Europe's Terror & Migration Crisis Series

2016-2022

European Smart Borders, Immigration Enforcement & Border Security Markets

Homeland Security Research Corp.

Europe's Terror & Migration Crisis Series

European Smart Borders, Immigration Enforcement & Border Security Markets

2016-2022

May 2016

Homeland Security Research Corp. (HSRC) *is an international market and technology research firm specializing in the Homeland Security (HLS) & Public Safety (PS) Industry. HSRC provides premium market reports on present and emerging technologies and industry expertise, enabling global clients to gain time-critical insight into business opportunities. HSRC's clients include the EU, NATO U.S. Congress, DHS, U.S. Army, U.S. Navy, DOD, DOT, and US Congress GAO among others; as well as Counter Terror & PS government agencies in Japan, Korea, Taiwan, Israel, Canada, UK, Germany, Australia, Sweden, Finland, Singapore. With over 950 private sector clients (72% repeat customers), including major defense and security vendors, and Fortune 500 companies. HSRC earned the reputation as the industry's Gold Standard for Counter Terror & Public Safety market reports*.

Washington D.C. 20004, 601 Pennsylvania Ave., NW Suite 900,
Tel: 202-455-0966, info@hsrc.biz, www.homelandsecurityresearch.com

Copyright © 2016 HSRC. All rights reserved | Copy #020516

Acknowledgements

The authors of this report wish to convey their sincere thanks to all of the Counter Terror & Public Safety planners, engineers, scientists, security personnel, government officials, vendors, distributors and users, who granted us interviews, sent us their publications, provided us with non-published presentations, reviewed and commented on our drafts - giving us an invaluable insight into the working of technologies markets and trends. The list below contains the names of some of the people who have helped us directly or indirectly in the preparation of this report. We thank them and many others.

Jorge Domecq, Chief Executive of the European Defence Agency (EDA). **Carl Bildt**, Former Swedish Prime Minister and Minister of Foreign Affairs and Trustee of Friends of Europe. **Ana Gomes**, Member of the European Parliament, Committee on Civil Liberties, Justice and Home Affairs and on the Subcommittee on Security and Defence. **Ian Bremmer**, President and Founder of Eurasia Group. **Elisabeth Guigou**, President of the Foreign Affairs Commission of the French National Assembly, President of Anna Lindh Foundation and Trustee of Friends of Europe. **Lock Pin Chew**, Director of the Risk Assessment and Horizon Scanning Programme Office of Singapore's National Security Coordinating Secretariat. **Peter Hultqvist**, Swedish Minister of Defence. **Luis De Almeida Sampaio**, Portuguese Permanent Representative of Portugal to NATO. **Wolfgang Ischinger,** Chairman of the Munich Security Conference and former German Ambassador to the U.S. **Jaap De Hoop Scheffer**, Former NATO Secretary General and Trustee of Friends of Europe. **Elizabeth Johnston**, Executive Director of the European Forum for Urban Security. **Marina Kaljurand**, Estonian Minister of Foreign Affairs. **Joanne Liu**, International President of Medecins sans Frontieres (MSF). **Mara E. Karlin**, U.S. Deputy Assistant Secretary of Defense for Strategy and Force Development. **Frederica Mogherini**, High Representative of the Union for Foreign Affairs and Security Policy and Vice-President of the European Commission**. Irene Khan,** Director General of the International Development Law Organization and Former Secretary General of Amnesty International. **Bert Koenders**, Dutch Minister of Foreign Affairs. **General Mikhail Kostarakos**, Chairman of the European Union Military Committee (CEUMC). **Baroness Pauline Neville-Jones**, Member of the UK House of Lords and former Minister of State for Security and Counter-Terrorism. **Thomas Gottschild,** Director for EU & NATO Policies, Cassidian. **Colonel Henry Neumann**, Group Leader of CBRN Protection, Fire and Self Protection, German Armed Forces. **Lieutenant Colonel Brian Clesham**, HQ Land Command, Ministry of Defence, UK. **Pentti Partanen**, Director General, Finnish Department of Rescue Services. **John Conaghan**, Police Inspector, British Transport Police. **Colonel Frank Kämper**, Project Officer Protection, Capability Directorate, European Defence Agency. **Gayle Gorman and Jamie Campbell,** Eclipse Ventures. **Lars Kjaer,** World Shipping Council. **John Avolio,** Director, Security & Detection Systems, L3 Communications. **Ted Strancyek,** President, Aircraftsmen & Associates. **Dore S. Perler,** President & CEO, Sense Holding Inc. **James T. Ryan,** General Manager, Cantronic Ethnologies. **M. Peretz,** Executive Vice President, Integrated Detection Systems. **Richard Doubrava,** Managing Director of Security, Air Transport Association. **Marian Terlecki,** Manager, Cargo Security and ULD Industry Distribution & Financial Services, International Air Transport Association (IATA). **Raphael Kahn,** Director Secure, Marine. **Tony Magnusson,** Acting Head of Anti-Smuggling Division, National CSI coordinator, Swedish Customs. **Nadège Grard,** Assistant European Organisation for Security (EOS). **Pavel Adam**, Institute of Photonics and Electronics,

Copyright © 2016 HSRC. All rights reserved | Copy #020516

Czech Republic. **Ralph Hammer,** Expert, National and European Security Research, Ministry of Transport, Innovation and Technology, Austria. **Charles Elsen,** Former Council of the European Union. **Jean-Louis de Brouwer,** European Commission. **Audrey Baneyx,** Sciences-Po Paris Médialab. **Benoit Verjat,** Sciences-Po Paris Médialab. **Peter Jozsef Csonka,** European Commission. **Wenceslas de Lobkowicz,** Former European Commission, Sciences Po Paris. **Médéric Martin-Mazé,** King's College, London. **Tony Venables,** Former European Citizen Action Service. **Kees Groenendijk,** University of Nijmegen. **Beate Winkler,** Author, former Director of the EU Agency in Vienna, now FRA. **Fabrice Leggeri,** Frontex. **Elspeth Guild,** University of Nijmegen, CEPS. **Wouter Van De Rijt,** Council of the European Union. **Emilio de Capitani,** Former European Parliament. **Michael Kennedy,** Eurojust. **Petra Bard,** Central European University. **Willy Bruggeman,** Europol. **Monica den Boer,** SeQure Research and Consultancy, Vrije Universiteit, Amsterdam. **Johannes Vos,** Former Council of the European Union. **Peter Hustinx,** Former European Data Protection Supervisor. **Julien Jeandesboz,** Université Libre de Bruxelles. **Sandra Nunes,** eu-LISA. **Sharon Abbas,** Business Development Manager Raytheon International, Europe. **Nicolas D. Loannidis,** Managing Director, Patras Port Authority, S.A. **Anthony Comber,** Sales and Marketing Manager, Thales Navigation Limited. **Steven D. Botello** – Director, Cargo Sales, Rapiscan Security Products. **Jiří Homola,** Institute of Photonics and Electronics, Czech Republic. **Marek Piliarik,** Institute of Photonics and Electronics, Czech Republic, Prague. **Jianping Yao**, Microwave Photonics Research Laboratory, Canada. **Philip Anderson,** Senior Fellow Homeland Security Initiatives, CSIS Center For Strategic & International Studies. **Dale K. Kotter,** Scientist, National Security - INEEL. **Jerry Peck,** Global Trade Management Solutions. **Mike Bohlman,** Horizon Lines and ISO TC 104. **Charlie Piersall,** ISO TC. **Daniel Colonel Fred Hilpert**, Director, Transformation Support, Joint CBRN Defence Centre of Excellence, Czech Republic. **Bill DeWitt**, SSA. **Susan F. Hallowell, Ph.D.,** Director of Technology. **Jerry W. McElwee,** Vice President, Joint Programs, Boeing. **Eric R. Schwartz,** Director, Advanced Systems Technology Phantom Works, Boeing. **Patrick OSZCZEDA,** VP Counter Terror, Thales Group. **Bruce Aitken,** President, Homeland Security Industries Association (HSIA). **R. Barry Ashby,** President, Ashby & Associates. **Rodney E. Thomas,** CEO, Thomas & Herbert Consulting LTC**. John C. Carrano, Ph.D.,** Program Manager Microsystems Technology Office, Defense Advanced Research Projects Agency. **Mark J. Rosker, Ph.D.,** Program Manager, DARPA. **John M. Libert,** Physical Scientist, Display Metrology, Forensic Imaging, Department of Commerce National Institute of Standards and Technology Electronics and Electrical Engineering Laboratory of NIST. **Tomáš Špringer**, Institute of Photonics and Electronics, Czech Republic. **Milan Vala,** Institute of Photonics and Electronics, Academy of Sciences of the Czech Republic, Prague. **Benjamin R. Watts**, Department of Engineering Physics, McMaster University. **Tomasz Wolinski**, Faculty of Physics, Warsaw University of Technology. **Chang-Qing Xu**, Department of Engineering Physics, McMaster University. **Brig. Gen (Res.) Dani Arditi,** Fmr. Director Israel National Security Council. **Giorgio Abrate,** Senior Vice President. **Avio Olav Adami,** Strategic Relations Luciad Col (GS). **Thomas Ahammer,** Deputy Military Representative Permanent Representation of Austria to the EU. **Frank Amedick,** Global Account Manager, NATO Siemens Belgium. **Paul Ames,** Freelance Journalist. **Jacqueline Argence,** Solution Portfolio Management Director, Cassidian. **Aviel Atias,** Consultant Mind-Alliance Systems, LLC. **Fabio Bagnoli,** Division Manager, D'appolonia. **Paul Baker,** Director/Associate Consultant Baker, R&C/Ecorys. **Gary Bamford,** Director, Arcadis Vectra. **Alain Barbier,** Deputy Special Representative to the European Union, International Criminal Police Organization (INTERPOL). **Dan Baxter,** Senior Vice-President and Director, Fleishman-Hillard. **Jacquelyn Bednarz,** Attaché, Department of Homeland Security Mission of the United States of America to the EU. **Emanuela Bellan,** Head of Unit, Crisis Management European Commission General

Copyright © 2016 HSRC. All rights reserved | Copy #020516

Secretariat. **Juliette Bird,** First Secretary, Security and Terrorism Permanent Representation of the United Kingdom to the EU. **Ivan Bizjak,** Director General for Justice and Home Affairs Council of the European Union. **David Blackwell,** Director for Cybersecurity DETICA (BAE Systems). **Christian Blobner,** Project Manager, Logistics and Factory Systems, Fraunhoffer Institute for Factory Operation and Automation IFF. **Agnes Borg,** Assistant, Weber. **Shandwick Martin Borrett**, Director, IBM Institute for Advanced Security. **John Brading,** Deputy BD Director, National Security, Raytheon, UK. **Simon Busuttil,** European Parliament. **Geert Cami,** Co-Founder & Director, Security & Defence Agenda (SDA). **Genseric Cantournet,** Vice President, Security Cross-Processes and Projects Telecom Italia. **Patrice Cardot,** Conseiller, Ministry of Defence, France, Direction Générale de l'Armement (DGA). **Valentina Carletti,** Advisor for EU, EDA and NATO affairs, Selex Sistemi Integrati. **Albert Caruana,** Information Assurance Officer, Council of the European Union. **Claudio Catalano,** Analyst, Studies Division, Finmeccanica, UK. **Marc Cathelineau,** Vice President, European Union & NATO Affairs, Thales. **Inge Ceuppens,** Project Officer, European Commission, DG for Information Society & Media. **Jacques Cipriano,** Vice President, European Affairs, Safran Group. **Michael Clarke,** Public Affairs Director, G4S. **Robert Cox,** Trustee, Friends of Europe. **Eugenio Creso,** Institutional Relations Director, Selex Sistemi Integrati S.p.A. **Vincenzo Cuomo,** Professor, Italian National Research Council (CNR). **Charles de Couessin** General Manager, ID Partners. **Dennis Davis,** Vice President, International Association of Fire and Rescue Services (CTIF). **Jean-Louis de Brouwer,** Director for Migration and Borders, European Commission, DG for Home Affairs. **Gilles de Kerchove,** European Counter-Terrorism Coordinator, Council of the European Union. **Kirsten de Haan,** Research Assistant, Fleishman-Hillard. **Stanislas de Maupeou,** Director for Cyber-Defence, Thales. **Eva Diaz Perez,** EADS Key Account NATO/EU, European Aeronautic Defence and Space Company (EADS). **Anatoly Didenko,** Counsellor, Mission of the Russian Federation to the EU. **Claes Dorien,** Office Manager, European Corporate Security Association (ECSA). **Michael T. Dougherty,** Director of Immigration Control, Raytheon. **Jonathan Dowdall,** Policy Analyst & Market Development, Security Europe. **David Henry Doyle,** Security & Defence Advisor, YPFP Brussels. **Anna Katarzyna Dubowik,** Secretary, Permanent Representation of Poland to the EU. **H.E. Mr. Dumitru Sorin Ducaru,** Ambassador, Delegation of Romania to NATO. **Krzysztof Durczak,** Key Account Manager, Defence & Security Sector, Thales. **Eeva Eek-Pajuste,** Counsellor, Political Affairs, Permanent Representation of Estonia to the EU. **Sabine Ehmke-Gendron,** Director for Civil Protection and Disaster Management, Council of the European Union. **Ludwig Eickemeyer,** Corporate Sales Executive, European Voice. **Gamze Erdem,** Advisor, Turkish Industry and Business Association, (TÜSIAD). **Anu Eslas,** Programmes Coordinator, Estonian Atlantic Treaty Association. **Henning Faltin,** Deputy Branch Head, European Union Military Staff (EUMS). **David Fairnie,** Director of Global Port Solution, G4S. **Patsy Faynsztein,** Manager, EU Business Development, Raytheon International, Europe. **Maria Fialho,** Special Advisor, Transatlantic Relations, European Parliament. **Ulrich Fikar,** Assistant to Zoltàn Martinusz, European Council Cabinet of President Herman Van Rompuy. **Theodor Fokken,** Director, Business Development EU-NATO, Rohde & Schwarz. **Pierre-Alain Fonteyne,** Chairman of the IMG-S Security Research Roadmap (SRR), Catholic University of Louvain. **Roger Forsberg,** Chief Information Security Officer, Swedish Fortifications Agency. **Ulrike Freyert,** Policy Officer, Justice and Interior Representation of Brandenburg to the EU. **Octávia Frota,** Senior Advisor, Conrad International. **Marino Gallego,** Innovation Business Director, Everis. **Hugo Ganet-Sénoko,** Senior Manager, Indra. **Jim Gaudoin,** Managing Director, L-3 Communication Systems Security & Detection Systems Division. **Antoine Gérard,** Head of the Brussels Liaison Office, United Nations Office for the Coordination of Humanitarian Affairs (UNOCHA). **Andrea Ghianda,** Project Manager, Security & Defence Agenda (SDA). **Pierluigi Massimo Giansanti,** Director, NATO/EU Sales Department,

Copyright © 2016 HSRC. All rights reserved | Copy #020516

Selex Sistemi Integrati, S.p.A. **Bill Giles,** Director General Europe, BAE Systems. **Laurent Giquello,** French National Expert, NATO Air Command and Control System Management Agency (NACMA). **Lt. Gen. Jo Godderij,** Director, NATO International Military Staff (IMS). **Timo Harkonen,** Director of Government Security, Office of the Prime Minister, Finland. **Michael Hartinger,** Project Officer, Capability Development Planning, European Defence Agency (EDA). **Robert Havas,** Chairman, Board of Directors, European Organization for Security (EOS). **Rear Admiral Giorgio Lazio**, Chief of Staff Maritime Command, NATO. **James A. Lewis**, Director and Senior Fellow of the Strategic Technologies Program of the Center for Strategic and International Studies (CSIS). **Michael Printzos**, Programme Director of The Hellenic Initiative. **Lee Litzenberger**, U.S. Deputy Permanent Representative to NATO. **Didier Reynders**, Belgian Deputy Prime Minister and Minister of Foreign Affairs and European Affairs. **Katrin Suder**, German Secretary of State at the Ministry of Defence. **Carne Ross**, Executive Director of Independent Diplomat. **Sir Adam Thomson**, UK Permanent Representative to NATO. **Michael Roth,** German Minister of State for Europe. **Marietje Schaake**, Member of the European Parliament, Vice-Chair of the Delegation for Relations with the United States, Member of the Committee on International Trade. **Waldemar Very**, Deputy Special Representative for the Rule of Law at the United Nations Mission in Liberia (UNMIL). **Marriet Schuurman**, NATO Special Representative. **Catherine Woollard**, Secretary General of the European Council on Refugees and Exiles (ECRE). **Jamie Shea**, NATO Deputy Assistant Secretary General for Emerging Security Challenges. **Maria zakharova**, Spokesperson of the Russian Ministry of Foreign Affairs. **Julianne smith**, Senior Fellow and Director of the Strategy and Statecraft Program at the Center for a New American Security (CNAS). **Lamberto Zannier**, Secretary General of the Organization for Security and Co-operation in Europe (OSCE). **Javier Solana**, Former NATO Secretary General and EU High Representative for CSDP and Trustee of Friends of Europe.

Copyright © 2016 HSRC. All rights reserved | Copy #020516

Table of Contents

1 Europe's Terror & Migration Crisis: Key Findings 16

2 Europe's Terror & Migration Crisis: Key Conclusions 31

3 European Immigration Enforcement Market – 2016-2022 43

3.1 Introduction 43
3.2 Major Findings 44
3.3 Key Conclusions 47
3.4 Major Challenges 52
3.5 Europe's 2015 Refugee Crisis 59
3.6 Immigration Enforcement Market Background 73
3.7 The EU Internal Borders 75
3.8 Schengen Visas 75
3.9 Schengen Information System 75
3.10 Frontex 76
3.11 The External Borders Fund 80
3.12 The Prüm Treaty 80
3.13 SWOT Analysis 82
3.13.1 Strengths 82
3.13.2 Weaknesses 83
3.13.3 Opportunities 84
3.14 Threats 85
3.15 European Immigration Enforcement Market – 2015-2022 86

4 European Smart Borders & Border Security Market – 2016-2022 88

4.1 Scope 88
4.2 The European Borders Security 90
4.2.1 Introduction 90
4.2.2 The Schengen Area 90
4.2.3 European Integrated Border Management (IBM) 93
4.2.4 The EU Smart Borders Initiative 94
4.2.5 The Schengen Zone: Passenger Name Record (PNR) System Outlook 95
4.2.6 The 2014-2015 European Migration Surge 100
4.2.7 Temporary Reintroduction of Border Control 101
4.3 European Smart & Secure Border Market 104
4.3.1 Europe Smart Borders Projects 106
4.3.2 Visas Requirements 109
4.3.2.1 Introduction 109
4.3.2.2 Post Visa Liberalization Monitoring Mechanism 109
4.3.2.3 Schengen Evaluation Mechanism 109
4.3.2.4 FRONTEX Procurement Process 109
4.4 Major Findings 110
4.5 Major Conclusions 111
4.6 Market Background 111

Copyright © 2016 HSRC. All rights reserved | Copy #020516

4.7 The Defense Industry vs. the Smart Borders & Border Security Market 113
4.8 European Smart Borders, Immigration Enforcement & Border Security Market: SWOT Analysis 115
4.8.1 Strengths 115
4.8.2 Weaknesses 116
4.8.3 Opportunities 117
4.8.4 Threats 118
4.9 Business Models & Strategies 119
4.9.1 Variable Economic Conditions 119
4.9.2 Smart Borders, Immigration Enforcement & Border Security Market Tiers 119
4.9.3 Border Security Market Business Opportunities & Challenges 119
4.9.4 Smart Borders, Immigration Enforcement & Border Security Market Competitive Analysis 121

5 European Automatic Border Control (ABC) Systems Market – 2016-2022 123
5.1 Automatic Border Control (ABC) Technologies and Market Background 123
5.1.1 The European Automatic Border Control Market Background 123
5.2 The European Automated Border Control: ABC4EU Project 128
5.2.1 ABC4EU Project: Scope 128
5.2.2 ABC4EU Project Test & Validation: 130
5.2.3 The ABC4EU Project Proposal 130
5.2.4 ABC4EU Project Activities 130
5.2.5 The 2015 European Project Status 131
5.2.6 The ABC4EU Project Impacts 132
5.2.7 Biometric Automatic Border Control (ABC) Advantages 132
5.3 Automated Border Control Technologies 133
5.3.1 Airport Automated Border Control Market Background 136
5.3.2 Function of Automated Border Control 137
5.4 European Automated Border Control Systems Standards 139
5.5 European Automated Border Control Legislation 139
5.6 Automatic Border Control Systems Industry: SWOT Analysis 140
5.6.1 Strengths 140
5.6.2 Weaknesses 141
5.6.3 Opportunities 141
5.6.4 Threats 142
5.7 European Automatic Border Control (ABC) Systems Market – 2015-2022 142

6 European Border & Perimeter Barriers Market – 2016-2022 144
6.1 European Border & Perimeter Barriers Technology and Market Background 144
6.2 European Border Barriers 145

Copyright © 2016 HSRC. All rights reserved | Copy #020516

6.2.1 Hungarian Border Barrier 145
6.2.2 Greek Border Barrier 146
6.2.3 Austria Border Barrier 147
6.2.4 Bulgarian Border Barrier 147
6.2.5 Macedonian Border Barrier 148
6.2.6 Slovenian Border Barrier 148
6.2.7 Northern Ireland Border Barrier 148
6.2.8 Estonia Border Barrier 149
6.2.9 Spain Border Barriers 150
6.2.9.1 Ceuta Border Fence 150
6.2.9.2 Melilla Border Fence 150
6.2.10 Gibraltar Border Fence 151
6.2.11 Russia–Ukraine Barrier 151
6.3 European Border & Perimeter Barriers Market – 2015-2022 152

7 European Visa Issuance IT Market – 2016-2022 153
7.1 Scope 153
7.2 European Visa Issuance IT Technology & Market Background 153
7.2.1 The 2015 Asylum Database 154
7.3 The European Visa Information (Technology) System (VIS) 155
7.4 The Schengen Area Visa 157
7.4.1 Schengen Area Visa States 158
7.4.2 On the Road to EU membership / Candidate Countries 160
7.4.3 Potential candidates 160
7.4.4 Visa Exemptions 161
7.4.5 Who Needs a Schengen Visa? 162
7.4.6 Schengen Visa Types 166
7.4.6.1 Uniform Schengen Visas (USV) 166
7.4.6.2 Limited Territorial Validity Visas (LTV) 167
7.4.6.3 National Visas 167
7.4.7 Schengen Visa Fee 168
7.4.8 Schengen VISA Statistics 2014 168
7.5 Russian Federation Visa IT 170
7.6 European Visa Issuance IT Market – 2015-2022 172

8 European Smart Borders, Immigration Enforcement & Border Security Market – 2015-2022 173
8.1 Smart Borders, Immigration Enforcement & Border Security Market by Country – 2015-2022 173
8.1.1 2015 Market Size & 2016-2022 Market Forecast 173
8.1.2 Market Dynamics by Country – 2016-2022 175
8.1.3 Market Breakdown by Country – 2015-2022 176
8.2 Market by Revenue Source – 2015-2022 178
8.2.1 2015 Market Size & 2016-2022 Market Forecast 178
8.2.2 Market Dynamics by Revenue Source – 2016-2022 179
8.2.3 Market Breakdown by Revenue Source – 2015-2022 179

Copyright © 2016 HSRC. All rights reserved | Copy #020516

8.3 UK Smart Borders, Immigration Enforcement & Border Security Market – 2015-2022 181
8.4 France Smart Borders, Immigration Enforcement & Border Security Market – 2015-2022 181
8.5 Belgium Smart Borders, Immigration Enforcement & Border Security Market – 2015-2022 182
8.6 Germany Smart Borders, Immigration Enforcement & Border Security Market – 2015-2022 182
8.7 Austria & Switzerland: Smart Borders, Immigration Enforcement & Border Security Market – 2015-2022 183
8.8 Italy Smart Borders, Immigration Enforcement & Border Security Market – 2015-2022 183
8.9 Spain Smart Borders, Immigration Enforcement & Border Security Market – 2015-2022 184
8.10 Poland Smart Borders, Immigration Enforcement & Border Security Market – 2015-2022 184
8.11 Hungary & Czech Republic: Smart Borders, Immigration Enforcement & Border Security Market – 2015-2022 185
8.12 Russia Smart Borders, Immigration Enforcement & Border Security Market – 2015-2022 185
8.13 Rest of Europe: Smart Borders, Immigration Enforcement & Border Security Market – 2015-2022 186

9 Appendix A: European Homeland Security & Public Safety Related Product Standards 187
9.1 European Committee for Standardization (CEN) 187
9.2 European Homeland Security and Public Safety Standards 187
9.3 EU Buildings & Perimeter Security Standards & Specifications 211

10 Appendix B: The European Union Challenges and Outlook 212
10.1 Summary 212
10.2 The EU Economy 215
10.3 Anti-EU Trends 217
10.4 The EU Frail Leadership and Poor Strategic Vision 218
10.5 Migration and Refugee Crisis 219
10.6 European Security Worries 221
10.7 Terrorism 221
10.8 EU Future Scenarios 222

11 Appendix C: Europe Migration Crisis & Border Security 224
11.1 Introduction 224
11.2 EU Migration: Background 224
11.3 The European Borders Security 235
11.3.1 Introduction 235
11.3.2 The Schengen Area 235
11.3.3 The European Integrated Border Management System (IBM) 238

Copyright © 2016 HSRC. All rights reserved | Copy #020516

11.3.4 The EU Smart Borders Initiative 239
11.3.5 The Schengen Zone: Passenger Name Record (PNR) System Outlook 240
11.3.6 Temporary Reintroduction of Border Control 245
11.4 European Smart & Secure Border Market.....247

12 Appendix D: Abbreviations 250

13 Scope, Methodology & Disclaimer 262
13.1 Research Scope.....262
13.2 Research Methodology 262

14 Disclaimer & Copyright 264

Copyright © 2016 HSRC. All rights reserved | Copy #020516

List of Tables

Table 1 - European Population, Muslim-Population, GDP, GDP/Capita and Defense-Budget 2014 Data by 17 Countries....22
Table 2 - European Police Forces, 1st Responders, Airports & Air-Passengers Statistics by Country....30
Table 3 - 2015 Mediterranean Sea Arrivals by Country....47
Table 4 - European Immigration Enforcement Market [$M] and AGR [%] – 2015-2022....86
Table 5 - Border Security Market: Business Opportunities Sectors....120
Table 6 - Border Security Market – Competitive Analysis....121
Table 7 - European Automatic Border Control (ABC) Systems Market [$M] and AGR [%] – 2015-2022....143
Table 8 - European Border & Perimeter Barriers Market [$M] and AGR [%] – 2015-2022....152
Table 9 - Countries Nationals Who Need a Schengen Visa....163
Table 10 - Uniform Schengen Visa (including MEV) Statistics 2014....168
Table 11 - Visa Application by Third Country – 2014....170
Table 12 - European Visa Issuance IT Market [$M] and AGR [%] – 2015-2022....172
Table 13 - European Border Security & Immigration Enforcement Security Market* [$M] by Country – 2015-2022....173
Table 14 - European Smart Borders, Immigration Enforcement & Border Security Market* AGRs [%] by Country – 2016-2022....175
Table 15 - European Smart Borders, Immigration Enforcement & Border Security Market* Shares [%] by Country – 2015-2022....176
Table 16 - European Border Security & Immigration Enforcement Security Market [$M] by Revenue Source (Sales, Aftersale and Other Revenues) – 2015-2022....178
Table 17 - European Smart Borders, Immigration Enforcement & Border Security Market AGRs [%] by Revenue Source – 2016-2022....179
Table 18 - European Smart Borders, Immigration Enforcement & Border Security Market Share [%] by Revenue Source – 2015-2022....179
Table 19 - UK Smart Borders, Immigration Enforcement & Border Security Market [$M] by Revenue Source – 2015-2022....181
Table 20 - France Smart Borders, Immigration Enforcement & Border Security Market [$M] by Revenue Source – 2015-2022....181
Table 21 - Belgium Smart Borders, Immigration Enforcement & Border Security Market [$M] by Revenue Source – 2015-2022....182
Table 22 - Germany Smart Borders, Immigration Enforcement & Border Security Market [$M] by Revenue Source – 2015-2022....182
Table 23 - Austria & Switzerland: Smart Borders, Immigration Enforcement & Border Security Market [$M] by Revenue Source – 2015-2022....183
Table 24 - Italy Smart Borders, Immigration Enforcement & Border Security Market [$M] by Revenue Source – 2015-2022....183

Copyright © 2016 HSRC. All rights reserved | Copy #020516

Table 25 - Spain Smart Borders, Immigration Enforcement & Border Security Market [$M] by Revenue Source – 2015-2022.....184
Table 26 - Poland Smart Borders, Immigration Enforcement & Border Security Market [$M] by Revenue Source – 2015-2022.....184
Table 27 - Hungary & Czech Republic: Smart Borders, Immigration Enforcement & Border Security Market [$M] by Revenue Source – 2015-2022.....185
Table 28 - Russia Smart Borders, Immigration Enforcement & Border Security Market [$M] by Revenue Source – 2015-2022.....185
Table 29 - Rest of Europe: Smart Borders, Immigration Enforcement & Border Security Market [$M] by Revenue Source – 2015-2022.....186
Table 30 - European Homeland Security and Public Safety Standards 187
Table 31 - Membership in the EU, Eurozone, and Schengen Area.....214

Copyright © 2016 HSRC. All rights reserved | Copy #020516

List of Figures

Figure 1 - Europe Three-Key Challenges....17
Figure 2 - Number of European ISIS-Da'esh Fighters by Country....18
Figure 3 - 2015 Refugee Applications to Europe by Month....23
Figure 4 - 2015 Migrant Applications to Europe by Country of Origin....24
Figure 5 - Main Routes of Migration to Europe....24
Figure 6 - European Asylum-Seeker Decisions by Country....25
Figure 7 - Refugee Acceptance by Country 2015....26
Figure 8 - Asylum Claims per 100.000 Local Populations 2015....27
Figure 9 - EU Defense Expenditure [%] Drop - 2007-2014 [Constant 2005 Euros]....29
Figure 10 - Number of European ISIS Fighters by Country....44
Figure 11 - European Illegal Border-Crossers 2015 by Main Nationalities....45
Figure 12 - Video Analytics Modes Used For Border Crossing Surveillance....49
Figure 13 - Border Fence....51
Figure 14 - Land Border Migration....52
Figure 15 - Future Asylum Seekers European Border Control System Architecture....53
Figure 16 - Asylum Claims in Europe 2015....59
Figure 17 - Asylum Claims per 100.000 Local Populations 2015....60
Figure 18 - Top 10 Origins of Asylum Seeking Migrants Jan-Oct. 2015....60
Figure 19 - Numbers of Refugees EU Member States are Requested to Take....61
Figure 20 - Asylum Applications Granted By European Countries 2014....62
Figure 21 - European Refugee Routes 2014 & 2015....63
Figure 22 - Mediterranean Refugees Deaths by Route 2014 & 2015....64
Figure 23 - Syrian Refugees in the Middle East and Europe (November 2015)....65
Figure 24 - Main European Migration Routes and Asylum Seekers Statistics....67
Figure 25 - Fragility and Instability in Europe Neighborhood MEA Countries....73
Figure 26 - Europe Inflows of Threats....74
Figure 27 - The Frontex Organization....77
Figure 28 - The Frontex Border Map....78
Figure 29 - Details of a Passport Stamp Confirming Border Crossing....79
Figure 30 - European Immigration Enforcement Market [$M] – 2015-2022....87
Figure 31 - European Borders....90
Figure 32 - The 2015 Schengen Map....91
Figure 33 - The Advanced Passenger Analysis (APA) System....100
Figure 34 - Main Migrant Routes to Germany....103
Figure 35 - Migrant Arrivals by Sea and Land Borders in 2015....104
Figure 36 - Automatic Border Control (ABC) Airport Facility....107
Figure 37 - An Automatic Border Control (ABC) Kiosk....108
Figure 38 - FRONTEX Procurement Categories by Market Share [%]....110
Figure 39 - Border Security, Layers of Security....112
Figure 40 - Border Security Threat Detection Scheme....113
Figure 41 - The EU Airport Automated Border Control Concept....125

Copyright © 2016 HSRC. All rights reserved | Copy #020516

Figure 42 - Automatic Border Control Enable Identity Management throughout a Border Checkpoint 127
Figure 43 - Automatic Border Control (ABC) Installations 133
Figure 44 - Automatic Border Control (ABC) Block Diagram 135
Figure 45 - Automated Border Control Process 138
Figure 46 - Face Recognition Based Automated Border Control 138
Figure 47 - European Automatic Border Control (ABC) Systems Market [$M] – 2015-2022 143
Figure 48 - Border Barrier Architecture 145
Figure 49 - The Greek Border Barrier 146
Figure 50 - Estonia-Russia Border 149
Figure 51 - European Border & Perimeter Barriers Market [$M] – 2015-2022 152
Figure 52 - The ABC Visa IT Reader 156
Figure 53 - The Schengen Area Visa Member States 158
Figure 54 - Global European Visa Status 162
Figure 55 - European Visa Issuance IT Market [$M] – 2015-2022 172
Figure 56 - European Border Security & Immigration Enforcement Security Market [$M] by Country – 2015-2022 174
Figure 57 - European Border Security & Immigration Enforcement Security Market Shares [%] by Country – 2015-2022 177
Figure 58 - European Border Security & Immigration Enforcement Security Market [$M] by Revenue Source (Sales, Aftersale and Other Revenues) – 2015-2022 178
Figure 59 - European Smart Borders, Immigration Enforcement & Border Security Market Share [%] by Revenue Source – 2015-2022 180
Figure 60 - The European Union: Member States and Candidate Countries 213
Figure 61 - EU Countries Currency Status- 2016 215
Figure 62 - European 2015-2016 GDP Growth Forecast [%] By Country 216
Figure 63 - Europe GDP per Capita By Country 216
Figure 64 - 2015 Refugee Applications to Europe by Month 225
Figure 65 - 2015 Migrant Applications to Europe by Country of Origin 226
Figure 66 - Main Routes of Migration 227
Figure 67 - European Asylum-Seeker Decisions by Country 228
Figure 68 - Refugee Acceptance by Country 2015 230
Figure 69 - Asylum Claims per 100.000 Local Populations 2015 231
Figure 70 - Fragility and Instability in Europe Neighborhood MEA Countries 233
Figure 71 - Europe Inflows of Threats 234
Figure 72 - European Borders 235
Figure 73 - The 2016 Schengen Border Map 236
Figure 74 - The Advanced Passenger Analysis (APA) System 245
Figure 75 - Migrant Arrivals by Sea and Land Borders in 2015 247

Copyright © 2016 HSRC. All rights reserved | Copy #020516