HEVC Decoder

The Strongene HEVC Decoder (SHD) is based on the emerging international video coding standard HEVC. HEVC achieves similar video quality to H.264/AVC with only 50% bitrate, saving great amount of bandwidth and storage resources.

Advantage of SHD

- **Parallelism**: SHD fully exploits data-level and thread-level parallel decoding methods, making best use of the CPU capabilities. In the future, the capacity of GPU will also be considered.

- **Velocity**: SHD achieves up to 21x decoding speedup compared with reference software HM 12.0 in 4-thread decoding. On x86 CPU, decoding speed of 1080p videos can be more than 200fps, while on ARM Cortex-A9 duo-core processor, decoding speed of 720p videos can be more than 50fps.

- **Efficiency**: SHD only takes only 1.6x resources of the best H.264/AVC software decoder CoreAVC, and works well even for 4kx2k super resolution videos.

- **Robustness**: From March 2013, SHD has been embedded into Xunlei Kankan video client and providing HEVC service to 8.7 million users in China everyday with crash ratio below 0.2%.

- **Easy Integration**: SHD can be easily embedded into other systems in form of Microsoft DirectShow filter or ffmpeg codec.

- **Multi-platform**: SHD supports following operating systems: Windows, Linux, Mac OS (x86); Android, IOS, Linux (ARM).

SHD is the first as well as the world-leading large-scale commercial HEVC decoder, which is fully compatible with HM 12.0. Together with the HEVC encoder, up to 50% bandwidth and storage resources can be saved compared with the prevalent H.264/AVC standard while the same video quality is maintained. By using SHD, video service providers can benefit from the greatly improved compression efficiency, in terms of much reduced operating cost, brand-new user experience, more flexible market plan, and the growth in revenue.

After continuous fundamental innovation, SHD fully exploits the data-level and thread-level parallel methods, making best use of the CPU capabilities and achieving significant decoding speedup with extremely low resource occupation. In both single and multi-threading decoding, SHD is of great stability without any memory leak or exception. SHD supports extensive platforms of PC, smart phones and tablets. In all aspects, SHD can well meet the demand of large-scale commercial applications, being the key for enterprises to win the future competition in video industry.
SHD Integration
Currently, SHD can be integrated into other systems mainly in the form of Microsoft DirectShow filter or ffmpeg Codec. And the SHD for Android and IOS platform (with demo Apps) is also available via website. The personal use of SHD is free and encouraged, while both the integration of SHD into software and included for mobile Apps are also acceptable via software license or other commercial agreements.

SHD Performance
SHD achieves up to 8x decoding speedup compared with reference software HM 12.0 in single-thread decoding and 21x decoding speedup in 4-thread decoding. SHD only occupies 1.6x resource of CoreAVC, providing real-time HD decoding of HEVC videos over x86 and ARM processors.

SHD Configuration
SHD supports flexible decoder settings in terms of thread number. SHD is fully compatible with HM 12.0 apart from the functions that are useless in practical application.

SHD Application
Together with HEVC encoder, SHD works as the foundation to support various HEVC-based image and video applications including online video service (VOD and live streaming), video conference, video surveillance, video transcoding, video interaction, video transmission, remote education, telemedicine, home media center, data center solution for video cloud computing, multimedia retrieval, digital image compression, smart city network and so on