

ATRC Data Compression Summary

December 12, 1990

Points of Consensus

- **20 Mbps video data rate is crucial for HDTV quality**
- **Two tiers of data with different BERs is essential**
- **We expect other digital competitors in the FCC process**
- **Continued development and simulation of the data compression approaches not selected for FCC hardware is extremely important**

Strategic Options

- **"MPEG++" -- modify for terrestrial channel with best features of all proposed systems**
 - MPEG motion structure (from all)
 - Fixed-length motion vectors (from ??)
 - Odd/even field interleaving (from Sarnoff)
 - Spatial refresh interleaving (from Sarnoff)
 - DCT (from MPEG and LEP/DTB)

- **LEP/DTB Frameskip**
 - very MPEG-like (see above)

- **Sarnoff QMF**
 - potential of hierarchical transcoding
 - close contender, needs further development

- **Briarcliff VQ**
 - potential of lowest-cost receivers
 - needs much further development

Strategic Consequences

- "MPEG++"

Advantages

Close to mainstream
Need to influence MPEG anyway
Lowest hardware risk
Good features from all ATRC

Disadvantages

No surprise to competitors
No novelty for FCC (vs. GI)
Little intellectual property
At risk to a "better" approach
- SBC/QMF from Zenith, MIT

- QMF

Advantages

Nested hierarchy is obvious
- graceful degradation
- ease of transcoding
Potential "Leapfrog" system
Keeps door open for non-DCT
Intellectual property

Disadvantages

Less mature than DCT
Not mainstream approach
Performance advantages not
adequately demonstrated