



About us

Journal

JMIS Journal

Conference

Members

Notice

Home > About us > Introduction

About us

- Introduction +
- Greetings from the president +
- History +
- Past President +
- Vision and Organization +
- Chapter and Research Group +
- CI +
- Directions +

Introduction

The Korea Multimedia Society, founded in the Busan area in 1997, has grown into a major national multimedia society organization in the IT field (multimedia, game, movie and video, IT S/W). KMMS currently has around 6000 academically active members. With the improvement of the internet, multimedia technology has been evolving and developing rapidly and has received recognition as a key technology of the 21st century. As a result, global organizations are fiercely competing to further research and develop media technology. In a rapidly changing environment, KMMS has been organizing various academic conferences, presentations, publications, and exhibits on multimedia including the game, movie, and video areas. Our society desires to popularize multimedia technology.


Journal of Korea Multimedia Society, KMMS's monthly journal, is accredited by the National Research Foundation of Korea. KMMS annually publishes 12 times, totaling around 180 research papers reviewed by strict assessment. Also, KMMS quarterly publishes an English journal, The Journal of Multimedia and Information Systems (JMIS). JMIS is continually striving to become a high quality international SCI-level journal in the multimedia and other IT related fields.

In addition, KMMS has been organizing national spring and fall conferences in order to provide a space for intellectual exchange for different sectors of the academic society: universities, research institutions, and industries. Through these conferences, KMMS seeks to bridge disciplines together to present, discuss, and improve recent research and technological developments.

KMMS annually hosts an international conference known as MITA. MITA has been held at IT outdated Asia countries to share Korea's advanced multimedia and IT technology, provide IT books (written in English), and notebooks. Through these actions, KMMS has been serving a private foreign diplomatic role.

Also, Korea Multimedia Society has received recognition for excellence in quality by being ranked 43th in a total of 1,592 journals accredited by the National Research Foundation of Korea (NRF) at its Ko-Factor assessment. KMMS has also been selected as one of the most excellent 66 journals among 5,634 journals at the Journal Preference Assessment by the ministry of education of South Korea.

We have provided a place for multimedia and IT-related companies to share ideas and collaborate through our technology workshops, presentations, and exhibitions. We have particularly been giving more attention to different industrial affiliate programs because we desire to contribute to future regional industrial developments. KMMS welcomes researchers, developers, engineers and degree holders in multimedia, gaming, movies, video, and the IT area. We look forward to the active participation and contribution of those interested.

Journal for Accreditation by NRF (Journal accredited by NRF) ISSN 1229-7771	JMIS ISSN 1229-778X	CONFERENCE SPRING/ AUTUMN
12 times a year (Monthly)	4 times a year (Quarterly)	2 times a year (Biannually)
MITA INTERNATIONAL	EXHIBITION APPLICATION TECHNOLOGY	WORKSHOP MULTIMEDIA LECTURE
1 times a year (Yearly)	Multimedia Application Technology Exhibition 2 times a year (Biannually)	Workshop and Short Courses (Several times)
Journal Ko-Factor Assessment (National Research Foundation of Korea)	Journal Preference Assessment (Ministry of Education of South Korea)	
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About us

Journal

JMIS Journal

Conference

Members

Notice

Home > Journal > Content of Present Issue and Full text

Journal

- Editorial Board +
- Submission Information +
- Paper Submission +
- Content of Present Issue and Full text +**

Content of Present Issue and Full text



Advanced Search | 한국어

	Publisher name	Korea Multimedia Society	Publication period	1998 - 2025
	Subject	Engineering > Electrical and Electronic Engineering > Information and Communication Engineering	ISSN	1229-7771(Print), 2384-0102(Electronic)
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Search Journal & Issue

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Issue

Volumes/Issues List

- Vol.14 No.7
2011.07
- Vol.14 No.6
2011.06
- Vol.14 No.5
2011.05
- Vol.14 No.4
2011.04
- Vol.14 No.3
2011.03**
- Vol.14 No.2
2011.02
- Vol.14 No.1
2011.01
- Vol.13 No.12
2010.12
- Vol.13 No.11
2010.11
- Vol.13 No.10
2010.10**

More



About us

Journal

JMIS Journal

Conference

Members

Notice

Journal > Content of Present Issue and Full text

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Content of Present Issue and Full text

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Advanced Search | 한국어

- Editorial Board
- Submission Information
- Paper Submission
- Content of Present Issue and Full text

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List



Publisher name: Korea Multimedia Society
 Journal: Journal of Korea Multimedia Society
 Subject: 공학 > 전기전자공학 > 정보통신공학
 Issue Year: 2010

Articles 15

< Previous 제13권 제10호 제13권 제12호 Next >

멀티미디어학회논문지 제13권 제11호 (15)

• 멀티미디어 정보통신 및 보호

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Byung-Kwan Lee, Eun-Hee Jeong | Korea Multimedia Society | Journal of Korea Multimedia Society | 13(11) | 2010.11 | 1687 - 1697(11 pages) | KCI Accredited Journal

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Academic journal

A Design of Safe AKA Module for Adapted Mobile Payment System on Openness SMART Phone Environment

개방형 스마트 폰 환경에 적합한 모바일 결제 시스템을 위한 안전한 AKA(Authentication Key Agreement) 모듈 설계



Byung-Kwan Lee (관동대학교) , Eun-Hee Jeong (강원대학교)
Korea Multimedia Society | Journal of Korea Multimedia Society | Vol.13 No.11
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Abstract-Keywords Contents

스마트 폰 환경에서 모바일 결제 시스템을 수행하기 위해서는 USIM 기반의 AKA 인증 절차가 필수적이다. 본 논문에서는 개방형 스마트 폰 환경에 적합한 모바일 결제 시스템을 위한 결제 프로토콜과 AKA 모듈을 설계하였다. 결제 프로토콜은 모바일 결제 시스템의 구성요소들 간에 상호인증을 하도록 설계하여 신뢰성을 향상시켰고, 3GPP-AKA 프로토콜에 기반을 둔 모바일 결제 시스템의 AKA 모듈은 사전 등록을 통해 공유 비밀키(SSK)를 생성함으로써 IMSI 노출을 방지하고, 타임스탬프를 이용해 SQN(SeQuence Number) 동기화 문제를 해결하였다. 또한, SN과 인증기관 사이의 인증벡터 대신에 공유비밀키를 사용하도록 하여, 기존의 SN과 인증기관 사이의 대역폭이 (688 × N) × R bit에서 각각 320 × R bit, 368 × R bit로 감소시켰으며, MS와 SN간에는 일회용 공유비밀키인 OT-SSK를 사용해 메시지 암호화키인 CK와 IK를 생성하도록 하여 침투할 때마다 새로운 OT-SSK를 생성함으로써 데이터 재전송 공격을 방지하였다.

The USIM-based AKA authentication process is essential to a mobile payment system on smart phone environment. In this paper a payment protocol and an AKA module are designed for mobile payment system which is suitable for openness smart phone environment. The payment protocol designs the cross authentication among components of the mobile payment system to improve the reliability of the components. The AKA module of mobile payment system based on 3GPP-AKA protocol prevents the exposure of IMSI by creating the SSK(Shared Secure Key) through advance registration and solves the SQN(SeQuence Number) synchronization problem by using timestamp. Also, by using the SSK instead of authentication vector between SN and authentication center, the existing bandwidth (688 × N) × R bit between them is reduced to 320 × R bit or 368 × R bit. It creates CK and IK which are message encryption key by using OT-SSK(One-Time SSK) between MS and SN. In addition, creating the new OT-SSK whenever MS is connected to SN, it prevents the data replay attack.

#USIM #Mobile Payment System(모바일결제시스템) #Mobile Payment Protocol(모바일결제 프로토콜)

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Recommendations

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