Super High Definition Digital Cinema Distribution System

While a wide range of content can now be distributed with the coming of the Internet, the motion picture is still the king of multimedia content. New technology for complete digitization of movies without loss of the quality of 35-mm film and distribution of that data over a fiber network has been developed in the NTT Laboratories.

That technology is the digital cinema distribution system, which improves on the video image quality of HDTV* by achieving a resolution of 3840 x 2048 pixels (8 million pixels), or four times the resolution of HDTV. It is therefore capable of presenting the world’s highest quality digital cinema. The system consists of a video server, real-time decoder, liquid crystal projector and IP distribution software. One major feature of the digital cinema is the network distribution function, which is realized through digitization. This laboratory-developed system was used to successfully demonstrate the world’s first network distribution of 8 million pixel digital cinema via an IP stream at the Tokyo Cinema Show in November 2001 and at an international symposium in March 2002. The distribution experiment at the latter event, in particular, created a big sensation by presenting a two-hour long movie, “TOMB RAIDER” at the Yamaha Hall in Ginza. The content was distributed over an IP stream at 300 Mbit/s via a network (MetroEther) by connecting a content server installed at the NTT East Center (Iidabashi) to the network with Gigabit Ethernet.

The digitization of the movie produced an immense amount of data, so distribution of that data was unthinkable without optical fiber. This concept is made feasible only by the steady increase in network bandwidth by use of optical fiber. In future, we plan to strengthen efforts on the standardization of high-quality digital cinema, support for the development of products, and preparation of a content distribution environment.

(Network Innovation Laboratories)

* HDTV: High Definition Television

Application of the Situation-Adaptive Retrieval System SPIDIR to a Personalized Video Search System

ADSL and optical fiber have seen rapid penetration into residential networks in recent years, and use of video is already emerging as one of the most popular broadband service offerings. But as increasing amounts of video content become available, it is becoming more and more difficult for users to easily locate the specific materials they want to see.

SPIDIR is a system that indexes and keeps track of video content by storing metadata on each piece of video —title, people appearing in the video, and so on—in MPEG-7-compliant XML format. SPIDIR supports a number of different search modes in response to a user’s search criteria: a search can be performed on various attributes corresponding to the search criteria, or search results can be presented as a directory structure. In addition, SPIDIR also provides an advanced video search capability tailored to the individual user by combining user-specific data (user profile and input information) and genre information furnished by the service provider. User information such as gender, age, and the area in which one lives can be flexibly recorded. The service provider can then use this information to flexibly modify the appearance of video searches to accommodate age restrictions, to provide materials in a specific genre, to furnish contents relating to the particular place people live, and so on. The system also features an interface based on a viewing log that captures the viewing habits of the user, so a personalized search menu can be readily built up that reflects the tastes and preferences of each user.

Although SPIDIR was primarily developed as a video contents delivery service capable of handling massive amounts of video data, the system could be easily adapted to online shopping malls, systems for providing digital learning materials, digital libraries, and many other potential applications.

(Cyber Space Laboratories)