



# **NETVC: High-Performance Royalty-Free Video for the Internet**

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**Timothy B. Terriberry  
Thomas Daede**



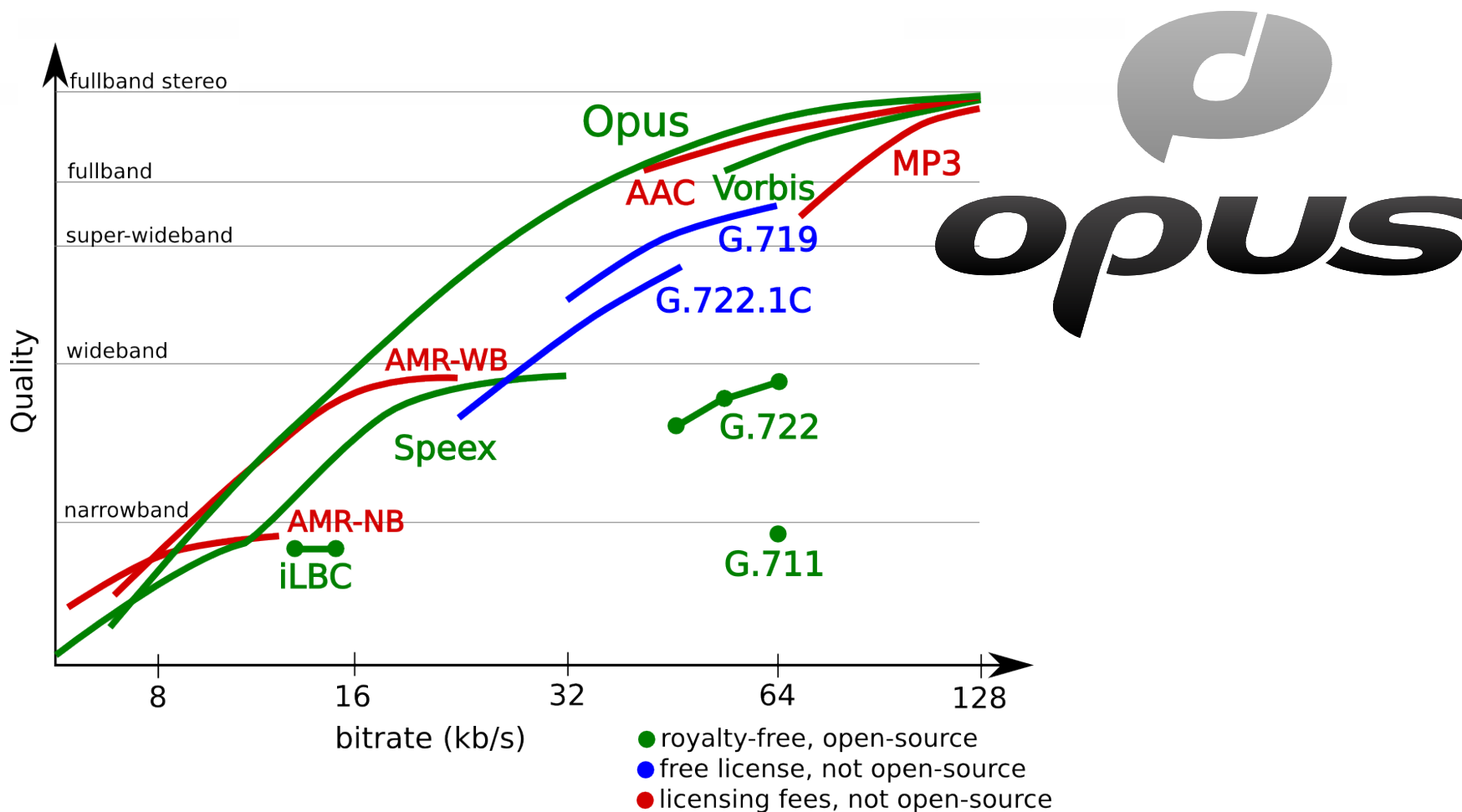
# Current Video Codec Generation is a Mess



- See: VP8 vs. H.264 in WebRTC
  - Not everyone can deploy non-RF patent licenses
  - RF codecs still seen as too risky by some, not well-deployed enough by others
- Network effects decide
  - Where RF is established, non-free codecs see no adoption (JPEG, PNG, FLAC, ...)
- RF is not enough
  - People care about different things
  - Must be better on *all* fronts



# We Did This for Audio





# The Daala Project

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- Goal: Better than HEVC *without* infringing IPR
- Need a better strategy than “read a lot of patents”
  - People don’t believe you
  - Analysis is error-prone
    - Try to stay *far* away from the line, but...
    - One mistake can ruin years of development effort
    - See: H.264 Baseline



# Strategy

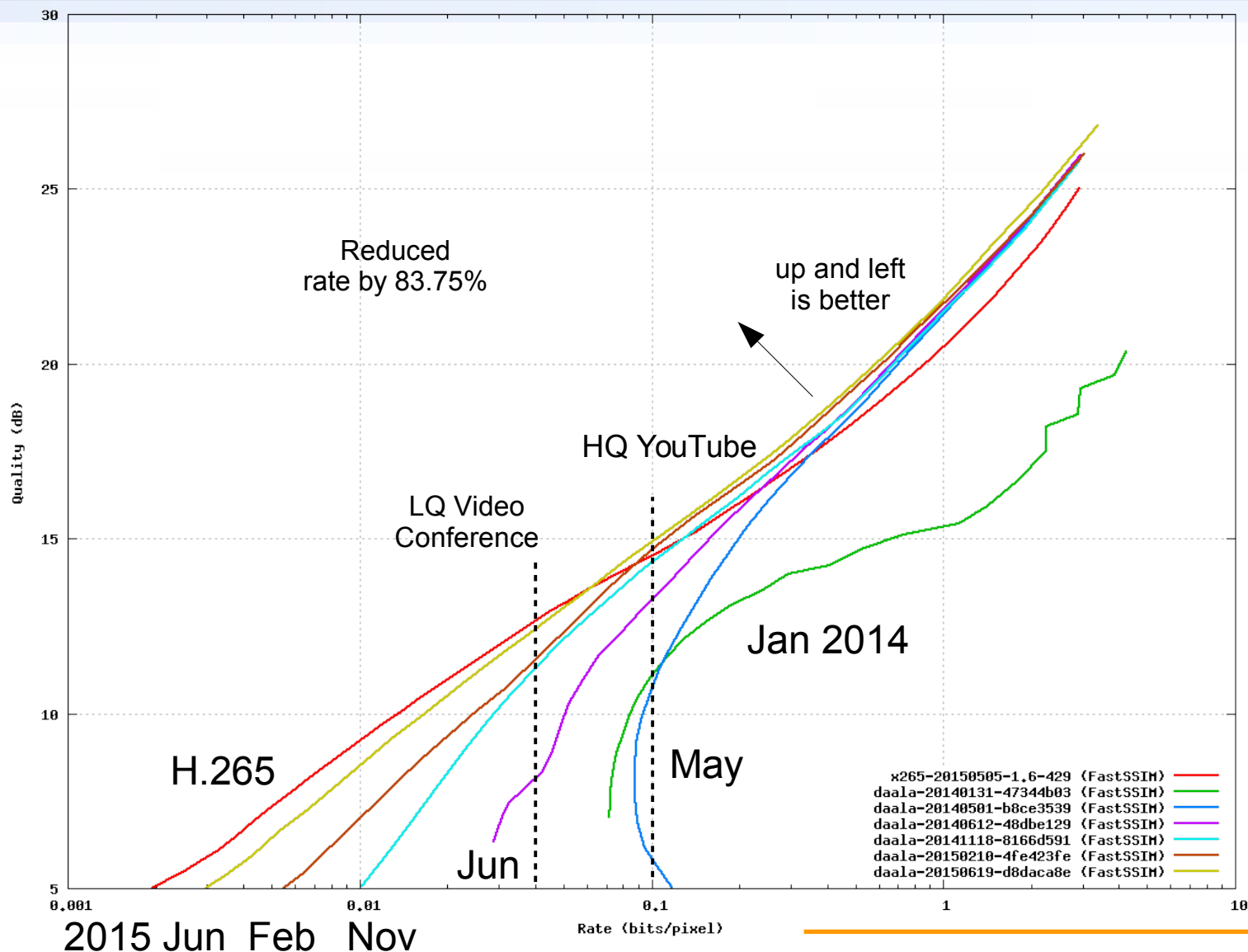
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- Look for some elements common to broad classes of patents
  - Only need to avoid one element in a patent claim to be able to say “we don’t do that”
- Replace with fundamentally different techniques
  - Higher risk/higher reward than incremental changes
  - Can avoid vast swaths of IPR
  - Creates new challenges others haven’t solved
- Still have to read a lot of patents

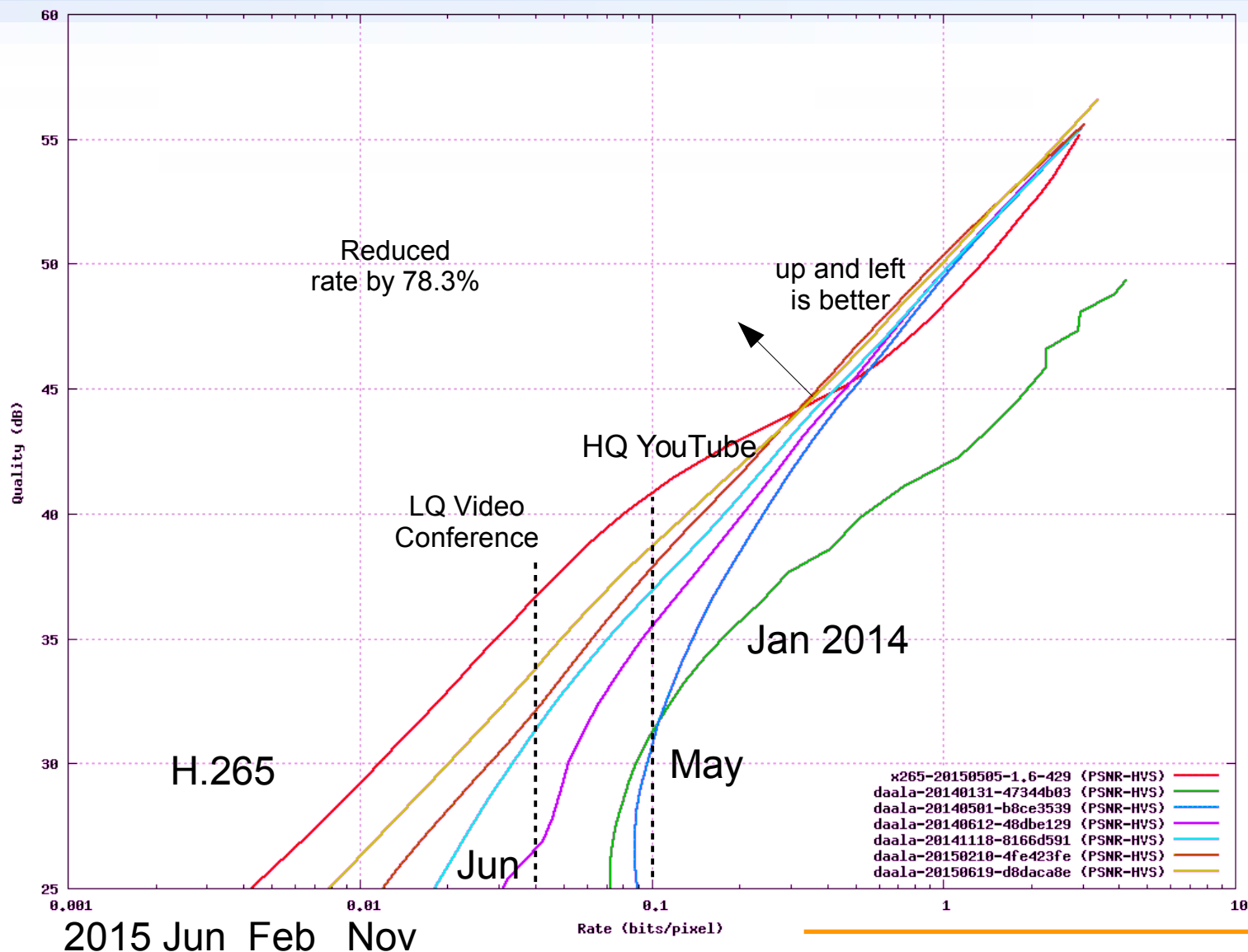


# Daala Progress (Fast MS-SSIM): January 2014 to June 2015





# Daala Progress (PSNR-HVS): January 2014 to June 2015

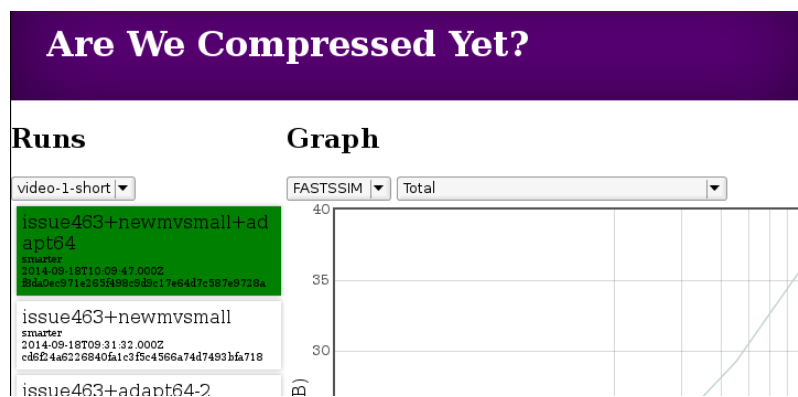




# Are We Compressed Yet?



- <https://arewecompressedyet.com/>
  - Will run metrics on any git commit (we're happy to add your repository, just ask)
  - Amazon EC2 instances, so results in a few minutes
  - Details on setup at <https://wiki.xiph.org/AreWeCompressedYet>







# Cisco's Thor Project

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- Documented in draft-fuldseth-netvc-thor
- Will be open-source “Real Soon Now”
  - Repo on Github (currently private)
  - Cisco can get commit access to anyone who wants to hack on it this weekend
  - Thomas and I already have access, and can help you get going and get your stuff in



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# Questions?