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.
Location, what kind of event?

Rally
Demonstration
Public Meeting
Sports
Concert
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?

<table>
<thead>
<tr>
<th>Simplex</th>
<th>Duplex</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stream: One way only with several seconds delay.</td>
<td>Real time: You can have a conversation between remote location and studio.</td>
</tr>
</tbody>
</table>
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
Barix Instreamer is a very small box for streaming mp3 or PCM. Control via built-in web interface. In my experience very reliable. $365.

One way stream using a “Barix box”
Using a computer

Do it on the cheap...
## Use a computer to stream

<table>
<thead>
<tr>
<th>OS</th>
<th>Program</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mac</strong></td>
<td>Nicecast ($59)</td>
<td>mp3 only</td>
</tr>
<tr>
<td></td>
<td>Ladiocast (free)</td>
<td>ogg, mp3, AAC, HE-AAC</td>
</tr>
<tr>
<td></td>
<td>butt (free)</td>
<td>(broadcast using this tool)</td>
</tr>
<tr>
<td><strong>PC</strong></td>
<td>Winamp (free)</td>
<td>with Edcast plugin can do mp3, AAC, HE-AAC. Codec license questionable</td>
</tr>
<tr>
<td></td>
<td>butt</td>
<td>(broadcast using this tool)</td>
</tr>
<tr>
<td><strong>Linux</strong></td>
<td>butt, others?</td>
<td></td>
</tr>
</tbody>
</table>
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

<table>
<thead>
<tr>
<th><strong>Pros</strong></th>
<th><strong>Cons</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Easy to setup</td>
<td>Not always reliable</td>
</tr>
<tr>
<td>Free</td>
<td>Not for music</td>
</tr>
<tr>
<td>Sounds pretty good for voice</td>
<td>Yet another update</td>
</tr>
</tbody>
</table>
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**.
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.
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