draft-ietf-codec-opus-10
Comments and changes since last WGLC

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C Code (SG16)

- *“The C-code still contains some "TODO" comments”*
- Some fixed, some removed, some left as a “note to implementers”
- *“Parts of the C-code seems to be either unreachable or remain unoptimized: We believe that a significant amount of work still needs to be done to derive an efficient implementation without useless additional complexity”*
- Removed several unreachable functions

Portability (SG16)

- “The portability of the current version is rather limited. Speech and audio coding standards are expected to have a wide portability so that they can be used in a wide range of environments. [Concern about MSVC project files]”
- Tested on 23 platforms
  - 9 CPU architectures
  - 10 operating systems
- Not including Linux or Windows project files for size reasons

Time Stretching/Shortening (SG 16)

- *“The auxiliary functionalities required for VoIP, e.g. time shortening/stretching, are not provided together with the codec. An important justification for the formalization of the IETF Codec WG was that these functionalities were stated to be very crucial for VoIP quality and are not provided in the codecs from other SDOs“*
- Based on list discussion, included pointer to Google WebRTC source code

Draft Issues (SG16, last meeting)

- Comments/concerns about the Opus draft being incomplete
- Draft has been significantly improved
  - 38 more pages, excluding source code (322 total)

Mode Switching (Anisse Taleb, old)

- *“Regarding mode switching, I think this is quite an important functionality to support, we have tried to simulate such aspects and the results were not very good.”*
- Fixed many corner cases with seamless mode switching since first WGLC
  - Responsible for the vast majority of the “non-editorial” changes to the C code.

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CBR (private communication)

- Concern about lack of CBR in SILK-only mode
- Implemented CBR (and VBR cap) for SILK

Test Vectors (SG16, last meeting)

- *“Test vectors to check the compliance with the OPUS standard are missing: Speech & audio coding standards should have a minimum set of Test Vectors to check whether the generated executable works properly and any implementation complies with the expected standardized format“*
- Test vectors now available:
  - http://opus-codec.org/testvectors/

Compliance (Erik Norvell)

- *“I suggest the standard compliance defined in terms of closeness to the test vectors should be removed. In consequence, this will render the specified OPUS encoder and decoder c-code to informative only.”*
- An informative standard is not a standard
  - If my implementation decodes all the bits of an Opus stream, sends them to the bit bucket, and then plays a nice jingle, is it an Opus decoder?
- Can possibly be resolved by making the comparison tool less strict:
  - Tradeoff between implementation freedom and finding bugs

PLC With Real Traces (last meeting)

- Guidelines specify that packet loss needs to be tested with real traces
- See testing presentation