

# Smart radio prototype developed in Finland

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The radio of the future will know the listener's preferences. It will also know when background music is needed and when the user wants to listen intently. The prototype of this online radio learns from user's listening habits, and it is based on a personalisation engine developed by VTT Technical Research Centre of Finland. VTT is searching for a partner to commercialise the idea.

This new kind of [radio](#) provides user-based content in an easy-to-use form: just switch the radio on and let it play. If the programme leaves you cold, just let it play on, but if you like or do not like it, tell it to your radio by giving the thumbs up. In this way, it develops into a radio which adapts its programme content to the listener's preferences and listening situations, while preserving channel branding and respecting the professionalism of broadcasters.

This new type of radio has been developed by VTT Technical Research Centre of Finland, Jutel, Yle, Radio Kajaans, Lingsoft, Unicom Consulting, the University of Tampere, Lausumo Speech Technologies, Adfore Technologies and Tieto via the Personal Radio project forming part of Digile Oy's Digital Services programme. The project involves creating a new kind of radio by combining the expertise, products and services of research institutes and companies. These include text analysis and the use of location data.

Personal Radio works on the basis of VTT's [personalisation](#) engine, which learns from tiny actions by the user while listening, such as giving the thumbs up or down, or switching off the programme. In this way, it

learns the listener's preferences and recommends suitable content from the radio's archives and other sources. Exposure to repeat or unsuitable advertisements can be avoided. The researchers aim to add [speech recognition](#) to the radio's functions to enable easier communications when driving or jogging, for example.

The personalisation engine can create programme preferences by combining listener and programme categorisation with content categorisation based on keyword analysis of radio programmes. Speech recognition and keywords are used to identify similar traits between talk shows. For example, if certain keywords are mentioned just before a listener gives a programme the thumbs up, the personalisation engine deduces that this is because of the words in question or that the listener likes or does not like the programme.

In addition to keyword analysis of programme content, the personalisation engine compares listening histories and concludes that listeners of similar programmes may have similar tastes. However, this amounts only to a guess by the personalisation engine, based on which it may still recommend programmes of a new kind. Further feedback on these can be given to the engine.

Personal Radio presents no threat to the privacy of the listener, since the personalisation engine makes no use of personal details or information on the [listener's](#) interests and hobbies. No pre-loaded user profiles are needed.

Smart radio will enable radio channels to provide more varied and better-targeted programmes. They can use their archives to supplement the day's programmes. Talk-based shows on TV are also suitable for the new radio. Keyword analysis and speech synthesis during radio broadcasts enables the use of press and Internet text archives. Personal Radio will also assist with advert targeting: the personalisation engine can be used to

recognise listeners interested in the same issues.

The radio has been developed for the Android mobile phone system, but can also be converted to other platforms.

The Personal Radio project has demonstrated the technological feasibility of the idea. To make its commercialisation possible, further R&D will be performed in joint projects between research institutes and companies. The next objective is to explore how consumers react to the idea and the resulting behaviour, and to improve the related recognition and personalisation technology. At the same time, Personal Radio will be made easier to install and to run better on various platforms. The goal is to produce a radio for mobile phones which broadcasts content in line with the tastes of individual listeners and is as easy to use as transistor radios once were.

**More information:** Digile Oy's Digital Services programme:  
[www.digital-services.fi/](http://www.digital-services.fi/)

Provided by VTT Technical Research Centre of Finland

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