Editorial
Introducing T-IFS

WELCOME to the inaugural issue of the IEEE TRANSACTIONS ON INFORMATION FORENSICS AND SECURITY (T-IFS). The motivation for this new research journal is the growing need for security and forensic methods in an ever expanding range of applications. These applications include, among others, digital rights management, content identification, human identification, authentication, transaction tracking, surveillance, networking, law enforcement, and interplay of technology with legal and ethical issues. Core technical problems include efficient and reliable system design as well as the modeling, processing, communication, and analysis of various types of "signals": audio, speech, text, software, images, video, electromagnetic measurements, fingerprints, network traffic data, etc. In this context, the words "information forensics" connote the extraction and analysis of information for security applications.

Research in information forensics and security has been increasing rapidly through the 1990s, as evidenced by articles and news clips in the popular press, and by the growing numbers of workshops, conferences, and special issues of publications of all types. As a consequence of this growth, a scattering of publications have arisen in the field.

A few years ago, it became apparent that the time had come for a new journal devoted to the publication of archival papers in information forensics and security. Such a journal would welcome authors and readers of diverse backgrounds, as well as emphasize fundamental contributions and publish them following rigorous peer review by dedicated experts. Plans for such a journal were initially developed late in 2002 and Ton Kalker and I took the idea to the IEEE Signal Processing Society. That original idea resulted in three embedded special issues on secure media published within the IEEE TRANSACTIONS ON SIGNAL PROCESSING (T-SP). The success of those special issues led us to hope that IEEE would approve a journal dedicated to this topical area.

Subsequently, IEEE did just that; following the creation of a refined and expanded scope, T-IFS was created, with expert assistance from K. J. Ray Liu, to serve the broader community that has become the contributors and the audience for T-IFS. In order to start a new IEEE publication, there is a complex route of paperwork (we owe the development of the formal proposal and budget to Mercy Kowalczyk, the SPS Executive Director) and salesmanship (for which we again thank SPS Vice President-Publications K. J. Ray Liu and Past President Fred Mintzer). The Society took the additional step of creating a new technical committee to support the journal and to explore new means, including workshops, and other technical activities, to serve the technical community involved in information forensics and security. Ton Kalker is the first chair of that TC, which means our original collaboration will be targeted to strengthening these areas within SPS. We also wish to thank Rich Cox, SPS Senior Past President, who received that initial proposal from Ton and me; Arye Nehorai, the former VP Publications who gave us encouragement that T-IFS could become a reality; and Ali Sayed, who was Editor-in-Chief of the IEEE T-SP and graciously permitted the secure media special issues to be embedded in his Transactions.

The submission website for T-IFS is active and receiving papers. We are delighted to report that a large number of authors have found their way to the site and are sending us their work. We hope those submissions will continue to flow as the technical community addresses, in its way, the complex issues that affect the world we all inhabit.

You will want to know that this first issue of the TRANSACTIONS ON INFORMATION FORENSICS AND SECURITY also reflects the history of the secure media special issues published with the IEEE T-SP (in October 2004 and in February and October 2005). While three of the papers in this first issue are the result of submissions to the T-IFS website, the other eight papers were initially submitted to the secure media special issues; the authors agreed to our transferring their work to T-IFS when we discovered that the special issues did not have sufficient pages to accommodate them all.

I hope you will enjoy T-IFS this first time, and far into the future. Look for our next issue in June.

PIERRE MOULIN, *Editor-in-Chief*

Pierre Moulin (F'03) received the Ingénieur civil électricien degree from the Faculté Polytechnique de Mons, Belgium, in 1984 and the M.Sc. and D.Sc. degrees in electrical engineering from Washington University, St. Louis, MO, in 1986 and 1990, respectively.

He was a Researcher at the Faculté Polytechnique de Mons in 1984–1985 and at the Ecole Royale Militaire, Brussels, Belgium, in 1986–1987. He was a Research Scientist at Bell Communications Research in Morristown, NJ, in 1990–1995. In 1996, he joined the University of Illinois, Urbana-Champaign (UIUC), where he is currently Professor in the Department of Electrical and Computer Engineering, Research Professor at the Beckman Institute and the Coordinated Science Laboratory, and Affiliate Professor in the Department of Statistics. His fields of professional interest are image and video processing, compression, statistical signal processing and modeling, decision theory, information theory, information hiding, and the application of multiresolution signal analysis, optimization theory, and fast algorithms to these areas.

Dr. Moulin received a 1997 Career award from the National Science Foundation (NSF) and a IEEE Signal Processing Society 1997 Senior Best Paper award. He is also coauthor (with J. Liu) of a paper that received an IEEE Signal Processing Society 2002 Young Author Best Paper award. In 2003, he became IEEE Fellow and Beckman Associate of UIUC's Center for Advanced Study. In 2005, he was selected by the ECE department as the Sony Faculty Scholar. He is currently serving on the Board of Governors of the IEEE Signal Processing Society and as Editor-in-Chief of IEEE TRANSACTIONS ON INFORMATION FORENSICS AND SECURITY.

He has served as an Associate Editor of the IEEE TRANSACTIONS ON INFORMATION THEORY (T-IT) and the IEEE TRANSACTIONS ON IMAGE PROCESSING, Co-chair of the 1999 IEEE Information Theory Workshop on Detection, Estimation, Classification and Imaging, Chair of the 2002 NSF Workshop on Signal Authentication, and Guest Associate Editor of the IEEE T-IT's 2000 special issue on information-theoretic imaging and of the IEEE TRANSACTIONS ON SIGNAL PROCESSING's 2003 special issue on data hiding. During 1998–2003 he was a member of the IEEE IMDSP Technical Committee. More recently he has been Area Editor of the IEEE TRANSACTIONS ON IMAGE PROCESSING and Guest Editor of the IEEE T-SP's supplement series on Secure Media.