2010-2014

U.S. X-Ray Explosives Detection Technologies & Markets



Source: Smith Detection

Table of Contents

1 Scope

- 1.1 Basic Assumptions
 - 1.1.1 Is There a Threat?
 - 1.1.2 Possible Scenario Analysis
 - 1.1.3 Additional Assumptions
- 1.2 Methodology
 - 1.2.1 Research Methods
 - 1.2.2 Report Structure
 - 1.2.3 Who Is This Report For?

2 Executive Summary

- 2.1 Major Findings
- 2.2 Major Conclusions
- 2.3 The Economic Slowdown Impact on the Market
 - 2.3.1 Economic Downturn Impacts on the X-Ray Screening Market
 - 2.3.2 Economy Downturn Impacts on X-Ray Screening Submarkets
- 2.4 2D X-Ray Explosives Detection Systems Market Outlook: 2010-2014
- 3 Market Drivers
- 4 Market Inhibitors
- 5 Current 2D X-Ray Technologies
 - 5.1 Explosive Materials Classification
 - 5.2 Explosives Screening Modalities
 - 5.2.1 X-Ray vs. ETD and EDS Modalities
 - 5.3 2D X-Ray Technologies
 - 5.3.1 X-Ray Systems Principles of Operation
 - 5.3.2 Innocuous Materials Interference
 - 5.3.3 Conventional 2D X-Ray
 - 5.3.4 Dual Energy X-Ray
 - 5.3.5 Quasi Dual Energy X-Ray
 - 5.3.6 Variable-View X-Ray
 - 5.3.7 Backscatter Screening X-Ray
 - 5.3.8 Coherent Scatter 2D X-Ray
 - 5.3.9 Threat Image Projection (TIP)
 - 5.4 X-Ray Technologies: Performance Comparison
 - 5.5 Explosives Screening Technologies: Price Comparison
- 6 2D X-Ray: TSA Product Certification
- 7 X-Ray Explosives Detection Market Outlook: 2010-2014
 - 7.1 Air Cargo Screening
 - 7.2 Airport Cabin Baggage Screening
 - 7.3 Secured Facilities Explosives Screening

- 7.3.1 Secured Federal Facilities
- 7.4 Postal Items Explosives Screening
- 7.5 Supply Chain Cargo Explosives Screening
- 7.6 1st Responders X-Ray Equipment
- 7.7 Other X-Ray Explosives Detection Systems
- 8 Service, Refurbishing and Upgrade Market Forecast: 2010-2014
- 9 Technology Outlook: 2010-2014
 - 9.1 Fused X-Ray and ETD
 - 9.2 Fused X-Ray Screening and RFID
 - 9.3 Air-Cargo Containers Screening
 - 9.4 Multi-Threat Multi-Modal Systems
 - 9.5 Advanced Coherent X-Ray Scattering 2D X-Ray
 - 9.6 Stereoscopic X-Ray Imaging
 - 9.7 Multi-Pixel X-Ray Sources
- 10 Business & Technological Opportunities and Challenges
 - 10.1 Introduction
 - 10.2 Remote Tele-Interpretation
 - 10.3 Medium Capacity Multi-Threat Screening Systems
 - 10.4 Upgraded Multi Threat Screening System
 - 10.5 Fused Technology Screening Systems With RFID and Risk Assessment Infrastructure
 - 10.6 Third Party Service
- 11 Appendix A: DHS Characterization of Commercial X-Ray Explosives
 Detection Systems
- 12 Appendix B: TSA Glossary

List of Tables

2. Executive Summary

- Table 1 USA Potential Targets Requiring Explosives Detection Screening
- Table 2 Economic Recession Impacts on X-Ray Explosives Detection Sub-markets
- Table 3 U.S. X-Ray Explosives Detection Systems Sales and Service Market [\$ Million] 2008-2014
- Table 4 U.S. X-Ray Explosives Detection Systems Sales and Service Market Structure [\$ Million] 2010-2014
- Table 5 U.S. X-Ray Explosives Detection system Market [\$ Million] 2008-2014

5. Current 2D X-Ray Technologies

- Table 6 EDS, ETD and 2D X-Ray Technologies Pros and Cons
- Table 7 Explosives, Drugs, and Common X-Ray "Interruption" Materials
- Table 8 Comparison of X-Ray Detection Technologies
- Table 9 Price Comparison of Bulk Explosives Screening Technologies

7. X-Ray Explosives Detection Market Outlook: 2010-2014

- Table 10 U.S. Air Cargo X-Ray Explosives Detection Market [\$M] 2008-2014
- Table 11 Air Cargo X-Ray Screening Market [Unit] & Market Share [%] 2008-2014
- Table 12 U.S. Airport Cabin Baggage X-Ray Screening Market [\$M] 2008-2014
- Table 13 U.S. Airport Cabin Baggage X-Ray Screening Market [Units] & Market Share [%] 2008-2014
- Table 14 U.S. Secured Facilities X-Ray Explosives Screening Market [\$M] 2008-2014
- Table 15 U.S. Secured Facilities X-Ray Explosives Detection Market [Units] & Market Share [%] 2008-2014
- Table 16 U.S. Postal Items X-ray Screening Market [\$M] Outlook 2008-2014
- Table 17 U.S. Postal Items X-ray Explosives Detection Market [Units] & Market Share [%] 2008-2014
- Table 18 U.S. Supply Chain Cargo X-Ray Explosives Detection Market [\$M] 2008-2014
- Table 19 U.S. Supply Chain Cargo X-Ray Explosives Detection Market [Units] & Market Share [%] 2008-2014
- Table 20 U.S. 1st Responders X-Ray Explosives Detection Market [\$M] 2008-2014
- Table 21 U.S. 1st Responders X-Ray Explosives Detection Market [Units] & Market Share [%] 2008-2014
- Table 22 U.S. Other (e.g., Mobile Systems, People Screening Portals) X-Ray Explosives Detection Market [\$M] 2008-2014
- Table 23 U.S. Other (e.g., Mobile Systems, People Screening Portals) X-Ray Explosives Detection Market [Units] & Market Share [%] 2008-2014

8. Service, Refurbishing and Upgrade Market Forecast: 2010-2014

- Table 24 U.S. X-ray Explosives Detection Systems Service, Refurbishing and Upgrade Sub-Markets [\$ Million] Outlook: 2008-2014
- Table 25 Systems Service, Refurbishing and Upgrade Market Structure by Application [%] 2008-2014

9. Technology Outlook: 2010-2014

Table 26 - Pros and Cons of Multi-modal Technology

11. Appendix A: DHS Characterization of Commercial X-Ray Explosives Detection Systems

- Table 27 Characterization of Commercial X-Ray Explosives Detection Systems
- Table 28 Characterization of Commercial X-Ray Explosives Detection Systems Continued
- Table 29 Characterization of X-Ray Explosives Screening Systems Continued
- Table 30 Characterization of Commercial X-Ray Explosives Detection Systems Continued

List of Figures

1. Scope

Figure 1 - Airport Explosives Threats Vectors

2. Executive Summary

- Figure 2 Cabin Bags Screening In the Ensemble of Airport Security Means
- Figure 3 X-Ray Explosives Detection Systems Sales and Service Market [\$ Million] 2010-2014
- Figure 4 X-Ray Explosives Detection Systems Sales and Service Market Structure [%] by Sub-market: 2008 & 2014
- Figure 5 U.S. X-Ray Explosives detection Systems Sales and Service Market Fragmentation [%] 2008 & 2014

5. Current 2D X-Ray Technologies

- Figure 6 Explosive Materials Classification
- Figure 7 Major Explosives Detection Technologies: Bulk vs. Trace
- Figure 8 X-Ray Conveyor-Based Screening Systems Principles of Operation
- Figure 9 Conventional X-Ray
- Figure 10 Dual Energy X-Ray
- Figure 11 Material Differentiation by Dual Energy X-Ray
- Figure 12 Dual Energy Z Map
- Figure 13 Quasi Dual Energy X-Ray
- Figure 14 Variable-View X-Ray Option
- Figure 15 Backscatter Cargo Screening X-Ray
- Figure 16 Coherent X-Ray Scheme

7. X-Ray Explosives Detection Market Outlook: 2010-2014

- Figure 17 U.S. Air Cargo X-Ray Explosives Detection Market [\$M] 2008-2014
- Figure 18 U.S. Air Cargo X-Ray Systems and Service Market Structure [%] 2008 & 2014
- Figure 19 U.S. Air Cargo X-Ray Explosives Detection Market [Units]
- Figure 20 U.S. Air Cargo X-Ray Market Share [%] 2008 & 2014
- Figure 21 U.S. Airport Cabin Baggage X-Ray Screening Market [\$M] 2008-2014
- Figure 22 Airport Cabin Baggage X-Ray Systems and Service Market Structure [%] 2008 & 2014
- Figure 23 U.S. Airport Cabin Baggage X-Ray Screening Market [Units]
- Figure 24 Airport Cabin Baggage X-Ray Screening Market Share [%] 2008 & 2014
- Figure 25 Secured Facilities X-Ray Explosives Detection Market [\$M] 2008 -2014
- Figure 26 Secured Facilities X-Ray Screening Systems and Service Market Structure [%] 2008 & 2014
- Figure 27 U.S. Secured Facilities X-Ray Explosives Detection Market [Units]

- Figure 28 U.S. Secured Facilities X-Ray Explosives Detection Market Share [%] 2008-2014
- Figure 29 U.S. Postal Items X-ray Screening Market [\$M] Outlook 2008-2014
- Figure 30 Postal Items X-ray Systems and Service Market [%] Structure 2008 & 2014
- Figure 31 U.S. Postal Items X-ray Explosives Detection Market [Units]
- Figure 32 U.S. Postal Items X-ray Explosives Detection Market Share [%] -
- Figure 33 U.S. Supply Chain Cargo X-Ray Explosives Detection Market [\$M] 2008-2014
- Figure 34 Supply Chain Cargo X-Ray Screening Systems and Service Market Structure [%] 2008 & 2014
- Figure 35 U.S. Supply Chain Cargo X-Ray Explosives Detection Market [Units]
- Figure 36 U.S. Supply Chain Cargo X-Ray Explosives Detection Market Share [%] 2008 & 2014
- Figure 37 U.S. 1st Responders X-Ray Explosives Detection Market [\$M] 2008-2014
- Figure 38 U.S. 1st Responders X-Ray Explosives Detection Market Structure [%] 2008 & 2014
- Figure 39 U.S. 1st Responders X-Ray Explosives Detection Market [Units]
- Figure 40 U.S. 1st Responders X-Ray Explosives Detection Share [%] 2008 & 2014
- Figure 41 U.S. Other (e.g., Mobile Systems, People Screening Portals) X-Ray Explosives Detection Market [\$M] 2008-2014
- Figure 42 U.S. Other (e.g., Mobile Systems, People Screening Portals) X-Ray Explosives Detection Market Structure [%] 2008 & 2014
- Figure 43 U.S. Other (e.g., Mobile Systems, People Screening Portals) X-Ray Explosives Detection Market [Units]
- Figure 44 U.S. Other (e.g., Mobile Systems, People Screening Portals) X-Ray Explosives Detectors Share [%] 2008 & 2014

8. Service, Refurbishing and Upgrade Market Forecast: 2010-2014

- Figure 45 U.S. X-Ray Explosives Detection Systems Service, Refurbishing and Upgrade Market [\$ Million] 2008-2014
- Figure 46 Systems Service, Refurbishing and Upgrade Market Structure by Application [%] 2008 & 2014

9. Technology Outlook: 2010-2014

- Figure 47 Fused Modality Multi Threat (Explosives & Nuclear) Screening System
- Figure 48 3D Stereoscopic X-Ray Camera and Images
- Figure 49 3D Stereoscopic X-Ray Luggage Inspection Scheme

10. Business & Technological Opportunities and Challenges

- Figure 50 DHS S&T Explosives Division Functions
- Figure 51 TSA RDT&E Strategic Vision
- Figure 52 The 2D X-Ray Performance Criteria
- Figure 53 Remote Cargo Tele-Screening