

# 广播与电视技术

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Radio & TV Broadcast Engineering

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为繁荣学术交流,本刊已加入《中国学术期刊网络出版总库》、“万方数据”和“维普中文科技期刊数据库”,有权选取部分论文在本刊关联平台(如广电猎酷网 www.lieku.cn、“广电猎酷”微信公众号等)发布,作者著作权使用费已随论文稿酬一次性给付。本刊充分尊重作者的原创成果并合理保护作者享有的权利,如作者不同意本刊之外其他形式的发布,请在来稿中声明,本刊将作适当处理。本刊及主办单位对本刊已发布作品的内容和观点不持有任何立场、不做任何承诺或保证、不承担任何责任。

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## 【11】智慧广电建设升级方案总体架构研究

为深入贯彻落实广电总局《关于促进智慧广电发展的指导意见》，进一步助力总局加快推进传统广电向智慧广电演进迭代，2021年3月广播电视规划院成立智慧广电研究项目组，开展智慧广电总体架构研究。本文重点对项目组的研究思路、工作原则，以及研究提出的智慧广电目标、特征作了介绍，并详细阐述了研究提出的智慧内容生产、智慧内容传播、智慧安全保障、智慧监测监管、智慧服务供给、智慧生态和智慧引擎等七大领域的智慧广电总体架构内容，值得业内同仁参考借鉴。

## 【27】基于5G通信技术的低延时网络直播解决方案

近年来，互联网行业网络直播已经成为一个现象级应用，新闻媒体也利用网络直播作为重要的传播手段和拓展舆论阵地的有效武器。为使网络直播更适应新闻媒体的实际应用和安全需求，河南广播电视台研发了一套基于5G通信技术和超高清视频编码技术的超高清视频直播解决方案，有效降低了新闻资讯类直播的录制成本，提升直播效率，提高与用户的互动性，可供同行借鉴。

## 【33】融媒体背景下广播电视台全文件化制播系统设计与实现

随着广播电视节目采、编、播等生产系统的数字化、智能化、网络化发展，广播电视节目制播方式已发生了根本性变革。带式记录、线性编辑、录像机上载送播等传统节目生产模式已不再适应数字媒体时代发展要求，需进行技术改造升级，建立全文件化制播生产系统，以紧跟融合媒体发展步伐。本文介绍了融媒体背景下广播电视台全文件化制播系统的设计与实现，相关做法可供广播电视台开展同类项目建设时参考。

## 【66】基于“一云多屏”架构的广电融媒体平台建设实践

伴随媒体融合的纵深化发展，重庆广电新媒体在技术融合、平台融合、业务融合、终端融合等方面持续创新，着力建设综合性融合媒体应用平台，构建了“一体化平台、多资源汇聚、统一内容管理、多渠道分发、多终端服务、全媒体运营”的融合制播体系，对推动广电媒体融合向纵深发展起到积极作用。本文主要介绍了建设实践的相关内容，可咨业界同仁借鉴。

## 【105】省级安播监管系统设计与实现

按照广播电视安全播出管理要求，江苏有线建成了省中心集中汇聚，分中心独立管控的三级安播监管体系，实现了数字电视信号传输、监测信号回传、控制信号操作有机结合的数字电视信号安全播出网，有效地保障了数字电视信号安全播出。



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## [ 11 ] Research on Overall Architecture of Upgrade Plan for Intelligent Radio and Television Construction

In order to thoroughly implement the “Guiding Opinions on Promoting the Development of Smart Broadcasting and Television” issued by NATR and further help NATR accelerate the evolution of traditional radio and television to smart radio and television, Academy of Broadcasting Planning established a smart radio and television research project team in March 2021 to carry out the research on overall structure of smart radio and television. This paper focuses on research ideas and working principles of project team, as well as objectives and characteristics of smart radio and television proposed in the research, and expounds in detail overall architecture of smart radio and television in seven fields proposed in the research, such as smart content production, smart content dissemination, smart security, smart monitoring and supervision, smart service supply, smart ecology and smart engine, which is worthy of reference for colleagues in the industry.

## [ 27 ] A Low Latency Live Streaming Solution Based on 5G Technology

In recent years, live streaming in Internet industry has become a phenomenon-level application, and news media also use live streaming as an important means of communication and an effective weapon to expand public opinion position. In order to adapt live streaming to actual application and safety requirements of news media, Henan Radio and Television Station has developed a set of UHD video live streaming solutions based on 5G communication technology and UHD video coding technology, which effectively reduces recording cost of news and information live broadcasting, improves the efficiency of live broadcasting and improve the interaction with users, which can be used for reference by peers.

## [ 33 ] Design and Implementation of Full File-based Production and Broadcasting System in the Times of Media Convergence

With the development of digital, intelligent, and networked production systems for acquisition, editing, and broadcasting of radio and television programs, fundamental changes have taken place in production and broadcasting methods of radio and television programs. Traditional program production modes such as tape recording, linear editing, and uploading and broadcasting on video recorders no longer meet development requirements of digital media era. Technical transformation and upgrading are required to establish a full-file production and broadcasting system, so as to keep up with the development of converged media. This paper introduces design and implementation of full file-based production and broadcasting system of radio and television stations under the background of converged media. Relevant practices can be used as a reference for radio and television stations to carry out similar projects.

## [ 66 ] Construction Practice of Radio and Television Converged Media Platform Based on “One Cloud and Multi-screen” Architecture

With in-depth development of media convergence, New Media Group of Chongqing Radio and Television Station continues to innovate in technology integration, platform integration, business integration, terminal integration, etc., and focuses on building a comprehensive converged media application platform. It builds an integrated production and broadcasting system of “integrated platform, multi-resource aggregation, unified content management, multi-channel distribution, multi-terminal services and omni-media operation”, which plays a positive role in promoting in-depth development of radio and television media convergence. This paper mainly introduces relevant content of construction practice, which can be used for reference by colleagues in the industry.

## [ 105 ] Design and Implementation of Province-level Security Broadcasting Supervision System

In accordance with the requirements for safe broadcasting management of radio and television, JSCN has established a three-level security broadcasting supervision system with centralized gathering of provincial centers and independent control of sub-centers, which has realized digital TV signal safe broadcasting network with organic combination of digital TV signal transmission, monitoring signal return and control signal operation. It effectively ensures safe broadcasting of digital TV signals.