Advanced Solutions for Today's Technology

Move at the Speed of ATHENA™

Demaratech's Silk™ Technology securely moves data at incredible speeds over existing hardware, delivery channels, and infrastructure. By gathering the brightest minds to create Silk™ technology, Demaratech will change the way the world moves, stores, and accesses data.

Built into Silk™ Technology is a Pattern Processing Engine, which has the ability to be repurposed in both horizontal and vertical industry segments with data handling needs. The Pattern Processing Engine that makes up the core of Silk™ can determine and process patterns within data such as anomaly detection, object identification, noise filtering, compression, security/digital rights management, and encryption. With these capabilities, Demaratech is able to create solutions for some of the most challenging data handling problems in the world today.

Deploying Silk™ Technology in Media and Entertainment offers benefits for both production/post-production and the distribution aspects of the industry. From dramatically reducing storage requirements for filmmakers to providing high-quality, high-definition (HD) feature-length movies on standard DVDs and Video-on-Demand, Silk™ enables a new range of experiences to be delivered to consumers while it drives down costs and improves security.

Picture Perfect

Motion Picture Perfect

A video experience starts with the filmmaker. It takes 125MB of storage to hold 1 second of uncompressed (1080i/4.2.2) HD video, or 900GB for the average 2-hour feature film. Using a 30 to 1 shoot time to finished feature film time, the average filmmaker will generate at least 27TB of digital data. In a July, 2006, eWeek article on post-production filmmaking needs, Industrial Light & Magic's IT Storage Manager, Mike Thompson, stated, "Artists at ILM create more than a terabyte of raw video per week that needs be stored somewhere. Nothing is thrown away…you can imagine, we move humongous amounts of data from one place to another."

With the Silk Symmetry™ lossless compression, that terabyte would be reduced to 100GB, and the filmmaker's 27TB would reduce to 2.7TB. Once a film is "in the can," this 10 to 1 reduction in footprint can be applied to archival catalogues and content management systems. Essentially, Silk™ Technology will transform the movement to digital filmmaking by removing the prohibitive storage and infrastructure costs current production techniques require.

Video Compression

Movies that Move You

While many compression technologies exist, they sacrifice quality to achieve reductions in the overall video image data. With Silk Speed™ lossy compression, ratios of 600:1 or greater are easily achievable with visually imperceptible reductions in quality. Once processed, these high-quality videos enable consumers to experience movies, TV shows, and music videos any place, any time, on any device. By applying our Silk Smooth™ Noise Reduction, both detectable and undetectable noise is eliminated, providing additional reductions in size and quality improvements.

Standard DVDs – A standard definition movie can be reduced to 4.5GB on a DVD with MPEG-2 compression. With Silk

Speed™ lossy compression, that same movie can be reduced to 250MB to 500MB with a superior quality level. Given a terabyte HD movie, the same technology can produce a compressed experience of the same quality that would require an HD-DVD or Blu-Ray disc. Exploiting this technology in DVDs is just the beginning, as existing content can be repurposed into libraries of 10 to 20 feature length movies that can fit on a standard DVD. An HD-DVD or Blu-Ray disc would hold correspondingly more movies.

Video-on-Demand – VoD will take on a new meaning with Silk Speed™. TV shows and movies can be downloaded in minutes on a broadband connection versus the 1-2 hours current technologies require. Given a reduced screen size of a cell phone, the lower quality requirements will allow Silk Speed™ to deliver a standard feature length film to such devices in minutes over current CDMA/GPRS data connections.

IPTV Streaming - With the expanding IPTV market, pushing MPEG4 high-definition video streams of 6Mb to 8Mb per second over last mile networks (i.e. DSL, Cable) can pose many challenges. With the Silk Speed™ Lossy Encoder, the stream size can be reduced to 1Mb to 2Mb per second with similar quality when used in conjunction with the Silk™ Decoder. For a standard-definition video streams, current MPEG4 encoders drive at a rate of approximately 1.5Mb per second. Silk Speed Lossy™ Encoder standard-definition delivers video streams of similar quality in range between 200Kb to 300Kb per second.

With the capabilities of the Silk Speed™ Lossy Decoder, we believe the following results are achievable:
- 2 PAL/NTSC streams over 384kbit/s DSL
- 2-3 PAL SD/NTSC streams over 512kbit/s DSL
- 1 HD 720p steam over 1Mbit/s DSL
- 2-3 HD 1080i streams over 6Mbit/s DSL
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It's Under Lock and Key

One of the benefits of Silk Secure™ is that it encrypts digital media to keep it protected from unauthorized copying. Combined with Silk Shield™, rock solid digital rights management, our customers can be assured that unauthorized access to content will guard against piracy.

Silk™ Technology for the Media and Entertainment Industry is comprised of:
- Silk Symmetry™ Lossless Compression
- Silk Speed™ Lossy Compression
- Silk Smooth™ noise Filtering
- Silk Secure™ Data Encryption)
- Silk Shield™ Digital Rights Management/Anti-Piracy