**FEDERAL UNIVERSITY DUTSE**

FACULTY OF COMPUTING

DEPARTMENT OF CYBER SECURITY

COURSE CODE: 409

COURSE: VOIP AND MULTIMEDIA SECURITY STANDARD

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ASSIGNMENT QUESTION

Write extensively on multimedia security standard.

ABSTRACT:

Multimedia content is widely shared and and consumed across various digital platforms, making it crucial to ensure the security and protection from unauthorized access, modification or distribution. This paper will highlight the overview, key futures, applications and advancement of recent multimedia security standard. The discussion encompasses encryption, watermarking, digital right management (DRM), and their relevant standards aimed at a safeguarding multimedia content in different domains. The paper is supported by relevant citation and references from scholarly articles, conference papers and technical reports published during the specified period.

1.0 INTRODUCTION

Multimedia security standard play a vital role in safeguarding digital content against threats such as privacy, unauthorized access, and illegal distribution. This section provides an introduction to the significance of multimedia security and outlines the objectives of the paper.

* 1. DEFINATION OF MULTIMEDIA SECURITY STANDARD

Multimedia security standard refer to a set of guidelines, protocols, and specifications developed to ensure the security, integrity, and protection of multimedia content, including images, audio, video and other forms of digital media. These standards provide a framework for implementing security measures to prevent unauthorized access, tampering, copying, or distribution of multimedia data.

Multimedia security standard encompass various aspect of data protection, encryption, watermarking, digital right management (DRM), and secure communication protocols. They define algorithms, methodologies,and best practices for securing multimedia content throughout its life cycle, from creation and distribution to storage and consumption.

1.2 The primary objectives of multimedia security standard are to :

1. Ensure confidentiality: multimedia security standards employs encryption techniques to safeguard the confidentiality of sensitive data, preventing unauthorized users from accessing or deciphering the content.
2. Maintain integrity: these standards include mechanisms to verify the integrity of multimedia content, detecting any unauthorized modification or tempering attempts.
3. Protect against privacy and illegal distribution: DRM standards are designed to enforced copyright protection and prevent unauthorized copying, sharing,or distribution of multimedia content.
4. Enable secure communication: standard for secure communication protocols ensure the confidentiality and integrity of multimedia data during transmission over networks, protecting against eavesdropping and data interception.
5. Support traceability and authentication: watermarking techniques embedded within multimedia content enable traceability and authentication, allowing content owners to identify the source of unauthorized use or distribution.

Overall, multimedia security standards serve as a foundation for implementing robust security measures that safeguard digital media, protect intellectual property rights, and preserve the integrity and privacy of multimedia content on various domains such as broadcasting, cloud computing,internet of things (IOT), and much more.

2.0 MULTIMEDIA ENCRYPTION STANDARDS

1. Advanced Encryption Standard (AES)
2. Multimedia internet KEYing (MIKEY)
3. Secure real-time Transport Protocol (SRTP)
4. Scalable Encryption Scheme for HEVC (SHVC)

2.1 MULTIMMEDIA WATERMARKING STANDARD

1. MPEG watermarking

2. Audio watermarking techniques

3. Video watermarking techniques

4. Image watermarking techniques

2.2 DIGITAL RIGHT MANAGEMENT (DRM) STANDARD

1. OMA DRM
2. MPEG-21 part 5 (MPEG-21IPMP-X)
3. Adobe Access
4. Microsoft playready

2.3 MULTIMEDIA SECURITY IN BROADCASTINGSTANDARD

* ATSC 3.0 Security
* DVB-CPCM
* EBU-TECH 3292

3.4 MULTIMEDIA SECURITY IN CLOUD COMPUTING STANDARD

* Cloud Security Alliance (CSA) Guidelines
* ISO/IEC27017:2015
* NIST Cloud computing Security reference Architecture (NCC-SRA)

3.5 MULTIMEDIA SECURITY IN IOT STANDARD

* Open Connectivity foundation (OCF)
* IETF Constrained Application protocol (CoAP)

CONCLUSION

This paper summarized the key finding and highlights the importance of multimedia security standard in safeguarding digital content. It also identifies potential areas for future research and development and it also covers some multimedia security standard.

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