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## **High Definition Images**

High-definition Television

4K Digital Cinema

The promotion of high definition TV images was carried out at the initiative of Japan for the development of high-definition television and super-high-definition television. The standard created for movie digitalization was 4K digital cinema. Y. Ninomiya, et al., proposed the MUSE system as a compression method—employing sub-sampling between fields and frames—for analog high-definition signals. M. Tanimoto proposed the TAT system, but MUSE system was realized as the high-definition broadcasting system. M. Tanimoto also proposed free observing point TV for three-dimensional images. S. Sakakibara, et al., made considerable contribution to the standardization of high-definition studio standards invented in Japan, and eventually high-definition television was put into practical use. F. Okano, et al., proposed a super-high-definition system combining 16 high-definition television screens and developed the super-high-definition television with 1,320 scanlines and 7,680 horizontal pixels. M. Sugawara, et al., proposed the broad color gamut color coordinate system and remarkably improved color reproducibility. Considering this trend, the movie business studied high-definition images from the perspective of the digitalization of analog films, and 4K digital cinema standards were set with Hollywood as the central player. This technology was developed by T. Aoyama, et al.

MUSE: Multiple sub-Nyquist Sampling Encoding

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## **Vector Quantization**

Image compression like telephones and televisions with few communication methods has been studied from the perspective of image transmission at IECE. S. Tazaki, et al., proposed the concept of vector quantization ahead the rest of the world and researched and developed various systems related to this.