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## **NTIA/ITS DIGITAL VIDEO QUALITY METRIC TAKES TOP PERFORMING SPOT**

### *Evaluation Software Now Available From Web Site*

The video quality metric (VQM) developed by NTIA's Institute for Telecommunication Sciences (NTIA/ITS) was the top performing metric for digital video quality measurement systems in recent tests performed by the Video Quality Experts' Group (VQEG). The results of these VQEG tests and analyses are used by the International Telecommunication Union (ITU) as the basis for international Recommendations. As a result of these tests, it is anticipated that the NTIA/ITS VQM will become part of both national and international video quality measurement standards.

The new VQM measurement tools will enable companies and public entities to determine, through objective technical means, the quality of digital video pictures for new telecommunication services such as direct broadcast satellites, digital and high definition television, video teleconferencing, telemedicine and e-commerce. These innovative techniques to measure the quality of digital video pictures will significantly enhance the competitiveness of U.S. companies and lead to higher quality products for consumers.

While other metrics in the VQEG tests worked well for either the U.S. or the European television standards, the NTIA/ITS VQM was the only metric (out of eight original international submissions) that performed statistically better for *both* standards. Obtaining a 91% average correlation coefficient to subjective viewing panel results for the U.S. and European television standards, the NTIA/ITS VQM was the only metric to break the difficult 90% threshold. For the U.S. television standard, the NTIA/ITS VQM achieved an outstanding correlation coefficient of 94%.

The NTIA/ITS VQM utilizes patented reduced-reference technology (3 U.S. patents awarded, one U.S. patent pending) and produces quality estimation results that closely emulate human perception. Although the VQEG test only evaluated the performance of the NTIA/ITS VQM for digital television systems, the metric has been designed and tested to work for many different types of coding and transmission systems (e.g., bit rates from 10 Kbits to 45 Mbit/s, MPEG-1/2/4, digital transmission systems with errors, analog transmission systems, and tape-based systems).

The NTIA/ITS VQM has been completely implemented in user-friendly software, both for UNIX and Windows® based systems. This software, plus user's manuals and a full technical description of the algorithms, is available to all interested parties via a no-cost evaluation license agreement. See [www.its.bldrdoc.gov/n3/video/vqmsoftware.htm](http://www.its.bldrdoc.gov/n3/video/vqmsoftware.htm) for more information.