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REPORT OF TOPIC CHAIRMAN
PRODUCTION TOPIC AREA

Topic Chairman	**: Kazim PEKTAS – TRT-Türkiye**
Period of Report	**: April 2026 to October 2026**
Date of Report	**: 30 October, 2026**

Reports from Project Managers in Topic on Production

A total of four projects are under the **Production Topic Area**, as below:

1. Ultra High Definition TV and Advanced Immersive Sensory Media Systems P/UHDAISM
2. Systems for people with special needs P/SN
3. IT -based Production System and file-based workflows P/ITPS
4. Big Data, Personalisation and Artificial Intelligence P/BDAI

For this reporting period we received three contributions, one from **Ultra High Definition TV and Advanced Immersive Sensory Media Systems (P/UHDAISM)** project group and two from **Big Data, Personalisation and Artificial Intelligence (P/BDAI)** project group.

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1. RECENT R&D ON AI- ASSISTED NEWS PRODUCTION AT KBS

Project Group: Big Data, Personalisation and Artificial Intelligence (P/BDAI)
Project Manager: Dr Byunghee Jung, KBS, Korea

KBS Media Technology Research Institute (KBS R&D) is conducting research on the practical application of artificial intelligence to news production. Current activities focus on applying AI to key stages of the production process, including voice synthesis, news drafting, and production support, while exploring digital human technology for future broadcast applications. These efforts aim to improve production efficiency and quality and to establish reliable methods for incorporating AI into professional broadcasting.

AI-assisted Radio News Production

The rapid advancement of AI has increased opportunities to automate and streamline broadcast production. In radio news, AI can be particularly useful during overnight hours and emergency situations, when maintaining sufficient production resources can be challenging. To address these requirements, KBS R&D has developed an AI-assisted radio news production system that combines voice synthesis, content generation, and dedicated production tools.

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A key component of the research is the development of **AI voice models based on the speaking characteristics of KBS news anchors**. Broadcast materials were selected and processed through data preprocessing and alignment, with standardized pronunciation rules applied to improve accuracy and consistency. In parallel with in-house development, commercial TTS and voice-cloning technologies were evaluated to identify approaches capable of meeting broadcast requirements for voice quality and operational stability.

To integrate these technologies into actual production, KBS R&D developed a dedicated tool supporting the radio news process from **cue-sheet preparation and audio generation to pronunciation correction, review, and editing**. Unlike standalone TTS applications, the tool is designed around existing broadcast practices, allowing generated audio to be handled within a structured production environment.

The research has also been extended to automated content generation. Publicly available information, including weather data, disaster alerts, and press releases, can be collected and organized automatically to generate initial news drafts. KBS R&D has also implemented **"Today's News by AI,"** an automated daily briefing service, to examine the use of AI for routine and recurring news production.

All AI-generated drafts are intended to support, rather than replace, editorial judgment, and remain subject to verification, review, and final approval by news professionals. The system was tested through an experimental radio news broadcast on KBS's anniversary in 2025. The trial demonstrated the feasibility of using AI-generated voices in an actual broadcast environment and provided practical experience for further improvement. Based on the results, KBS is continuing development toward the level of quality, reliability, and operational stability required for regular broadcasting.

Through this research, KBS is moving beyond the application of individual AI functions and examining how news drafting, voice synthesis, pronunciation management, editing, and production support can be combined within a unified production process.

Digital Human Technology for Broadcasting

KBS began research on digital human technology in 2025 as part of a three-year national R&D project on the generation and reproduction of realistic human movement. The project aims to establish technologies for realistic movement, facial expressions, gestures, and speech synchronization, with KBS responsible for demonstration services and pilot broadcast content.

During the first year, four digital human characters—a male and female anchor and a male and female reporter—were planned for potential application to news and current-affairs programs. Their roles, visual identities, speaking styles, and appearance were designed using character narratives and generative AI tools.

The project has also examined requirements for practical adoption through consultation with organizations in broadcasting, advertising, entertainment, virtual production, and AI platforms. Major issues include production cost, realism, operational frameworks, and common standards. Commercial solutions such as HeyGen and Synthesia were also evaluated to assess their capabilities and potential use in broadcasting.

The next phase of the project will focus on establishing a digital human production pipeline and developing pilot services for integration with AI-assisted broadcast production. Potential applications include regularly updated information content, multilingual or accessibility-oriented content, and new formats for delivering timely public-interest information.

Future Direction:

KBS R&D is extending its research from individual AI applications toward a more integrated approach to news production. The combination of automated news drafting, voice synthesis, specialized production tools, and digital human technologies provides a basis for exploring new production models in which AI supports multiple stages of the broadcasting process.

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Future work will focus on practical deployment, with particular attention to broadcast quality, system reliability, and operational integration. KBS will continue to evaluate these technologies through broadcast-oriented development and field testing, with the objective of establishing practical and sustainable applications of AI in news production.

2. MULTIMODAL LLM USING TV PROGRAM CONTENT DATA

Project Group: Big Data, Personalisation and Artificial Intelligence (P/BDAI)
Project Manager: Dr Byunghee Jung, KBS, Korea

NHK Science and Technology Research Laboratories (NHK-STRL) is researching and developing multimodal large-language models (LLMs) for producing programs more efficiently. NHK-STRL has developed an original multimodal LLM that has been additionally trained using program video, audio, and closed caption data. This article outlines its characteristics and its envisioned future applications for supporting program production workflows.

- **Key Features of the NHK-STRL Multimodal LLM**

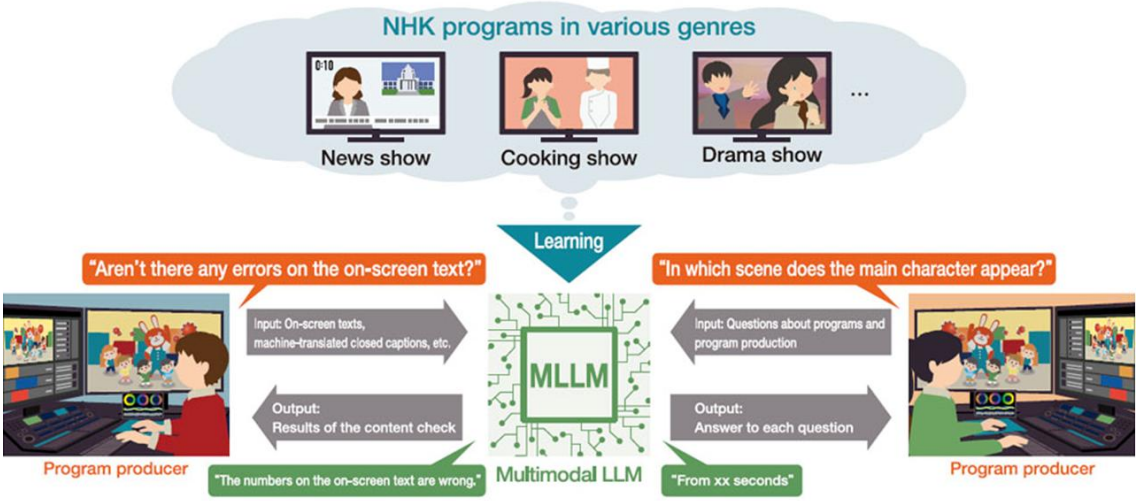
NHK-STRL developed a multimodal LLM by additionally training an open-weight LLM on data centered on NHK program video, audio, and closed captions. By learning from actual broadcast content, the model can perform analyses specialized for broadcast content. Furthermore, by applying instruction tuning tailored to anticipated support tasks in program production, the model is expected to become better suited to assisting broadcasting operations. In addition, by comprehensively analyzing video, audio, and closed captions, the multimodal LLM can understand program content more deeply than text-only LLMs can.

- **Enhancing Content Reliability**

To ensure the accuracy of broadcast content, NHK carefully reviews its programs before they are aired. Tasks that have traditionally been performed manually include checking for typographical errors in on-screen text during broadcasts and verifying that program descriptions provided for distribution accurately reflect the content. By using the developed multimodal LLM as a support tool, it can reduce the workload of content creators while helping them to maintain content reliability.

- **Looking Ahead**

To enable multimodal LLMs to be practically deployed, their accuracy will need to be further improved. NHK-STRL also plans to identify tasks that can be effectively handled by LLMs and expand the corresponding training data. Through these efforts, NHK-STRL aims to pave the way for future practical applications of multimodal LLMs in program production.



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3. ON-SITE REAL-TIME AVATAR COMPOSITING SYSTEM

Project Group: Ultra High Definition TV and Advanced Immersive Sensory Media Systems (P/UHDAISM)
Project Manager: Dr. Toshie HIROSHIMA, NHK Japan

NHK STRL has developed an on-site real-time avatar compositing system that simplifies virtual production, enabling 3DCG avatars to be seamlessly integrated into live-action video with minimal equipment. A fixed 8K camera captures wide-angle footage, into which 3DCG avatars are composited in real time. Desired image areas of the composited video can then be cropped and scaled to create the final 2K program. The system is easily set up, requiring only a one-time adjustment of the camera position and orientation.

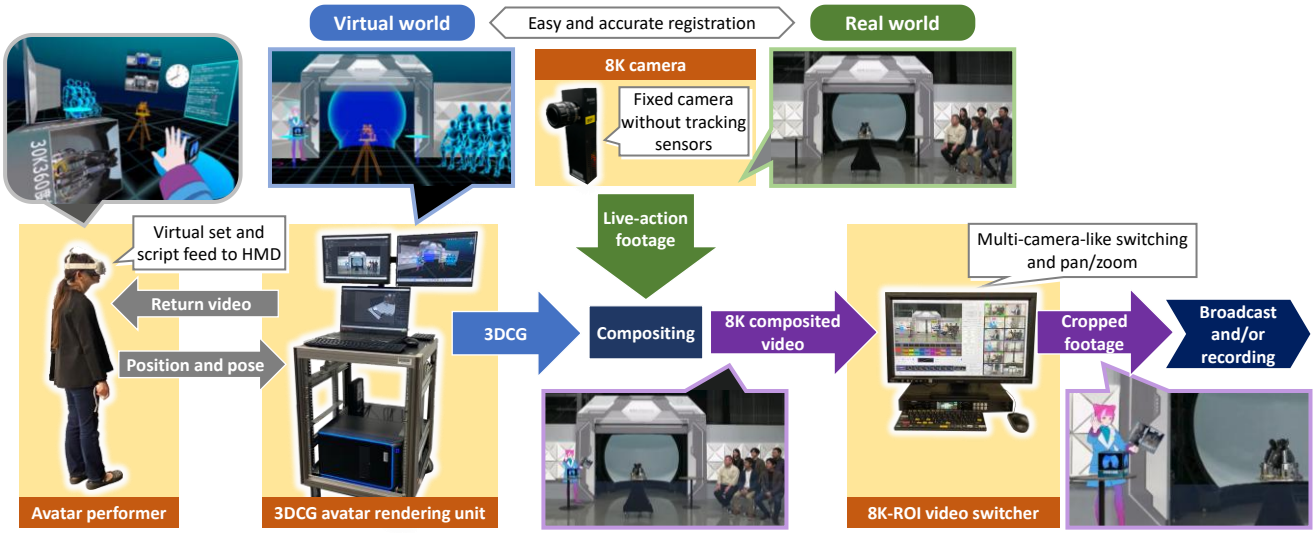


Figure 1. Configuration of an on-site real-time avatar compositing system

- **Multi-camera-like 3DCG composition with minimal equipment**

3DCG avatars are composited into wide-angle 8K live-action footage, from which arbitrary areas can be cropped to produce the final program (Fig. 1). Alignment between the real and virtual worlds is straightforward, requiring no special equipment such as camera-tracking sensors.

- **Support functions for avatar performers enabling natural real-virtual interaction**

The performer wears a head-mounted display (HMD) and controls the avatar's body movements and facial expressions. Script and virtual replica of the studio set are displayed within the performer's field of view, enabling natural interactions between real and virtual elements.

- **Intuitive operation with "8K-ROI video switcher"**

Regions of Interest (ROIs) are cropped from 8K video and output as 2K-resolution video. The intuitive user interface enables flexible production workflows, including switching between multiple ROIs as well as pan and zoom operations.

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