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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.tv、“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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【21】广电双向网改造 FTTH 施工运维应用与实践

施工运维是有线电视网络 FTTH 改造的薄弱环节之一，特别是在传统的有线电视网络 FTTH 施工运维方式早已不适应现在工作需求的情况下，更需要有新的思路、新的概念、新的设想和新的设备来支撑 FTTH 网络建设维护。本文从有线电视网络 FTTH 施工运维实践出发，总结了 FTTH 快速施工安装、运维中的仪表、无源电子标签、光纤智能管理系统等四方面的工程经验，可咨业界同仁参考借鉴。

【25】IPv6 和全业务经营并举，推进广电宽带网络升级改造

面对 IPv4 紧缺、IPv6 演进迫切的发展形势，广电行业如何实现从 IPv4 向 IPv6 过渡成为一个关乎网络演进升级、技术创新发展的现实课题。本文从 IPv6 演进和全业务运营两个维度，对全国有线电视网络互联互通平台骨干网、业务系统、终端，以及省网、城域网、接入网的演进与业务支撑方案进行研究，提出了广电网络 IPv6 演进的方案和建议方案和全业务运营的策略思路，有利于推动广电宽带网络的改造升级，可咨参考借鉴。

【33】多源异构收视大数据平台架构及应用探究

实现对多源异构数据的统计分析，乃至扩展到构建智慧广电应用，都必须首先解决异构数据的融合统一问题。本文基于已发布的相关行业暂行技术文件，探讨提出了一种针对广电多源异构收视大数据平台的软硬件架构方案，重点研究了收视大数据处理基础工具和应用开发方向，以及数据汇聚、清洗、入库方式等关键的数据准备环节，为未来广电行业构建全国性收视大数据中心作了一些技术储备。

【38】VR 全景视频技术链路各环节对视觉观看体验的影响解析

虚拟现实（VR）技术近年来发展迅猛，在我国广电行业也已经有所尝试。但目前 VR 全景视频观看还存在观看清晰度不够、容易眩晕恶心等观看不适感，影响 VR 全景视频沉浸式观看视觉体验。本文分析了 VR 全景视频技术链路各环节对观看的影响，梳理归类出较为舒适的观看视觉体验在各环节所需要的技术要求，为推动 VR 技术全景视频的发展和应用奠定了一定基础。

【76】数字电视付费频道预览及快速订购功能的原型设计与开发

付费频道作为数字电视重要的增值业务之一，如用户体验不佳，势必会对业务市场推广产生不利影响。为解决付费频道收视率低下的问题，江苏有线采用付费频道预览的形式吸引用户观看，采用互联网支付手段进行付费开通，实现快速订购，在一定程度上提高了付费频道的收视率。江苏有线已完成系统原型开发，基本实现了基于 IP 的付费频道预览、机顶盒挂帘、用户扫码支付和付费频道自动开通等功能，具备商用推广条件。

【102】隧道调频广播覆盖系统信号源安全方案

完善隧道中的广播信号覆盖具有十分重要的现实意义。目前隧道中广播信号覆盖多使用隧道调频广播前端和光纤直放站实现，信源容易受到干扰、插播破坏，保证隧道广播信号的安全播出非常重要。本文提出的基于音频比对技术的信号源安全方案，能及时发现异常信号，有效防止非法信号插播和错播事故，确保隧道广播信号的安全播出。

【127】广播覆盖监测系统设计

中央人民广播电台结合实际业务需求，设计了一套广播覆盖监测系统。该系统承载着各地台站基本信息管理功能，实现了节目播出内容一致性自动比对，检测节目停播、异常等。该系统建成后，可以通过监测广播开路信号的技术指标和节目内容两种方式，准确、实时地判断各地的播出情况和覆盖效果，大大提高了工作效率。本文介绍系统的设计方案，供业界参考。



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[21] Construction Operation and Maintenance of FTTH in Two-way Transformation of CATV Network

Construction operation and maintenance is one of the weakest points in the FTTH transformation of CATV network, especially in the situation that the traditional operation and maintenance of FTTH CATV network could not meet the present requirement. New ideas, new concepts and new equipment are needed to support FTTH network. This paper starts from the construction operation and maintenance practice of FTTH CATV network, and then summarizes the engineering experience in four aspects: the rapid construction and installation of FTTH, the instrument in operation and maintenance, the passive electronic label and the optical fiber intelligent management system. It could be referenced for colleagues in industry.

[25] IPv6 and Full-service Business for the Upgrading of CATV Broadband Network

Due to the urgent shortage of IPv4 and the evolution of IPv6, how to realize the transition from IPv4 to IPv6 in broadcasting industry has become a practical issue concerning the network evolution and the technology innovation. In two aspects of the IPv6 evolution and full-service operation, this paper studies the national CATV interconnected platform, including the backbone network, business system, terminals, the provincial network, metropolitan area network, accessing network and the business scheme. This paper puts forward the proposal of the IPv6 evolution and the strategy of full-service operation, which is helpful to upgrade the broadband network and for your reference.

[33] Exploration of Multi-source Heterogeneous Audience Big Data Platform Architecture

In order to statistically analyze the multi-source heterogeneous data and to apply it to the smart broadcasting, we have to integrate the heterogeneous data first. According to the technical documents published in the related industries, this paper proposes a kind of software and hardware architecture for multi-source heterogeneous audience big data platform. It discusses the key tools of data processing and its application development, as well as the data preparation such as data aggregation, data cleaning and data storage. This makes technical reserves for a national big data center in future.

[38] Influence of VR Panorama Video Technology on Viewing Experience

Virtual reality (VR) technology has been rapidly developing in recent years, and has also been applied in China broadcasting industry. But VR panoramic video still have a sense of discomfort, such as insufficient clarity, dizziness and nausea, which degrade the immersive viewing experience. This paper analyzes the influence of VR panorama video technology on viewing experience, and sorts out the technical requirements for more comfortable viewing experiences. It offers a foundation for the development and application of the VR technology panoramic video.

[76] Prototype Development of Preview and Quick Order for DTV Paid Channel

Paid channel is one of the important value-added services of DTV. If the user experience is poor, it would have disadvantages on business marketing. Due to low ratings of paid channels, Jiangsu Cable Network Technology Research Institute Co. Ltd. tries to hook more subscribers by content preview. Also, paid channel could be quickly ordered by the Internet payment. It raises the paid channel ratings. Jiangsu Cable Network Technology Research Institute Co. Ltd. has already developed the prototype, including functions of preview based on IP, QR scanning and automatic opening, which could be commercially promoted.

[102] Security Scheme of Source Signal for Tunnel FM Broadcasting Coverage System

Improving the broadcasting coverage in tunnels is of great practical significance. At present, the broadcasting coverage in tunnels is mostly achieved by FM front-ends and optical repeaters, which are vulnerable to be interfered and disrupted. It is very important to ensure the safe broadcast in tunnels. This paper proposes a source signal security scheme based on audio comparison. It detects abnormal signals in time, and effectively prevents broadcasting errors and illegal signals from inserting as well, so that the safe broadcasting in tunnels is ensured.

[127] Design of Broadcasting Coverage Monitoring System

According to the business requirements, China National Radio designed a broadcasting coverage monitoring system, which manages the basic information of all stations. It realizes a program automatic consistent comparison, and detects the program's broadcasting stop and abnormality. After the construction, we can accurately get the broadcasting coverage effects of various places in time, by monitoring the technical index and program content of the wireless broadcasting signals. It greatly improves the work efficiency. The system scheme introduced in this paper could be referenced in the industry.