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Femtocells: Secure Communication and Networking

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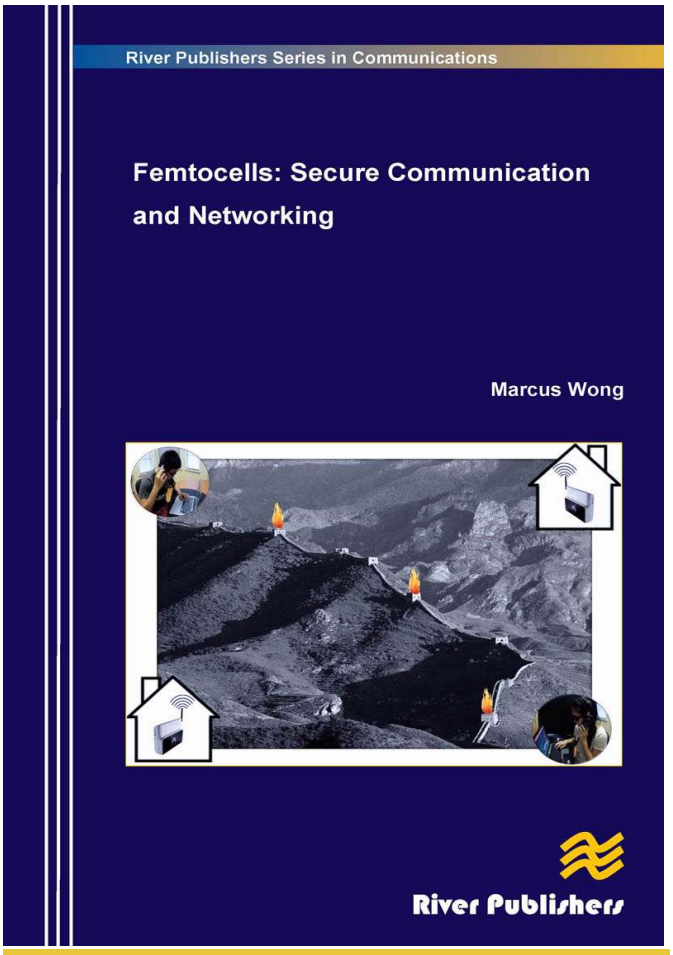

With Femtocell popularities and deployments on the rise, a number of Femtocell security breach has been reported as a result of pre-standards versions of Femtocells that did not conform to published standards or implemented as a result of lack of understanding of basic security principles. A considerable amount of effort has been devoted, both in industry forums and standards developing organizations, towards creating technical specifications for the architecture, operational, and security of the Femtocells. Security remains on the minds of operators as the traditionally closed operator core network opens up with the Femtocells extending into the homes of users and potential hackers with more and more powerful tools.

Technical topics discussed in the book include:

- UMTS/LTE Femtocell security and threat analysis;
- CDMA Femtocell security;
- WiMAX Femtocell security;
- LIPA and SIPTO security;
- Small Cells;

Femtocells: Secure Communication and Networking provides an in-depth analysis and research results on the security design of Femtocells based on UMTS, LTE, CDMA and WiMAX access technologies. Threat analysis, security requirements as well as security mechanisms used to counter the threats and potential attacks are provided in details covering every aspect of Femtocell security.

Femtocells: Secure Communication and Networking is ideal for personnel in communication, networking and security industries as well as academic staff and master/research students in network security, computer science, operational research, electrical engineering and telecommunication systems and the Internet.

Content:
Preface; 1. Introduction; 2. 3GPP Architecture and the Femtocell; 3. Security of Femtocells; 4. CDMA Femtocells; 5. WiMAX Femtocells; 6. LIPA and SIPTO; 7. Security Profiles and IKEv2 Call Flow; 8. From Femtocells to Small Cells; 9. Conclusion and Outlook; Annex; Glossary; Bibliography.

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KEYWORDS:
Femtocells, security, threat analysis, cellular, wireless communication, small cells, network architecture, LIPA, SIPTO, 3G, 4G, LTE, SAE, CDMA, WiMAX

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