

Table of Contents

1	Executive Summary.....	13
1.1	Major Findings.....	13
1.2	Major Conclusions.....	15
1.3	Economic Turmoil – Market Impact.....	17
1.4	Global Market -2010-2016.....	18
1.5	Remote Terrorist Detection Technologies	22
2	Introduction.....	26
2.1	Scope	26
2.2	Remote suspects detection Range Classification	27
2.3	Methodology.....	28
3	Market Analysis	30
3.1	Market Drivers.....	30
3.2	Market Inhibitors.....	31
3.3	SWOT Analysis	32
3.4	Competitive Analysis	34
3.5	Business Challenges and Opportunities.....	35
4	CCTV Based Remote Suspects Detection Technologies.....	37
4.1	Present and Pipeline Technologies.....	37
4.2	Technological Challenges	39
5	CCTV Based Remote Biometric Identification.....	42
5.1	Remote Biometric Identification Technologies	42
5.2	Terrorist Watch Lists	43
6	Fused Remote Video Surveillance and Biometric Technology	46
6.1	Overview	46
6.2	Example: IOM PassPort™	47
7	Fused Multi-modal Biometric Remote People Screening.....	49
8	Stimuli Triggered Remote Behavioral CCTV Based Surveillance	50
8.1	Definition	50
8.2	The Challenge and the Answer	50
8.3	Method	51
8.4	Technology.....	52
8.5	Advantages	53
8.6	HLS and Other Applications	54
9	Passive Remote Behavior CCTV Based Tracking.....	56
9.1	Overview	56
9.2	Behavior Tracking Purpose	58
9.3	Behavioral Profiling	59
9.4	Behavior Profiling – Drivers.....	59
9.5	Behavior Profiling – Inhibitors.....	59
10	CCTV-based Remote Surveillance	61
10.1	Overview	61
10.2	Video Monitoring and Biometrics.....	61

CCTV Based Remote Biometric & Behavioral Suspect Detection:
Technologies & Global Markets - 2011-2016

10.3	CCTV Biometric Face Recognition Identification vs. Verification	62
10.4	Performance of CCTV-based Biometric Recognition Technologies.....	63
10.5	Tag and Track – Intelligent Video Surveillance	64
10.6	TSA Advanced Surveillance Program	64
11	Remote Video Content Analysis (VCA) Systems	66
11.1	Overview	66
11.2	Future VCA Research	68
12	Fused NIR Time-of-flight Topography & Remote CCTV Imaging.	69
13	Remote Biometric Detection Programs and Projects.....	70
13.1	Localization of Threat Substances in Urban Environment (LOTUS).....	70
13.2	Mitigation Thrust Area Program	72
13.3	Conveyance Protection Program	72
13.4	Research Thrust Area Program	72
13.5	Algorithm and Analysis of Raw Images Program	73
13.6	Detection Technology and Material Science Program.....	73
14	Safe City Remote Suspects Detection Systems	74
14.1	Concept.....	74
14.2	Technical Solutions	75
14.3	Remote Biometric Behavioral Detection Safe City Market	76
15	CCTV Based Remote Suspect Identification R&D Programs.....	77
15.1	Check Point Program	77
15.2	Social Behavioral Threat Analysis Thrust Area	77
15.3	Biometric Detector Project.....	78
16	Global CCTV Based Remote Behavioral & Biometric Suspect Detection Market - 2011-2016.....	79
16.1	CCTV Based Remote Behavioral & Biometric Suspect Detection Systems Sales	79
16.1.1	Global Systems Sales by Modality - 2011-2016.....	79
16.1.2	Systems Sales by Country - 2011-2016.....	81
16.2	Global CCTV Based Remote Behavioral & Biometric Suspect Detection Service, Upgrade & Refurbishment Market.....	83
16.2.1	Service, Upgrade & Refurbishment Market by Modality - 2011-2016.....	83
16.2.2	Service, Upgrade & Refurbishment Market by Country - 2011-2016.....	84
16.3	Consolidated Global CCTV Based Remote Behavioral & Biometric Suspect Detection Market	86
16.3.1	Consolidated Market by Segment – 2011-2016	86
16.3.2	Consolidated Market by Modality – 2011-2016	87
16.3.3	Consolidated Market by Application – 2011-2016.....	89
16.3.4	Consolidated Market by Country – 2011-2016.....	90
16.4	Consolidated Market by Application & Country	92
16.4.1	Summary	92

CCTV Based Remote Biometric & Behavioral Suspect Detection:
Technologies & Global Markets - 2011-2016

16.4.2	Transportation: CCTV Based Remote Behavioral & Biometric Suspect Detection Market by Country – 2011-2016.....	93
16.4.3	Perimeter and Border Security: CCTV Based Remote Behavioral & Biometric Suspect Detection Market by Country – 2011-2016	94
16.4.4	Force Protection: CCTV Based Remote Behavioral & Biometric Suspect Detection Market by Country – 2011-2016.....	95
16.4.5	Safe City: CCTV Based Remote Behavioral & Biometric Suspect Detection Market by Country – 2011-2016.....	96
16.4.6	Critical Infrastructure Protection: CCTV Based Remote Behavioral & Biometric Suspect Detection Market by Country – 2011-2016	97
16.4.7	Other Applications: CCTV Based Remote Behavioral & Biometric Suspect Detection Market by Country – 2011-2016.....	98
17	US Remote Behavioral & Biometric Suspect Detection Market.....	99
17.1	Systems Sales, Service, Upgrade & Refurbishment Markets - 2011-2016.....	99
17.2	Market Forecast by Application - 2011-2016.....	99
18	UK Remote Behavioral & Biometric Suspect Detection Market	101
18.1	Systems Sales, Service, Upgrade & Refurbishment Markets - 2011-2016.....	101
18.2	Market Forecast by Application - 2011-2016.....	102
19	French Remote Behavioral & Biometric Suspect Detection Market.....	103
19.1	Systems Sales, Service, Upgrade & Refurbishment Markets - 2011-2016.....	103
19.2	Market Forecast by Application - 2011-2016.....	104
20	German Remote Behavioral & Biometric Suspect Detection Market	105
20.1	Systems Sales, Service, Upgrade & Refurbishment Markets - 2011-2016.....	105
20.2	Market Forecast by Application - 2011-2016.....	106
21	Spanish Remote Behavioral & Biometric Suspect Detection Market.....	107
21.1	Systems Sales, Service, Upgrade & Refurbishment Markets - 2011-2016.....	107
21.2	Market Forecast by Application - 2011-2016.....	108
22	Indian Remote Behavioral & Biometric Suspect Detection Market	109
22.1	Systems Sales, Service, Upgrade & Refurbishment Markets - 2011-2016.....	109
22.2	Market Forecast by Application - 2011-2016.....	110
23	Chinese Remote Behavioral & Biometric Suspect Detection Market.....	111
23.1	Systems Sales, Service, Upgrade & Refurbishment Markets - 2011-2016.....	111
23.2	Market Forecast by Application - 2011-2016.....	112
24	Japanese Remote Behavioral & Biometric Suspect Detection Market	113

CCTV Based Remote Biometric & Behavioral Suspect Detection:
Technologies & Global Markets - 2011-2016

24.1	Systems Sales, Service, Upgrade & Refurbishment Markets - 2011-2016	113
24.2	Market Forecast by Application - 2011-2016.....	114
25	Saudi Arabian Remote Behavioral & Biometric Suspect Detection Market.	115
25.1	Systems Sales, Service, Upgrade & Refurbishment Markets - 2011-2016	115
25.2	Market Forecast by Application - 2011-2016.....	116
26	Bahrain, Kuwait, Qatar and UAE Remote Behavioral & Biometric Suspect Detection Market.....	117
26.1	Systems Sales, Service, Upgrade & Refurbishment Markets - 2011-2016	117
26.2	Market Forecast by Application - 2011-2016.....	118
27	CCTV Based Remote Biometric Detection Vendors	119
27.1	3i-MIND	119
27.2	3VR	120
27.3	3xLOGIC	120
27.4	ADT Security Services	121
27.5	Agent Video Intelligence.....	122
27.6	AGT international	123
27.7	Aimetis	123
27.8	American Dynamics	124
27.9	Arecont Vision	124
27.10	Avigilon.....	125
27.11	Axis	125
27.12	Axxon	126
27.13	Basler	126
27.14	Bosch Security Systems.....	127
27.15	BRS Labs	127
27.16	Cernium.....	128
27.17	CIEFFE	128
27.18	Cisco	129
27.19	CNL.....	129
27.20	CSST.....	129
27.21	Dallmeier	129
27.22	Dedicated Micros	130
27.23	DVTel	130
27.24	Exacq	131
27.25	Firetide	131
27.26	GE Security	132
27.27	Genetec.....	132
27.28	Geovision	133
27.29	Geutebrueck.....	133
27.30	Hikvision.....	133
27.31	Honeywell.....	134
27.32	Hoyos Corp.	135
27.33	Human Recognition Systems.....	136
27.34	IndigoVision.....	137
27.35	Intellio.....	137

CCTV Based Remote Biometric & Behavioral Suspect Detection:
Technologies & Global Markets - 2011-2016

27.36	Intergraph.....	137
27.37	Intrinsa	138
27.38	Ioimage	138
27.39	IPConfigure	139
27.40	IQinVision.....	139
27.41	Lumenera	140
27.42	LuxRiot.....	140
27.43	March Networks	141
27.44	Milestone Systems	142
27.45	Mirasys.....	142
27.46	Mobotix.....	143
27.47	NICE Systems.....	144
27.48	NUUO.....	144
27.49	Network Video Technologies.....	145
27.50	ObjectVideo.....	145
27.51	On-Net Surveillance Systems	146
27.52	Orsus.....	146
27.53	Panasonic	146
27.54	Pelco	147
27.55	Pivot3	147
27.56	Pixim	148
27.57	Proximex	148
27.58	Raytec Imaging Corp.....	149
27.59	Salient Stills.....	149
27.60	Sanyo	149
27.61	SeeTec.....	149
27.62	SightLogix	150
27.63	Smartvue.....	150
27.64	StarDot.....	151
27.65	Steelbox	151
27.66	Synectics.....	152
27.67	Texas Instruments.....	152
27.68	Theia	153
27.69	TimeSight.....	153
27.70	V.A.S. GmbH.....	154
27.71	VDG Security BV.....	155
27.72	Veracity	155
27.73	Verint.....	156
27.74	Vicon	157
27.75	Videalert Ltd	157
27.76	VideolQ	158
27.77	VideoNext.....	159
27.78	WeCU Technologies Ltd	160

List of Figures

Figure 1 - Global CCTV Based Remote Behavioral & Biometric Suspect Detection Market Share [%] – 2010, 2016	18
Figure 2 - Global CCTV Based Remote Behavioral & Biometric Detection (Systems Sales, Service, Upgrade & Refurbishment) Market Share [%] by Modality – 2010, 2016	19
Figure 3 - Global CCTV Based Remote Behavioral & Biometric Detection (Systems Sales, Service, Upgrade & Refurbishment) Market Share [%] by Application - 2010-2016	20
Figure 4 - Global CCTV Based Remote Behavioral & Biometric Detection (Systems Sales, Service, Upgrade & Refurbishment) Market [\$Million] by Country – 2010, 2016	21
Figure 5 - People Screening - Threats and Associated Detection Technologies.....	25
Figure 6 - Evacuation Distance by Threat and Explosive Mass	27
Figure 7 - SWOT Analysis.....	33
Figure 8 - CCTV Based Remote Biometric & Behavioral Suspect Detection Market – Competitive Analysis.....	34
Figure 9 - CCTV Based Remote Biometric & Behavioral Suspect Detection: Performance Criteria	35
Figure 10 - Spectrum of Evolving Remote People Screening Technologies.....	38
Figure 11 - Remote Open Space Threat Detection	38
Figure 12 - Short Range Remote Biometric Detection Setup	39
Figure 13 - People Screening in an Open Space Environment.....	42
Figure 14 - The USA Terrorist Watch List and Screening Flowchart.....	44
Figure 15 - Field of View of a Fused Video Surveillance and Biometrics	46
Figure 16 - A Corridor CCTV & Biometric Portal Layout.....	48
Figure 17 - Future People/Baggage Screening Turnstiles (Artist Rendition).....	48
Figure 18 - Stimuli Triggered Remote Behavioral Surveillance System – Functional Flow Diagram	53
Figure 19 - Profiling and Behavior Tracking – Principles of Operation	57
Figure 20 - CCTV Surveillance Notice.....	64
Figure 21 - VCA Block Diagram and Data Flow	67
Figure 22 - Localization of Threat Substances in Urban Environment	71
Figure 23 - Global CCTV Based Remote Behavioral & Biometric Suspect Detection Systems Sales [\$Million] by Modality - 2010-2016.....	80
Figure 24 - Global CCTV Based Remote Behavioral & Biometric Suspect Detection Systems Sales [%] by Modality – 2010, 2016	81
Figure 25 - Global CCTV Based Remote Behavioral & Biometric Suspect Detection Systems Sales by Country [%] - 2010-2016	83

CCTV Based Remote Biometric & Behavioral Suspect Detection:
Technologies & Global Markets - 2011-2016

Figure 26 - Global CCTV Based Remote Behavioral & Biometric Suspect Detection Systems Service, Upgrade & Refurbishment Market [\$Million] by Modality - 2010-2016	84
Figure 27 - Global CCTV Based Remote Behavioral & Biometric Suspect Detection Systems Service, Upgrade & Refurbishment Market Share [%] by Country – 2010, 2016	85
Figure 28 - Global CCTV Based Remote Behavioral & Biometric Suspect Detection Systems Service, Upgrade & Refurbishment Market vs. Systems Sales [\$Million] – 2010-2016	87
Figure 29 - Global CCTV Based Remote Behavioral & Biometric Detection (Systems Sales, Service, Upgrade & Refurbishment) Market [\$Million] by Modality - 2010-2016	88
Figure 30 - Global CCTV Based Remote Behavioral & Biometric Detection (Systems Sales, Service, Upgrade & Refurbishment) Market Share [%] by Modality – 2010, 2016	88
Figure 31 - Global CCTV Based Remote Behavioral & Biometric Detection (Systems Sales, Service, Upgrade & Refurbishment) Market Share [%] by Application - 2010-2016	89
Figure 32 - Global CCTV Based Remote Behavioral & Biometric Detection (Systems Sales, Service, Upgrade & Refurbishment) Market [\$Million] by Country – 2010, 2016	91
Figure 33 - Global CCTV Based Remote Behavioral & Biometric Suspect Detection Market for Transportation Applications [%] by Country - 2010-2016	93
Figure 34 - Global CCTV Based Remote Behavioral & Biometric Suspect Detection Market for Perimeter and Border Security Applications [%] by Country - 2010-2016	94
Figure 35 - Global CCTV Based Remote Behavioral & Biometric Suspect Detection Market for Force Protection Applications [%] by Country - 2010-2016	95
Figure 36 - Global CCTV Based Remote Behavioral & Biometric Suspect Detection Market for Safe City Applications [%] by Country - 2010-2016	96
Figure 37 - Global CCTV Based Remote Behavioral & Biometric Suspect Detection Market for Critical Infrastructure Protection Applications [%] by Country - 2010-2016	97
Figure 38- Global CCTV Based Remote Behavioral & Biometric Suspect Detection Market for Other Applications [%] by Country - 2010-2016	98
Figure 39 - US CCTV Based Remote Behavioral & Biometric Suspect Detection Market Share [%] by Application - 2010-2016.....	100
Figure 40 - UK CCTV Based Remote Behavioral & Biometric Suspect Detection Market [\$Million] - 2010-2016.....	101
Figure 41 - UK CCTV Based Remote Behavioral & Biometric Suspect Detection Market Share [%] by Application - 2010-2016.....	102

CCTV Based Remote Biometric & Behavioral Suspect Detection:
Technologies & Global Markets - 2011-2016

Figure 42 - French CCTV Based Remote Behavioral & Biometric Suspect Detection Market [\$Million] - 2010-2016.....	103
Figure 43 - French CCTV Based Remote Behavioral & Biometric Suspect Detection Market Share [%] by Application - 2010-2016.....	104
Figure 44 - German CCTV Based Remote Behavioral & Biometric Suspect Detection Market [\$Million] - 2010-2016.....	105
Figure 45 - German CCTV Based Remote Behavioral & Biometric Suspect Detection Market Share [%] by Application - 2010-2016.....	106
Figure 46 - Spanish CCTV Based Remote Behavioral & Biometric Suspect Detection Market [\$Million] - 2010-2016.....	107
Figure 47 - Spanish CCTV Based Remote Behavioral & Biometric Suspect Detection Market Share [%] by Application - 2010-2016.....	108
Figure 48 - Indian CCTV Based Remote Behavioral & Biometric Suspect Detection Market [\$Million] - 2010-2016.....	109
Figure 49 - Indian CCTV Based Remote Behavioral & Biometric Suspect Detection Market Share [%] by Application - 2010-2016.....	110
Figure 50 - Chinese CCTV Based Remote Behavioral & Biometric Suspect Detection Market [\$Million] - 2010-2016.....	111
Figure 51 - Chinese CCTV Based Remote Behavioral & Biometric Suspect Detection Market Share [%] by Application - 2010-2016.....	112
Figure 52 - Japanese CCTV Based Remote Behavioral & Biometric Suspect Detection Market [\$Million] - 2010-2016.....	113
Figure 53 - Japanese CCTV Based Remote Behavioral & Biometric Suspect Detection Market Share [%] by Application - 2010-2016.....	114
Figure 54 - Saudi Arabian CCTV Based Remote Behavioral & Biometric Suspect Detection Market [\$Million] - 2010-2016.....	115
Figure 55 - Saudi Arabian CCTV Based Remote Behavioral & Biometric Suspect Detection Market Share [%] by Application - 2010-2016.....	116
Figure 56 - Bahrain, Kuwait, Qatar and UAE CCTV Based Remote Behavioral & Biometric Suspect Detection Market [\$Million] - 2010-2016.....	117
Figure 57 - Bahrain, Kuwait, Qatar and UAE CCTV Based Remote Behavioral & Biometric Suspect Detection Market Share [%] by Application - 2010-2016.....	118

List of Tables

Table 1 - Global CCTV Based Remote Behavioral & Biometric Suspect Detection Market [\$Million] by Segment - 2010-2016.....	18
Table 2 - Global CCTV Based Remote Behavioral & Biometric Detection (Systems Sales, Service, Upgrade & Refurbishment) Market [\$Million] by Modality - 2010-2016	19
Table 3 - Global CCTV Based Remote Behavioral & Biometric Detection (Systems Sales, Service, Upgrade & Refurbishment) Market by Application - 2010-2016	20
Table 4 - Global CCTV Based Remote Behavioral & Biometric Detection (Systems Sales, Service, Upgrade & Refurbishment) Market [\$Million] by Country - 2010-2016.....	21
Table 5 - Global CCTV Based Remote Behavioral & Biometric Suspect Detection Market [\$Million] by Application and Country - 2010-2016.....	22
Table 6 - Remote Terrorist Detection Technologies.....	22
Table 7 - Comparison of Remote terrorists detection Technologies.....	37
Table 8 - Retica Remote Biometric System Performance	46
Table 9 - Short Range Remote Biometric Portal: IOM PassPort™ Performance.....	47
Table 10 - VCA: Sub-Systems, Technology, Technology Challenges and Target Performance	68
Table 11 - Global CCTV Based Remote Behavioral & Biometric Suspect Detection Systems Sales [\$Million] by Modality - 2010-2016.....	79
Table 12 - Global CCTV Based Remote Behavioral & Biometric Suspect Detection Systems Sales [%] by Modality - 2010-2016.....	80
Table 13 - Global CCTV Based Remote Behavioral & Biometric Suspect Detection Systems Sales [\$Million] by Country - 2010-2016.....	81
Table 14 - Global CCTV Based Remote Behavioral & Biometric Suspect Detection Systems Sales by Country [%] - 2010-2016.....	82
Table 15 - Global CCTV Based Remote Behavioral & Biometric Suspect Detection Systems Service, Upgrade & Refurbishment Market [\$Million] by Modality - 2010-2016	84
Table 16 - Global CCTV Based Remote Behavioral & Biometric Suspect Detection Systems Service, Upgrade & Refurbishment Market [\$Million] by Country - 2010-2016	85
Table 17 - Global CCTV Based Remote Behavioral & Biometric Suspect Detection Market [\$Million] by Segment - 2010-2016.....	86
Table 18 - Global CCTV Based Remote Behavioral & Biometric Detection (Systems Sales, Service, Upgrade & Refurbishment) Market [\$Million] by Modality - 2010-2016	87

CCTV Based Remote Biometric & Behavioral Suspect Detection:
Technologies & Global Markets - 2011-2016

Table 19 - Global CCTV Based Remote Behavioral & Biometric Detection (Systems Sales, Service, Upgrade & Refurbishment) Market by Application - 2010-2016	89
Table 20 - Global CCTV Based Remote Behavioral & Biometric Detection (Systems Sales, Service, Upgrade & Refurbishment) Market [\$Million] by Country - 2010-2016	90
Table 21 - Global CCTV Based Remote Behavioral & Biometric Suspect Detection Market [\$Million] by Application and Country - 2010-2016	92
Table 22 - Global CCTV Based Remote Behavioral & Biometric Suspect Detection Market for Transportation Applications by Country - 2010-2016	93
Table 23 - Global CCTV Based Remote Behavioral & Biometric Suspect Detection Market for Perimeter and Border Security Applications by Country - 2010-2016	94
Table 24- Global CCTV Based Remote Behavioral & Biometric Suspect Detection Market for Force Protection Applications by Country - 2010-2016	95
Table 25 - Global CCTV Based Remote Behavioral & Biometric Suspect Detection Market for Safe City Applications by Country - 2010-2016	96
Table 26 - Global CCTV Based Remote Behavioral & Biometric Suspect Detection Market for Critical Infrastructure Protection Applications by Country - 2010-2016	97
Table 27 - Global CCTV Based Remote Behavioral & Biometric Suspect Detection Market for Other Applications by Country - 2010-2016	98
Table 28 - US Systems Sales, Service, Upgrade & Refurbishment Markets [\$Million] - 2010-2016	99
Table 29 - US CCTV Based Remote Behavioral & Biometric Suspect Detection Market [\$Million] by Application - 2010-2016	100
Table 30 - UK Systems Sales, Service, Upgrade & Refurbishment Markets [\$Million] - 2010-2016	101
Table 31 - UK CCTV Based Remote Behavioral & Biometric Suspect Detection Market [\$Million] by Application - 2010-2016	102
Table 32 - French Systems Sales, Service, Upgrade & Refurbishment Markets [\$Million] - 2010-2016	103
Table 33 - French CCTV Based Remote Behavioral & Biometric Suspect Detection Market [\$Million] by Application - 2010-2016	104
Table 34 - German Systems Sales, Service, Upgrade & Refurbishment Markets [\$Million] - 2010-2016	105
Table 35 - German CCTV Based Remote Behavioral & Biometric Suspect Detection Market [\$Million] by Application - 2010-2016	106
Table 36 - Spanish Systems Sales, Service, Upgrade & Refurbishment Markets [\$Million] - 2010-2016	107

CCTV Based Remote Biometric & Behavioral Suspect Detection:
Technologies & Global Markets - 2011-2016

Table 37 - Spanish CCTV Based Remote Behavioral & Biometric Suspect Detection Market [\$Million] by Application - 2010-2016	108
Table 38 - Indian Systems Sales, Service, Upgrade & Refurbishment Markets [\$Million] - 2010-2016	109
Table 39 - Indian CCTV Based Remote Behavioral & Biometric Suspect Detection Market [\$Million] by Application - 2010-2016	110
Table 40 - Chinese Systems Sales, Service, Upgrade & Refurbishment Markets [\$Million] - 2010-2016	111
Table 41 - Chinese CCTV Based Remote Behavioral & Biometric Suspect Detection Market [\$Million] by Application - 2010-2016	112
Table 42 - Japanese Systems Sales, Service, Upgrade & Refurbishment Markets [\$Million] - 2010-2016	113
Table 43 - Japanese CCTV Based Remote Behavioral & Biometric Suspect Detection Market [\$Million] by Application - 2010-2016	114
Table 44 - Saudi Arabian Systems Sales, Service, Upgrade & Refurbishment Markets [\$Million] - 2010-2016	115
Table 45 - Saudi Arabian CCTV Based Remote Behavioral & Biometric Suspect Detection Market [\$Million] by Application - 2010-2016	116
Table 46 - Bahrain, Kuwait, Qatar and UAE Systems Sales, Service, Upgrade & Refurbishment Markets [\$Million] - 2010-2016	117
Table 47 - Bahrain, Kuwait, Qatar and UAE CCTV Based Remote Behavioral & Biometric Suspect Detection Market [\$Million] by Application - 2010-2016	118