Internet and Radio: The Fun of VoIP

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What We're Covering

What is VoIP?

How does VoIP work?

What are the systems of VoIP?

How do you use VoIP?

Some Background

Imagine:

- Sitting in your shack, having an "armchair contact" with someone:
  - Riding a bike through a canyon in California
  - Walking on a pier in southern Ontario
  - Driving home in northern Vermont, chatting about border operating protocol
  - All while the band conditions are bad!
- Standing outside the Boeing Air Museum in SeaTac, WA
  - Chatting with friends in Florida…on a handheld!
- Using a remote radio to make contacts from-almost anywhere in the world!

Each of these are actually contacts that I've made using the magic of radio-with a little help from VoIP.

What is VoIP?

Stands for "Voice-over Internet Protocol"

In short, VoIP systems use internet links to provide greater range and flexibility for ham operators

In other words, VoIP allows hams to utilize technology to make contacts that would otherwise be difficult or impossible.

How does VoIP work?

Three main operating modes: operator-to-operator, "repeater style," and Reflector/Conferencing.

- ◦ Operator-to-operator: Basically simplex-uses the internet to link the two operators together.

- ◦ "Repeater style": Allows multiple operators to link together, similar to a repeater-but again, using internet links

- ◦ Reflectors/Conferencing: Similar to a linked repeater system.

What are the systems of VoIP?

Two main ones:
◦ Internet Radio Linking Project: IRLP
◦ Echolink

Some other VoIP modes of note:
◦ Yaesu's "WIRES-II"
◦ eQSO
◦ iLink

IRLP vs. EchoLink-A Comparison

IRLP	Echolink
Requires an actual radio to use	Can be used with a radio or computer (even smartphones!)
Only comes out on "the other end" with an actual radio	Can be used for direct contacts without any radios involved
Can be used by any licensed Ham-no accounts required	Requires an account in the Echolink system
Require a Ham License to use-and thus require observation of FCC rules at all timess	

Reflectors and Conferences

Basically the same thing: IRLP has reflectors, and EchoLink has conferences.

Think of linked repeater systems-but using the internet for the links.

Has some interesting implications:
- Allows for nationwide and international nets
- Allows Echolink and IRLP to become "EchoIRLP," merging the two systems together.
- Makes it easy to find QSO's-there's almost always someone monitoring

How do you use IRLP?

Getting started:

1.   Find a node to use

2.   Make sure the node isn't busy

3.   Dial the node number that you want to connect to

4.   Listen for the connection
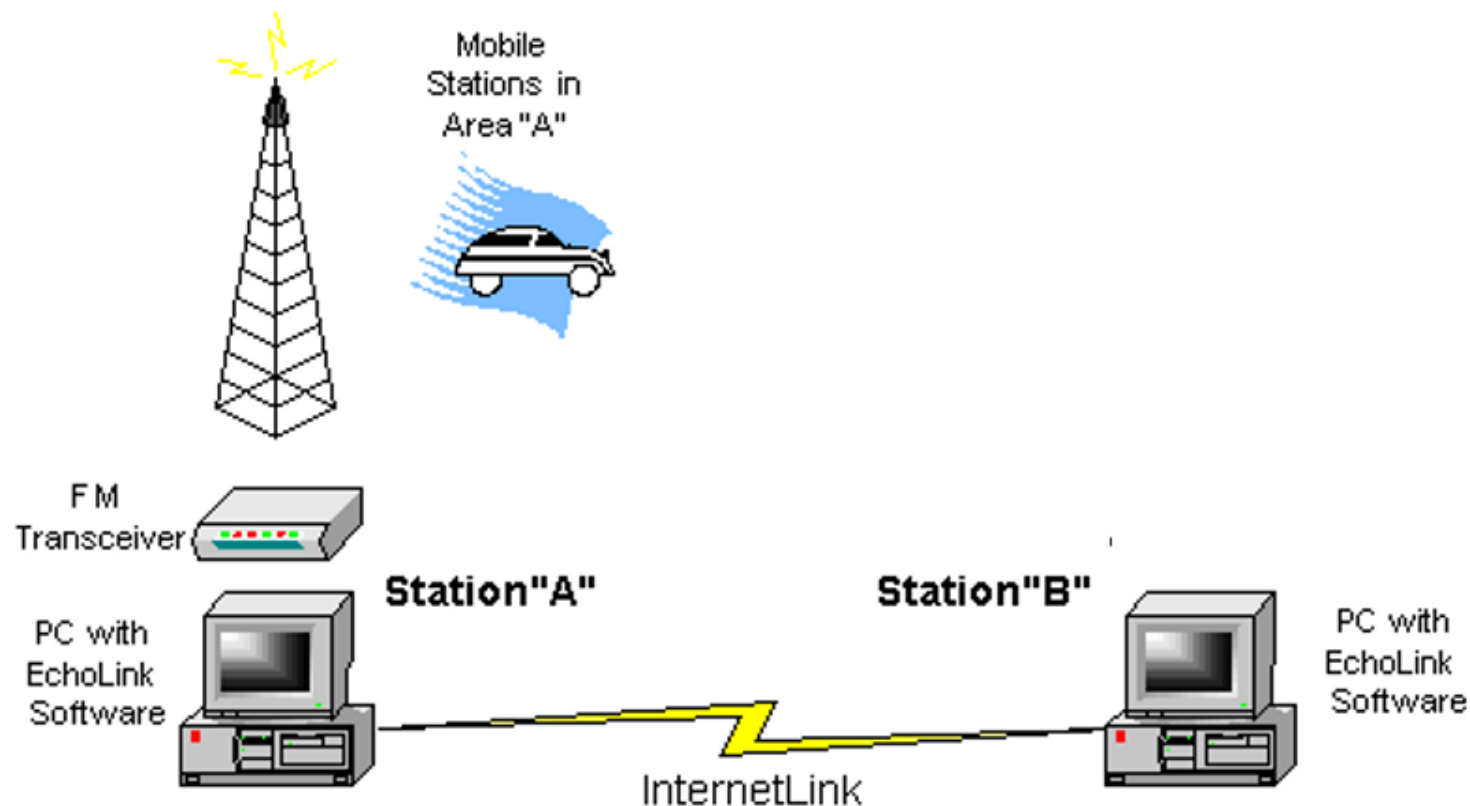
5.   Start talking!

When you are done:

1.   Disconnect (dial 73)! (Very important!!!)
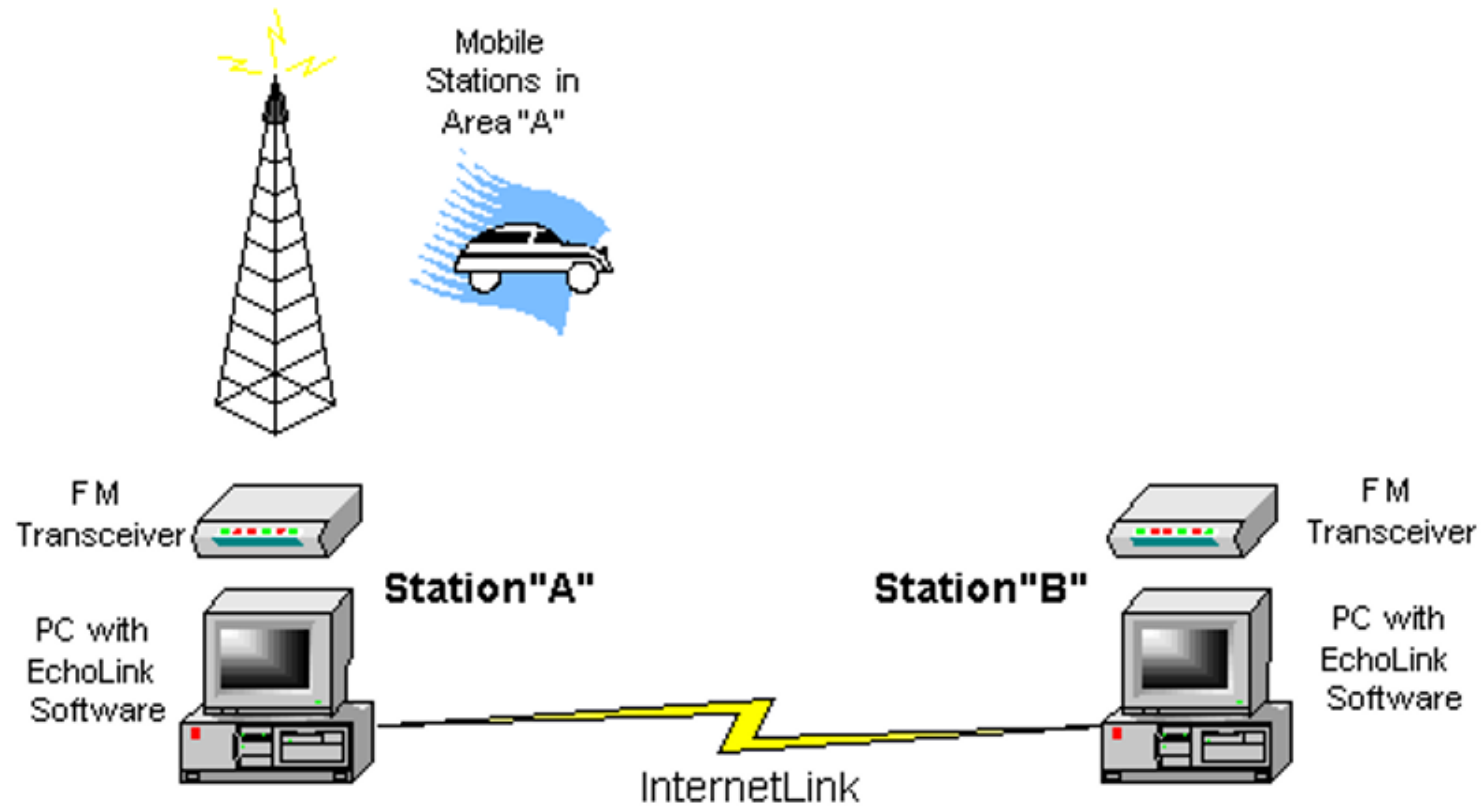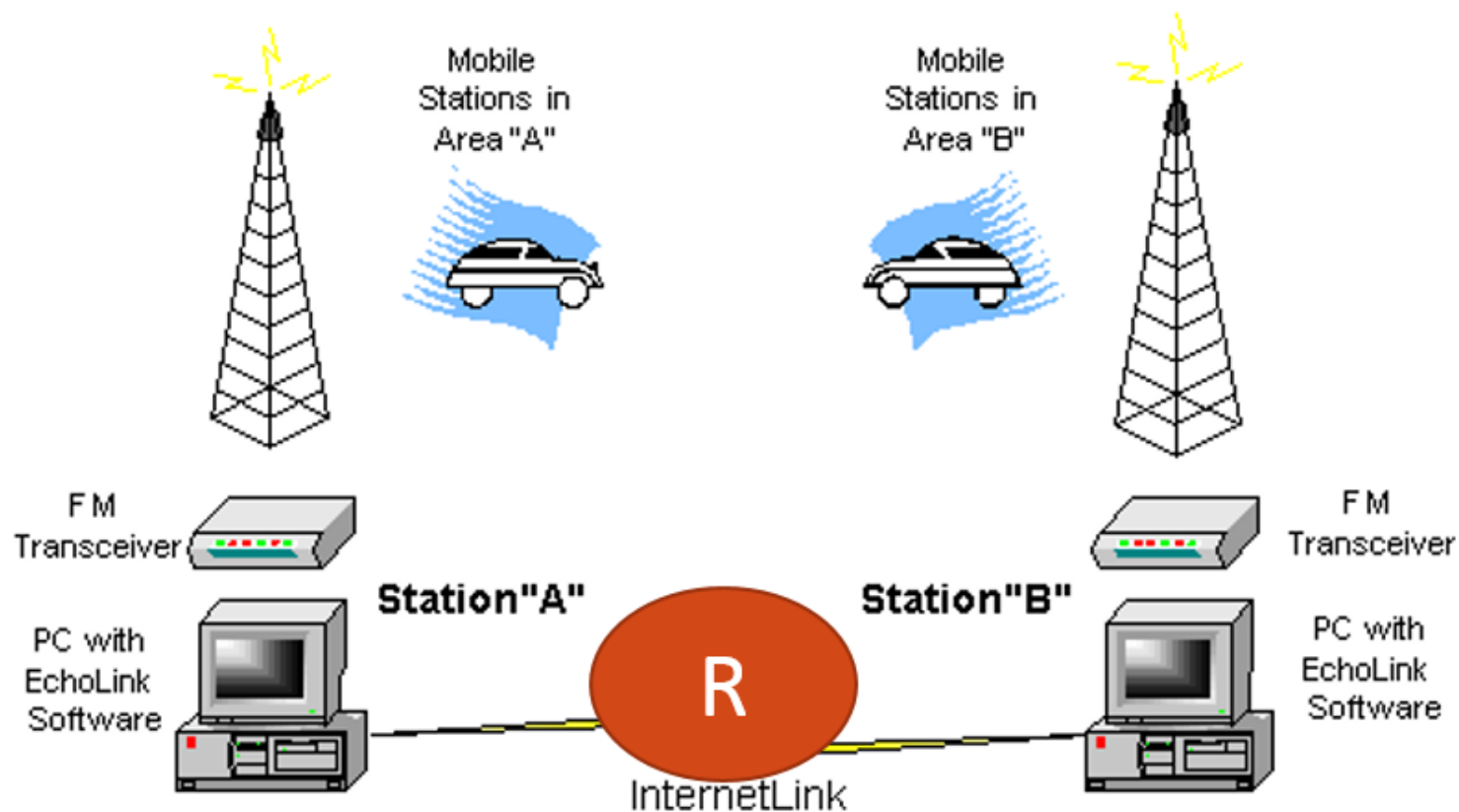
2.   If on a repeater, sign clear.

Linking Example

PC with EchoLink Software — Station"A" · InternetLink · Station"B" — PC with EchoLink Software

Linking Example

Linking Example

Linking Example

How do you use Echolink?

Setup:

1. Download the EchoLink client (computer or iOS device)

2. Apply for an account (requires ham license)

Making a contact:

1. Check your audio! (Use *ECHOTEST* node)

2. Find a node

3. Start talking!

4. Just disconnect when you're done

Some helpful things:

Remember to pause before speaking when using VoIP systems and modes!!!

Remember to disconnect when through on IRLP-dial 73!!!

Suggestions for getting started:
- IRLP: 9050-"East Coast Reflector"
  - Easy access- Lake Alfred 146.565 with 127.3 PL (always on-no dialing necessary)
  - Next step: WC4PEM network
- When traveling, talk back home! WC4PEM is node 4128 on IRLP
- EchoLink: *DODROPIN* conference- "Ladies Tea Time Net," Tues. 7p-9p Eastern

Websites for more information:
- www.irlp.net
- www.irlp.net/google.html-geographically find IRLP nodes
- www.echolink.org
- www.repeaterbook.com-look up IRLP and EchoLink repeaters (good for travelers)
- QST Article from Feb. 2003- "VoIP and Amateur Radio" by Steve Ford