Introduction

Key Messages

Executive Summary

Demand for Aircraft
- Single-Aisle
- Twin-Aisle
- Very Large Aircraft
Regional Focus

- Asia-Pacific
- Europe
- North America
- Middle East
- Latin America
- CIS
- Africa

Freight Forecast

Summary Data
Welcome to this year’s Airbus Global Market Forecast pocket guide. We hope that you will find it a useful reference on your desk or on your travels.

The last year has been characterised by social unrest in various parts of the World, and continued economic uncertainty in others. We have witnessed similar difficult events over the last 10 years or so. However, it is remarkable, that even allowing for some of the most difficult periods aviation has faced in its relatively short existence, including the banking crisis of 2008/2009 and now sovereign debt issues in Europe, aviation has still managed to grow more than 50%. This resilience is a clear sign of the value people place on flying, and something that through the data methods we employ, we are able to reflect in our 2012 forecast.

An Airbus survey conducted recently, showed that of the 10,000 people questioned worldwide, the majority believed that we would fly more in the future.
In China and India this number totalled more than 80% of respondents. This is exactly the message that Airbus forecasters get from modelling the future, using the best data and one of the most comprehensive methodologies employed in the industry today. It is useful, from time to time, to re-enforce our findings with another form of empirical research.

As well as more flyers, we forecast a continuing expansion of the World’s aviation network, with greater aviation connectivity and more capacity between major population centres helping to drive benefits in terms of jobs, prosperity, and economic growth.

However, like you, we are determined that this progress will not come at the expense of our environment. We will continue to strive to match and better the achievements of aviation’s pioneers, moving from canvas to carbon, cables to fly-by-wire, one seat to more than 550 seats, massive improvements in efficiency in terms of operations and fuel consumption in order to meet this challenge.
Demand for Asia up, but Europe and US still key

With the addition of another growth year, 2031, the Airbus Global Market Forecast again shows an increase in aircraft demand to 28,200 new build passenger and freighter aircraft, underlining the long term growth prospects for the industry.

There is no doubt that much of this new demand will come from the emerging markets, regions including Asia, South America and Africa. However, there is equally no doubt that more mature markets in Europe and North America will continue to grow and benefit from the emerging regions’ strong air transportation growth.

Total demand for passenger aircraft 2012-2031

By 2020, Mid- and Old- Generation aircraft will only represent 5% of the fleet in service

Twin-Aisle represent ~40% of Asian demand; including 46% of the world’s VLA demand
Airbus analysis has shown for example that traffic growth between advanced and emerging air transport markets will grow at an average annual rate of 5.1%, above the world average growth rate of 4.7%, and not far off the 6.6% annual growth rate forecast between emerging markets. In fact by 2031, over 60% of all traffic will involve the advanced aviation markets, primarily North America and Europe.

This growth, together with a need to replace older less eco-efficient aircraft, 52% of the aircraft demand (above 100 seats) in North America for example, will mean that 42% of all the aircraft larger than 100 seats in size will be delivered to airlines in North America and Europe.
The Value of Aviation
a global success story

Air transport changes how economies and societies operate. Its contribution goes far beyond direct economic effects. By promoting international trade, encouraging tourism, and stimulating investment throughout today’s globalised world, air transport is a major driver for economic and social development.

For producers of goods and services it leads to efficiency gains, facilitates links between businesses and potential customers, and brings long-distance and international contracts within reach. By aiding international migration, it offers a means to sustainable and stable incomes. Freedom of movement into and out of developing regions provides opportunities to learn new, marketable skills — leading to long-term employment, increased productivity and higher standards of living.

A study by Oxford Economics in 2012, published by ATAG (Air Transport Action Group), highlighted these benefits and the resulting importance of aviation. This includes the millions of jobs the industry supports and more importantly the economic benefits to the global economy. If aviation was a country, it would rank 19th globally in terms of GDP.

In a world-wide survey of 10,000 people carried out by Airbus over the summer of 2012, it was clear people expected to fly more in the future, particularly in developing markets. For example 89% and 69% of respondents from India and China respectively thought we would fly more in the future, demonstrating the value people place on aviation.
Aviation today by the numbers

- 2,681,000,000 passengers carried in 2010
- $5.3 trillion worth of cargo shipped by air in 2010
- 2% of global man-made CO₂ emissions come from aviation

Globally contributes

- 56.6 million jobs supported world-wide
- $2.2 trillion aviation’s global economic impact
- 19th if aviation was a country ranked by GDP
Responsible Growth

From the Airbus survey it was also clear that today’s flyers, and those who want to fly more in the future, expect the progress made by the industry in reducing its impact on the environment to continue, with 96% of respondents stating that aviation will need to be more environmentally sustainable. Additionally, ~85% believed this will need to be achieved through using less fuel and producing less CO₂ as a result. The good news is, so do we!

Over the last 40 years, fuel burn has been reduced by 70% and aircraft noise by 75%. This combined with improved operational efficiencies through the use of larger aircraft across all segments and improved airline load factors, now averaging over the 75% globally, has meant that despite a 53% increase in traffic and a 41% increase in capacity, jet fuel demand has increased just 3% since 2000.
Taking the US domestic market, the single largest flow in the Airbus Global Market Forecast, and data from the US Bureau of Transportation Statistics and Air Transport Association, it can be seen that again when comparing 2000 with 2011, traffic on this flow has increased by 13 percentage points, with demand from fuel decreasing by some 25 points.

As an industry we are determined and committed to continue to find ways to not only allow for the sustainable growth of aviation, but also to reduce its impact relative to today’s levels. The aviation industry has set itself an aggressive target to reduce aviation emissions by at least 50% by 2050. Today, Airbus spends more than 90% of its annual research and development budget on technologies that have environmental benefits for current and future aircraft.
EXECUTIVE SUMMARY

4.7% CAGR  Passenger traffic growth next 20 years
4.9% CAGR  Freight traffic growth

Number of passengers  2011  > 3 billion
Number of passengers  2031  > 7.5 billion

27,347  Passenger aircraft deliveries
(≥100 seats) 2012-2031

851  New Freighters (>10 t) 2012-2031

28,198  Passenger & New freighter deliveries 2012-2031

Passenger aircraft fleet
- 2011: 15,556
- 2031: 32,551
+109%

Freighter aircraft fleet
- 2011: 1,615
- 2031: 2,938
+82%

TRAFFIC  > DOUBLE

PAX FLEET  > DOUBLE
Air travel remains a growth market

World annual traffic (RPKs - trillions)

Air traffic has doubled every 15 years

Air traffic will double in the next 15 years

20-year world annual traffic growth 4.7%

38% Replacement
62% Growth

69% Units Single-Aisle,
44% Value Twin-Aisle

Air traffic will double in the next 15 years

Air travel remains a growth market
20-year demand for 27,350 aircraft worth US$ 3.7 trillion

Singles-aisles: 69% by units,
Twin-aisles: 42% by value.

Global Market Forecast 2011

% unit | % value
--------|--------
69%     | 40%    
17%     | 27%    
8%      | 17%    
6%      | 16%    

Passenger aircraft (>100 seats) and jet freight aircraft (>10 tons)
Most deliveries to Asia-Pacific, 9,600 passenger aircraft

North America and Europe 42%, or 11,550

Top 10 countries will take 61% of deliveries by volume, 60% by value

USA will take the most aircraft

China will take the highest value of deliveries

Germany and UK in the top 5 by volume
# New passenger aircraft deliveries per region

## 20-year new aircraft deliveries per region

<table>
<thead>
<tr>
<th></th>
<th>AFRICA</th>
<th>ASIA-PACIFIC</th>
<th>CIS</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012-2021</td>
<td>413</td>
<td>4,505</td>
<td>492</td>
</tr>
<tr>
<td>2022-2031</td>
<td>544</td>
<td>5,113</td>
<td>737</td>
</tr>
<tr>
<td>2012-2031</td>
<td>957</td>
<td>9,618</td>
<td>1,229</td>
</tr>
</tbody>
</table>

% of 20-year total new deliveries

- AFRICA: 4%
- ASIA-PACIFIC: 35%
- CIS: 4%

Passenger aircraft (≥ 100 seats)

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## Top 10 countries GMF 2012

Top 10 countries in 20-year new passenger aircraft deliveries and business volume (2012 – 2031)

<table>
<thead>
<tr>
<th>New passenger aircraft deliveries</th>
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</thead>
<tbody>
<tr>
<td>1</td>
</tr>
<tr>
<td>2</td>
</tr>
<tr>
<td>3</td>
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<tr>
<td>4</td>
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<td>6</td>
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<tr>
<td>7</td>
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<td>8</td>
</tr>
<tr>
<td>9</td>
</tr>
<tr>
<td>10</td>
</tr>
</tbody>
</table>

61% of total new deliveries
<table>
<thead>
<tr>
<th>Region</th>
<th>Business volume (bn. US$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 PRC</td>
<td>634.0</td>
</tr>
<tr>
<td>2 US</td>
<td>544.0</td>
</tr>
<tr>
<td>3 UAE</td>
<td>223.9</td>
</tr>
<tr>
<td>4 India</td>
<td>173.7</td>
</tr>
<tr>
<td>5 Germany</td>
<td>138.1</td>
</tr>
<tr>
<td>6 UK</td>
<td>129.8</td>
</tr>
<tr>
<td>7 Russia</td>
<td>113.7</td>
</tr>
<tr>
<td>8 Australia</td>
<td>102.1</td>
</tr>
<tr>
<td>9 Brazil</td>
<td>100.1</td>
</tr>
<tr>
<td>10 Japan</td>
<td>98.2</td>
</tr>
</tbody>
</table>
Drivers for growth

- Economic growth is a **key driver** for air traffic growth
- Economic growth rates in emerging regions/countries will **outstrip the developed**
- **Increasing urbanisation** will also drive economic growth and **the propensity to fly**

"The growth in middle classes is another key driver. Today, 30% of the world can be classified as middle class, forecasts suggest 60% will be by 2031."
Emerging regions will drive long-term economic growth

The middle class will grow **five times** in the Asia-Pacific

Emerging regions will contribute **56%** of the economic growth between 2011-2031

2011-2031 real GDP average annual growth rate, by region
Propensity to travel and urbanisation are correlated

“Global* middle class” expected to rise to 5 billion people by 2031

* Households with daily expenditures between $10 and $100 per person (at PPP). Source: Kharas and Gertz, Airbus
Emerging regions will contribute by 56% to the total economic growth between 2011 and 2031.

2011-2031 contribution to World real GDP growth (2005 billion $US), by type of region

- Developing
- Other emerging
- BRIC
- Advanced

World population (millions) % of World population

<table>
<thead>
<tr>
<th>Year</th>
<th>Population (millions)</th>
<th>% of World population</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>7,000</td>
<td>30%</td>
</tr>
<tr>
<td>2021</td>
<td>7,700</td>
<td>44%</td>
</tr>
<tr>
<td>2031</td>
<td>8,400</td>
<td>60%</td>
</tr>
</tbody>
</table>

* Households with daily expenditures between $10 and $100 per person (at PPP). Source: Kharas and Gertz, Airbus 2011.
Higher economic growth in emerging markets will drive growth in air traffic.
Aviation remains resilient to crises, has grown 53% since 2000 (includes 9/11, SARS, banking crisis).
Domestic Chinese (PRC) traffic will surpass Domestic US traffic in 2031.
An average growth rate of 9.9% per year will make Domestic India the 5th largest flow by 2031.
Airlines in the Asia-Pacific will fly 32% of all traffic.
Airlines in Europe and North America will fly 44%.
Middle Eastern carriers will grow from a 7% share to 11% in the next 20 years.

Asia-Pacific to lead in world traffic by 2031

<table>
<thead>
<tr>
<th>Region</th>
<th>% of 2011 world RPK</th>
<th>20-year growth</th>
<th>% of 2031 world RPK</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asia-Pacific</td>
<td>28%</td>
<td>5.4%</td>
<td>32%</td>
</tr>
<tr>
<td>Europe</td>
<td>27%</td>
<td>4.1%</td>
<td>24%</td>
</tr>
<tr>
<td>North America</td>
<td>27%</td>
<td>3.3%</td>
<td>20%</td>
</tr>
<tr>
<td>Middle East</td>
<td>7%</td>
<td>7.3%</td>
<td>11%</td>
</tr>
<tr>
<td>Latin America</td>
<td>5%</td>
<td>5.9%</td>
<td>6%</td>
</tr>
<tr>
<td>CIS</td>
<td>4.7%</td>
<td>5.4%</td>
<td>4%</td>
</tr>
<tr>
<td>Africa</td>
<td>3%</td>
<td>5%</td>
<td>3%</td>
</tr>
</tbody>
</table>
The four largest flows will represent 34% of the World traffic in 2031.
Whilst emerging markets will drive growth, 6.6% annual growth between emerging markets, 62% of traffic will occur in the advanced aviation markets.

By 2031, global and major network carriers will fly 69% of all RPKs.

Low-cost carriers will be the fastest growing airlines between 2011 and 2031.

2031 share of World RPK traffic by airline type:

- **59%** Global Network
- **20%** LCC
- **10%** Major Network
- **4%** Small Network
- **4%** Regional and affiliate
- **3%** Charter

The traffic of airlines considered as subsidiary is counted in the traffic of the principal airline.
LCCs will raise their share to 20% from 15% in 2011

London Heathrow will remain the world’s largest airport in terms of long haul traffic, assuming actions to meet growing demand

Dubai will be No.2 by 2031

Eight of the top 20 largest airports will be in Asia-Pacific

Top 20 airports in 2031 in terms of RPK for international long-haul operations

Top 20 airports in 2031, in terms of RPKs, for international, long-haul* flights only

*Long-haul is defined by flights of more than 3700 km
Demand for Aircraft

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Single-Aisle 19,500 new deliveries

1. OPERATIONS
   - 85% of frequencies
   - 73% of seats
   - 84% of airport pairs
   - On average fly 45% further today than 20 years ago and have 18% more seats

2. FLEET
   - Fleet to grow at 3.5% per annum
   - 78% in 2011 > 74% of 2031 fleet (over 100 seats)

New deliveries of Single-Aisle aircraft by region

- North America: 4,956 units (25%)
- Latin America: 1,658 units (9%)
- Other regions: 2,988 units

20-year demand (2012-2031)

Airplane icons = 500 units

Single-Aisle passenger aircraft
FORECAST

- 71% of deliveries over the next 20 years (over 100 seats)
- 39% of deliveries for replacement
- North America, with its significant domestic market will take 25% of the demand for Single-Aisle Aircraft
- Europe will represent 22%
- Asia-Pacific will represent 31%
- LCCs in all regions will take a third of Single-Aisle deliveries

WORLD : 19,518

<table>
<thead>
<tr>
<th>Region</th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Europe</td>
<td>4,342</td>
<td>22%</td>
</tr>
<tr>
<td>Asia Pacific</td>
<td>6,028</td>
<td>31%</td>
</tr>
<tr>
<td>North America</td>
<td>1,658</td>
<td>8%</td>
</tr>
<tr>
<td>Latin America</td>
<td>724</td>
<td>4%</td>
</tr>
<tr>
<td>Middle East</td>
<td>792</td>
<td>4%</td>
</tr>
<tr>
<td>Africa</td>
<td>4,956</td>
<td>25%</td>
</tr>
<tr>
<td>celebrating*</td>
<td>1,018</td>
<td>5%</td>
</tr>
</tbody>
</table>

*CIS (Commonwealth of Independent States)
Single-Aisle
19,500 new deliveries

Single-Aisle fleet in service evolution

- New aircraft: 19,518
- Growth: 11,837
- Replaced: 7,681
- Stay in service & recycled: 4,480

Global Market Forecast
Single-Aisle 2012-2031 new passenger aircraft deliveries

Number of new aircraft

<table>
<thead>
<tr>
<th>Aircraft segment</th>
<th>Number of new aircraft</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td>1,647</td>
</tr>
<tr>
<td>125</td>
<td>3,081</td>
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<tr>
<td>150</td>
<td>7,141</td>
</tr>
<tr>
<td>175</td>
<td>4,877</td>
</tr>
<tr>
<td>210</td>
<td>2,772</td>
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</tbody>
</table>
Demand for Aircraft

Twin-Aisle
6,500 new deliveries

1. OPERATIONS (TA/VLA)
   - 15% of frequencies
   - 27% of seats
   - 16% of airport pairs
   - Fly 57% further than 20 years ago
   - On average 5% more seats than just 10 years ago

2. FLEET
   - Twin-Aisle fleet to grow at 3.9% per annum
   - 21% of 2011 fleet → 22% of 2031

New deliveries of Twin-Aisle aircraft by region

Global Market Forecast | 30
FORECAST

- 24% of deliveries over the next 20 years (over 100 seats), 40% for replacement
- Asia-Pacific represents 46% of the demand for Twin-Aisle aircraft, driven by geography and population
- Europe will represent 17% of demand
- North America will represent 13% of demand
- Middle East will represent 12% of the demand

WORLD : 6,497
Twin-Aisle
6,500 new deliveries

Twin-Aisle fleet in service evolution

- New aircraft: 6,497
- Replaced: 3,878
- Stay in service & recycled: 2,619
- Growth: 7,198

Fleet size
- Beginning 2012: 3,320
- 2031: 7,198

Twin-Aisle passenger aircraft
Single-Aisle 2012-2031 new passenger aircraft deliveries

Number of new aircraft

<table>
<thead>
<tr>
<th>Aircraft segment</th>
<th>Number of new aircraft</th>
</tr>
</thead>
<tbody>
<tr>
<td>250</td>
<td>2,369</td>
</tr>
<tr>
<td>300</td>
<td>2,208</td>
</tr>
<tr>
<td>350</td>
<td>1,210</td>
</tr>
<tr>
<td>400</td>
<td>710</td>
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</tbody>
</table>

Twin-Aisle passenger aircraft
Demand for Aircraft
Global Market Forecast 34

Very Large Aircraft (VLA)
1,330 new deliveries

FORECAST
- 4% of 2031 fleet (over 100 seats)
- 5% of deliveries over the next 20 years (over 100 seats)
- 13% of the value
- Asia-Pacific represents 46% of the demand for VLAs
- Europe with its large global airlines will represent 19%
- North America will represent 5%

New deliveries of Very Large Aircraft by region

20-year demand (2012-2031)

= 100 units
• **Middle East** will represent **23%** of VLA demand
• Connecting the world, **VLAs will link 92** aviation mega-cities and their people by 2031
• **92% of all long haul traffic** will flow between these points
• **A380s and their operators are already beginning** the process of connecting mega-cities today.
Urbanisation + Mega-cities + Wealth = VLAs

42 Aviation Mega-cities in 2011 growing to 92 in 2031

2031 cities with more than 10,000 daily long-haul passengers

LONG-HAUL TRAFFIC IS CONCENTRATED ON A FEW MAIN AVIATION CENTRES

Traffic as of month of September. Long haul traffic: flight distance >2,000km, excl. domestic traffic;

The A380 network as of July 2012
Urbanisation is one of the main drivers of economic growth
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**Regional Focus**

**Asia-Pacific**

**More People, more flying**

- Represents more than a *quarter* of the world economy today, and possibly a *third* by 2031.
- Asia-Pacific’s economy is growing *2.5 times* faster than in Europe or North America.
- Nearly *60%* of the world’s population by 2031.
- *23%* increase in the number of regularly served cities in Asia-Pacific, between 2005 and 2011, cf. +6% in Europe.
- LCCs in Asia-Pacific now represent *21%* of seats offered in the region, just 5% in 2005. Still potential including *Japan, China*.
- *9,600* new deliveries – *36%* replacement, *64%* for growth.
- *37%* will be Twin-Aisles due to the distance and large population centres served.

### 20-year demand (2012-2031)

<table>
<thead>
<tr>
<th>Economy</th>
<th>Real GDP</th>
<th>Real trade</th>
<th>Urban population</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>4.6%</td>
<td>7.2%</td>
<td>1.8%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Traffic</th>
<th>Intra-regional &amp; domestic</th>
<th>Inter-regional</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>6.3%</td>
<td>5.2%</td>
<td>5.8%</td>
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</table>

<table>
<thead>
<tr>
<th>Fleet</th>
<th>Fleet in service beginning 2012</th>
<th>Fleet in service 2031</th>
<th>20-year new aircraft deliveries</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>4,303</td>
<td>10,440</td>
<td>9,618</td>
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</tbody>
</table>

1. 2012 – 2031 CAGR
2. Passenger aircraft ≥ 100 seats
Air transport is becoming more and more accessible

Evolution of number of regularly served cities per region

<table>
<thead>
<tr>
<th>Region</th>
<th>2005</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>Africa &amp; Middle east</td>
<td>171</td>
<td>204</td>
</tr>
<tr>
<td>Latin America</td>
<td>211</td>
<td>232</td>
</tr>
<tr>
<td>North America</td>
<td>269</td>
<td>266</td>
</tr>
<tr>
<td>Europe</td>
<td>283</td>
<td>300</td>
</tr>
<tr>
<td>Asia-Pacific</td>
<td>358</td>
<td>441</td>
</tr>
</tbody>
</table>

Traffic as of month of September; regular service referring to a minimum of two daily departures on a 150-seater aircraft

Aircraft by Units

- **Single-Aisle**: 879
- **Small Twin-Aisle**: 609
- **Intermediate Twin-Aisle**: 2,102
- **Very Large Aircraft**: 6,028

By Value

- VLA: 15%
- Intermediate Twin-Aisle: 19%
- Small Twin-Aisle: 32%
- Single-Aisle: 34%

Passenger aircraft >100 seats only
Regional focus

Europe

Travel in their DNA

• Despite the economic uncertainty we have seen in the recent past and slow economic growth forecast in the short to medium term, European people continue to fly.

• The growth in LCCs from 0% to ~45% of seats in 2011 has helped stimulate tourism and VFR (visiting friends and relatives) thereby driving traffic growth beyond what would be expected by GDP growth alone.

• As new more distant routes are tested by LCCs, average stage lengths have increased, from ~900nm in 2002 to nearly 1150 nm by the end of 2011.

• Air traffic within Europe is forecast to grow at the moderate pace of 3.4% per annum.

• International traffic will grow at 4.4% per annum, mainly driven by the dynamism of emerging market.

• 5,700 new deliveries – 40% replacement, 60% for growth.

• 76% will be Single-Aisles due to the distance and large population centres served.

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**Economy**

<table>
<thead>
<tr>
<th>1.9%</th>
<th>3.5%</th>
<th>0.6%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Real GDP</td>
<td>Real trade</td>
<td>Urban population</td>
</tr>
</tbody>
</table>

**Traffic**

<table>
<thead>
<tr>
<th>3.4%</th>
<th>4.4%</th>
<th>4.1%</th>
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</thead>
<tbody>
<tr>
<td>Intra-regional &amp; domestic</td>
<td>Inter-regional</td>
<td>Total</td>
</tr>
</tbody>
</table>

**Fleet**

<table>
<thead>
<tr>
<th>3,840</th>
<th>7,266</th>
<th>5,701</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fleet in service beginning 2012</td>
<td>Fleet in service 2031</td>
<td>20-year new aircraft deliveries</td>
</tr>
</tbody>
</table>

1 2012 – 2031 CAGR - 2 Passenger aircraft ≥ 100 seats
Air transport is becoming more and more accessible

Fleet size

+ 3.2 % per annum

Beginning 2012

2031

3,840

7,266

Growth

3,426

New aircraft 5,701

Replaced

2,275

Stay in service & recycled

1,565

Passenger aircraft >100 seats

Aircraft by Units

By Value

VLA

13%

Intermediate Twin-Aisle

17%

Small Twin-Aisle

22%

Single-Aisle

48%

Europe

Passenger aircraft >100 seats only
Regional focus

North America
Simply the best way from A to B

• Today, the domestic US market is the largest single aviation market in the world:
  > Over 115 airlines, 4,000+ aircraft >100 seats in service today
  > 730 million passengers flown to, from and within the US in 2011.

• Over the last year, we have seen the beginning of the replacement of older aircraft.

• Since 1991, growth in spending on travel has outpaced inflation. Per capita annual expenditures on travel in real terms were $348 in 1991 and in 2011 they were $485.

• Today, North American carriers have one of the oldest fleets in service of any region.

• On average, the fleet is 11 years old which is the second oldest in the world, with only Africa’s fleet older, at 12 years old on average.

• 5,850 new deliveries – 52% replacement, 48% for growth.

• 85% will be Single-Aisles due to the strength of the US domestic market.

---

20-year demand (2012-2031)

| Economy 1 | 2.6% | Real GDP |
| Traffic 1 | 5.1% | Real trade |
| | 1.0% | Urban population |

| Intra-regional & domestic | 2.3% | Total |
| Inter-regional | 4.6% |
| | 3.5% |

| Fleet 2 | 4,079 | Fleet in service beginning 2012 |
| | 6,897 | Fleet in service 2031 |
| | 5,851 | 20-year new aircraft deliveries |

1 2012 – 2031 CAGR - 2 Passenger aircraft ≥ 100 seats
More than 80% of the world’s population within 8 hours

Fleet size

+ 2.7 % per annum

6,897

Growth

2,818

New aircraft

5,851

Replaced

3,033

Stay in service & recycled

4,079

Beginning 2012

2031

Passenger aircraft >100 seats

Aircraft by Units

By Value

VLA 4%

Intermediate Twin-Aisle 11%

Small Twin-Aisle 22%

Single-Aisle 63%

North America

621

206

68

4,956

Single-Aisle

Small Twin-Aisle

Intermediate Twin-Aisle

Very Large Aircraft

Passenger aircraft >100 seats only
• Almost **6 billion people** are within **8 hours** flight of the gulf countries.

• Middle East achieved a **8.9%** growth in 2011 despite unrest in the region and the hesitant world economy.

• The domestic Middle East market enjoyed a **7.8%** growth in 2011.

• Gulf airports are expected to boost their capacity by another **130 million** passengers by **2018**.

• Gulf airlines serve more than 600 intercontinental destinations today.

• Low cost carriers in the region are taking the benefit of a young, increasingly mobile population, together with a large expatriate community to take **13%** of the Intra-regional market.

• **44%** of the population of the Gulf Cooperation Council countries (UAE, Saudi Arabia, Kuwait, Oman, Qatar and Bahrain) consists of expatriates. 19 million people flying for work and to visit friends and relatives.

• **1,906** new deliveries – **27%** replacement, **73%** for growth

• **58%** will be Twin-Aisles, due to the position the region is creating for itself as a major global hub.
More than 80% of the World’s population within 8 hours

Aircraft by Units

By Value

Middle East

Single-Aisle  Small Twin-Aisle
Intermediate Twin-Aisle  Very Large Aircraft

Passenger aircraft >100 seats only
In the future Latin America's economic growth is expected to be in the same range as other highly dynamic regions like the Middle East, Africa and South-East Asia.

In 2000, the Latin American airliner fleet was one of the oldest in the world with an average aircraft age of almost 16 years. Today, it is slightly above 10 years, similar to Europe.

Since 2000, the fleet in service has increased by almost 40% from some 800 to more than 1100 aircraft.

The region’s carriers have increased their share of capacity from 13% to 21% since 2005.

Latin America’s airports have increased capacity by more than 40% since 2005.

2,085 new deliveries – 31% replacement, 69% for growth.

80% will be Single-Aisles, driven by strong growth in air travel domestically and around the region (6% intra-regional and domestic growth per annum).
2011 top 10 Latin American cities in seats offered on departing and arriving flights; 2011 vs. 2005 evolution of traffic per route from/to/between/off the top 10 cities

**Long-haul traffic from/to Latin America, 2011 vs. 2005**

- From/to top 10 cities: +40%
- From/to further cities: +15%

**Traffic within Latin America, 2011 vs. 2005**

- From/to/between top 10 cities: +71%
- From/to/between further cities: +13%

**Aircraft by Units**

- Single-Aisle
- Small Twin-Aisle
- Intermediate Twin-Aisle
- Very Large Aircraft

- Passenger aircraft >100 seats only
- By Value
  - VLA: 5%
  - Intermediate Twin-Aisle: 8%
  - Small Twin-Aisle: 32%
  - Single-Aisle: 55%

- Latin America

**Top 10 Latin American cities in seats on departing and arriving flights; 2011 vs. 2005 evolution of traffic per route from/to/between/off the top 10 cities:**

- MEX
- SSA
- BUE
- BOG
- BSB
- SCL
- BHZ
- SAO
- RIO
- LIM
Regional focus

CIS
Flying towards diversification

- **Russia** is the biggest country in the CIS, with a GDP of almost 2 trillion $US in 2011, the ninth largest globally, eighth in terms of population with almost 150 million inhabitants in 2011, and with an area of 17 million km², it is the largest country in the World.

- Russia’s economy is underpinned by a wealth of natural resources, owning 25% of all proved natural gas reserves and 6.3% of all proved oil reserves. But is seeking to diversify its economy, for which aviation will play a key role.

- Between 1998-2011, domestic and intra-CIS passenger capacity has increased at an annual average growth rate of 9.1%.

- Historically, huge productivity improvements have resulted in the number of aircraft operated by CIS airlines to actually decrease, whilst traffic has also increased.

- **1,229** new deliveries – 22% replacement, 78% for growth.

- 83% will be Single-Aisles.

---

**Economy** 1

| 3.5% | Real GDP |
| 3.3% | Real trade |
| 0.3% | Urban population |

**Traffic** 1

| 5.5% | Intra-regional & domestic |
| 5.9% | Inter-regional |
| 5.7% | Total |

**Fleet** 2

| 792 | Fleet in service beginning 2012 |
| 1,754 | Fleet in service 2031 |
| 1,229 | 20-year new aircraft deliveries |

1 2012 – 2031 CAGR - 2 Passenger aircraft ≥ 100 seats
CIS fleet evolution

Fleet size

+ 4.1% per annum

New aircraft 1,229

By Value

100%

VLA 8%
Intermediate Twin-Aisle 9%
Small Twin-Aisle 22%
Single-Aisle 61%

By Units

Single-Aisle
Small Twin-Aisle
Intermediate Twin-Aisle
Very Large Aircraft

Passenger aircraft >100 seats only
Africa
More wealth, more flight, more development

- Africa expected to have **higher** economic growth in the short to medium term than **Asia**.
- Africa’s middle class to **triple** to more than **1 billion** people by 2060 - **42%** of its population.
- Domestic traffic has grown **93%**, international traffic has grown by **89%** since 2000.
- Traffic to and from the **Middle East** and **Asia** has grown dramatically, **300%** and **126%** respectively.
- **China** in particular continues to build strong economic ties, which is driving growth.
- The share of low cost airlines in the region has grown from **3%** in 2003 to **9%** in 2009, **still potential to grow**.
- Today, new low cost ventures are on the horizon.
- **957** new deliveries – **13%** replacement, **87%** for growth.
- **76%** will be Single-Aisles.

2011 traffic to/from and within Africa well above 2000 levels

<table>
<thead>
<tr>
<th>Traffic to/from Africa (Available Seat Kilometres), 2011 vs. 2000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Domestic traffic: +93%</td>
</tr>
<tr>
<td>International traffic: +89%</td>
</tr>
<tr>
<td>Overall traffic: +90%</td>
</tr>
</tbody>
</table>

Global Market Forecast | 50
Traffic to/from Africa (Available Seat Kilometres), 2011 vs. 2000

- Intra Africa: +93%
- North America: +77%
- Latin America: +149%
- Middle East: +300%
- Europe: +50%
- CIS (incl. Russia): +584%
- Asia Pacific: +126%

Domestic traffic: +93%
International traffic: +89%
Overall traffic: +90%

Fleet:
- Fleet in service beginning 2012: 618
- Fleet in service 2031: 1,453
- 20-year new aircraft deliveries: 957

Economy
- Real GDP: 4.4%
- Real trade: 5.4%
- Urban population: 3.1%

Traffic
- Intra-regional & domestic: 6.2%
- Inter-regional: 5.6%
- Total: 5.7%

Aircraft by Units:
- By Value:
  - VLA: 9%
  - Intermediate Twin-Aisle: 10%
  - Small Twin-Aisle: 32%
  - Single-Aisle: 49%

Passenger aircraft >100 seats only

1 2012 – 2031 CAGR - 2 Passenger aircraft ≥ 100 seats
• Today, there are more than 1,600 freighter aircraft with a cargo hold of at least 10 tons and more than 200 airlines.

• Despite the economic crisis, competition from other modes and the resulting difficulties for the air cargo market, the total number of Freight Ton Kilometres (FTKs) in 2011 was 7% above the pre-crisis high in 2007 and 23% higher than the low in 2009.

• In 2011, traffic to, from and within PRC represented 26% of the global air traffic market.

Freighters fleet evolution forecast

<table>
<thead>
<tr>
<th>Region</th>
<th>2012</th>
<th>2031</th>
</tr>
</thead>
<tbody>
<tr>
<td>North America</td>
<td>825</td>
<td>1,254</td>
</tr>
<tr>
<td>Europe &amp; CIS</td>
<td>275</td>
<td>54</td>
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<tr>
<td>Africa</td>
<td>64</td>
<td>123</td>
</tr>
<tr>
<td>Middle East</td>
<td>57</td>
<td>887</td>
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<tr>
<td>Asia-Pacific</td>
<td>316</td>
<td>120</td>
</tr>
<tr>
<td>Latin America</td>
<td>78</td>
<td>120</td>
</tr>
<tr>
<td>World</td>
<td>1,615</td>
<td>2,938</td>
</tr>
</tbody>
</table>

+52% +82% +54%
• For the period 2011-2031, worldwide air freight is expected to grow at 4.9% per year.

• Asia-Pacific is one of the largest drivers of freight traffic, three of the top five freight flows include Asia.

• Over the forecast period, there is demand for nearly 1,800 converted aircraft and nearly 900 new aircraft.
New deliveries worth more than $220 billion

1,793 Converted
851 New build
Fleet to > double

2012-2031 new delivery freighter business volume

2012-2031 freighter demand

- Conversions
- New Freighters

<table>
<thead>
<tr>
<th>Category</th>
<th>Conversions</th>
<th>New Freighters</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small jets</td>
<td>523</td>
<td>411</td>
</tr>
<tr>
<td>Regional &amp; Long range</td>
<td>847</td>
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<tr>
<td>Large</td>
<td>423</td>
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</table>
## Traffic Evolution: Top Twenty largest flows in billions of FTKs

<table>
<thead>
<tr>
<th>Route</th>
<th>2011 FTKs</th>
<th>2012-2031 growth</th>
<th>% Growth 2011-2031</th>
<th>% of 2011 FTKs</th>
<th>% of 2031 FTKs</th>
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<tbody>
<tr>
<td>PRC to North America</td>
<td>6.5</td>
<td>7</td>
<td>17</td>
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</tr>
<tr>
<td>Domestic USA</td>
<td>2.5</td>
<td>10</td>
<td>7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Europe to PRC</td>
<td>6.5</td>
<td>4</td>
<td>11</td>
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<tr>
<td>PRC to Europe</td>
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<td>4</td>
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<tr>
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<td>North America to Europe</td>
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<td>5</td>
<td>6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Europe to North America</td>
<td>3.4</td>
<td>5</td>
<td>5</td>
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</tr>
<tr>
<td>North America to PRC</td>
<td>6.7</td>
<td>3</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Europe to Asia</td>
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<td>4</td>
<td>6</td>
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<tr>
<td>North America to Asia</td>
<td>4.4</td>
<td>4</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asia to North America</td>
<td>4.1</td>
<td>3</td>
<td>4</td>
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<td></td>
</tr>
<tr>
<td>Europe to India</td>
<td>7.4</td>
<td>1</td>
<td>4</td>
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<tr>
<td>Europe to South America</td>
<td>5.1</td>
<td>2</td>
<td>3</td>
<td></td>
<td></td>
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<tr>
<td>Asia to Europe</td>
<td>2.9</td>
<td>3</td>
<td>2</td>
<td></td>
<td></td>
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<tr>
<td>Europe to Middle East</td>
<td>5.1</td>
<td>2</td>
<td>3</td>
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<tr>
<td>Europe to Africa</td>
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<td>2</td>
<td>3</td>
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<tr>
<td>North America to South America</td>
<td>5.8</td>
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<td>2</td>
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<tr>
<td>South America to Europe</td>
<td>4.5</td>
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<td>2</td>
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<tr>
<td>Africa to Europe</td>
<td>4.8</td>
<td>1</td>
<td>2</td>
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<tr>
<td>Europe to Pacific</td>
<td>3.8</td>
<td>2</td>
<td>2</td>
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</tbody>
</table>
### New passenger aircraft deliveries by region

<table>
<thead>
<tr>
<th>Region</th>
<th>Africa</th>
<th>Asia-Pacific</th>
<th>CIS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single-Aisle</td>
<td>724</td>
<td>6,028</td>
<td>1,018</td>
</tr>
<tr>
<td>Small Twin-Aisle</td>
<td>168</td>
<td>2,102</td>
<td>141</td>
</tr>
<tr>
<td>Intermediate Twin-Aisle</td>
<td>36</td>
<td>879</td>
<td>40</td>
</tr>
<tr>
<td>Very Large</td>
<td>29</td>
<td>609</td>
<td>30</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>957</strong></td>
<td><strong>9,618</strong></td>
<td><strong>1,229</strong></td>
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</table>

### New passenger & freight aircraft deliveries by region

<table>
<thead>
<tr>
<th>Region</th>
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<th>Asia-Pacific</th>
<th>CIS</th>
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</thead>
<tbody>
<tr>
<td>Single-Aisle</td>
<td>724</td>
<td>6,028</td>
<td>1,018</td>
</tr>
<tr>
<td>Twin-Aisle</td>
<td>213</td>
<td>3,078</td>
<td>187</td>
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<tr>
<td>Very Large</td>
<td>38</td>
<td>763</td>
<td>34</td>
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<tr>
<td><strong>TOTAL</strong></td>
<td><strong>975</strong></td>
<td><strong>9,869</strong></td>
<td><strong>1,239</strong></td>
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</table>

### Passenger aircraft >100 seats and freight aircraft >10 tons

### New freight aircraft deliveries by region

<table>
<thead>
<tr>
<th>Region</th>
<th>Africa</th>
<th>Asia-Pacific</th>
<th>CIS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Regional</td>
<td>7</td>
<td>71</td>
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<tr>
<td>Large</td>
<td>11</td>
<td>180</td>
<td>5</td>
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<td><strong>TOTAL</strong></td>
<td><strong>18</strong></td>
<td><strong>251</strong></td>
<td><strong>10</strong></td>
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</table>
## New passenger & freight aircraft deliveries by region

<table>
<thead>
<tr>
<th>Region</th>
<th>Europe</th>
<th>Latin America</th>
<th>Middle East</th>
<th>North America</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Africa</td>
<td>4,342</td>
<td>1,658</td>
<td>792</td>
<td>4,956</td>
<td>19,518</td>
</tr>
<tr>
<td>Asia-Pacific</td>
<td>708</td>
<td>333</td>
<td>504</td>
<td>621</td>
<td>4,577</td>
</tr>
<tr>
<td>CIS</td>
<td>397</td>
<td>60</td>
<td>302</td>
<td>206</td>
<td>1,920</td>
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<tr>
<td>Europe</td>
<td>254</td>
<td>34</td>
<td>308</td>
<td>68</td>
<td>1,332</td>
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<tr>
<td>Latin America</td>
<td>5,701</td>
<td>2,085</td>
<td>1,906</td>
<td>5,851</td>
<td>27,347</td>
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</table>

## New freight aircraft deliveries by region

<table>
<thead>
<tr>
<th>Region</th>
<th>Europe</th>
<th>Latin America</th>
<th>Middle East</th>
<th>North America</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Africa</td>
<td>4,342</td>
<td>1,658</td>
<td>792</td>
<td>4,956</td>
<td>19,518</td>
</tr>
<tr>
<td>Asia-Pacific</td>
<td>1,174</td>
<td>417</td>
<td>826</td>
<td>1,079</td>
<td>6,974</td>
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<tr>
<td>CIS</td>
<td>323</td>
<td>35</td>
<td>345</td>
<td>168</td>
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<tr>
<td>Europe</td>
<td>5,839</td>
<td>2,110</td>
<td>1,963</td>
<td>6,203</td>
<td>28,198</td>
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</table>

## Passenger aircraft >100 seats and freight aircraft >10 tons

<table>
<thead>
<tr>
<th>Region</th>
<th>Europe</th>
<th>Latin America</th>
<th>Middle East</th>
<th>North America</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Africa</td>
<td>57</td>
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<td>13</td>
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<td>25</td>
<td>57</td>
<td>352</td>
<td>851</td>
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</table>
## Converted freight aircraft deliveries by region

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<th>Asia-Pacific</th>
<th>CIS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small</td>
<td>5</td>
<td>273</td>
<td>7</td>
</tr>
<tr>
<td>Regional</td>
<td>18</td>
<td>116</td>
<td>15</td>
</tr>
<tr>
<td>Large</td>
<td>12</td>
<td>144</td>
<td>9</td>
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<tr>
<td><strong>TOTAL</strong></td>
<td><strong>35</strong></td>
<td><strong>533</strong></td>
<td><strong>31</strong></td>
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</table>

## Total freight aircraft deliveries by region

<table>
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<th>Asia-Pacific</th>
<th>CIS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small</td>
<td>5</td>
<td>273</td>
<td>7</td>
</tr>
<tr>
<td>Regional</td>
<td>25</td>
<td>187</td>
<td>20</td>
</tr>
<tr>
<td>Large</td>
<td>23</td>
<td>324</td>
<td>14</td>
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<tr>
<td><strong>TOTAL</strong></td>
<td><strong>53</strong></td>
<td><strong>784</strong></td>
<td><strong>41</strong></td>
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<tr>
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<td>Europe</td>
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<td>---------------</td>
<td>-------------</td>
</tr>
<tr>
<td>Africa</td>
<td>55</td>
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</tr>
<tr>
<td>Asia-Pacific</td>
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<tr>
<td>CIS</td>
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<td>1</td>
<td>23</td>
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<tr>
<td>Europe</td>
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</tr>
<tr>
<td>Latin America</td>
<td>403</td>
<td>107</td>
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</table>