

# Proposed Error Patterns for JCT-VC

## JCT-VC G150

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# Network Simulation Conditions

- G.1050 network simulator
- 8 active network elements (routers) in path
- Traffic injected in several categories
  - VoIP (constant low bitrate)
  - OTT Video (TCP, high bitrate)
  - P2P (TCP, multiple connections, high bitrate)
  - HTTP (TCP, variable bitrate)
  - All those were live-captured by G.1050 people
- Test signal is VBR, 1.5 Mbit/s average, with 1 second bursts up to 2 Mbit/s, captured as an “HD” feed (G.1050 contains a vague description)

# Results

- Four error pattern files: 1%, 3%, 5%, and 10% average loss rates
- Both bursty and non-bursty loss characteristics
  - For example, the 1% loss file contains a long burst of more than 16 packets (with two successfully transmitted packets in the burst) around timestamp 0.93 sec)
- Jitter low at low and high loss rates, highly variable at medium loss rates
  - Low jitter because queues are mostly empty/full at low/high loss rates
  - High jitter, because queues are oscillating
- Some pumping observable (indication of insufficient randomization)
- Files contain long bursts of unimpaired transmission

# Example: File format

Source:,"TIA TR30.3: TIA-921B"  
Creation Date:,10/22/2011  
Description:, out/5/HD\_vbr  
Content-Encoding :, ASCII  
Delay Unit:,ms

Time,	Delay,	Drop
0.000000000,	81.918020000,	0
0.030424000,	79.411300000,	0
0.061512000,	79.411300000,	0
0.077098000,	79.411300000,	0
0.092701000,	79.411300000,	0
0.123900000,	79.411300000,	0
0.139608000,	79.411300000,	0
0.155107000,	79.411300000,	0
0.170722000,	79.411300000,	0
0.186294000,	79.411300000,	0
0.201897000,	79.411300000,	0
0.217533000,	79.411300000,	0

# Example: Statistics

5-HD\_vbr (Delay and Drop)

