

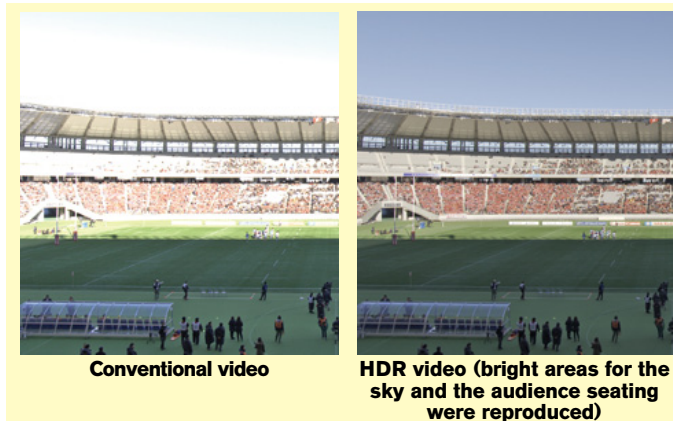
## High Dynamic Range (HDR) 8K Display Developed

**H**igh dynamic range (HDR) video technology is capable of showing scenes that are difficult to display using conventional television. These scenes include ones with large variations in brightness as would exist in daytime sporting events at a stadium, where shady and sunny spots are captured in the same frame (Figure), or where there are flashing reflections from glass or metal.

Advances in display technology have expanded the brightness range, allowing high luminance and a wider range of visual expression options.

NHK, in cooperation with the British Broadcasting Corporation (BBC), has developed a new HDR scheme that is highly compatible with conventional television systems. This system greatly expands the highlight range beyond the white level, while maintaining the same gradation characteristics (tone curve) between dark areas and the white level. The Association of Radio Industries and Businesses (ARIB) in Japan established the STD-B67 standard, "Essential Parameter Values for the Extended Image Dynamic Range Television (EIDRTV) System", based on this scheme in July 2015. International standardization is also currently underway.

NHK, in collaboration with Sharp Corporation, has constructed of the world's first 85V-type HDR 8K LCD that is compliant with this HDR scheme (Picture). The display has a highly efficient backlight system that accommodates HDR's high peak luminance, as well as a driving technology that adjusts the luminance of each small region of input video. This makes



**Figure: Comparison of video taken with conventional system and HDR system**

it feasible to attain four times the maximum luminance and 100 times the contrast ratio of a conventional 8K display system (both actual measurements). The HDR 8K display was exhibited at IBC2015, Europe's largest broadcasting equipment exhibition, which was held in Amsterdam, the Netherlands, in September 2015.

Incorporating the HDR scheme in ultrahigh-definition/wide-color-gamut 8K images is expected to enhance the attractiveness of the 8K system. 8K programs are being produced by taking advantage of the strengths of HDR systems. Our future work on broadcasting system standardization and equipment installation is progressing with the goal of employing HDR in 4K/8K test satellite broadcasting, which will start in 2016.



**Picture: HDR 8K LCD**

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