

# 广播与电视技术

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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、不做出任何承诺或保证、不承担任何责任。

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## 〔10〕《IPTV集成播控平台与传输系统用户“双认证、双计费”接口规范》解读

2021年2月底,国家广播电视总局发布了广播电视和网络视听行业标准《IPTV集成播控平台与传输系统用户“双认证、双计费”接口规范》。标准规定了IPTV集成播控平台与传输系统之间“双认证、双计费”的主要对接流程,定义了用户、认证、计费相关的接口规范,适用于IPTV集成播控平台和IPTV传输系统采用“双认证、双计费”方式的规划、设计、建设、运行、管理和维护。本文即是对该标准较为全面的解读,有助于业界人士更好的理解和使用标准。

## 〔20〕H.266/VVC残差编码关键技术研究

H.266/VVC在H.265/HEVC残差编码技术的基础上,提供了更丰富的变换核选择,并针对帧内预测方向提供了更加高效的二次变换,同时,对量化步长进一步扩充,可以更加方便的进行码率控制。在传统的标量化基础上,引入了依赖量化,与系数编码相结合可以降低编码数据量。除了普通残差编码模式,H.266/VVC标准也可以支持变换/量化跳过模式,以应对不同的编码场景。本文围绕H.266/VVC残差编码关键技术开展研究,可咨广电系统相关机构开展研究和应用时参考。

## 〔56〕基于“一云六屏一播”架构的新时代文明实践智慧云平台的设计及实现

本文所述的新时代文明实践智慧云平台设计根据中央、江苏省委对新时代文明实践中心建设试点工作的部署要求,进行规划设计和实施,采用“一云六屏一播”架构体系,可实现县乡村、志愿服务组织、志愿者、农村群众的有机对接,全方位全过程服务于新时代文明实践中心建设,可供各省市广电网络运营商承接开展新时代文明实践中心建设时参考借鉴。

## 〔81〕FeMBMS与DTMB关键技术指标比较研究

5G广播是中国广电与传统三大运营商避免同质化竞争,形成差异化发展的中要方向。2019年10月,采用3GPP R14版本FeMBMS标准的5G广播先导网在北京试播,为5G广播的发展及应用提供了研究基础。本文基于试验网测试数据,对FeMBMS和DTMB两个系统的关键技术指标进行了比较分析,为将来广播电视业务的发展提供了技术参考。

## 〔116〕广播电视行业网络安全态势感知预警平台的设计与思考

态势感知技术以大数据、人工智能技术为基础,是一种基于环境的、动态、整体地洞悉安全风险的能力。本文研究设计了广播电视行业网络安全态势感知预警平台,可对广播电视行业内的网络进行全方位、多视角的实时监测、统计、分析、探测、追溯、展示,有助于提升广播电视行业内网络安全整体防护水平。



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## [ 10 ] Interpretation of "Specification of Interfaces for User 'Double Authentication and Accounting' for Both IPTV Integrated Playout Management Platform and Transmission System"

In February 2021, NRTA issued the standard "Specification of interfaces for user 'double authentication and accounting' for both IPTV integrated playout management platform and transmission system" for radio, television and network audio-visual industry. The standard specifies main docking process of "double authentication and accounting" between IPTV integrated playout management platform and transmission system, and defines interface specifications related to user, authentication and accounting, which is applicable to planning, design, construction, operation, management and maintenance of "double authentication and accounting" mode adopted by IPTV integrated playout management platform and IPTV transmission system. This paper makes a comprehensive interpretation of the standard, which is helpful for the industry to better understand and use the standard.

## [ 20 ] Research on Key Techniques of H.266/VVC Residual Coding

H.266/VVC standard provides a richer selection of transform cores on the basis of H.265/HEVC residual coding technology, and provides a more efficient secondary transform for intra-frame prediction direction. At the same time, it further improves quantization step size, which can be more convenient for rate control. On the basis of traditional scalar quantization, dependent quantization is introduced, which is combined with coefficient coding to reduce data rate. In addition to ordinary residual coding mode, H.266/VVC can also support transform/quantization skip mode to cope with different coding scenarios. This paper focuses on key technologies of H.266/VVC residual coding, which can be referred to relevant institutions of radio and television for research and application.

## [ 56 ] Design and Implementation of Smart Cloud Platform Based on "One Cloud, Six Screens, One Broadcast" Architecture for Civilized Practice in the New Era

The new era civilization practice smart cloud platform described in this paper is planned, designed and technically implemented according to deployment requirements of central government and Jiangsu Provincial Party Committee for pilot work of new era civilization practice center construction. "One cloud, six screens, one broadcast" architecture system is adopted to realize organic docking of counties and villages, voluntary service organizations, volunteers, and rural people, which can serve the construction of new era civilization practice centers in an all-round and whole process. It can be used as a reference for provincial and municipal radio and television network operators to undertake the construction of new era civilization practice centers.

## [ 81 ] Comparative Study on KPIs between FeMBMS and DTMB

5G broadcasting is an important direction for CBN to avoid homogeneous competition with three traditional operators and form a differentiated development. In October 2019, 5G broadcast pilot network using 3GPP R14 version of FeMBMS standard was piloted in Beijing, providing a research foundation for development and application of 5G broadcasting. Based on test data of test network, this paper compares and analyzes key technical indicators of FeMBMS and DTMB systems, and provides a technical reference for future development of broadcast and television services.

## [ 116 ] Design and Thinking of Network Security Situation Awareness and Early-warning Platform in Radio and Television Industry

Situational awareness technology is based on big data and artificial intelligence technology. It is an environment-based, dynamic and overall insight into security risks. This paper studies and designs network security situation awareness and early warning platform of radio and television industry, which can carry out all-round and multi perspective real-time monitoring, statistics, analysis, detection, tracing and display of radio and television network, and help to improve overall protection level of network security in radio and television industry.