

【Press Release】



KDDI R&D Laboratories Inc.

April 7<sup>th</sup>, 2011

**Development of Codec Equipment Applicable for Real-time Transmission  
of 8K UHD TV signals**

KDDI R&D Laboratories Inc. has succeeded to develop a compact style codec equipment that can realize real-time transmission of 8K Ultra-high Definition Video (UHD TV) at extremely high compression performance. By utilizing this equipment, the 8K content delivery is possible over typical broadcasting network such as FTTH, CATV and satellite circuits. This research was conducted under the research project, "Ultra-high definition video compression coding technology", organized by the National Institute of Information and Communications Technology, Japan.

**Background**

After wide acceptance of 3D as the consumer media, UHD TV is anticipated as the next generation video application. Above all, the 8K UHD TV with the spatial resolution of 7680 pixels x 4320 lines as equivalent to 16 times of conventional HDTV is strongly expected. Therefore, the research works to realize the large screen public viewing and the future broadcasting service are conducted worldwide. For 8K UHD TV, the conventional transmission system was equipped at quite large scale because it was realized by multiplexing compressed signals from HDTV encoders. Under the restricted transmission capacity assumed for consumer broadcasting networks, the picture quality was not satisfactory due to insufficient coding performance. Therefore, the development of a new compression coding scheme and a corresponding codec system were strongly required.

**Achievement**

We established the proprietary coding technology for 8K UHD TV. Based on this technology, the real-time codec system has been developed as hardware equipments. The employed video compression scheme is featured by originally extended coding functions under the framework of H.264 standard. As the compression performance, the satisfactory picture quality can be maintained even at the bit-rate of 70Mbit/s. As for the codec system, we developed the real-time codec system composed of encoder and decoder. The great advantage is its compact style whose height is only 2U ( 8.8cm ) for encoder and decoder, respectively. Furthermore, the system is implemented under the fully programmable architecture based

on FPGA platform in order to achieve higher flexibility compared to the conventional architecture dependent on a special purpose LSI.

**Future Activity**

After further enhancement of our coding scheme to achieve compression performance improvement, a field trial of 8K UHDTV transmission via broadcasting networks is planned for the live transmission from an event venue such as a stadium.

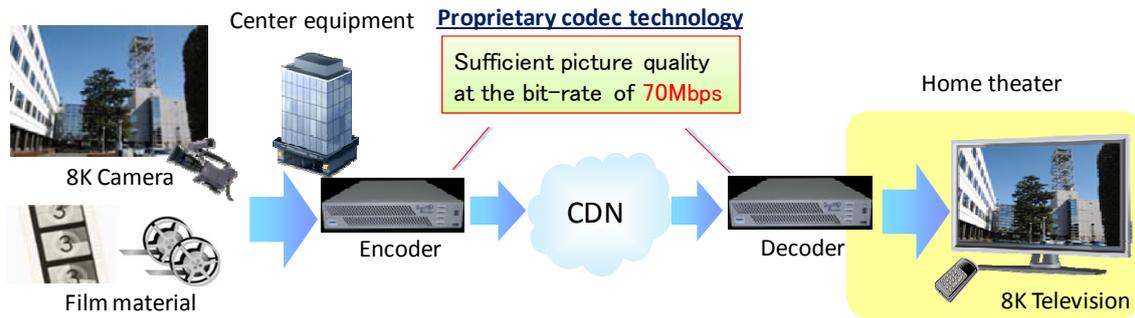


Fig. 1 Assumed configuration of transmission system

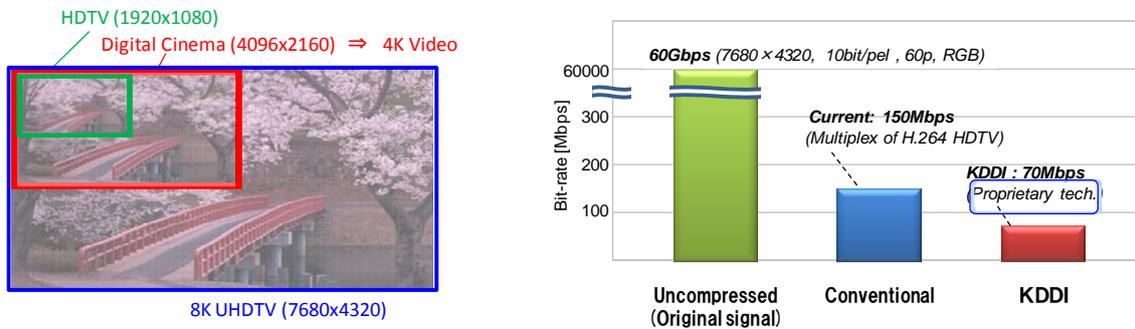


Fig. 2 Comparison of compression performance