

ATRC Digital Simulcast

Status Report

Key Issues To Consider

- **Once established, an HDTV standard should have a technical longevity of 50 years! (as did NTSC)**
 - **new adoption curves are costly to the industry**
 - **also desire to preserve consumer investment**
- **A simulcast system must provide robust service in a co-channel environment -- a very difficult demand**
- **All digital systems are not equivalent. There will likely be very significant differences in:**
 - **picture quality**
 - **robustness**
 - **interference characteristics**
 - **coverage area**

Why HDTV Should Be Digital

- **Digital compression should provide better picture quality than analog systems of the same bandwidth**
- **Digital offers reduced transmission impairments**
- **Digital systems can provide for future improvements in performance (given a flexible standard)**
- **Digital HDTV performance and cost will benefit from advances in computing technology**
- **Digital encryption can accommodate service providers (i.e., pay-per-view cable)**
- **Digital consumer products will be more reliable**

Digital HDTV Has Additional Benefits

- **Digital HDTV will help to drive other industries towards digital, thus improving the U.S. technology infrastructure**
 - **digital communications (teleconferencing)**
 - **digital recording (VCRs and discs)**
 - **digital IC's (TV receivers etc.)**
- **Non-entertainment applications of digital HDTV will accelerate technology development and lower costs**
 - **Computing, Defense, Space, Medical...**
- **Digital HDTV offers new opportunities when combined with computing and communications -- the net effect of these factors will contribute to U.S. competitiveness**

ATRC -- Unique RF Approaches

- **Spectral shaping will reduce the amount of interference with an NTSC co-channel**
- **Multiple carriers will make the digital signal more robust in the presence of an NTSC co-channel**
- **Multiple tiers of protection will imitate some of the graceful degradation characteristics of analog**

ATRC -- Unique Compression Approaches

- **ATRC compression technique selected after simulating and refining several approaches (it is not another H.261 clone)**
- **We believe that the industry should be carefully comparing different compression approaches, rather than basing system proposals on currently-available ICs**
- **Evolutionary performance improvements are part of our overall strategy for compression**

Time Is Essential

- **Performance and interference characteristics of various digital transmission techniques in an NTSC co-channel environment are completely new issues**
- **Likewise, the performance of various digital data compression techniques in the presence of errors needs to be carefully evaluated**
- **Digital data compression and transmission at HDTV rates requires significant hardware development efforts**
- **ATRC is committed to work with the FCC and the rest of the industry to help select the best HDTV system for the U.S.**