

IRLP and EchoLink Developments

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Past Developments

- EchoIRLP developed 2002-2003.
 - VoIP Net combines in 2004 using Analog Gateway.
 - IRLP – EchoLink digital links, September 2004.
 - IRLP/EchoLink Integrated Conference, March 2005.
 - *WX_TALK*/IRLP 9219 integrated for the 2005 season.
 - “Conference Kicker” script introduced prior to Katrina.
 - 2005 – 2008, changes have been incremental and evolutionary.
 - 2007 – Hurricane Flossie near Hawaii. Codec issues due to clash between traditional operating procedures and VoIP WX technical requirements.
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Current Development

- New software (rtpDir and thelinkbox) has become available, Renewed development on existing software such as thebridge.
 - New systems such as D-STAR are rapidly coming online.
 - DV Dongle allows access to D-STAR audio by PC users and third party applications.
 - New capabilities and software are the basis of current and future developments.
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Thebridge – New Capabilities

- Thebridge is the workhorse of EchoLink conferences and the foundation of the VoIP WX Net's infrastructure.
 - New capabilities since 2005 of importance include:
 - Ability to make Speak Freely connections to arbitrary ports.
 - Audio recording/playback now works for both IRLP (GSM only) and EchoLink nodes.
 - ADPCM conference capability (not for EchoLink).
 - RTP outbound connections – possible third party integration.
 - WX_TALK/9219 has been upgraded to the latest version of thebridge.
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New Software – thelinkbox

- Thelinkbox is essentially thebridge with the addition of a multiport repeater controller and a software audio switch matrix.
 - Also developed by Skip WB6YMH.
 - Thelinkbox is capable of handling repeater and simplex links, as well as EchoLink, RTP and Speak Freely VoIP connections.
 - Capable of using both GSM and ADPCM codecs.
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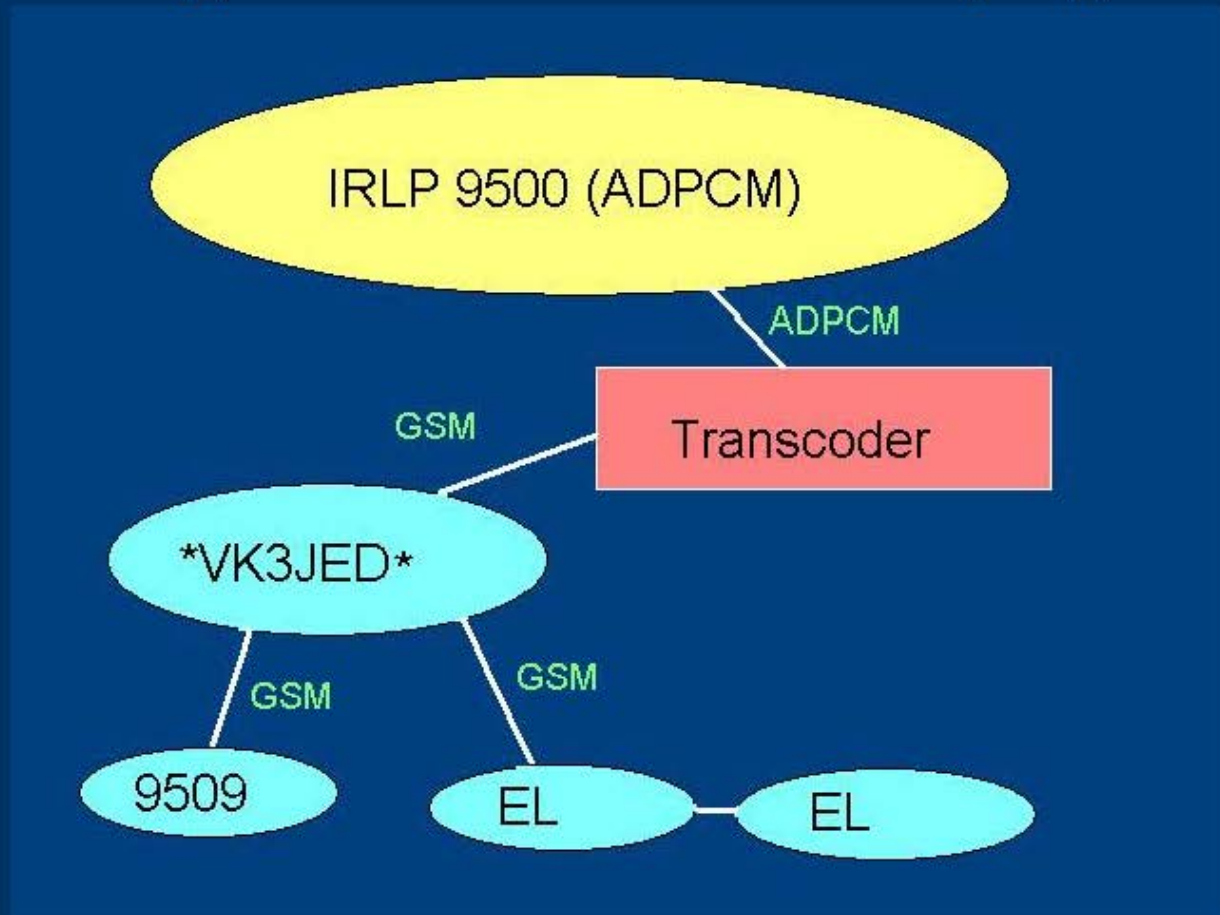
New Software – rtpDir

- RtpDir (RTP Director) is another package that incorporates a conference server and an RF link controller.
 - Developed by Scott KI4LKF and a team of programmers.
 - Requires a GUI (Windows or Linux).
 - RtpDir can handle EchoLink, RTP and Speak Freely VoIP connections.
 - Has an “EchoIRLP” mode of operation, which aims to create an EchoIRLP node without modifying the IRLP scripts.
 - Can be used as a conference server, RF link or both.
 - One VoIP WX NCO using rtpDir as a dispatch console.
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The GSM – ADPCM Transcoder

- Created using thelinkbox and its audio bridging capabilities.
 - Completely software solution, no soundcard required.
 - Audio remains in digital form. Audio latency and degradation are minimised.
 - Can be deployed from an IRLP mode for tactical use, or as a permanent link between ADPCM and GSM networks.
 - Node 6392 transcoder is capable of tactical deployments between any two IRLP reflector channels.
 - IRLP reflector 9500 and EchoLink *VK3JED* are permanently linked – the “VK Megalink”. These are in turn linked to IRLP 9509 (GSM) and several EchoLink conferences.
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“VK Megalink” Transcoder Deployment



Future Development

- EchoIRLP-rtpDir – In testing by KI4LKF.
 - EchoIRLP-NG – Under development by VK3JED using thelinkbox as its core.
 - Will be easy to revert to standard IRLP.
 - IRLP Reflector Redesign – Using thebridge to enhance IRLP reflector functionality.
 - Simple one and two way connections to other reflector.
 - Multiple integrated conferences per physical machine.
 - Simple and dynamic “listen only” connections. Uses thebridge's control capabilities.
 - D-STAR integration – Very new project to link a D-STAR reflector's audio with EchoLink and IRLP using a DV Dongle and thelinkbox.
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Other Possibilities

- D-STAR text integration – It should be possible to link D-STAR low speed data to EchoLink's text box across the network.
 - Further interoperability is dependent on open specifications and protocols. This is why D-STAR integration is likely before any digital links to eQSO, for example.
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Thanks

- Skip WB6YMH – author of thebridge and thelinkbox.
 - Scott KI4LKF – author of rtpDir.
 - Danny KD4RAA and Kevin KD5WX – for trusting me with 9219 and *WX_TALK* respectively.
 - Pete VK2YX for approving the installation of the transcoder on 9500 and 9509 on a permanent basis.
 - Kent W7AOR for access to the test reflector for developing the new IRLP reflector system.
 - Various other developers, vendors and amateurs who have made this all possible.
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Questions?

