PUSH Radio

Wisconsin Broadcasters Association

Broadcasters Clinic

October 2010

Jeff Welton

Regional Sales Manager, Central US

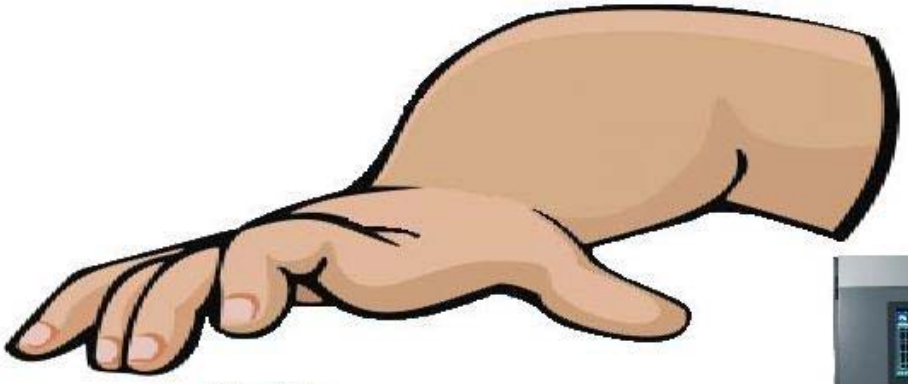
Nautel

ALL

Making Digital Radio **Work.**

Traditionally, Radio has been a pull-through medium

- Content is originated at studio, or sent to studio via satellite or other means
- All scheduling, playlists, traffic, spots, coordinated at studio
- Requires personnel to be at studio instead of out in the streets where customers are
- Requires careful timing, production and scheduling
- Less interactive or proactive, mostly reactive



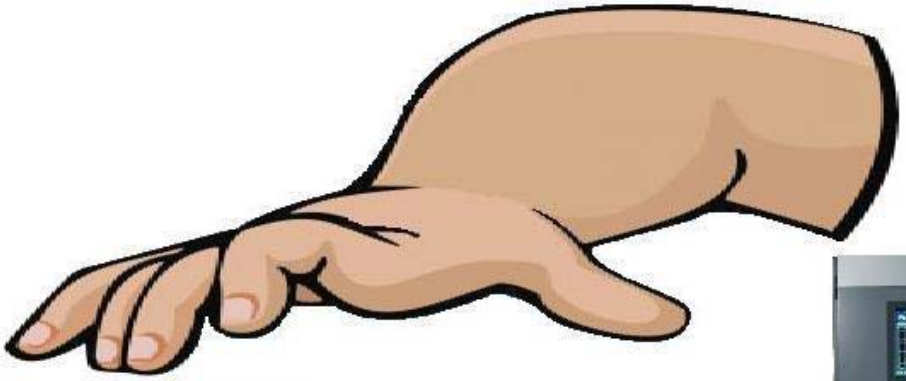
CONTENT

ALL

Making Digital Radio Work.

Traditionally, Radio has been a pull-through medium

- Control and monitoring of transmitter site done from studio or via dial up remote
- Traditionally limited in scope to 8-16 channels or functions, depending on control system used
- Any additional investigation required trip to transmitter site, using Engineering resources



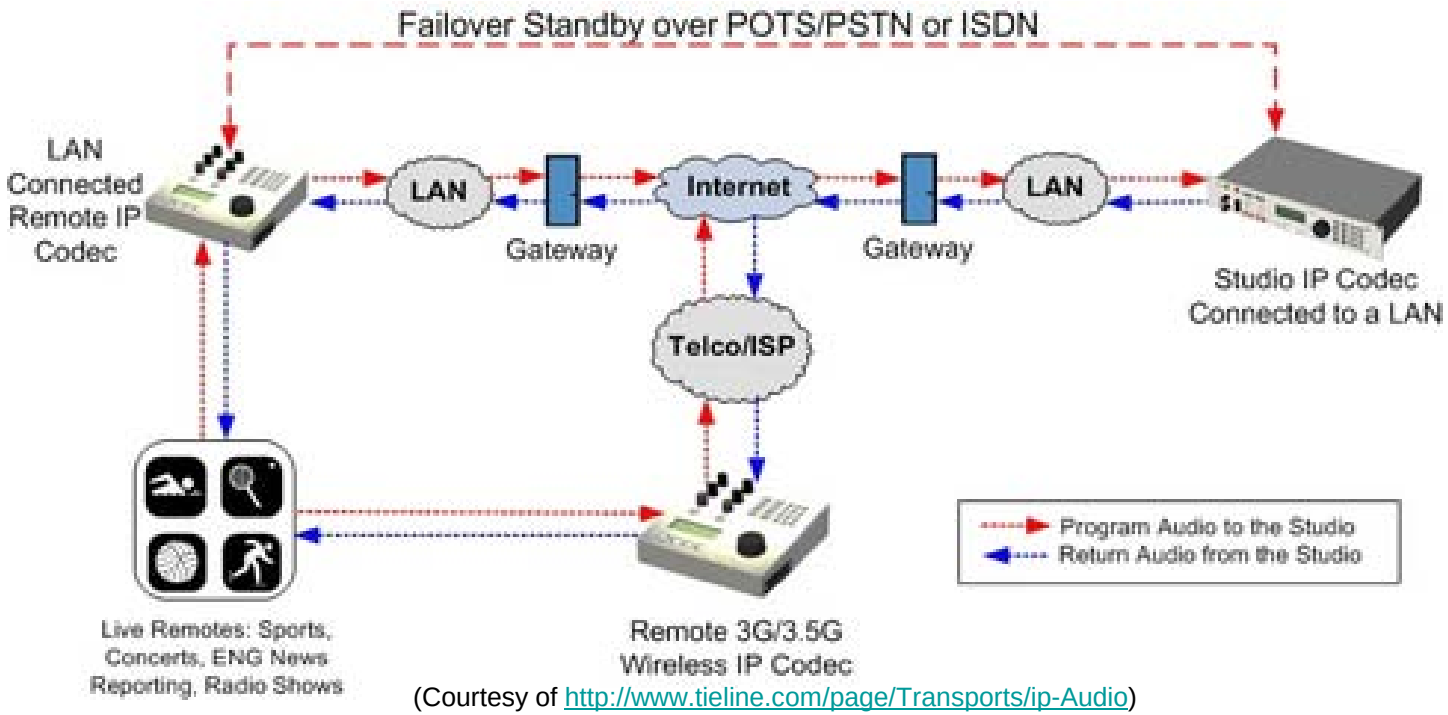
ALL

Making Digital Radio Work.

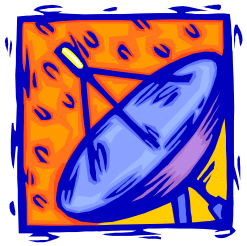
But IP can change everything (well, almost everything)

Studio audio

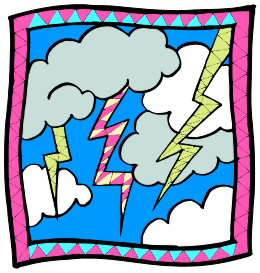
Remote broadcasts



(Courtesy of http://www.tieline.com/page/Transports/ip-Audio)



Satellite feeds



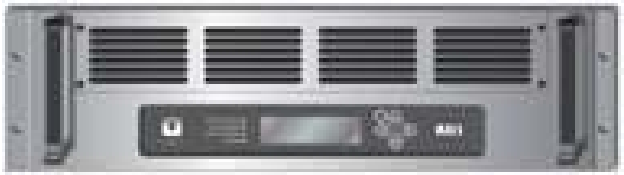
EAS audio

NULLSOFT SHOUTcast Streaming Technology

ALL Internet streaming

Making Digital Radio Work.

Now all we need is a way to PUSH content to the transmitter



ALL

Making Digital Radio Work.

Then the transmitter needs to speak the language…

- Advanced User Interface
- IP Audio I/O
- Livewire & Shoutcast Support
- Local emergency audio play out is built in the transmitter (USB)
- Upgrade to digital
  - HD Radio
  - DRM+
- Advanced instrumentation
- SNMP Enabled
- Internal playlist generation

ALL

Making Digital Radio Work.

Now content can be PUSHed directly to the transmitter

- Send audio from any source/location via wireless IP or LAN
  - Streaming audio
  - Recorded files/reports
  - Live event programs/remotes
  - EAS decoders
  - Studio audio (e.g., drive hosts, live guests)
- Send in real time or record to USB for later playback
- Use playlist generator for “non-real-time” playback
- Use transmitter’s preset selections to choose audio source

ALL

Making Digital Radio Work.


Date & Time
Fri Feb 12 2010
11:09:45
Active Preset: Preset 4 (4)
Power
0.00 kW
Analog
Set Point
0.05 kW
Mode
FM
Reflected
0.00 W
Frequency
98.1MHz
Exciter
Active Exciter :
Internal
FM Modulation
0%
100% +Pk:8
160%
Software Configuration
Maintenance
Network Setup
Upgrade Software
Watchdog Setup
Email Configuration
Notifications
USB Devices
Upload Files
Playlist
Playlist
Playlist
Volumes
Streams
Sequence
Type
Volume
Name
Remove
Move Up
Move Down
Save
Start
Stop
RF On
RF Off
System Mode set to Remote
RF Off received.
RF Off received.
Menu
Status
Log
Local
Remote
Reset
Change User

In addition, transmitter can be controlled or monitored…

- Advanced User Interface is fully web accessible – this will eventually be a standard for most manufacturers as software defined transmitters become the norm, rather than an exception.
  - Provide local level control and monitoring over IP
  - Permit Engineering to troubleshoot without needing to drop everything and run to the transmitter site.
  - Provide the ability for factory tech support to have detailed troubleshooting logs
  - Can provide an email alert for any non-functional parameter
- Provide instrumentation not commonly available
  - Spectrum analyzer functionality
  - Audio baseband analysis
  - Metering down to individual component current levels

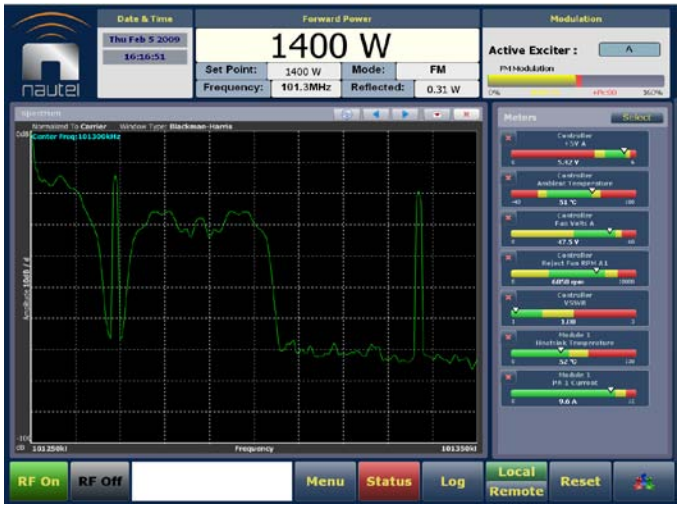
ALL

Making Digital Radio Work.

As an Example - VS Series FM

Advanced User Interface

- Local or remote access using web browser
- Management/control
- Extensive logging
- Presets
- Advanced Instrumentation
- SNMP Enabled
- User Accounts (multi-level access)
- Emails alarms – including wait times
- Different types of alarms – dif emails
- Monitor, control, diagnostics & playlist



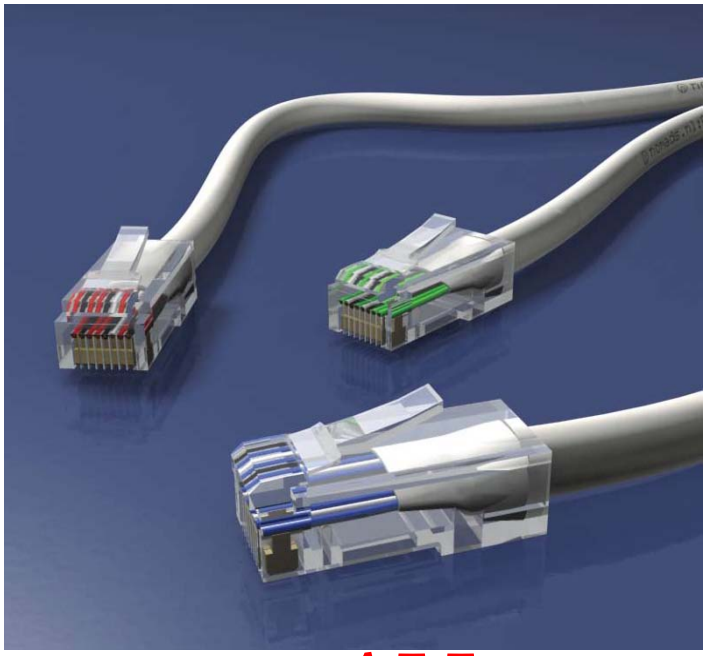
ALL

Making Digital Radio Work.

As an Example - VS Series FM

IP Audio I/O

- Direct IP audio input
- Stream
- Livewire for real-time uncompressed digital audio
- Now all devices can connect using IP
- OR analogue L/R, AES/EBU, Composite all standard
- Auto-switches to next feed then to internal USB drive



ALL

Making Digital Radio Work.

VS Digital Radio Upgrade

- Simple inexpensive digital upgrade (available late 2010)
- Compact 2RU chassis includes Exgine or DRM+
- Supports Reliable HD Transport
- Real-time spectrum Analyzer

Making Digital Radio **Work.**