So you want to do a live remote?

What, where, how?

This presentation was created by Simon Frech with Otis Maclay for the Grassroots Radio Conference, August 14-17, 2014, at KHOI, Ames, Iowa.

Drive your remote bus with your large professional staff to the location. Connect to the dedicated line you ordered from the phone company. No problem.
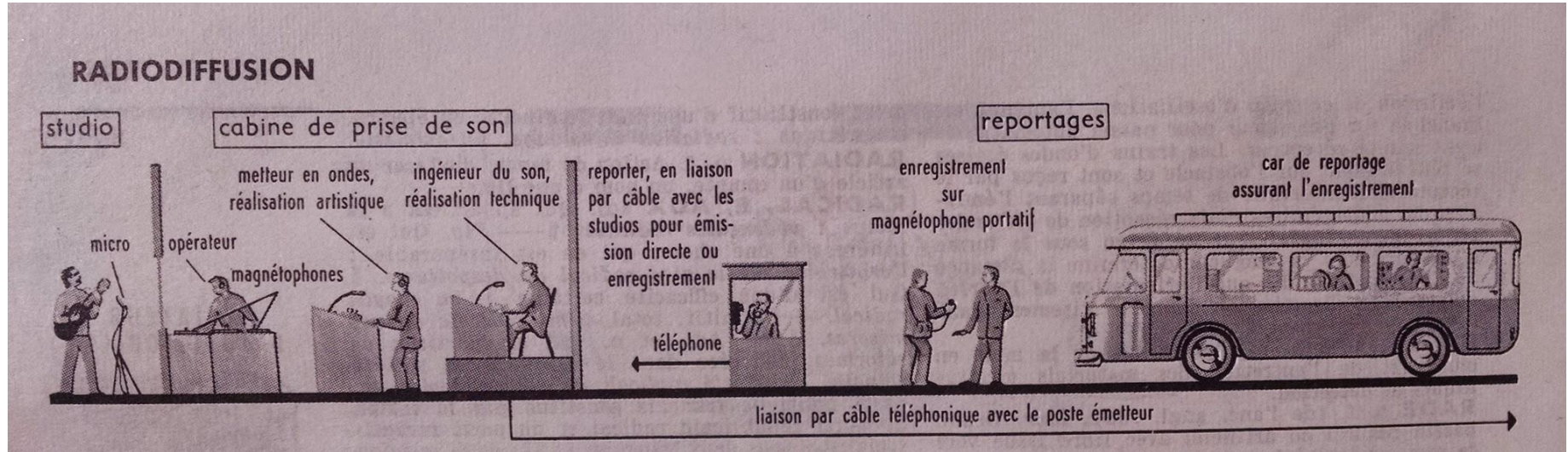

image from 1960 Petit Larousse encyclopedia

Location, what kind of event?

Rally

Demonstration

Public Meeting

Sports

Concert

WORT Operations Coordinator Norman Stockwell and DJ Bad Sister Heidi staffing the remote radio station. Photo by Rebecca Kemble.   link

Check out the location, options

Who is the contact? One contact, please!

Where's the power outlet? Bring a UPS.

Where's the phone line?

Where's internet access?

WiFi can work, wired is better.

Don't share WiFi with many others.

Mobile networks: Maybe

How to get the audio to the studio?

Modes of transmission:

    Phone (POTS)

    Internet (wired or WiFi)

    Mobile (G3, G4)

    Wireless link (your own)

    Marti RPU

One way or two way?

Simplex

Duplex

Stream: One way only with several seconds delay.

Real time: You can have a conversation between remote location and studio.

Codecs you can buy

Comrex Access
portable
$3,500

connections:
phone
mobile networks
(with USB modem)
ethernet

Codecs you can buy

Comrex Access
Rack unit
$2,750

connections:
phone
mobile networks
ethernet

Codecs you can buy

Telos Z/IP One
$2,000

connections:
ethernet
mobile networks
(with USB modem)

Codecs you can buy

Tieline Bridg-IT basic
$1,500

connections:
ethernet
mobile networks
(with USB modem)

Tieline Bridg-IT Pro
$2,050 adds AAC, other features.

Codecs you can buy

APT Horizon NextGen
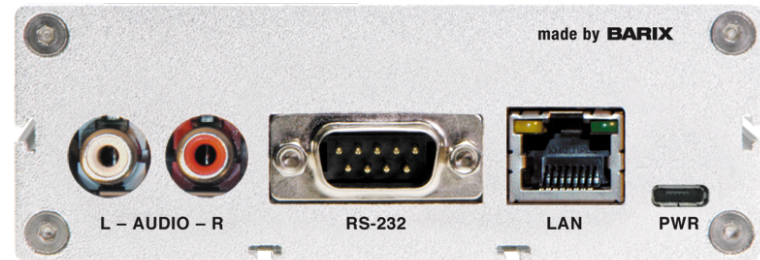$2,150

connections:
ethernet
mobile networks
(with USB modem)

"Surestream"
redundancy
No front panel
control

One way stream using a "Barix box"

Barix Instreamer is a very small box for streaming mp3 or PCM. Control via built-in web interface. In my experience very reliable. $365.

Using a computer

Do it on the cheap...

Use a computer to stream

Mac

Nicecast ($59) mp3 only

Ladiocast (free) ogg, mp3, AAC, HE-AAC

butt (free) (broadcast using this tool)

PC

Winamp (free) with Edcast plugin can do mp3, AAC, HE-AAC. Codec license questionable

butt (broadcast using this tool)

Linux

butt, others?

Just about any computer will work

A few years old? No problem.

Use external sound card (USB audio adapter) or a mixer with built-in USB connection.

Turn off all other applications.

You'll need an icecast server

Get through firewalls

Add capacity

Setup your own

Use someone else's

giss.tv is free for noncommercial content

streamguys.com if you need more capacity

Ask Otis!

Use online services for two-ways

Skype

ipDTL

SourceConnect

Google Hangouts

Luci live (lite)

webrtc

Skype

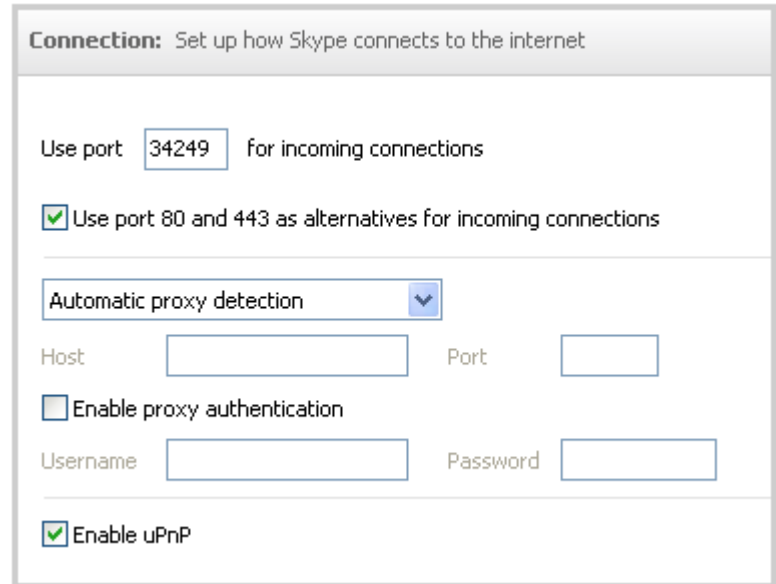| Pros	Cons
Easy to setup	Not always realiable
Free	Not for music
Sounds pretty good for voice	Yet another update

Making Skype better (geeky)

On your station's network router, open the port for the Skype computer. It may just improve the connection a bit.

When you install Skype, a port above 1024 is chosen at random as the port for incoming connections. You can configure Skype to use a different port for incoming connections if you wish, but if you do, you must open the alternative port manually.

If the port chosen for incoming connections becomes unavailable, by default ports 80 and 443 will be used as alternatives. If another application (such as Apache HTTP server or IIS) uses these ports, you can either configure the application to use other ports, or you can configure Skype to not use these ports.

1. In Skype, from the menu bar, click **Tools** > **Options**.
2. Under **Advanced**, click **Connection**.

Connection: Set up how Skype connects to the internet

Use port [34249] for incoming connections

☑ Use port 80 and 443 as alternatives for incoming connections

Automatic proxy detection ▼

Host [   ]   Port [   ]

☐ Enable proxy authentication

Username [   ]   Password [   ]

☑ Enable uPnP

ipDTL.com

Pros

Easy to setup

Free for one to one at 40kbps

Uses OPUS codec

Sounds great

Built-in text chat and other tools

Cons

Needs subscription for more connections and higher bitrates

Chrome browser only

Not iOS or Android compat.

now.source-elements.com

Pros

Easy to setup

Free for up to 4 simultaneous connections at 128kbps

Uses OPUS codec.

Sounds excellent

Built-in text chat

Latest Chrome browser including Android

Cons

Once beta version expires you will need subscription for more connections and higher bitrates

Chrome browser only

Not iOS compatible

Google Hangouts on air

Pros

Free

Good sound quality

Don't need camera

Can do private link if not "broadcasting"

Can involve several parties

Cons

Setup not easy

Chrome browser only

Problems with copyrighted material

LUCI live

LUCI live and LUCI live lite are mobile phone and Mac/PC apps that connect you at good to excellent quality to the studio.

Download demos: LUCI.eu

WebRTC

WebRTC is a free, open source project that enables web browsers with Real-Time Communications (RTC) capabilities via simple JavaScript APIs.

http://www.webrtc.org

OpenOB: Help us use it!

OpenOB can be used for:

> Studio to studio contribution links
>
> Outside broadcast contribution links
>
> Talkback links
>
> Studio to transmitter distribution links

It can be used on a variety of network connections (including over the internet and mobile links such as 3G), with operating bitrates as low as 16kbps in compressed mode, and support for fully lossless operation in linear PCM mode.
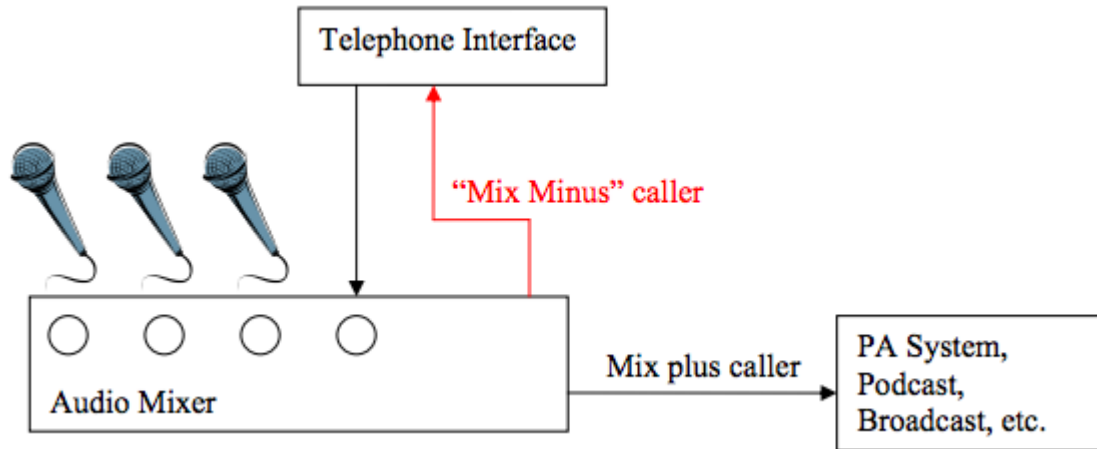
http://jamesharrison.github.io/openob/

Mix Minus

Just like with on-air telephone calls, everything EXCEPT the phone call audio goes back to the caller.

You can use the AUX bus on your mixer to create the mix minus bus.

Things to take along

UPS

Adapters

Extra cables

Splitters

Hum eliminator

Studio Hub

Cat 5 cables

Questions?
Comments?

Thank you!

Simon Frech, Redwood Community Radio, Redway, California. simon@kmud.org