



Fraunhofer Gesellschaft

Multimedia and Security Workshop at ACM Multimedia 2001, Ottawa, Canada

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[ACM Multimedia 2001 in Ottawa, Ontario, Canada](#)

Multimedia and Security Workshop at ACM Multimedia

**Multimedia and Security Workshop at ACM Multimedia 2001
Multimedia at the Dawn of the Millennium
Ottawa, Ont. CANADA, October 5, 2001**

Jana Dittmann¹, Klara Nahrstedt² and Petra Wohlmacher³

Introduction

Security has become one of the most significant problems for spreading new information technology. Digital data can easily be copied and multiplied without information loss. This requires security solutions for such fields as distributed production processes and electronic commerce, since the producers seek to provide access control mechanisms to prevent misuse and theft

This year we have five invited talks:

- Rüdiger Grimm (University of Ilmenau, Germany): Internet Voting Systems – Security Considerations
- Fred Baker (Cisco Systems, Santa Barbara, California, USA): Security as an Immune Response?
- Jessica Fridrich (SUNY Binghamton, USA): Detection of Steganography
- Edward Delp (Video and Image Processing

of material.

The workshop analyses specific security problems of multimedia systems and multimedia material in the digital environment. Based on our discussion in the workshop at the ACM MM'98 in Bristol, at the ACM MM'99 in Orlando and at ACM MM'00 in Los Angeles we want to continue with the state of the art evaluation and discuss future needs for the design of MM Security and legal aspects. We understand that the interest and importance of security was reflected in the great number of participants from all over the world in last three workshops.

Objectives

Based on these excellent experiences the objective of the workshop is to see the advantages in the field of multimedia and security.

Especially new challenges of ID-card watermarking, audio watermarking and multimedia watermarking will be discussed. We want to classify their applications and fundamental parameter. In the field of copyright protection we want to discuss robustness, security, attacks and the usage of public key solutions.

Beside the copyright protection we want to introduce to new fragile watermarking systems to ensure manipulation recognition. Here we want to distinguish between content-preserving and content-manipulating changes.

Another topic will be cryptographic protocols like multiple key techniques for customer specific protection. Beside technical approaches legal requirements, the identification of

Laboratory (VIPER) School of Electrical and Computer Engineering Purdue University West Lafayette, Indiana USA): Fragile Image Watermarks

- Jörg Schwenk (T-Nova, Deutsche Telekom, Germany): From Pay TV to Pay Streaming -- Similarities and Differences

and a call for papers to include other reviewed papers for a day-long workshop to related topics such as but not limited to

- copyright protection
- robust and fragile watermarking techniques
- watermarking attacks
- visual models
- quality evaluations and benchmarks
- conditional access
- content-based digital signatures
- legal aspects
- watermarking protocols
- security in JPEG2000, MPEG-4, MPEG-7 or MPEG21
- biometrics and multimedia security
- video and audio crypting
- watermarking applications

How to submit? Please see [above](#). The papers (**page limit is 4 pages**) will be published by ACM in an extra workshop proceeding. We plan to publish a longer version (up to 12 pages) in a GMD publication. The workshop fee will be \$100 for ACM members and \$120 for non-members.

[More about the ACM Multimedia 2001](#)

design and acceptance problems for security solutions are addressed.

Contents

In the workshop, we want also face the topic, of the use of digital signatures for authentication. Existing multimedia security mechanisms use steganography approaches and are mostly not realized by cryptographic solutions applying security. Thus the discussion is extend to the use of cryptographic mechanisms.

The intention of the workshop is to bring together experienced researchers, developers, and practitioners from academia and industry for a state of the art evaluation and discussions of topics and problems for multimedia security environments for our new century. The workshop reflects the strength and weaknesses of what the multimedia community has to offer to meet the needs of secure multimedia environments. Participants get an excellent overview about what the community has to offer, where are the improvements, the progress and the problems.

Programm Commitee

Andreas Lang, IPSI, Fraunhofer,
Germany

Martin Steinebach, IPSI, Fraunhofer,
Germany

Sviatoslav Voloshynovskiy, CUI -
University of Geneva, Switzerland

Rüdiger Weiss, convergence cryptolabs
Amsterdam, Netherlands

[next column](#)

Session outline

5 th Oct

- 1.) 8:00am Welcome and Introduction to the Workshop, Jana Dittmann; GMD – IPSI, Germany
- 2.) To have more discussion in the workshop, the presenters are asked to give a short 15 minute overview of their work and the problem and/or solutions, after each talk are 5 minutes questions and discussions

Session 1: Digital Watermarking approaches I

Chair: Klara Nahrstedt

8:15am On Multiple Watermarking, Nicholas Paul Sheppard, Reihaneh Safavi-Naini, Philip Ogunbona

8:35am A Compressed-Domain Watermarking Algorithm for MPEG Layer 3, Aspects of Security Infrastructures: Digital Certificates, D. K. Koukopoulos, Y.C. Stamatiou

8:55am Public Watermark Detection—A Framework and The Optimal Detector, Trista Pei-chun Chen, Tsuhan Chen

Session 2: Digital Watermarking approaches II

Chair: Jana Dittmann

9:15am Watermarking Security Enhancement Using Filter Parametrization in Feature Domain, M. A. Suhail and M. M. Dawoud

9:35am Watermarking Techniques Using the Drawing Exchange Format (DXF) File, Kab Il Kim, Hwan Soo Kang

- 9:55am – 10:10am Break

10:10am A NEW TECHNIQUE FOR AUTHENTICATION OF IMAGE/VIDEO FOR MULTIMEDIA APPLICATIONS, Chih-Hsuan Tzeng and Wen-Hsiang Tsai

10:30am Future Directions, Fred Baker (invited)

Session 3: Steganographical approaches

Chair: Petra Wohlmacher

10:50am Reliable detection of LSB steganography in color and grey scale images, Jessica Fridrich, Miroslav Goljan, Rui Du (invited)

11:10am Towards robust hidden watermarking using multiple quasi-circles, Veena Sridhar Xiaobo Li Mario A. Nascimento

11:30am Steganographic capacity of images, based on image equivalence classes, Klaus Hansen, Christian Hammer, Jens D. Andersen, Lars R. Randleff

11:50am – 1:30pm Lunch Break

Session 4: Applications I

Chair: Rüdiger Grimm

- 1:30pm From Pay TV to Pay Streaming -- Similarities and Differences, Joerg Schwenk, Tobias Martin, Erik Neumann (invited)
- 1:50pm PlataJanus: An audio annotation watermarking framework, Martin Steinebach, Jana Dittmann, Claus Vielhauer
- 2:10pm A Secure Fingerprint-Based User Authentication for Lotus Notes, Nalini K. Ratha, Jonathan H. Connell and Ruud M. Bolle
- 2:30pm A flexible Content and Context-based Access Control Model for Multimedia Medical Image Database Systems, Sofia Tzelepi and George Pangalos

2:50pm – 3:30pm Break

Session 5: Applications II

Chair: Jörg Schwenk

- 3:30pm Security Requirements for Internet Voting, Rüdiger Grimm (invited)
- 3:50 pm Securing the First Steps Into a New Exciting Multimedia World, Matthias Hollick
- 4:10 pm Tamper Resistant Software: Extending Trust into a Hostile Environment, J.R. NICKERSON, S.T. CHOW, AND H.J. JOHNSON
- 4:30 pm Summary and closing, Jana Dittmann, Petra Wohlmacher, Klara Nahrstedt

5:00pm End of the Workshop

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