May 29, 2011

Via ECFS

Marlene Dortch, Secretary
Federal Communications Commission
445 12th Street NW
Washington, DC 20554

RE: Notice of Ex parte & Petition to Deny, Docket WT 11-65

Dear Ms. Dortch,

On May 27, 2011, David Frankel, CEO of ZipDX LLC had a telephonic meeting with the following individuals in the Wireless Telecommunications Bureau, the Office of General Council, and the Consumer & Governmental Affairs Bureau:

OGC: Jim Bird
WTB: Thuy Tran, Melissa Tye, Peter Trachtenberg, Elizabeth Lyle, Pramesh Jobanputra, Patrick DeBraba
CGB: Mikelle Morra, Sherry Dawson, Karen Peltz Strauss

The discussion was driven by the attached slides. We conducted the meeting in "HDVoice" using a speakerphone device supplied by ZipDX and installed in the FCC conference room. (Melissa Tye attended via conventional telephone connection.) ZipDX thanks the FCC IT team for their assistance in making the device operational, and of course thanks the attendees for their time and attention.

Please treat this submission as our PETITION TO DENY the merger unless the suggested remedy is agreed to as part of the transaction. If the parties suitably address the issues we have raised, then we are supportive of the merger.

ZipDX hereby certifies that the attached slides were served on AT&T and T-Mobile via electronic mail to William Drexel and Dan Menser on May 27, 2011, as our Petition to Deny.

Regards,

/s/
David Frankel
CEO, ZipDX LLC
Los Gatos, California
1-800-372-6535 / dfrankel@zipdx.com

cc: fcc@bcpiweb.com, kathy.harris@fcc.gov, jim.bird@fcc.gov, catherine.matraves@fcc.gov, david.krech@fcc.gov via email

Agenda

- Summary of Protest & Remedy
- Background on Telephonic Audio Quality
- Benefits of Wideband Audio (“HDVoice”)
- Benefits for those with Disabilities
- Current Deployment of Wideband
- Threat of AT&T/T-Mobile Merger
- Proposed Conditions if Merger Proceeds
- Conclusion

Summary of Protest & Remedy

- The US telecommunications industry has a reputation for neglecting audio quality without technical cause
- This neglect is harmful to telephone users generally; disproportionately so to those with certain disabilities
- An AT&T/T-Mobile combination eliminates a potential innovator and reduces competitive pressure to improve
- It also raises the specter of a huge “closed” network that doesn’t exchange high-quality audio with other operators
- If the merger proceeds, AT&T must be compelled to:
  - Provide an array of HDVoice-capable handsets
  - Support HDVoice throughout their network
  - Freely exchange HDVoice with other service providers
  - Continue to improve audio quality & provide free video exchange

Introduction to Wideband Audio

G.722
AMR-WB

7,000 Hz
Wideband
Telephones

G.711
G.729

Narrow
Band
Telephones

Human
Speech

22,000 Hz

14,000

7,000

3,300

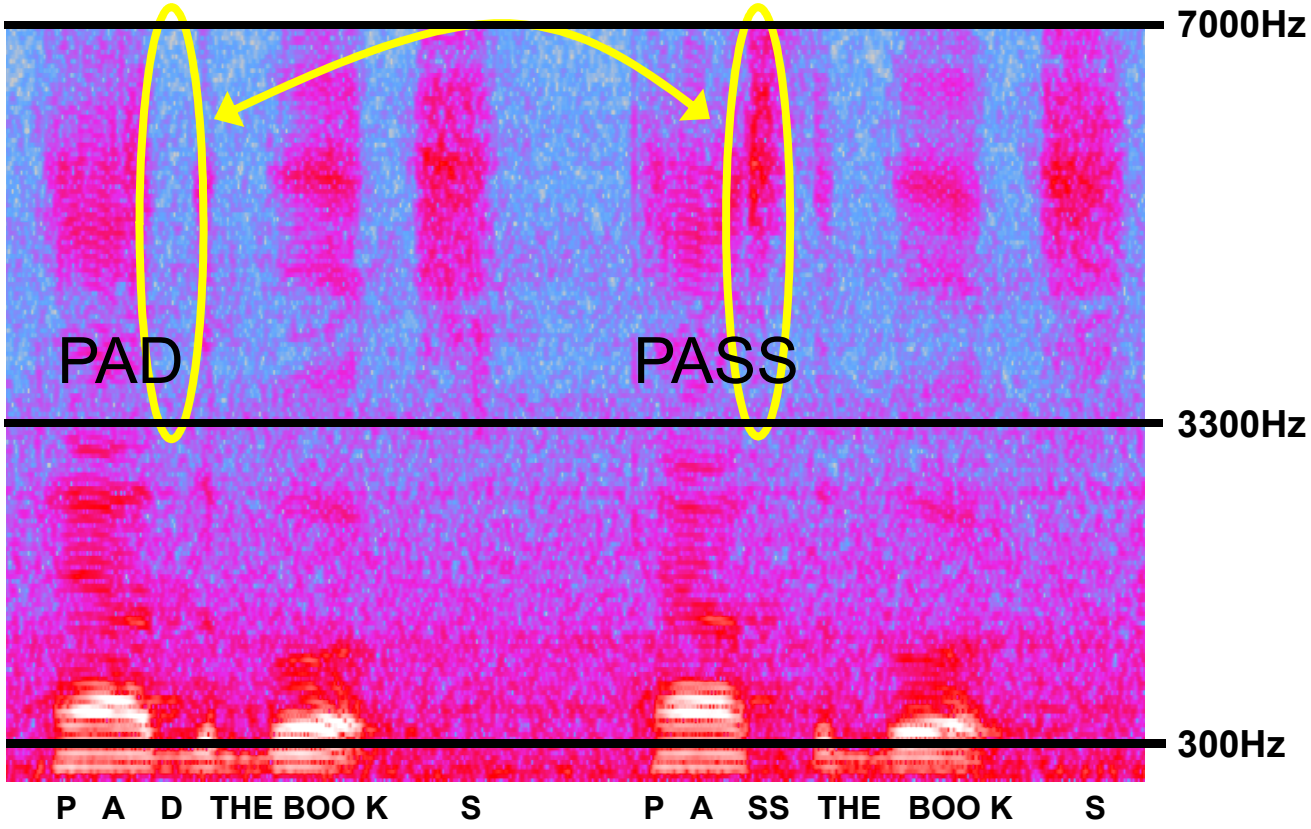
300

80

Range
Of
Human
Hearing

Audio Misunderstandings

- "But I told him to *pass* the books for distribution, not to *pad* them!
- Words are indistinguishable in “narrowband”



Importance of Quality Audio

- Most people are aware that mobile audio quality is “impaired”
- We’ve been trained to expect lower fidelity in telephony
- This is a tremendous compromise that we should not accept

MOST PEOPLE ARE AWARE OF
IMPAIRMENTS THAT MAKE IT
DIFFICULT TO READ AUDIO
IMPAIRMENTS CAN BE JUST AS
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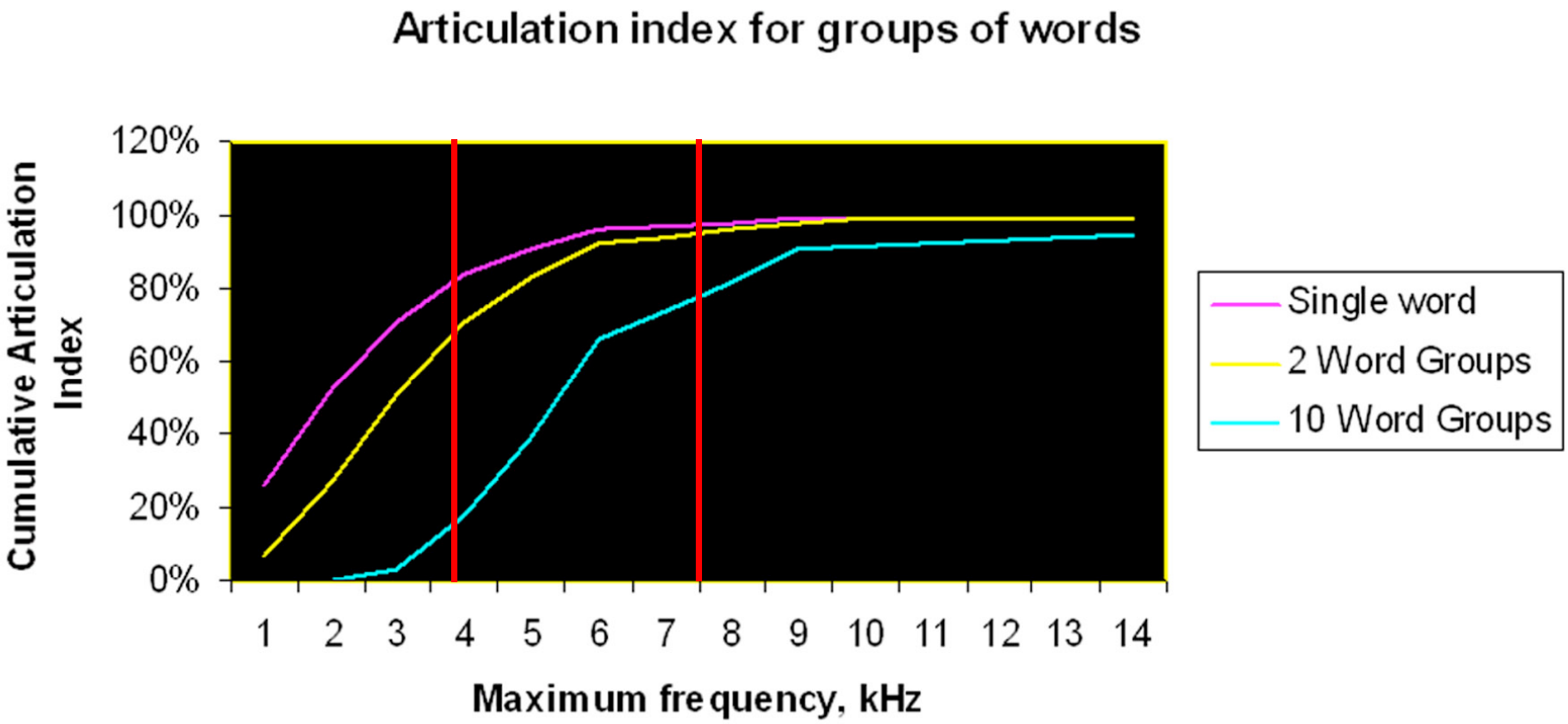
Most people are aware of impairments that make it difficult to read. Audio impairments can be just as debilitating, but are not commonly recognized (at least consciously).

Intelligibility Challenges



- Standard Definition Audio (3.3KHz): **40** ambiguities per minute
  - Fatiguing and tedious for humans
  - Tremendously challenging for automatic speech recognition
- High Definition Audio (7KHz): **4** ambiguities per minute

Reference: Jeff Rodman, Polycom, 2003 from French & Steinberg, Bell Labs, 1947

Technology is not the problem

- Mobile hardware is available with HDVoice
  - Handsets: Nokia, Samsung, LG, HTC, Sony-Ericsson
  - Network Infrastructure: Ericsson, Huawei
  - Standards available: AMR-WB/G722.2 & EVRC-WB
- Mobile Operators in other countries have deployed HDVoice
  - Orange has deployed in France, UK, Spain, Belgium, Egypt, Moldova, Armenia, Romania; Switzerland, Luxembourg and Dominican Republic planned
  - Vodafone has trials in Turkey
  - WIND Mobile offers HDVoice in Canada
- Business phone systems already support HD Voice:
  - IP PBX Vendors: Cisco, Avaya, Digium/Asterisk, Shoretel, Mitel
  - Phone vendors: Polycom, Gigaset, Aastra, Snom, Grandstream
  - Standards are in place (SIP, G.722)
- Numerous CLECs and “hosted VoIP” providers support HDVoice
- ZipDX offers an HDVoice-capable conferencing service

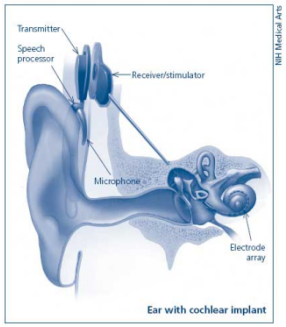
Note: Doug Mohney tracks HDVoice technology & deployment at www.hdvoicenews.com

The Benefits Of Wideband Audio

- Greater accuracy & better comprehension
- Easier to recognize voices
- Fewer challenges with accented speakers
- On Conference Calls:
  - Identify who's talking
  - Improved understanding during “double-talk”
  - Better productivity
- Much less fatigue
- Less repetition
- More enjoyable
- Fewer errors by IVR & transcription systems
  - Customer service, traffic, map, search applications
- All good for E911 / Public Safety

Benefits for those with Disabilities

- Our aging population increasingly suffers from hearing loss
  - HDVoice can make listening less tedious and stressful
  - Enables a custom “equalizer app” to selectively boost compromised frequencies
- Cochlear Implant technology works better with wideband input
  - Today, those with cochlear implants still struggle to use the telephone
  - Studies show improved word recognition compared to narrowband input
- SynFace is a speech-activated animated avatar enabling lip-reading
  - Studies of this evolving application show better accuracy with wideband input
- Speech-to-text promises real-time captioning
  - Accuracy is significantly higher with wideband input
- Those with speech impediments have trouble being understood
  - HDVoice removes a set of unnecessary distortions
- Those with visual impairments depend more on the telephone
  - HDVoice experience is much closer to an in-person meeting



Mobile IS the NEW PSTN

- Mobile telephony now dominates the telephony landscape
  - We must hold mobile carriers accountable for the quality and reliability of our telecommunications
- Line Type — Count, millions — Interstate Minutes/Year
  - Wireline — 122 — 349 billion
    - Residential — 65 — 25 billion
  - VoIP — 29
    - Residential — 25
  - Mobile — 279 — 711 billion
- Of approximately 119 million US households:
  - Mobile-Only: 26.6%
  - Landline & Mobile 58.1%
    - Mobile-Mostly: 15.9%
    - Mixed Use 42.2%
  - Landline-Only 12.9%
  - Phoneless/Unknown: 2.3%

42.5% mobile-only/mostly

21.1% split use

Assume half are landline-mostly*
34.0% landline-only/mostly

* CDC Question: "all or almost all calls are received on cell phones, some are received on cell phones and some on regular phones, or very few or none are received on cell phones."

Sources:
FCC Local Telephone Competition Status as of June 30,2010
FCC Trends In Telephone Service, September 2010
CDC Wireless Substitution: Early Release Estimates January-June 2010
Lines: Local Status, Figure 1 & 2 & Table 17
Wireline Minutes: Trends, Table 10.2
Mobile Minutes: Trends, Tables 11.3 & 11.4
Residential wireline minutes calculated as 16 minutes/month * 2 (outbound/inbound adjustment) (Trends, Table 14.2)
Mobile minutes calculated as 30% of 708 minutes/month
Household data: CDC Table 1 & text
Skype: Skype S-1, August, 2010, p 82 – 12.8B SkypeOut mins/year; 176.8B Skype-to-Skype (40% video); 2X

AT&T History on Audio Quality

- AT&T has, unfortunately, a lengthy history of delivering poor audio quality
- This is taken from a May, 1877 Bell System brochure (from Popular Science Monthly, July 1906, p. 491)

1877

The Telephone

The proprietors of the telephone, the invention of Alexander Graham Bell, for which patents have been issued by the United States and Great Britain, are now prepared to furnish telephones for the transmission of articulate speech through instruments not more than twenty miles apart. Conversation can be easily carried on after slight practice and with occasional repetition of a word or sentence. On first listening to the telephone, though the sound is perfectly audible, the articulation seems to be indistinct; but after a few trials the ear becomes accustomed to the peculiar sound and finds little difficulty in understanding the words.

- 134 years later, other than the "twenty miles apart" qualifier, this description could just as easily apply to AT&T's wireless service.
- Technology for better audio (some of it invented by Bell Labs) is available.
- The "Bell-Heads" can put their energy into arguing why this is hard and expensive, or they can put that energy into deploying a solution.

at&t

Gatekeeper

Handsets
Coverage
Speed
Voice Quality
Apps
Capacity

Merger Threatens HDVoice in USA

- T-Mobile, whose affiliates have championed HDVoice in Europe, will be obliterated here
  - T-Mobile conducted trials with Ericsson in Germany in 2006, reporting positive results (http://www.ericsson.com/us/ericsson/corpinfo/publications/review/2006_03/files/2_amrwb.pdf)
  - T-Mobile networks in Netherlands and Poland reportedly can/will support HDVoice
- The new combined network will be the largest in the country
- AT&T's will be the ONLY national network on the GSM standard
- AT&T exerts tremendous influence on the capabilities of handsets on its network
  - It is critical that HDVoice evolve to a "default" capability in handsets to make it ubiquitous
- There is no evidence that AT&T plans to make HDVoice available on its own
- Market pressure (HDVoice deployment by a competitor) may be insufficient to get AT&T to move, given its historical indifference to voice quality
- Even if AT&T DOES deploy HDVoice, there is no assurance of HDVoice *inter-operation*
  - Allows calls originated on (or terminated to) another network to connect to AT&T's subscriber in wideband
- HDVoice inter-operability is extremely important
  - HDVoice benefits are lost if intermediate connection is via narrowband technology
  - America will, presumably, continue to have more than one mobile network operator
  - Some consumers and most businesses will use "landline" telephone service (including VoIP)
  - International traffic is growing and international operators are deploying HDVoice
  - It is not practical for most end-users to dictate the network used by the other parties with whom they talk
  - Nor can a given end-user, in practice, switch carriers in order to be "in network" with all of their colleagues
  - Thus, many calls will be inter-carrier and will require HDVoice inter-operability

Remedy Required if Merger Proceeds

- AT&T must offer HDVoice-capable handsets
  - HDVoice must be available on basic, feature-phone, and smart-phone models
  - At least 10% of newly-activated phones must be HD-capable in 2012, rising to 40% in 2014
  - HDVoice audio must be made available to 3rd-party “apps”
- AT&T must support end-to-end HDVoice calls on their network
  - HDVoice must be available to 30% of covered POPs by the end of 2012, rising to 90% in 2014
  - HDVoice must be included with any mobile plan, including pre- and post-paid service options, at no charge
  - When AT&T supports HDVoice on its landline network, it must interoperate in wideband with its mobile network
- AT&T must inter-operate with any other service provider in HDVoice
  - Others must be allowed to exchange calls with AT&T using Internet Protocol
  - AT&T must inter-operate using the codec used natively by the handset
  - AT&T must also inter-operate using the G.722 codec and provide necessary transcoding
  - AT&T must provide economic and technical incentives to encourage (NOT discourage) HDVoice inter-operability
- AT&T must support inter-operation for new services
  - Video calling services offered by AT&T must inter-operate with endpoints on other networks
- AT&T must submit a detailed implementation and compliance plan for FCC review
  - Prior to merger, AT&T must develop a detailed plan for compliance with these conditions
  - The plan must specify the manner by which other providers can inter-operate in HDVoice with AT&T customers
  - The plan must specify the reporting to be provided by AT&T to prove compliance with these conditions
  - The FCC must approve the plan, including remedies for non-compliance, before the merger can proceed

Conclusions

- HDVoice is a telephony technology with significant broad benefits
  - There are specific benefits for those with certain disabilities
- The technology is generally available
- The United States is behind in deployment of this technology
- The AT&T / T-Mobile Merger threatens to further hinder HDVoice in USA
  - AT&T has historically neglected audio quality
  - T-Mobile will be eliminated as an HDVoice proponent
  - A dominant operator could “close” their network to HDVoice inter-operation
- The FCC should deny the merger unless AT&T:
  - Agrees to aggressively deploy HDVoice on handsets and in their network
  - Offers inter-operability with other service providers
  - Offers inter-operability for emerging services
  - Submits an acceptable, detailed implementation and compliance plan
- The FCC has an obligation to pursue this effort
  - On behalf of American consumers
  - On behalf of Americans with disabilities impacted by audio impairments