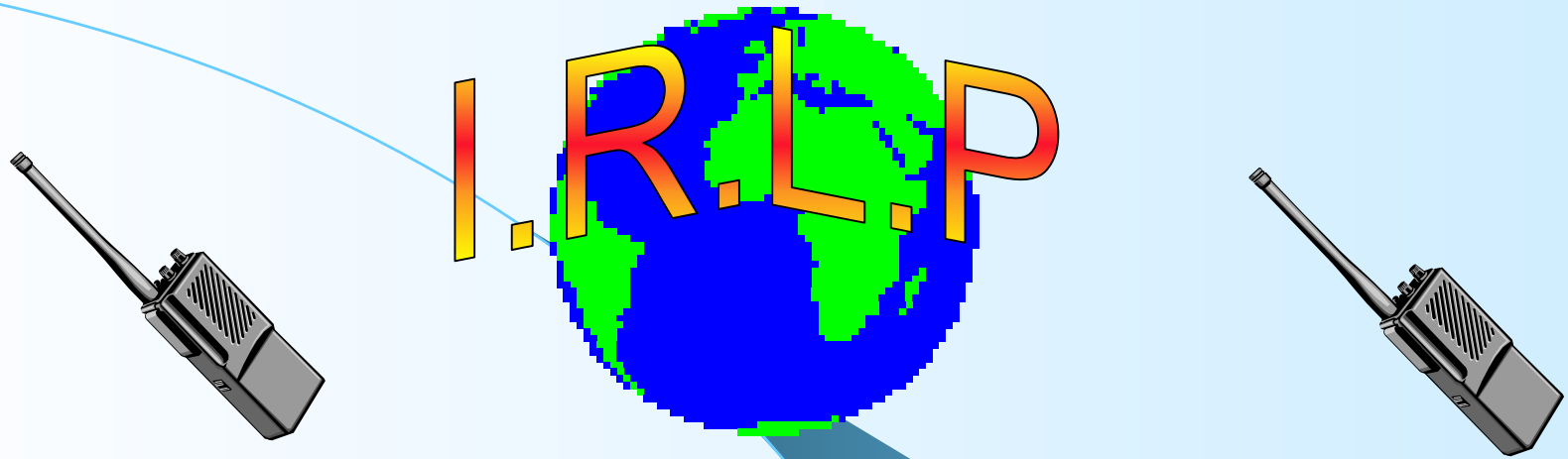


# The Internet Radio Linking Project



Presented by **VE7LTD**

IRLP System Designer

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# Topics of Discussion Presentation No. 1

- Introduction of IRLP
- How IRLP Started
- Other Amateur VoIP Systems
- What is EchoIRLP
- What is EchoIRLP NOT
- What Does the Future Hold?

# Introduction - IRLP

- Provides a simple and easy system to link radio systems together.
- Used to replace other RF and leased line based links.
- Provides a radio link to any place with an internet connection.
- Software and hardware requirements are minimal :  
Use the old PC collecting dust in your closet.
- Low startup and operational cost.

# How IRLP Started

- 1996 QST Amateur Radio article titled 'A New "Band" for Your Radio' by James Millner, WB2REM
- The article combined my two favourite hobbies; Ham radio and the internet.
- Original systems used Iphone, an old windows based voice-over-IP package
- I found the system very unreliable, and very insecure. Any person on the internet could talk through my repeater.
- Iphone used VOX, which caused the first few words to be missed, and unnecessary delays in the transfer of the audio.
- There was no easy way to control the link. I had to install DTMF decoders to remove the power to the radio! I had another DTMF decoder set to reboot the unreliable Windows machine.

# How IRLP Started (cont'd)

- I set out to design a system that would be reliable and controllable, with protection to keep the non-amateurs on the internet from using my repeater.
- Decided on LINUX for its superior networking stack, security, and reliability.
- Speak Freely is the voice over IP client/server package that transmits live audio (i.e. speech) over the internet with surprising clarity and quality.
- I designed a control package that uses a secret/private key authentication system known as PGP. This is the heart of the IRLP security and ensures that nobody can pretend to be someone they aren't.
- I promoted the system to local hams, and the system started to grow.

# Amateur Voice Over IP Systems

- Repeaterlink (1996-1998)
  - Designed to use VocalTech's Iphone software
  - Used Microsoft Windows platform
  - Very unstable – Frequent crashes
  - No security – Anyone on the net could call your repeater
  - Not controllable by radio
  - Software required expensive licensing
  - Used VOX circuits in both directions – long delays and missed words

# Amateur Voice Over IP Systems

- IRLP (1997-present)
  - Built on Speak Freely software (Linux and Windows)
  - Based on stable Linux platform
  - Very stable
  - Each connection is radio to radio only – no headsets
  - Heavy security to ensure Amateur-only access
  - Fully controllable by radio
  - Used hardware DTMF and COS circuitry
  - Scripting makes further development easy
  - Still growing

# Amateur Voice Over IP Systems

## ➤ ILink (1999-2001)

- Written by Graeme Barnes, M0CSH
- Based loosely on Speak Freely software (Windows)
- Based on Microsoft Windows platform
- Designed to provide a system for people who wanted to use headsets to talk over radio (as IRLP would not)
- Very unstable – Could not leave unattended
- Subscription based security – Fairly loose
- Controllable by radio
- Used software DTMF and COS circuitry
- Simple interface to radio
- No longer in existence



# Amateur Voice Over IP Systems

- EQSO (1999-Present)
  - Unknown what base software is (Windows)
  - Based on Microsoft Windows platform
  - Allows use of headset speaker/microphones
  - More stable than Ilink – Could leave unattended
  - Fairly loose security
  - I know little about system
  - Mainly concentrated in the UK
  - Very small growth

# Amateur Voice Over IP Systems

- Echolink (2000-Present)
  - Written by Jonathan Taylor, K1RFD
  - Uses same software base as Ilink
  - Promoted as a more powerful Ilink replacement
  - Many people switched from Ilink to Echolink, basically depleting the Ilink system
  - Still growing

# Amateur Voice Over IP Systems

- Hamlink (2001-2002)
  - Uses same software base as Ilink
  - Tried to use a pay-by-subscription system
  - Based in Australia
  - Some great ideas and features
  - Never grew past the Beta stage

# Amateur Voice Over IP Systems

- Wires (2003-present)
  - External hardware with Windows based client software
  - Loosely based on IRLP node concept – RF at each end
  - Attempt by Yaesu to enter amateur VoIP
  - Commercially controlled servers not very reliable
  - Designed to be compatible with Yaesu hardware
  - Several nodes in Japan, few in North America
  - Very little use

# What is EchoIRLP?

- It is a Linux IRLP computer, running a Linux version of Echolink.
- It is a way that an IRLP computer and interface can act as BOTH an IRLP and Echolink node.
- It is way to allow people who are running IRLP access to the Echolink network.

# What is EchoIRLP NOT?

- It is NOT a way to crosslink IRLP and Echolink.
- It is NOT a way for Echolink nodes to dial up the IRLP system.
- It is NOT IRLP connecting to Echolink.

# What Does the Future Hold?

- Anticipate that both IRLP and Echolink will continue to grow.
- Packages such as EchoIRLP will expand the usability of some IRLP nodes.
- More use of IRLP hardware/software for simple linking repeater controller.
- More private IRLP links/reflectors will come into use.
- More commercial interest in this technology will spawn IRLP and Echolink knockoffs for commercial use.

# Resources on the Web

- Active IRLP Status Page

<http://status.irlp.net>

- IRLP Homepage

<http://www.irlp.net>



# Local IRLP Nodes

## ➤ VHF Repeaters

VE7RHS – 145.270- at UBC

VE7RNA – 146.680- in Chemainus

VE7ROX – 145.150- in Burnaby

VE7RVA – 146.610- in Abbotsford

VE7VIC – 146.840- in Victoria

VE7MFS – 145.310- in Coquitlam

## ➤ UHF Repeaters

VE7RHS – 441.975+ at UBC

VE7MAN – 443.600+ in Surrey

VE7RNV – 444.950+ in North Vancouver

VE7RAD – 444.700+ in Chilliwack

VE7RMR – 443.625+ in Maple Ridge

# Using an IRLP Node

- View the Guidelines
  - <http://www.irlp.net/guidelines.html>
- To dial call node, enter its node number by DTMF
  - Node numbers are found on IRLP status page
- To disconnect, enter the DTMF code “73”
- Demo

# Questions?

- Any questions?