

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

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Welcome!



- 1990's – MPEG standards introduced
- Mid 1990's - Cascading tests performed....



## ISO-MPEG Compression Guidelines

<u>Bit Rate</u>	<u>Number of Transcodings</u>
384 kb/s	10
256 kb/s	5
192 kb/s	2
128 kb/s	1



Why is cascading such a problem  
for these algorithms?



MPEG codecs are perceptual



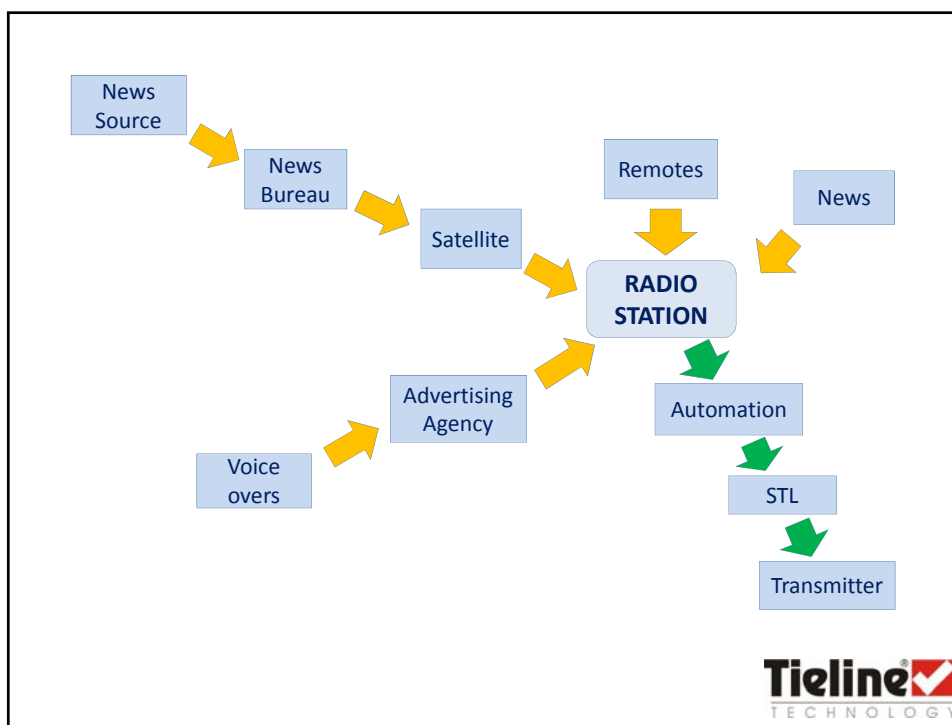
Source material is often pre-compressed

- 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



### “The Curse of the Cascading Codecs” Will we soon need warning labels?



Yes, *we* care...

But does anyone else?



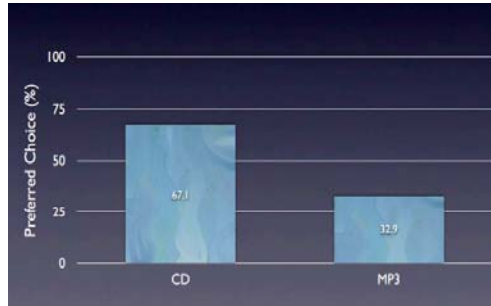
HTC recently purchased Dr. Dre's  
company for \$30 million dollars...

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...



Why should audio quality matter  
to us in radio?

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



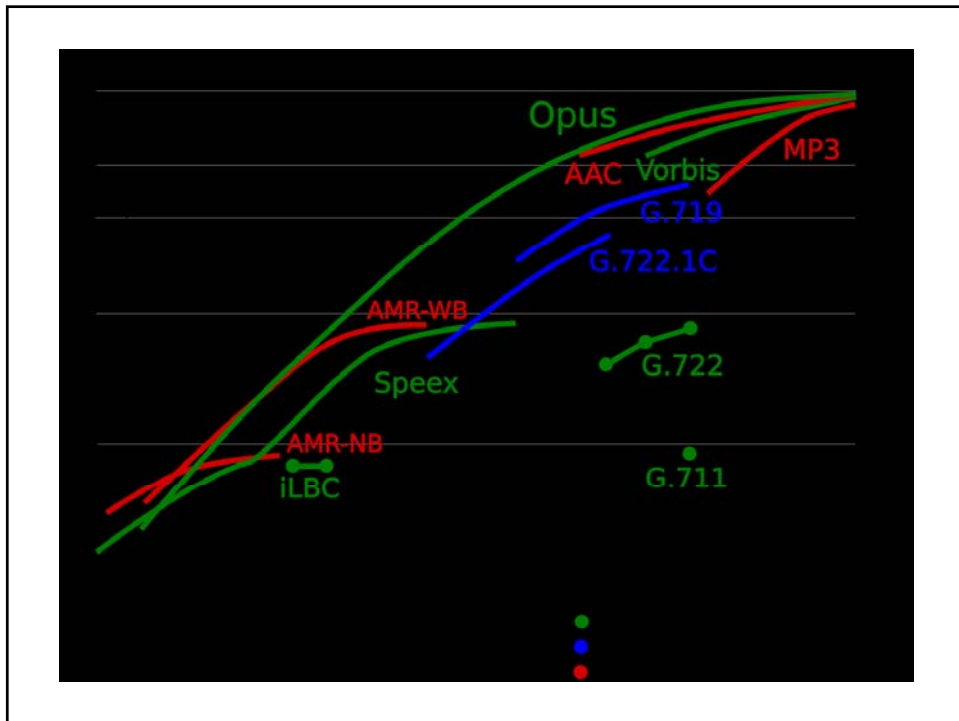
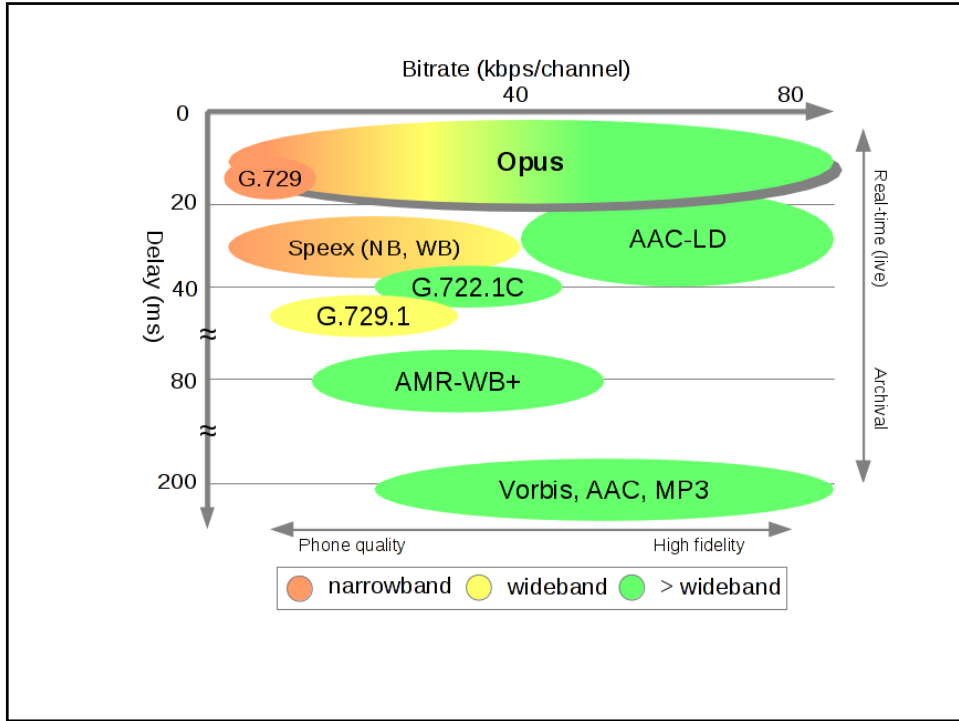
**Is that all there is?**



**OPUS!**

[www.opus-codec.org](http://www.opus-codec.org)





For more information, please contact me:

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Thank you!

