

Fujitsu Develops High-Quality Video Compression Technology Conforming to H.264 Standard

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Fujitsu Laboratories today announced the development of core circuitry technology for video compression and decompression that features high-quality video processing and operation with world-class ultra-low power consumption of less than 100 milliwatts.

The new technology enables prolonged recording of high-quality video for digital devices that employ flash memory or hard-disk drives (HDDs) for recording, such as digital cameras and video camcorders. Fujitsu's new video compression and decompression technology conforms to the latest H.264 international standard for video compression, which is expected to attract wide attention in the future for next-generation DVDs and terrestrial digital broadcasting for mobile devices.

In view of recent dramatic technological advancements of higher capacity and faster operation speeds of flash memory and write-able disk media, there is great interest in digital image devices such as digital cameras and video cameras equipped with flash memory or HDDs that are available for personal use. At the same time, in the arena of international standardization, H.264 has been established as the latest video compression technology standard that significantly outperforms compression performance compared to past methods. As such, there is much anticipation for rapid development of its practical-use applications for video, such as for next-generation DVDs and terrestrial digital broadcasting for mobile devices.

H.264 is more complex compared to former compression methods, and is known for requiring processing power that is approximately 10 times that which is required for MPEG-2. Technical obstacles existed to realize H.264 compression while maintaining high levels of compression performance and high-quality video, at low power levels that can be provided with even batteries.

Newly Developed Technology:

1. Enables smaller device size and lower power consumption

To perceive changes in moving images from the previous image shown, a function which requires the greatest processing power during compression, rather than searching the entire picture for changes, Fujitsu developed an algorithm that enables image changes to be determined while searching shrunken versions of the picture in stages. This method enables minimal calculation volume, ideal for use in large-scale integrated circuits (LSIs), and enables real-time H.264 compression of standard television images at less than 100 milliwatts.

2. Technology that can realize high-quality video compression

Fujitsu developed an algorithm that enables control of compression levels, so that images for which image degradation is particularly obvious to human sight - such as faces or slow-moving objects - are continuously tracked, and those parts of the image are maintained at high definition and remain uncompressed.

Fujitsu's new technology enables prolonged high-quality video recording using H.264 with battery-operated digital video devices.

Notes:

H.264: International video codec standard jointly established by ITU-T

(International Telecommunication Union Telecommunication Standardization Sector) and ISO/IEC (International Organization for Standardization/ International Electrotechnical Commission.)

Source: Fujitsu

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