Universal codec to set sound free

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A unique piece of software that will code any piece of recorded music, or speech, for any device, has been created by a team of European researchers.

The IST project, called ARDOR, developed a unique codec, short for COmpressor-DECompressor. Codecs are the engine under the hood of software media players.

"At the moment there are dozens of standardised sound codecs. Basically each application has its own dedicated codec and these codecs are optimised for specific input signals, such as speech or music, and specific constraints like bit rate," says Nicolle van Schijndel, ARDOR project coordinator and senior scientist at Philips Research Laboratories.

All the standardised codecs work on different devices and software, but it means a tune that plays on your mobile phone won't play on your stereo.

This codec confusion emerged as software companies developed code that optimised music for particular devices: on a GSM or GPRS phone you need to make the file small, so it can downloaded quickly, but on a CD you can use huge files for each song.

The size of the file is determined by the bit-rate of the song, essentially the amount of data that defines all the notes in the song. The more data, the better the quality, but a CD-quality song might take a couple of hours download to a phone.

This is a problem. " Currently, there are two trends. Convergence of consumer electronics and mobile communications, and the emergence of ubiquitous, heterogeneous network environments," says van Schijndel. Networks formed from diverse and disparate devices, like mobile phones, PDAs and computers for example, cannot easily exchange media files and so lose a lot of their functionality.

That may change. ARDOR developed a generic codec that will, if adopted, enable it to code any piece of recorded music or speech for any device. The bit-rate, or file size of each piece of music, is adapted for each receiving device. It can work for everything from mobile phones to broadcasting.

The project was a success, generated a large number of publications and received intense interest from experts in the field. But more work needs to be done.

"The generic sound coding technology is not yet mature enough to contribute to standardisation, but parts of it may very well be included in future standards. We are closely following standardisation activities, such as MPEG4," says van Schijndel.

Another problem faced by the researchers is actually getting hardware and software companies to adopt their technology. Industry players often use their proprietary codecs as a competitive advantage by creating a captive audience.

"They will probably only do this if there is a clear need, for example, because their codecs do not deliver the required functionality such as interoperability. I expect this will be the case, but only future can tell," says van Schijndel.

History is on her side. In the past companies found that consumer

resistance to captivity forced companies to either abandon proprietary standards or share their technology with others. One day music too will be set free.

Source: IST Results istresults.cordis.lu/