



Advanced Airport Technologies: *Global Markets to 2022*

December 2017

Andrew McWilliams

Report Code: IAS024D

Table of Contents

- Chapter 1: Introduction 1**
 - Study Goals and Objectives..... 2
 - Reasons for Doing This Study..... 2
 - Scope of Report..... 2
 - Information Sources..... 2
 - Methodology..... 3
 - Geographic Breakdown..... 3
 - Analyst's Credentials..... 5
 - Related BCC Research Reports..... 5

- Chapter 2: Summary and Highlights..... 7**

- Chapter 3: Market and Technology Background 10**
 - Advanced Airport Technologies..... 10
 - Air/Ground Traffic Management and Control..... 10
 - Landing Aids, Guidance, and Lighting Systems 12
 - Airport Communications 12
 - Airport Management Systems 13
 - Security, Fire Protection and Other Emergency Systems..... 14
 - Passenger, Baggage, and Cargo Control Systems..... 14
 - Car Parking Systems 15
 - Trends in the Airport Industry 15
 - Airport Trends 15
 - Passenger/Freight Traffic Trends 34
 - Government Trends 37
 - Market Summary 41
 - Overall Market Size and Growth Trends 41
 - Market Segmentation 42

- Chapter 4: Air/Ground Traffic Management and Control Technologies 46**
 - Summary 46
 - Technologies 46
 - Advanced Radar Systems 46
 - Radar Data Processing and Display Systems 48
 - Manufacturers 48
 - Patents 49
 - Markets 50

- Chapter 5: Navigational and Landing Aids and Illumination Systems 53**
 - Summary 53
 - RF Navigational and Landing Aids 53
 - Technologies..... 53
 - Manufacturers 58
 - Patents 58
 - Markets 60
 - Airport Lighting Systems 62
 - Description 62
 - Technologies..... 63

Manufacturers.....	65
Patents.....	65
Markets	66
Chapter 6: Airport Communications	69
Summary	69
Technologies	69
Land Mobile Radio.....	69
Common-Use Networks	70
Wireless Communications.....	70
Vendors.....	72
Patents	72
Markets.....	72
Total Airport Telecommunications Spending.....	74
Chapter 7: Airport Digital Signage Systems	77
Summary	77
Technologies	77
Display Technologies	77
Control Software	77
Connectivity Technologies	77
Manufacturers	78
Patents	78
Markets.....	78
Chapter 8: Airport Management Software.....	81
Summary	81
Technology.....	81
Vendors.....	81
Patents	82
Markets.....	82
Chapter 9: Security, Fire Protection, and Emergency Services	85
Summary	85
Airport Security Systems.....	85
Passenger, Baggage and Cargo Screening Devices.....	87
Airport Physical Security.....	98
Emergency Response Equipment	105
Technologies.....	105
Manufacturers.....	105
Patents.....	106
Markets	106
Chapter 10: Passenger, Baggage and Cargo Handling Control Systems.....	108
Summary	108
Passenger Processing Systems.....	108
Technologies.....	108
Manufacturers.....	110
Patents.....	110
Markets	110
Baggage Systems.....	112
Baggage Handling Systems.....	114

Baggage Identification and Tracking Systems	118
Cargo Systems	124
Chapter 11: Car Parking Systems	129
Summary	129
Technologies	129
License Plate Recognition.....	129
Parking Space Guidance	129
Pay-On-Foot.....	129
Credit Card In/Out.....	130
Toll Booth Technology.....	130
Manufacturers	130
Patents	130
Markets	131
Chapter 12: Company Profiles	134
About BCC Research.....	149
About BCC Research.....	150
BCC Membership	150
BCC Custom Research	150

List of Tables

Summary Table: Global Market for Advanced Airport Technologies, by Type, Through 2022 (\$ Millions)	7
Table 1 Global Airports/Airfields by Country or Region (Number/Percentage of Worldwide Total Airports)	16
Table 2 U.S. Airports Eligible for AIP, 2016 (Percentage of All U.S. Airports)	17
Table 3 U.S. Airports with Runway Lighting Systems, 2016 (Number/Percentage of All U.S. Airports)	18
Table 4 Global Market for Advanced Airport Technologies, by Type/Category, 2016 (Number/Percentage of Worldwide Airports)	19
Table 5 Public vs. Private Ownership of U.S. Airports, 2016 (Number/Percentage of All U.S. Airports)	22
Table 6 Global Capital Expenditures in Airports, by Region, 2010-2016 (\$ Millions)	24
Table 7 Types of U.S. Airport Expenditures Financed by PFC Collections, 2016 (%)	28
Table 8 Global Market for Civil Aviation Fleet, by Aircraft Category, Through 2022 (Number of Aircraft)	30
Table 9 Global Market shares of Civil Aviation Fleet, by Aircraft Category, 2016 (%)	30
Table 10 Global Market Shares of Commercial Passenger Fleet, by Aircraft Category, 2016 vs. 2022 (%)	32
Table 11 Global Market for Commercial Air Movements, Through 2022 (Millions)	33
Table 12 Volume of Passengers Carried by World's Commercial Airlines, Through 2022 (Million RPK)	34
Table 13 Global Annual Passenger Traffic Growth Rates, by Region, 2016-2022 (%)	35
Table 14 Volume of Air Cargo Carried by World's Commercial Airlines, Through 2022 (Billions of RTK of Cargo Carried)	37
Table 15 Global Market for Advanced Airport Technologies, by Technology Type, Through 2022 (\$ Millions)	41
Table 16 Air/Ground Traffic Management and Control System Vendors	49
Table 17 U.S. Air/Ground Traffic Management and Control Patents Issued, Through Aug. 31, 2017 (Numbers/%)	49
Table 18 Global Market for ATC Technologies, Through 2022 (\$ Millions)	50
Table 19 Global Market Forecast for Navigational/Landing Aids and Illumination Systems, Through 2022 (\$ Millions)	53
Table 20 Manufacturers and Suppliers of RF Navigation and Landing Aids	58
Table 21 U.S. RF Navigational and Landing Aid Patents Issued, Through Aug. 31, 2017 (Number/%)	59
Table 22 Global Market for Airport-Based RF Navigation and Landing Aid Systems, by Type, Through 2022 (\$ Millions)	60
Table 23 Global Market Shares of Airport-Based RF Navigation and Landing Aid Systems, by Type, 2016-2022 (%)	61
Table 24 Airport Lighting System Manufacturers	65
Table 25 Global Market for Airport Lighting Technologies, Through 2022 (\$ Millions)	66
Table 26 Global Market Shares of Airport Lighting Technologies, 2016-2022 (%)	66
Table 27 Airport Communications Systems Vendors	72
Table 28 Global Market for Airport Communications Systems, Through 2022 (\$ Millions)	73
Table 29 Global Market Shares of Airport Communications Technologies, 2016-2022 (%)	73
Table 30 Manufacturers and Suppliers of Airport Digital Signage Systems	78
Table 31 Global Market for Airport Digital Signage Systems, Through 2022 (\$ Millions)	79
Table 32 Vendors of Airport Management Software	82
Table 33 Global Market for Airport Management Software, Through 2022 (\$ Millions)	83
Table 34 Global Market for Airport Security Systems and Emergency Response Equipment, Through 2022 (\$ Millions)	85
Table 35 Global Market for Airport Security Systems, by Type, Through 2022 (\$ Millions)	86

Table 36	Manufacturers and Suppliers of Passenger, Baggage and Screening Systems	92
Table 37	U.S. Airport Security Screening Patents, by Technology Issued, Through Aug. 31, 2017 (Number/%)	93
Table 38	U.S. Airport Security Screening Patents, by Patent Holder, Issued Through Aug. 31, 2017 (%)94	
Table 39	Global Market for Airport Passenger, Baggage and Cargo Screening Technologies, by Type, Through 2022 (\$ Millions).....	96
Table 40	Global Market Shares of Airport Passenger, Baggage and Cargo Screening Technologies, by Type, 2016-2022 (%)	97
Table 41	Manufacturers and Suppliers of Airport Physical Security Systems	100
Table 42	U.S. Airport Physical Security-Related Patents, by Type of Technology Issued, Through Aug. 31, 2017 (Number/%)	101
Table 43	Global Market for Airport Physical Security Technologies, Through 2022 (\$ Millions)	103
Table 44	Global Market Shares of Airport Physical Security Technologies, 2016–2022 (%)	103
Table 45	Emergency Response Vehicles	105
Table 46	Manufacturers and Suppliers of Airport Emergency Response Equipment	106
Table 47	Global Market for Airport Emergency Response Equipment, Through 2022 (\$ Millions)	106
Table 48	Global Market for Airport Passenger, Baggage, and Cargo Control Systems, Through 2022 (\$ Millions)	108
Table 49	Passenger Check-In System Vendors.....	110
Table 50	Global Market for Passenger Check-In Systems, Through 2022 (\$ Millions)	111
Table 51	Global Market Shares of Passenger Check-In Systems, 2016-2022 (%)	111
Table 52	Global Market for Passenger Baggage Systems, by Type, Through 2022 (\$ Millions)	113
Table 53	Global Market Shares of Passenger Baggage Systems, by Type, 2016-2022 (%).....	113
Table 54	Airport Baggage System Manufacturers	117
Table 55	Global Market for Baggage Handling Systems, Through 2022 (\$ Millions).....	118
Table 56	U.S. Baggage ID and Tracking Technology Patents Issued Through August 31, 2017 (Number/%)	120
Table 57	Baggage Identification and Tracking System Manufacturers.....	122
Table 58	Global Market for Baggage Identification and Tracking Systems, by Application, Through 2022 (\$ Millions)	122
Table 59	Global Market Shares of Baggage Identification and Tracking Systems, by Application, 2016- 2012 (%)	123
Table 60	Global Market for Bar Code Printers, Readers, and Consumables in Airline Baggage Tagging, 2016 (Number/%)	124
Table 61	Air Cargo Handling System Vendors.....	126
Table 62	Global Market for Air Cargo Handling Systems and Equipment, Through 2022 (\$ Millions)....	126
Table 63	Airport Parking System Vendors	130
Table 64	U.S. Airport Parking-Related Patents Issued Through August 31, 2017 (Number/%).....	131
Table 65	Global Market for Airport Car Parking Systems, Through 2022 (\$ Millions).....	132

List of Figures

Summary Figure: Global Market for Advanced Airport Technologies, by Type, 2016-2022 (\$ Millions)	8
Figure 1 Global Airports/Airfields by Country or Region (Percentage of Worldwide Total Airports).....	16
Figure 2 U.S. Airports Eligible for AIP, 2016 (Percentage of All U.S. Airports).....	18
Figure 3 U.S. Airports with Runway Lighting Systems, 2016 (Percentage of All U.S. Airports)	19
Figure 4 Global Primary and Secondary Markets for Advanced Airport Technologies, 2016 (Percentage of Global Airports).....	20
Figure 5 Public vs. Private Ownership of U.S. Airports, 2016 (Number/Percentage of All U.S. Airports) .	22
Figure 6 Types of U.S. Airport Expenditures Financed by PFC Collections, 2016 (Percentage of Total PFC Proceeds)	28
Figure 7 Global Market Shares of Civil Aviation Fleet, by Aircraft Category, 2016 (%)	31
Figure 8 Global Market Shares of Commercial Passenger Fleet, by Aircraft Category, 2016 vs. 2022 (%)	32
Figure 9 Global Market for Commercial Air Movements, 2016-2022 (Millions)	34
Figure 10 Trends in Global Commercial Air Passenger Traffic, 2016-2022 (Million RPK)	35
Figure 11 Global Annual Passenger Traffic Growth Rates, by Region, 2016-2022 (%)	36
Figure 12 Trends in Global Commercial Air Cargo Tonnage, 2016-2022 (Billions of RTK).....	37
Figure 13 Global Market for Advanced Airport Technologies, by Type, 2016-2022 (\$ Millions).....	42
Figure 14 Global Market Shares of Advanced Airport Technologies, by Technology Type, 2016 vs. 2022 (%)	43
Figure 15 U.S. Air/Ground Traffic Management and Control Patents Issued, Through Aug. 31, 2017 (Numbers/%).....	50
Figure 16 U.S. RF Navigational and Landing Aid Patents Issued, Through Aug. 31, 2017 (%)	59
Figure 17 Global Market Shares of Airport-Based RF Navigation and Landing Aid Systems, 2016-2022 (%)	61
Figure 18 Global Market Shares of Airport Lighting Technologies, 2016-2022 (%).....	67
Figure 19 Global Market Shares of Airport Communication Technologies, 2016-2022 (%).....	74
Figure 20 Global Market Shares for Airport Security Systems, by Type, 2016 vs. 2022 (%).....	86
Figure 21 U.S. Airport Security Screening Patents, by Technology Issued, Through Aug. 31, 2017 (%)...	94
Figure 22 U.S. Airport Security Screening Patents, by Patent Holder, Issued Through Aug. 31, 2017 (%)	95
Figure 23 Global Market Shares of Airport Passenger, Baggage and Cargo Screening Technologies, by Type, 2016-2022 (%)	97
Figure 24 U.S. Airport Physical Security-Related Patents, by Type of Technology Issued, Through Aug. 31, 2017 (%)	102
Figure 25 Global Trends in Airport Physical Security Market Shares, 2016-2022 (Percentage of Total Market)	104
Figure 26 Global Market Shares of Passenger Check-In Systems, 2016-2022 (%).....	112
Figure 27 Global Market Shares of Passenger Baggage Systems, by Type, 2016-2022 (%).....	114
Figure 28 U.S. Baggage ID and Tracking Technology Patents Issued Through August 31, 2017 (%)	121
Figure 29 Global Market Shares of Baggage Identification and Tracking Systems, 2016-2022 (%)	123
Figure 30 U.S. Airport Parking-Related Patents Issued through August 31, 2017 (%).....	131



About BCC Research

About BCC Research

With our unparalleled 45-year history, BCC Research provides comprehensive analysis of global market sizing, forecasting and industry intelligence, covering markets where advances in science and technology are improving the quality, standard and sustainability of businesses, economies and lives.

BCC Membership

From market sizing and forecasts, to opportunity assessments and competitive analyses, our ever-expanding library gives you the data, insights and intelligence required to ensure your project is a success. Members benefit from ongoing, unlimited access to the category or collections of their choice, and most membership packages pay for themselves within two to three reports being accessed.

Did you buy this report? You may qualify to apply your purchase price towards a full membership. Call 866/285-7215 or e-mail info@bccresearch.com to request a demo.

BCC Custom Research

Our experts provide custom research projects to those working to identify new markets, introduce new products, validate existing market share, analyze competition and assess the potential for products to impact existing markets. With impressive academic credentials and broad and deep knowledge of global industrial markets, our independent analysts and consultants develop the facts, figures, analysis and assessments to inform the decisions that will move your company ahead. Confidential inquiries to: custom@bccresearch.com or 781/205-2429.

DISCLAIMER

The information developed in this report is intended to be as reliable as possible at the time of publication and is of a professional nature. This information does not constitute managerial, legal or accounting advice, nor should it be considered as a corporate policy guide, laboratory manual or an endorsement of any product, as much of the information is speculative in nature. BCC Research and the author assume no responsibility for any loss or damage that might result from reliance on the reported information or from its use.

ISBN: 978-1-62296-589-2
December 2017