

**Christian Wimmer**

**Wireless LAN Security in a SOHO  
Environment: A Holistic Approach**

**Bachelor Thesis**

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# **Wireless LAN Security in a SOHO Environment: A Holistic Approach**

Christian Manfred Wimmer

A project submitted in partial fulfilment of the requirements for the  
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North East Wales Institute, Wrexham

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## II. Contents

<b>I.</b>	<b>ACKNOWLEDGEMENTS</b> .....	<b>2</b>
<b>II.</b>	<b>CONTENTS</b> .....	<b>3</b>
<b>III.</b>	<b>LIST OF FIGURES</b> .....	<b>6</b>
<b>IV.</b>	<b>LIST OF ABBREVIATIONS</b> .....	<b>7</b>
<b>V.</b>	<b>ABSTRACT</b> .....	<b>9</b>
<b>1.</b>	<b>INTRODUCTION</b> .....	<b>10</b>
<b>2.</b>	<b>LITERATURE REVIEW</b> .....	<b>11</b>
<b>3.</b>	<b>METHODOLOGY</b> .....	<b>16</b>
3.1.	TIMETABLE AND LOG-KEEPING .....	17
3.2.	THE ARTEFACT .....	17
3.3.	METHODOLOGY REFLECTION .....	18
<b>4.</b>	<b>WLAN BASICS</b> .....	<b>19</b>
4.1.	THE IEEE STANDARDS .....	19
4.2.	RELATIONSHIP BETWEEN THE WI-FI ALLIANCE AND THE IEEE .....	21
4.3.	WLAN ARCHITECTURE .....	22
4.3.1.	<i>Independent / Ad-Hoc</i> .....	23
4.3.2.	<i>Infrastructure</i> .....	23
<b>5.</b>	<b>SECURITY</b> .....	<b>24</b>
5.1.	SECURITY OBJECTIVES .....	24
5.2.	WLAN SECURITY .....	25
5.3.	WEP ARCHITECTURE .....	27
5.3.1.	<i>How WEP works</i> .....	27
5.3.2.	<i>WEP – why it doesn't work</i> .....	30
5.3.3.	<i>WEP Summary</i> .....	31
5.4.	NEW SECURITY: 802.11i AND WPA .....	32
5.4.1.	<i>Temporal Key Integrity Protocol (TKIP)</i> .....	32
5.4.2.	<i>What is WPA?</i> .....	33
5.4.3.	<i>Counter Mode with CBC-MAC and Robust Secure Networks</i> .....	34
5.4.4.	<i>Mixed Mode – Transitional Security Network (TSN)</i> .....	35
5.4.5.	<i>802.11i Summary</i> .....	35
5.5.	INTERIM AND EXTRA SECURITY SOLUTIONS .....	36
5.5.1.	<i>VPN and IPSec</i> .....	36
5.5.2.	<i>SSL and SSH</i> .....	36

5.5.3.	<i>Other alternatives</i> .....	37
5.6.	A BAD SECURITY EXAMPLE: NINTENDO DS .....	38
<b>6.</b>	<b>WIRELESS LAN PENETRATION TEST – AN EXPERIMENT .....</b>	<b>40</b>
6.1.	ASSEMBLING THE GEAR .....	40
6.2.	GATHERING BASIC INFORMATION .....	41
6.3.	ATTACKING WEP .....	41
6.4.	GETTING PAST THE MAC FILTER .....	43
6.5.	GETTING NETWORK SETTINGS.....	43
6.6.	CONCLUSION .....	43
<b>7.</b>	<b>PHYSICAL LAYER SECURITY .....</b>	<b>45</b>
7.1.	FREQUENCIES AND THEIR USE.....	45
7.1.1.	<i>2.4 GHz WLAN technology</i> .....	45
7.1.2.	<i>5GHz WLAN technology</i> .....	46
7.1.3.	<i>Advantages and Disadvantages of the frequencies</i> .....	46
7.2.	HOW WLAN SIGNAL STRENGTH IS MEASURED .....	47
7.3.	HOW THE SIGNAL IS AFFECTED .....	48
7.3.1.	<i>Straight-Line Losses</i> .....	48
7.3.2.	<i>Interference</i> .....	49
7.3.3.	<i>Practical Test: Microwave ovens versus WLANs</i> .....	51
7.4.	ANTENNAS AND THEIR IRRADIATION PATTERNS .....	51
7.4.1.	<i>Dipole Antennas</i> .....	51
7.4.2.	<i>Directional Antennas</i> .....	52
7.4.3.	<i>Antenna size matters</i> .....	53
<b>8.</b>	<b>EXPERIMENTS.....</b>	<b>54</b>
8.1.	GENERAL ISSUES .....	54
8.1.1.	<i>Hardware and Software Configuration</i> .....	54
8.1.2.	<i>Measuring the WLAN signal strength</i> .....	54
8.1.3.	<i>Windows and Netstumbler</i> .....	54
8.1.4.	<i>Linux and Wavemon</i> .....	55
8.2.	AVOIDING INTERFERENCE.....	56
8.3.	MAKING THE TEST RESULTS COMPARABLE .....	56
8.4.	EXPERIMENTS AND RESULTS.....	57
8.4.1.	<i>Signal loss for obstacles</i> .....	57
8.4.2.	<i>Using a home-made reflector</i> .....	57
8.4.3.	<i>Other means to shield the Access Point</i> .....	59
8.5.	RECOMMENDATIONS FOR PLACING THE ACCESS POINT TO INCREASE SECURITY .....	60
<b>9.</b>	<b>CRITICAL EVALUATION .....</b>	<b>61</b>
9.1.	EVALUATING THE OBJECTIVES.....	61

9.2.	EVALUATING OF THE PROCESS AND PERSONAL REFLECTION .....	63
<b>10.</b>	<b>CONCLUSION .....</b>	<b>65</b>
<b>11.</b>	<b>REFERENCES .....</b>	<b>66</b>
<b>12.</b>	<b>BIBLIOGRAPHY .....</b>	<b>70</b>
<b>13.</b>	<b>APPENDICES.....</b>	<b>72</b>
<b>A 1.</b>	<b>PROJECT ORGANIZATION RELATED.....</b>	<b>72</b>
A 1.1	PROJECT PROPOSAL .....	72
A 1.2	PROJECT SPECIFICATION.....	73
A 1.3	GANT CHART.....	74
A 1.4	BRAINSTORMING LOG .....	75
A 1.5	UNREALIZED ARTEFACT IDEAS.....	76
A 1.6	PROJECT LOGBOOK (DISCONTINUED) .....	78
<b>A 2.</b>	<b>INFORMATION GATHERING RELATED .....</b>	<b>82</b>
A 2.1	INTERVIEW TRANSCRIPT, TRANSLATED INTO ENGLISH .....	82
A 2.2	INTERVIEW TRANSCRIPT, ORIGINAL VERSION, GERMAN .....	85
A 2.3	WARWALK THROUGH WREXHAM.....	88
<b>A 3.</b>	<b>PHYSICAL LAYER RELATED.....</b>	<b>91</b>
A 3.1.	2.4GHZ CHANNELS AND FREQUENCY OVERVIEW.....	91
A 3.2.	5 GHZ CHANNELS AND FREQUENCY OVERVIEW .....	92
A 3.3.	EZ-12 PARABOLIC REFLECTOR TEMPLATE (ERSKINEAPE, 2005).....	94

### III. List of figures

Figure 4-1: A typical 802.1X setup .....	21
Figure 4-2: Relationship of Wi-Fi and IEEE 802.11 .....	22
Figure 4-3: Independent and ad-hoc networks, (adapted from Gast, 2005 p 16).....	23
Figure 5-1: The CIA Triad. (adapted from Brunschweiler, 2004, p. 32).....	24
Figure 5-2: Open and WEP Authentication .....	28
Figure 5-3: Generic stream cipher operation (adapted from Gast 2005, p115) .....	29
Figure 5-4: The Nintendo DS can connect to WEP networks, but lacks WPA support .....	39
Figure 6-1: Kismet in action. It gives us all the basic information needed to start the hack ...	41
Figure 6-2: WEP cracking with Aircrack. The 128bit WEP key was found in 4 seconds.....	42
Figure 6-3: MAC address spoofing under Linux is easy .....	43
Figure 7-1: DSSS Channels in 2.4GHz spectrum (Vladimirov et al., 2004, p. 62) .....	45
Figure 7-2 Signal-to-noise ratio and the noise floor (Gast, 2005 p 233) .....	48
Figure 7-3 Multiple paths.....	49
Figure 7-4: Wave combination by superposition. Wave 1 and Wave 2 are almost opposite of each other, the net result is almost nothing. (Adapted from Gast, 2005, p. 237).....	50
Figure 7-5: Inter-Symbol Interference .....	50
Figure 7-6 Signal loss while a microwave oven is operating near an access point.....	51
Figure 7-7: A typical dipole antenna, found on almost every 802.11 b/g Access Point .....	52
Figure 7-8: Radiation patterns of omnidirectional and directional antennas .....	52
Figure 8-1: Netstumbler, the swiss knife of Windows WLAN tools .....	55
Figure 8-2: Wavemon is a great tool for 802.11 signal measuring .....	56
Figure 8-3: Home made reflectors in action.....	58



## IV. List of abbreviations

AES	Advanced Encryption Standard
AP	Access Point
BSS	Basic Service Set
BSSID	Basic Service Set ID
CCMP	Counter Mode with CBC-MAC Protocol. AES based protocol 802.11i
DHCP	Dynamic Host Configuration Protocol
DoS	Denial of Service
dBm	decibel (db) in relation to 1 milli-watt (mW)
EAP	Extensible Authentication Protocol
ESS	Extended Service Set
FHSS	Frequency Hopping Spread Spectrum
FMS	Fluhrer-Mantin-Shamir. Used to reference a key recovery attack against WEP.
HR/DSSS	High-Rate Direct Sequence Spread Spectrum
HTTP	HyperText Transfer Protocol
HTTPS	HTTP Secure
IEEE	Institute of Electrical and Electronics Engineers
IP	Internet Protocol
IPsec	IP security. Framework of security protocols, often used for VPN
IR	InfraRed
ISO	International Organization for Standardization
ISM	Industrial, Scientific, and Medical Bands
IV	Initialization Vector
LAN	Local Area Network
LEAP	Lightweight Extensible Authentication Protocol).
MAC	Medium Access Control
OFDM	Orthogonal Frequency Division Multiplexing
OSI	Open Systems Interconnection, also known as the ISO – OSI modell
PHY	PHYSical Layer
PMK	Pairwise Master Key
PSK	PreShared Key
RADIUS	Remote Authentication Dial In User Service
RC4	Rivest Cipher 4, a streaming cipher developed by Ron Rivest, RSA labs

RSN	Robust Security Network, part of 802.11i
SNR	Signal to Noise Ratio
SSH	Secure Shell
SSID	Service Set Identifier
SSL	Secure Socket Layer
SOHO	Small Office / Home Office
TCP	Transmission Control Protocol
TGi	802.11 Task group i
TK	Temporal Key
TKIP	Temporal Key Integrity Protocol. RC4 based protocol introduced in 802.11i
VPN	Virtual Private Network
WAN	Wide Area Network
WEP	Wired Equivalent Privacy
Wi-Fi	Wireless-Fidelity
WiMAX	Worldwide Interoperability for Microwave Access, also known as IEEE 802.16
WLAN	Wireless LAN
WPA	Wi-Fi Protected Access
WPA2	WPA v2