (2nd Home-qth)
SSID -5 should be used for WX stations
SSID -6 unassigned
SSID -7 should be used for special mobile stations (truck, bicycle, motorbike, Jeep, bus, RCV ect.,
         NOT for normal cars)
SSID -8 should be used for fixed, portable stations
SSID -9 should be used for normal cars
SSID -10 should be used for Sat-stations (using APRS via satellite)
SSID -11 should be used for TCPIP stations only
SSID -12 unassigned
SSID -13 unassigned
SSID -14 truck 18 Wheels
SSID -15 SW

You are requested to use it, but it's not mandatory.