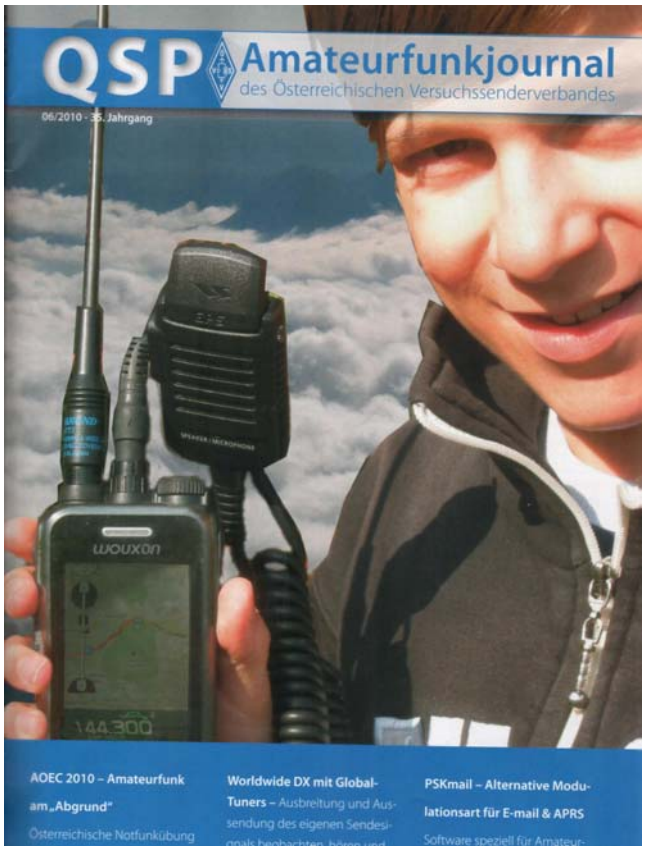
Initiative NEW RADIO

Ham-radios for the future!

For many decades our radios look very much the same. They are dominated by simple monochrome displays for displaying the frequency and miniature buttons with multiple functions.
Even if new functions like APRS are built into a „modern“ radio, the user interface still reminds of an old children's game: „Where are you? At N4817.11 E01634.23 - and where the hell is that ?“
In times of smartphones with 10“ AMOLED-displays and OpenStreetMap on Android and IOS operating systems this way of showing information seems more than ancient.

We want to be able to see the positions of other radio stations comfortably on a map and to navigate to them easily without having to play a game of hide and seek.
It is often said that costs and the lack of durability prevent the use of modern technology, but we believe that the opposite is the case. A high resolution color touch screen from smart phones is produced in millions and offers standardized interfaces which make it cheaper than the monochrome 3 row LCD produced specifically for one radio model, which in the end cannot even show a GPS-position on map or context oriented help text and menus.

Already in the year 2010 I have developed an idea for a handheld radio of the future using a picture editing program together with my son Florian, OE3FTA and printed this design on the cover page of our radio club newsletter.



Following this, some manufacturers started to integrate a bigger screen into some new models of home stations and mobile radios, but these lacked resolution and touch sensibility. A smartphone of this quality would be rejected immediately!

It is not only the operation concept, but also the lack of possibilities to experiment. For this, an open source firmware platform, for which Apps can be programmed, is required so that the radio’s functions can be extended. This includes not only decoders for CTCSS or APRS but also the SDR-like access to HF-core components to be able to develop new operation modes.

It would be plausible to not only receive FM, AM and SSB but also D-Star, C4FM or DMR.
Furthermore the radio could be used as a modem for data transfer. On a long journey the radio could use GPS to load local relay frequencies from an online database and even allow roaming, etc. Rudimentarily this function is already available in some D-STAR handheld radio.

The combination with WIFI (HAMNET) and Bluetooth, as we use them every day, would bring radios connectivity up to date. This could also reduce the effort of installing a mobile radio into a car considerably.

Station radios could communicate with computers or screens wirelessly and therefore avoid the annoying HF-ingress on the sound card interface or on the USB cable.

That the time for change has come is also shown by the presentation by Bruce Perens, K6BP at the Hamcation in Orlando on the topic of „Open Source Hard- and Software in Hamradio“ and the development of the „**HT of the future**“. In which a hand held radio is coded with SDR, which can achieve up to 10 dB gain compared to FM systems thanks to the Free DV-System by VK5DGR and can create a full duplex repeater on a simplex frequency thanks to the TDMA Time Division Method (like TETRA in DMO mode).

As hardware there is the „WhiteBox“ by Chris Testa, KD2BMH. Sadly this radio is far from serial production and the robust appearance in an IP67 casing.

Because of these reasons the OeVSV together with the DARC and the IARU will present a list of specifications for future developments to the major manufacturers in the Hamradio industry at the HAMRADIO 2015 in Friedrichshafen, Germany. High ranking representatives from ICOM and YAESU have already confirmed their participation and willingness to partner for next generations after providing useful equipment to radio amateurs for past years. In year 2015, with IARU and OeVSV celebrating 90years anniversary we should not forget that it has been ICOM, YEASU and KENWOOD providing the community with leading edge products.

As we speak, it seems that already other companies are also ready to enter the market and are also keen to listen to needs of amateur radio enthusiasts. (see latest announcements from Runbo in Schenzen)

Radios should not look like in 1970. „NEW RADIO“ devices should be equipped with modern technology and should employ a user interface different from buttons with 3 functions.

A major requirement for „NEW RADIO“ is an open source firmware or at least an open platform (free SDK) so that new applications can be programmed which orientate the functions with the current developments.

sample Specifications for New Radio handheld

- VHF/UHF SDR (138-173Mhz, 400-478MHz)
- 3-5 Watt HF (class AB)
- detachable antenna (SMA connector)
- FM, C4FM, D-Star, DMR, (SSB)
- AMBE, CODEC2
- Colour Touch Screen
- GPS & Bluetooth (Audio+PTT, data transfer)
- GSM, UMTS, LTE (Sim-card)
- HAMNET (5-10Mhz bw) & Wifi (802.11gn)
- Android OS
- Ingress Protection IP67
- detachable Lion-battery (4000mAh)
- Volume- & Frequency knob on top
- Camera, APRS+ Map (OSM)
- external accessories: Speaker-Microphone,
  SD-Memory card, Dockingstation
  host/client USB enabling data transfer

Support the initiative and send your ideas for the radio (also mobile-TRX, station radios, HF, VHF, UHF, SHF) of the future to ***newradio@oevsv.at***

Together we present the initiative NEW RADIO to manufacturers and journalists at the HAMRADIO 2015 at the OeVSV (Austrian Amateur Radio Society) stand at hall A1 - 145.

Presentation: 27. June from 16:30h stand A1 – 145, followed by an after show party

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