

Current State of Cryptographic Research in Malaysia

Raphael Phan Chung Wei

Swinburne Sarawak Institute of Technology, Sarawak, Malaysia
rphan@swinburne.edu.my

ABSTRACT: Development of the national multi-purpose card (smart card) is one of the seven flagships launched under Malaysia's Multimedia Super Corridor (MSC) project. Among the many uses of the smart card are as an identity card, credit card, ATM card, and as e-cash. In view of this, some sort of security mechanism has to be built into the smart card to protect against misuse by unauthorized persons. This is where the study of cryptography comes in. Cryptography involves the study, design and application of methods to ensure the security, privacy and integrity of information. As Malaysian researchers conduct research and development (R&D) on smart cards, it is vital that some emphasis be made on cryptographic research as well. This paper addresses the issue of the current state of cryptographic research in Malaysia, focusing on both public and private universities. The aim is to obtain an overall view of the current state of research in order to promote cooperation and collaboration among Malaysian universities in pursuing cryptographic research as a supplement to the smart card R&D. The paper concludes with suggestions as to how the field of cryptographic research in Malaysia can be enhanced, and outlines future directions in Malaysian cryptographic research.

INTRODUCTION

Development of the national multi-purpose card (smart card) is one of the seven flagships launched under Malaysia's Multimedia Super Corridor (MSC) project. Among the many uses of the smart card are as an identity card, credit card, ATM card, and as e-cash. In view of this, some sort of security mechanism has to be built into the smart card to protect against misuse by unauthorized persons. This is where the study of cryptography comes in. Cryptography involves the study, design and application of methods to ensure the security, privacy and integrity of information. As Malaysian researchers conduct research and development (R&D) on smart cards, it is vital that some emphasis be made on cryptographic research as well.

This paper addresses the issue of the current state of cryptographic research in Malaysia, especially in both public and private universities, and research-based MSC-status companies. The aim is to obtain an overall view of the current state of research in order to promote cooperation and collaboration among Malaysian universities and MSC-status companies in pursuing cryptographic research as a supplement to the smart card R&D. The paper concludes with suggestions as to how the field of cryptographic research in Malaysia can be enhanced, and outlines future directions in Malaysian cryptographic research.

We discuss the state of cryptographic research in public Malaysian universities, namely Universiti Malaya (UM), Universiti Kebangsaan Malaysia (UKM), Universiti Putra Malaysia (UPM), Universiti Sains Malaysia (USM), Universiti Teknologi Malaysia (UTM), Universiti Utara Malaysia (UUM), Universiti Malaysia Sabah (UMS), Universiti Malaysia Sarawak (UNIMAS), as well as in private universities, namely the International Islamic

University Malaysia (IIUM), Multimedia University (MMU), Universiti Tenaga (UNITEN), Universiti Teknologi Petronas (UTP), Universiti Teknologi Mara (UiTM), Universiti Tun Abdul Razak (UNITAR), Monash University Sunway Malaysia (MUSM), Curtin University of Technology, Sarawak Campus Malaysia (CUTSM), University of Nottingham in Malaysia (UNiM), Malaysia University of Science & Technology (MUST) and FTMS-De Montfort University Campus Malaysia.

We group the areas of cryptographic research into 3 major categories, namely design-based research, analysis-based research and implementation-based research.

DESIGN-BASED CRYPTOGRAPHIC RESEARCH

Design-based research involves research work into the parameters and basic building blocks (primitives) of cryptography for example in conventional and public-key encryption, digital signatures, message authentication and hash functions.

This is an area of cryptographic research that is still fairly in its infancy in Malaysia. From our review of the local Malaysian universities, we found that most of the research in the design of cryptography systems are done by researchers in Mathematics departments. *UPM's Maths. Dept.* has a team of researchers actively involved in this area. In particular, an active researcher M. R. Said [15] developed a public-key cryptosystem analogous to the LUC cryptosystem. The team also has interests in number theory and Elliptic Curve Cryptosystems (ECC). Meanwhile, *USM's Sch. of Math. Sc.* has an Error Correcting Code & Public Key Cryptography research group under G. A. How that researches on the design of public key systems [16]. An interesting mention is the results on number theory obtained

by the researchers who used them as a basis for an extended RSA system. The extended system was then applied in digital signatures, group digital signatures and blind digital signatures, hence producing a multiple RSA system. *UTM's Comp. Sys. & Comm. Dept.* has a Security Control & Analysis System (SCAS) research group led by N. B. Idris that is also very active in designing authentication and key recovery protocols based on the ECC [18]. In fact, cryptographic research at SCAS is done in close cooperation with the government ministries and government agencies, advising the government on the way to move forward in this area. Most of their research projects are funded by the Ministry of Science, Technology and The Environment (MOSTE)'s Intensification of Research in Priority Areas (IRPA) grants. Internationally, SCAS has collaboration with the Royal Holloway & Bedford New College of University of London through joint Ph.D supervisions. SCAS has also won a few awards and their cryptographic products are being used in the Multimedia Super Corridor (MSC) project. Elsewhere, *MMU's Eng. Fac.* has an Information Systems Security research group headed by M. U. Siddiqi that is involved in designing cryptographic systems. Specifically, researchers have designed a fair e-cash system for internet payment and a fast incremental hash function [23].

Distributed across other Malaysian universities are independent individuals researching in cryptography. M. L. Ahmed from *UPM's Comp. & Comm. Sys. Eng. Dept.* conducts pure research in the design of cryptographic techniques in smart cards [9] whereas L. Barukang of *UMS' CS Dept.* is studying the property of ECCs for use in real-time authentication protocols. He is also researching on the possibility of using Merseanne primes in cryptography design [6]. Meanwhile, N. A. Abu from *MMU's Fac. of Info. Sc. & Tech. (FIST)* has personal research interests in prime numbers for use in the design of random number generators and one-time pads [26].

ANALYSIS-BASED CRYPTOGRAPHIC RESEARCH

This area involves the analysis of cryptographic systems in terms of the level of security that they claim to provide, and is a very important area that supplements the design process of cryptographic systems. From the results of our review, analysis-based cryptographic research is a relatively new field of research in Malaysia. Notably, *MMU's Eng. Fac.* had a post-graduate researcher involved in the cryptanalysis of encryption methods, namely on the Advanced Encryption Standard (AES) [23] while L. Barukang of *UMS's CS Dept.* is studying the possibility of applying Merseanne primes in cryptanalysis [6].

IMPLEMENTATION-BASED RESEARCH

Implementation-based cryptographic research is a more popular area of study with Malaysian researchers. The MM & Imaging Sys. research group of *UPM's Comp. & Comm. Sys. Eng. Dept.* has a Computer Unit headed by A. R. Ramli which has research interests in cryptographic implementations especially smart card systems [11]. Similarly, *UTM's E. Eng. Dept.* also has a team of researchers involved in developing smart card applications

[17]. At the same time, *UTM's SCAS* research group in the *Comp. Sys. & Comm. Dept.* is working closely with the government in the implementation and development of cryptographic engines for the MSC [18]. SCAS develops and implements its own crypto engines and Public Key Infrastructure (PKI) systems. *IUM's Elec. & Comp. Eng. Dept.* has post-graduate researchers under S. Al-Irhayim implementing the Advanced Encryption Standard (AES) on the Transport Layer Protocol (TLS) and also embedded cryptographic techniques into biometric data to enhance the implementation of authentication schemes [20]. Meanwhile, *UNITEN's Elec. Eng. Dept.* has a PKI team led by M. Z. Jamaludin currently working on implementing a client-server authentication system using cryptographic techniques [27].

Scattered elsewhere are independent researchers such as L. Barukang of *UMS' CS Dept.* [6] and N. A. Abu of *MMU's FIST* [26] who are implementing ECC-based systems. L. Barukang wrote a prototype ECC system to perform key generation, encryption, signing and verification. Meanwhile, besides ECC-based systems, N. A. Abu also implements cryptography applications to provide multimedia security such as encryption and watermarking. C. K. Loo of *MMU's Eng. Tech. Fac.* is currently working on the implementation of cryptographic techniques in networks and fingerprint biometric encryption systems [25]. Finally, N. B. Z. Ali of *UTP's EE Eng. Fac.* has research interests in the implementation of encryption algorithms such as Blowfish [28].

ENHANCING CRYPTOGRAPHIC RESEARCH

It is evident from the findings of our review that cryptographic research in Malaysia is concentrated on implementation-based research. The area of design- and analysis-based cryptographic research, especially the latter are still somewhat new to Malaysian researchers. In addition, cryptographic research is conducted mostly by individuals, either independent post-doctoral researchers or post-graduate students under the supervision of their supervisors. There is an absence of a coordinated approach towards cryptographic research since we find that in most cases, only a few isolated researchers are conducting research in cryptography. Also, as far as we know, only five universities (UPM, USM, UTM, MMU and UNITEN) have research groups with interests in cryptography.

In research, it is vital that there be peers who have similar research interests to provide an environment and opportunity for discussion and feedback of ideas. Hence, for cryptographic research in Malaysia to advance further and be at a competitive edge with international researchers, there should be more cooperation between cryptographic researchers from the various Malaysian universities.

Design, analysis and implementation are all equally important areas of cryptography. Knowledge in design is needed for an accurate security analysis and a secure implementation. Many a times the design is sound but errors in the implementation cause weaknesses in a cryptographic system. Experience in analysis and implementation is vital to

ensure that the design is secure and efficient. A trusted cryptographic design is one that has withstood years of analysis. And the general public tend to have more faith in a design by a mature researcher with years of experience in security analysis than in a design by a researcher with no such experience.

Therefore, if cryptographic research in Malaysia is to progress at a steady pace, emphasis should be put equally on all three categories of cryptographic research. As such, design- and analysis-based cryptographic research is still very much in need of researchers. This effort would be accelerated somewhat by increased coordination among Malaysian cryptographic researchers. One possible way would be the setting up of a Malaysian cryptography society to provide an environment for researchers to share ideas and promote discussion.

CONCLUSION

We have presented the current state of cryptographic research in Malaysian universities, grouping areas of research into 3 main categories. We have also highlighted ways to enhance cryptographic research in Malaysia. The results of our review are by no means exhaustive. The main intent is to stimulate awareness into the need for more coordination and cooperation in Malaysian cryptographic research. As a reference for cryptographic researchers, we give in the Appendix the list of all the relevant faculties, schools and departments in Malaysian local universities that have or may have research interests in the area of cryptography, and the emails of the persons to contact. It is hoped that through this effort, our aim of encouraging more cooperation between Malaysian cryptographic researchers would be achieved.

ACKNOWLEDGEMENTS

I would like to thank Norbik Bashah Idris for updating me on some of the more recent cryptographic research activities in Malaysia.

REFERENCES

1. Mazliza Othman, *Head, Dept. of Computer Systems & Technology, Faculty of Computer Science & IT, Universiti Malaya* (2001)
2. Ow Siew Hock, *Head, Dept. of Software Engineering, Faculty of Computer Science & IT, Universiti Malaya* (2001)
3. Wong Peng Choon, *Professor, Institute of Mathematical Sciences, Faculty of Science, Universiti Malaya* (2001)
4. Sapiee Hj. Jamel, *Coordinator for Computer Science Programme, Faculty of Information Technology, Universiti Malaysia Sarawak* (2001)
5. Sazali Yaacob, *Dean, Dept. of Computer Science, School of Engineering & Information Technology, Universiti Malaysia Sabah* (2001)

6. Liawas Barukang, *Researcher, Dept. of Computer Science, School of Engineering & Information Technology, Universiti Malaysia Sabah* (2001)
7. Aziz Deraman, *Dean, Faculty of Information Technology & Science, Universiti Kebangsaan Malaysia* (2001)
8. Abdul Razak Salleh, *Head, Centre of Science & Mathematical Research, Faculty of Science & Technology, Universiti Kebangsaan Malaysia* (2001)
9. Mohammed Lawan Ahmed, *PhD Student, Dept. of Computer & Communication System Engineering, Faculty of Engineering, Universiti Putra Malaysia* (2001)
10. Norman Mariun, *Head, Dept. of Electrical & Electronics Engineering, Faculty of Engineering, Universiti Putra Malaysia* (2002)
11. Computer Unit Homepage, *Faculty of Computer & Communication System Engineering, Universiti Putra Malaysia* (2001) available online at <http://www.eng.upm.edu.my/webkkk/multimedia/index.html>
12. Abdul Azim Abdul Ghani, *Dean, Faculty of Computer Science & IT, Universiti Putra Malaysia* (2001)
13. Ali Mamat, *Head, Dept. of Computer Science, Faculty of Computer Science & IT, Universiti Putra Malaysia* (2001)
14. Mohd. Hasan Selamat, *Head, Dept. of Info. Systems, Faculty of Computer Science & IT, Universiti Putra Malaysia* (2001)
15. Rushdan Said, *Post-doctoral Researcher, Dept. of Mathematics, Faculty of Science & Environmental Studies, Universiti Putra Malaysia* (2001)
16. Yahya Abu Hassan, *Post-doctoral Researcher, Error Correcting Code & Public Key Cryptography Research Group, School of Mathematical Sciences, Universiti Sains Malaysia* (2001)
17. Faculty of Electrical Engineering Homepage, *Universiti Teknologi Malaysia* (2001) available online at <http://www.fke.utm.my/research/elektronik/research1.htm>
18. Norbik Idris, *Head, Center for Advanced Software Engineering, Dept. of Computer Systems & Communications, Faculty of Computer Science & Information Systems, Universiti Teknologi Malaysia* (2001)
19. Siti Mariyam Shamsuddin, *Head, Dept. of Computer Graphics & Multimedia, Faculty of Computer Science & Information Systems, Universiti Teknologi Malaysia* (2001)
20. Sufyan Al-Iryahim, *Post-doctoral Researcher, Dept. of Electrical & Computer Engineering, Faculty of Engineering, International Islamic University Malaysia* (2001)

21. Ahmed Ashour, *Head, Dept. of Science Engineering, Faculty of Engineering, International Islamic University Malaysia* (2002)
22. Mohamed Ridza Wahiddin, *Head, Dept. of Computational & Theoretical Science, Faculty of Science, International Islamic University Malaysia* (2002)
23. Ching Yen Choon, *Researcher, Faculty of Engineering, Cyberjaya campus, Multimedia University* (2001)
24. Ho Chin Kuan, *Tutor, Faculty of Information Technology, Cyberjaya campus, Multimedia University* (2001)
25. Loo Chu Kiong, *Researcher, Faculty of Engineering & Technology, Melaka campus, Multimedia University* (2001)
26. Nur Azman Abu, *Researcher, Faculty of Information Science & Technology, Melaka campus, Multimedia University* (2001)
27. Md Zaini Jamaludin, *Researcher, Dept. of Electrical Engineering, College of Engineering, Universiti Tenaga* (2001)

28. Noohul Basheer Zain Ali, *Researcher, Dept. of Electrical & Electronics Engineering, Universiti Teknologi Petronas* (2001)
29. Azni Zain Ahmad, *Asst. Vice Chancellor (Research), Bureau of Research & Consultancy, Universiti Teknologi Mara* (2001)
30. Chen Ying Tian, *Director & Senior Research Fellow, Malaysia University of Science & Technology* (2002)

APPENDIX: RELEVANT FACULTIES & CONTACTS

In this appendix, we list all the relevant faculties, schools and departments in Malaysian local universities that have or may have research interests in the area of cryptography. We also give the email contacts of the persons who are conducting such cryptographic research, or those in charge of the respective faculties. The D, A and I refer to Design-, Analysis- and Implementation-based research. A shortened version is also available online at <http://raphael.topcities.com/cryptoMsia>. The list is by no means exhaustive, and the author invites researchers to email him with the latest information regarding the cryptographic research that they are conducting.

University	Faculty/School	Dept	Contacts	Email	D	A	I	Research Interests & Extra Details
Universiti Malaya (UM)	CS & IT	Comp. Sys & Tech	Mazliza Othman	<i>Head</i> mazliza@fsktm.um.my	No	No	No	One potential researcher with interest to commence research
			Laila Mat Kiah	<i>Potential Researcher</i> mlaila@fsktm.um.my				
		Software Eng	Ow Siew Hock	<i>Head</i> show@fsktm.um.my	No	No	No	Not a research interest
	Eng	Elec	Nasrudin Abd Rahim	<i>Head</i> nasrudin@fk.um.edu.my				Awaiting reply
Science	Mathematical Sciences	Wong Peng Choon	<i>Professor</i> wpc@mnt.math.um.edu.my					One researcher .. awaiting reply for further details
		Wan Ainun Mior Othman	<i>Researcher</i> ainun@mnt.math.um.edu.my					
Universiti Kebangsaan Malaysia (UKM)	Tech & Info Sc.		Aziz Deraman	<i>Dean</i> dftsm@pkrisc.cc.ukm.my				Not very involved in this area ... awaiting possible replies from academic staff
	Eng		Hassan Basri	<i>Dean</i> engdean@vlsi.eng.ukm.my				Awaiting reply
	Sc & Math. Research Center		Abd Razak Salleh	<i>Dean</i> kpsm@pkrisc.cc.ukm.my	No	No	No	Not a research interest

Universiti Putra Malaysia (UPM)	Eng	Comp. & Comm. Sys	Abd Rahim Ramli	<i>Head of Computer Unit</i> arr@eng.upm.edu.my	Yes	No	Yes	There is an MM & Imaging Sys research group which has research interest in the area
			Mohammad Lawan Ahmed @Lawal Ahmed Gumel	<i>PhD Student</i> gs00607@stud.upm.edu.my				Research in smart card security
		EE Eng	Norman Mariun	<i>Head</i> norman@eng.upm.edu.my	No	No	No	Not a research interest
	Science & Env Studs	Mathematics	Rushdan Said	<i>Post-doctoral Researcher</i> mrushdan@fsas.upm.edu.my	Active	No	No	Has a team of researchers
			Kamel Arifin Mohd Atan	<i>Head of Dept</i>				
			Faridah Bt Yunos	<i>Researcher</i>				
	CS & IT	CS	Ali Mamat	<i>Head</i> ali@fsktm.upm.edu.my				Not a research interest
		IS	Hj Md Hasan Selamat	<i>Head</i> hasan@fsktm.upm.edu.my				Not a research interest
		MM	Hjh Fatimah Ahmad Ramlan Mahmod	<i>Head</i> fatimah@fsktm.upm.edu.my <i>Post-doctoral researcher</i> ramlan@fsktm.upm.edu.my				Research interest in Number theory .. awaiting reply for further details
		Tech, Comm & Netw	Mohamed Othman	<i>Head</i> mothman@fsktm.upm.edu.my				Not a research interest
Universiti Sains Malaysia (USM)	Math. Sciences	How Guan Eng Yahya Abu Hasan	<i>Post-doctoral researcher</i> gahow@cs.usm.my <i>Post-doctoral researcher</i> ahyahya@cs.usm.my	Yes	No	No	There is an Error Correcting Code & Public Key Crypto research group, among the research includes Multiple RSA and Blind Digital Signature	
	CS	Zaharin Yusoff	<i>Dean</i> zarin@cs.usm.my				Awaiting reply	
	EE Eng	Ali Yeon Mohd. Shakaff	<i>Professor</i> aliyeon@eng.usm.my				Awaiting reply	
Universiti Teknologi	CS & IS	Comp. Graphics & MM	Siti Mariyam		No	No	No	Not a research interest

Malaysia (UTM)		SE	Safaai Deris	Head safaai@fsksm.utm.my				Not listed as research interest ... awaiting confirmation
		Industrial Modelling & Computerization		Homepage http://www.ppi.fsksm.utm.my/				Homepage inaccessible
		Comp. Sys & Comms.	Md Aizaini Maarof	Head maaforma@fsksm.utm.my				Has 2 related research groups: <i>InSec</i> Interests in cryptography and steganography
			Norbik Idris	Head norbik@case.utm.my	Active	No	Active	<i>SCAS</i> Development of crypto engine and new authentication & key recovery protocols based on ECC
		IS		Homepage http://www.is.fsksm.utm.my/				Homepage inaccessible
	Elec Eng	Electronics	Abu Khari A'ain	Head abu@fke.utm.my				A team of researchers involved in smart card application development .. awaiting reply for further details
			Harun Ismail	Post-doctoral researcher harun@suria.fke.utm.my			Yes	
	MicroE & Comp	Md Khalil	khalil@suria.fke.utm.my				Awaiting reply	
Science	Mathematics		Homepage http://www.matematik.fs.utm.my/				Homepage inaccessible	
Universiti Utara Malaysia (UUM)	IT		Abu Talib Othman	Dean abutalib@uum.edu.my				Email inaccessible
Universiti Malaysia Sarawak (UNIMAS)	Eng		Mohammad Kadim Suaidi	Dean kadim@mailhost.unimas.my				Awaiting reply
	IT		Sapiee	Coordinator for CS Programme shapiee@fit.unimas.my	No	No	No	Not a research interest

Universiti Malaysia Sabah (UMS)	Eng & IT	CS	Sazali Yaacob	<i>Dean</i> sazali@ums.edu.my	Yes	Yes	Yes	One researcher, involved in the implementation of ECC. Also researching possible use of Merseanne primes in cryptography and cryptanalysis.
			Liawas Barukang	<i>Researcher</i> liawas@sktm.ums.edu.my				
International Islamic University (IIUM)	Eng	Electrical & Comp	Khalid Abd Hamid	<i>Head</i> khalid@iiu.edu.my	No	No	Yes	Supervision of post-graduate students on the implementation of AES on TLS, and the use of cryptographic-biometric data to enhance authentication
			Sufyan Al-Iryahim	<i>Post-doctoral researcher</i> sufyan@iiu.edu.my				
	Science Eng	Ahmed Shaaban Ashour	<i>Head</i> ashour@iiu.edu.my	No	No	No	Not a research interest	
	Science	Computational & Theoretical Science	Mohammed Ridza Wahiddin	<i>Head</i> mridza@iiu.edu.my	No	No	No	Not a research interest
Multimedia University (MMU)	Eng		Ching Yen Choon	<i>Researcher</i> ycching@mmu.edu.my	Yes	Yes	No	Has an IS Security research group with researchers involved in the design of E-cash and hash functions, as well as in cryptanalysis of block ciphers
	IT		Ho Chin Kuan	<i>Researcher</i> ckho@mmu.edu.my	No	No	No	Not a research interest
	Eng & Tech		Andy Low	<i>Researcher</i> andy.low@mmu.edu.my	No	No	Yes	Research interests in network security and fingerprint biometric encryption systems
	Info Science & Tech		Nor Azman Abu	<i>Researcher</i> azman@mmu.edu.my	Yes	No	Yes	Research interests in prime numbers and one-time pads, as well as the implementation of ECC
Universiti Tenaga (UNITEN)	Eng	Electrical	Md Zaini Jamaludin	<i>Researcher</i> mdzaini@uniten.edu.my	No	No	Yes	Implementation of a PKI system
		Eng Sciences & Maths	Rose Aini Kamarudin	<i>Head</i> rose@uniten.edu.my				Awaiting reply
		CS & IT	Zainuddin Hassan	<i>Head</i> zainuddin@uniten.edu.my				Awaiting reply

Universiti Teknologi Petronas (UTP)	EE Eng		Noohul Basher	<i>Researcher</i> Noohulbasheer_zainali@petronas.com.my			Yes	Research interest in the implementation of encryption algorithms
	IT/IS							No email given on homepage
Universiti Teknologi Mara (UiTM)	Bureau of Research & Consultancy		Azni Zain Ahmad	<i>Asst. Vice Chancellor (Research)</i> azniz132@salam.iitm.edu.my				Contact Ms Rosmawati Nordin
	IT & Quantitative Sc.		Rosmawati Nordin	roswati@tmsk.itm.edu.my	No	No	No	Not a research interest
Universiti Tun Abdul Razak (UNITAR)	IT		Khairuddin Hashim	<i>Professor</i> khairuddin@unitar.edu.my				Awaiting reply
Monash University Sunway Malaysia (MUSM)	Eng & Sc	Eng	Robin James Alfredson	<i>Head</i> Robin.Alfredson@engsci.monash.edu.my				Awaiting reply
	Bus & IT		Ron Davison	<i>Head</i> Ron.Davison@busit.monash.edu.my				Awaiting reply
Curtin University of Technology				<i>Homepage</i> www.curtin.edu.my				No information or contact email in homepage
University of Nottingham in Malaysia (UNiM)	Eng		Brian Tuck	<i>Director</i> brian.tuck@unim.edu.my				Awaiting reply
	CS & IT		Peter Blanchfield	<i>Director</i> peter.blanchfield@unim.nottingham.ac.uk				Awaiting reply
Malaysia University of Science & Technology (MUST)			Chen Ying Tian	<i>Homepage</i> www.must.edu.my <i>Director & Senior Research Fellow</i> ytchen@must.edu.my	No	No	No	Not a research interest
FTMS-De Montfort University Campus, Malaysia				<i>Homepage</i> www.ftmsglobal.com/ip.htm				No information or contact email in homepage