Audio Compression:
Are we squeezing the life out of radio?

Mary Ann Seidler
Tieline Technology

Welcome!

- 1990’s – MPEG standards introduced
- Mid 1990’s - Cascading tests performed....
ISO-MPEG Compression Guidelines

<table>
<thead>
<tr>
<th>Bit Rate</th>
<th>Number of Transcodings</th>
</tr>
</thead>
<tbody>
<tr>
<td>384 kb/s</td>
<td>10</td>
</tr>
<tr>
<td>256 kb/s</td>
<td>5</td>
</tr>
<tr>
<td>192 kb/s</td>
<td>2</td>
</tr>
<tr>
<td>128 kb/s</td>
<td>1</td>
</tr>
</tbody>
</table>

Why is cascading such a problem for these algorithms?
MPEG codecs are perceptual

Source material is often pre-compressed

- Music
- Commercials
- Voice overs
- Sound effects
Where do we have some control?

- Audio codecs
- Smart phones
- Smart phone apps
- Remotes
- Automation systems
- Satellite feeds
- Remote studios
- STL links
Example of a compression chain

```
News source ➔ News bureau ➔ Satellite ➔ Radio Station ➔ Automation ➔ STL ➔ Transmitter
```

"The Curse of the Cascading Codecs"
Will we soon need warning labels?

---

ANY FUTURE DUPLICATION OF THIS PRESENTATION USING AUDIO COMPRESSION TECHNOLOGY SHALL CREATE ADDITIONAL CODING ARTIFACTS THAT WILL ALTER THE SONIC INTEGRITY OF THE ORIGINAL AURAL COMPARISONS. THEREFORE, ANY SIMILARITY BETWEEN THE AUDIO SOURCE AS ORIGINALLY RECORDED AND SUBSEQUENTLY REPRODUCED IS PURELY COINCIDENTAL!
Yes, we care...

But does anyone else?
HTC recently purchased Dr. Dre’s company for $30 million dollars...

Someone is putting their money on $$ for audio quality
Young people prefer quality audio

Survey results from Sean Olive,
Director of Acoustic Research –
Harman International, 2011

Why should audio quality matter
to us in radio?
Why should audio quality matter to us in radio?

We’ve come from this...

We’ve come from this... ...to this
It’s just too easy to turn us off

So what can we do?

Here are four suggestions:
1. Draw up a plan

2. Test your audio chain
3. Insist on higher bit rates

4. Minimize compression in STL’s
Is that all there is?

OPUS!

www.opus-codec.org
For more information, please contact me:

Maryann@Tieline.com

Thank you!