

TRAINING for AVIATION

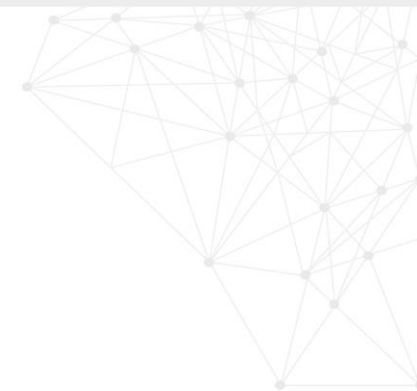


Meeting the demand for competences & qualified people

Seminario Internacional de gestión de aeropuertos en contexto global de crecimiento
30 y 31 de Marzo 2017

Philippe Crébassa, Vice President

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The Big Picture



Aviation Value

4 bn PAX, 4 k Airports, 1 400 Airlines

GDP: 700 bn\$ direct + 800 bn\$ indirect

Impact: 3,5% of World GDP

Ranks 21st in countries GDP

Airports investments: 40 bn\$ yearly

Jobs: 10 m direct + 11 m indirect

Latin America: 167 bn\$ Impact, 2 m jobs

Colombia: 8 bn\$ Impact, 130 k jobs

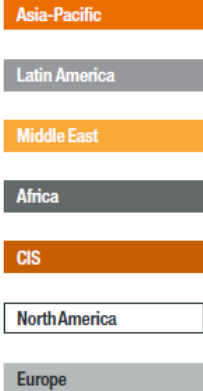
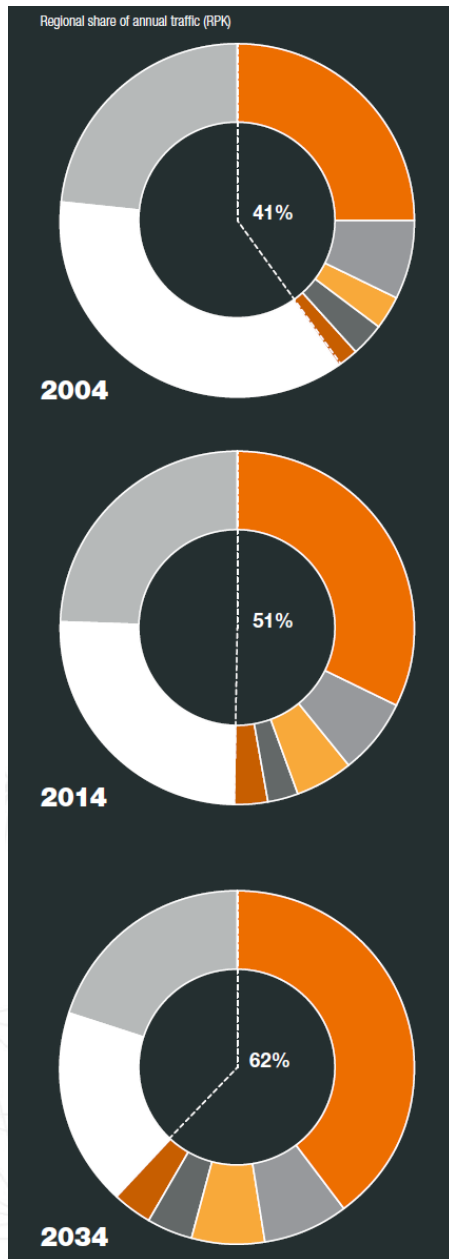


Structural Changes

From 1 to 4 bn in a century
 Traffic doubles every 15 years
Colombia: tripled last 10 years
 In the last 60 years, air travel price divided by 7

EVOLVING STRUCTURE OF THE AIR TRANSPORT MARKET

Sources: Sabre GDD, Airbus



Emerging/Developing

China
 India
 Middle East
 Asia
 Africa
 CIS
 Latin America
 Eastern Europe



6.2 billion people 2015

Yearly RPK growth 2016 - 2035

+5.6%



Advanced

Western Europe
 North America
 Japan



1 billion people 2015

+3.7%

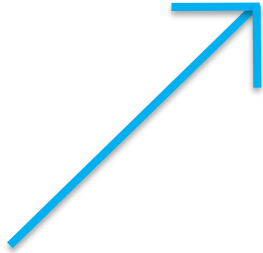


People



The Domino effect

Demand for
Air travel



Demand for
Aircraft
Routes & ATM
Airport & terminals



Demand for
qualified
Staff



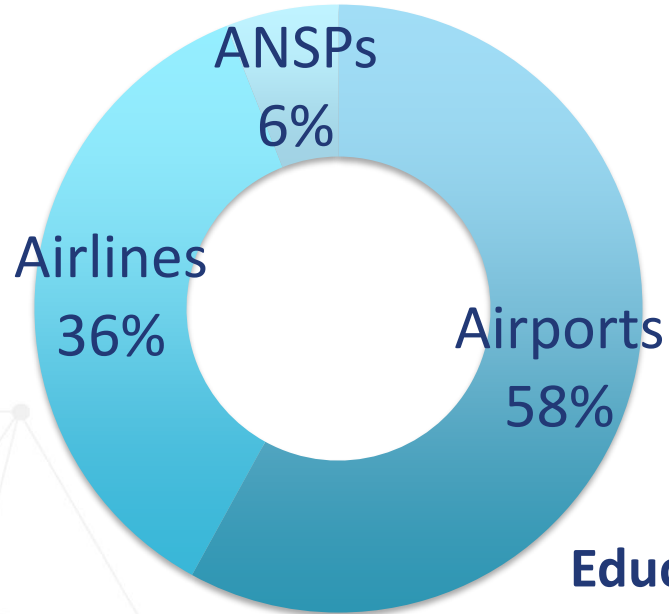
+ 4,7%

**Annual growth rate
in Latin America
next 20 years**

+ 3,1%

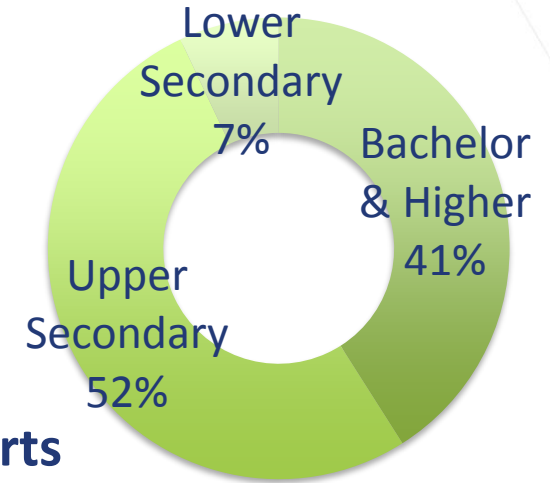
**The challenge is not technological (anymore), it is about
Competences & Management**

Direct jobs split

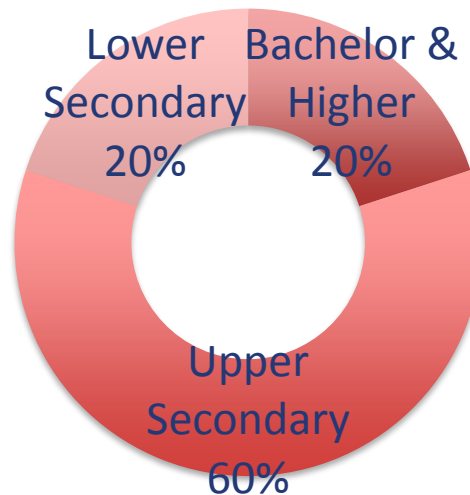


The Staff

Education level in Airlines



Education level in Airports



Impact on education & training

- Every 1 kPAX requires 3 more jobs in the industry
- ATAG reports
 - “Many roles require a highly qualified workforce and a significant amount of training”
- Trends for Colombia
 - + 2 000 direct jobs every year
 - Airports: + 220 Bachelors or higher, + 850 Secondary
 - Airlines: + 270, + 380 Secondary

The Strategy



The future of the education system in Colombia... is NOW

Efficiency

WHAT?

HOW?

Transition

- Quantity
- Quality
- Initial education
- Continuous training
- Research

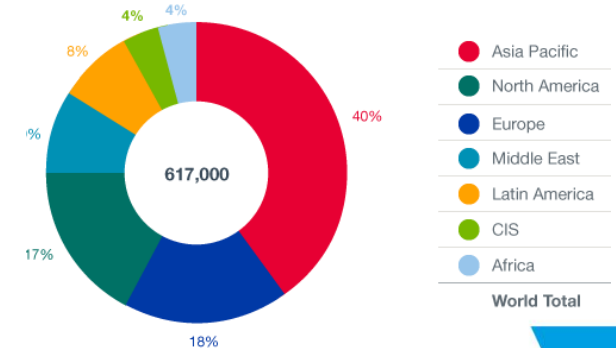
- Organizations
- Implementation
- Programs
- Partnerships

Innovation

Competences

The Pilots case

- 620 000 more in the next 20 years
- Shortage of training capacities
- Industry experience with a skills deficit
- Demand for locally sourced and qualified pilots



An Int'l Benchmark





The US



400+ aeronautical courses with degree programs
by 30+ conventional universities

A limited number of specialized universities
focused on the aviation sector

Air Traffic Control
Piloting

by several private schools



FAA Academy



TSA Office of Training & Development





China



Civil aviation education is organised under the leadership of the CAAC

Civil Aviation University of China



Civil Aviation Flight University of China



Civil Aviation Management Institute of China



Joint Programs with ENAC filling the gaps in air transport education





Brasil



Few specialized universities focused on the aviation sector, with no competences in air transport



Air Traffic Controllers trained by Department of Airspace Control (DECEA)

SAC Joint Programs with ENAC filling the gaps in air transport education



The Aviation University





Europe's #1



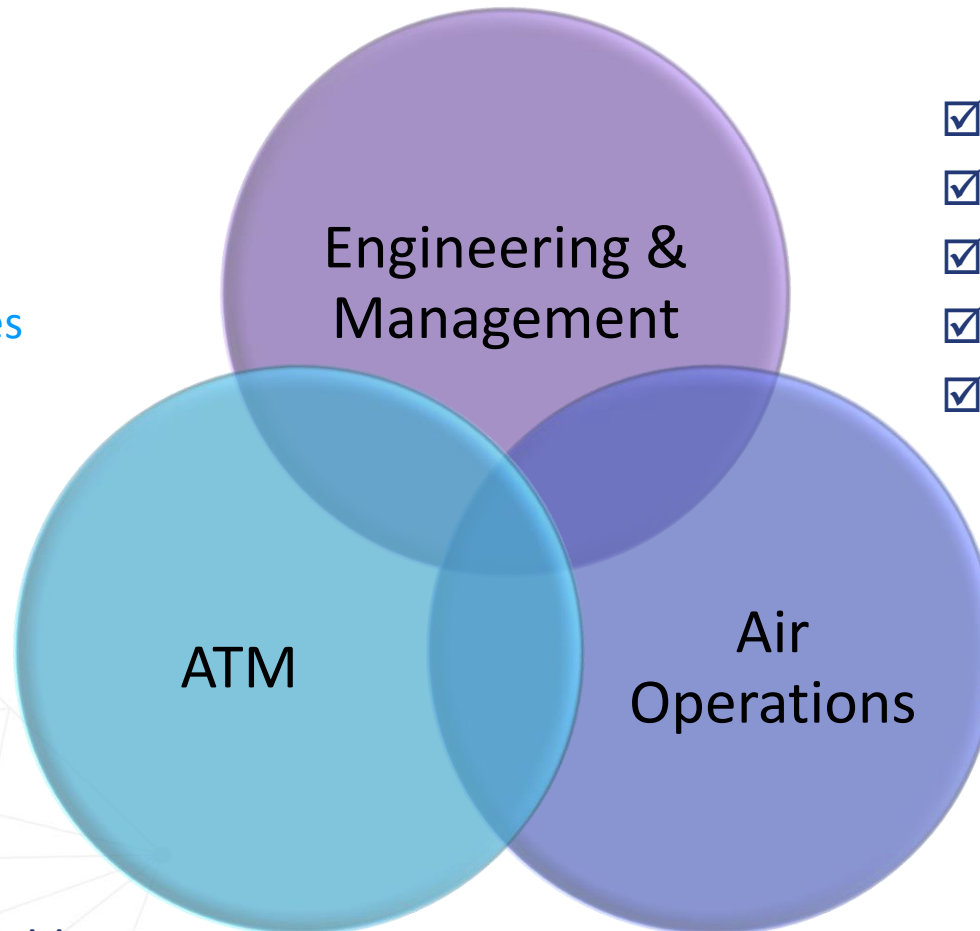
Accredited by Higher Education
under direct authority of CAA



Higher Education & Training Areas

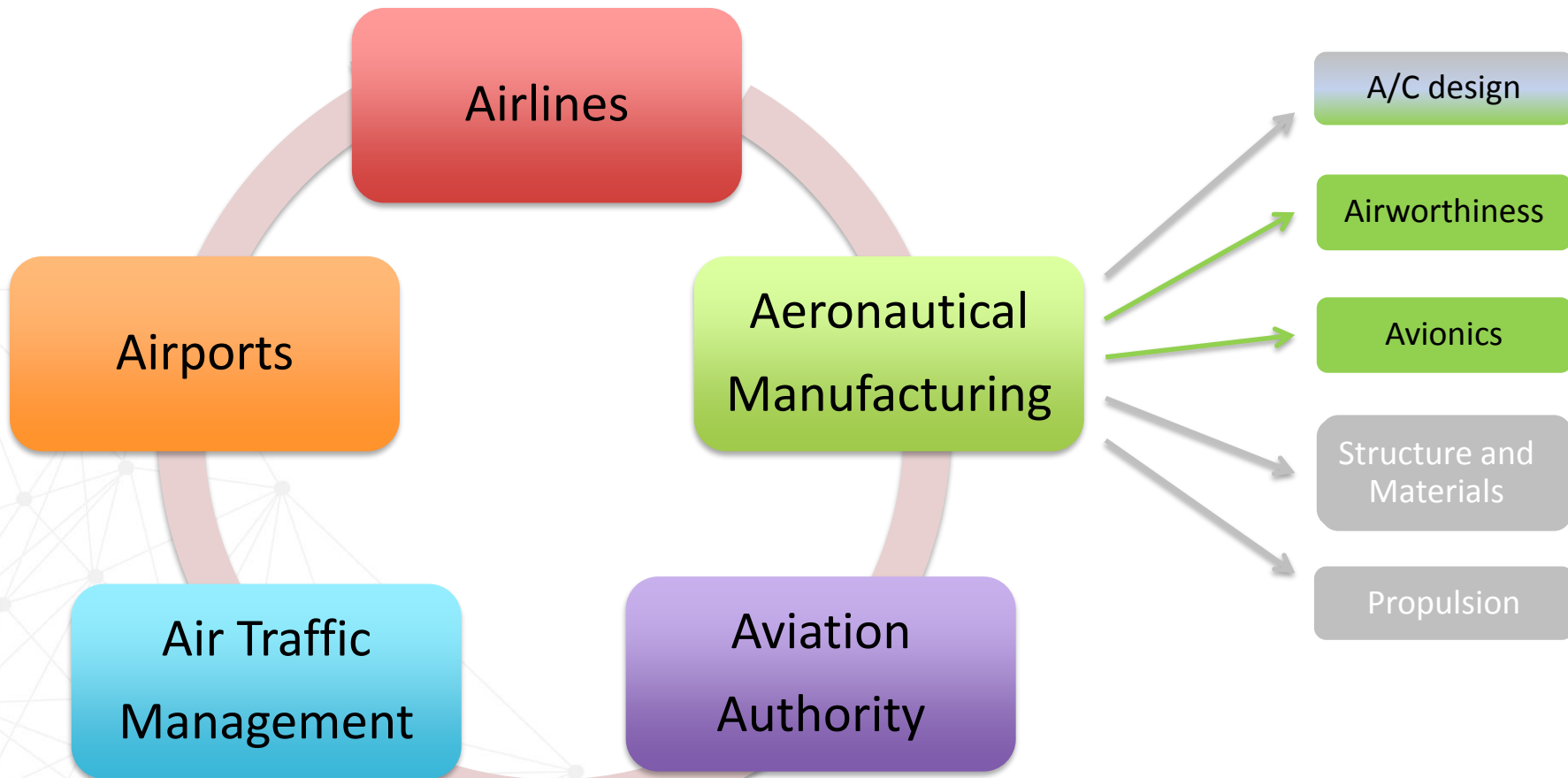
Diversity & Complementarities

- Avionics, Embedded Systems
- Air Navigation, GNSS
- System Engineering
- Flight Safety
- Air Traffic Management
- Air Transport Techniques
- Safety management
- Air Ground
- Economics
- Flight Control, UAVs
- Airport
- Airworthiness
- Human Factors
- Security
- Social Sciences & Humanities



- ☑ Undergraduate Programs
- ☑ Postgraduate Programs
- ☑ Continuing Education
- ☑ International cooperation
- ☑ Research & Development

Dedicated to aviation community

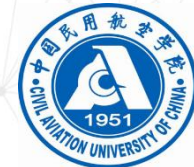




Academic Programs

ENAC Engineer Degree

in Toulouse and in Tianjing (China)



Executive MBA in Air Transport



in Beijing (China)

MSc

IATOM : International Air Transport Operations Management

ATM : Air Traffic Management

GNSS : Global Navigation Satellite System

HMI : Human Machine Interface

MSc Int'l double diplomas in aeronautics

in Hong-Kong, Beijing and Indonesia



香港科技大學
THE HONG KONG
UNIVERSITY OF SCIENCE
AND TECHNOLOGY

Post graduate Programs

↳ Advanced Masters

- **Value**

- Professionally-oriented, meeting the specific needs of the aviation industry
 - To acquire in-depth or dual skills
 - To develop expertise strengthening employment opportunities
 - To provide global market with highly qualified specialists

- **Requisites & Selection**

- Master degree
- Professionals with a Bachelor degree + having 3 years of professional experience.

- **Syllabus & Format**

- First semester: academic courses
- Second semester: professional internship and finishing with a thesis
- 1 year Full Time or 18 months Part Time

Post graduate Programs

Advanced Masters - Management

Airport Management (France, China, MEA)

Air Transport Management (France & China)



Airline Operations (Abu Dhabi, IATA)

Air Navigation Services Management (India, Indonesia & Brazil)



Advanced Masters – Operations and Engineering



Safety Management (Vietnam, The Philippines)

Air Navigation Systems Engineering and Operations

Aircraft Life Maintenance & Management (China)

Air Navigation Engineering (China)

Aerospace Project Management

The Way Ahead



Possible programs scheme

	Short Courses	Bachelor	Master of Science	Advanced Masters	Executive Education
Proposed Programs	Flight Dispatcher	Bachelor in Aviation	IATOM	Air Transport Management Airport Management Aviation Safety Airline Operations Aircraft Life Mtncce & Mgt ...	EMBA Executive Courses
Duration	From 1 week up to 12 weeks	3 years	2 years	1 year to 18 months	Up to 2 years
Requirements to Graduate	From 1 course up to 12 courses	3 year courses	18 courses + 6 months internship	12 courses + 6 months internship	18 courses + thesis
Initial teachers	ENAC	XXX ENAC	XXX ENAC	ENAC	ENAC
Transition from ENAC to XXX	End of Year 2	End of Year 3	End of Year 3	End of Year 3	TBD

A circular inset image showing two pilots in a cockpit, viewed from the side. They are looking forward at the instrument panel, which is filled with various gauges and digital displays. The background outside the cockpit is slightly blurred, showing what appears to be an airport tarmac.

**ENAC is ready to support
Colombian aviation**

**Muchas gracias
por su atención**