



# GROUND OPERATIONS SAFETY IMPROVEMENTS IN AFRICA

Version 1.0

## Introduction

Ground accidents cost the airline industry billions of dollars per year, and industry leaders recognize that something must be done against these losses. The apron environment is complex and requires a thorough analytical approach to risk management — a systems approach. To improve platform safety and to acquaint students with aviation safety in Africa, AviAssist and the ATAERA network of aviation universities have joined hands to initiate a student competition. Aim of the competition is to generate ideas to improve the safety & efficiency of ground operations during aircraft turn around at Kigali International Airport, Rwanda. This analysis will assist the Rwanda aviation industry in improving apron safety and ground operations safety and will complement efforts to enhance the organizational safety culture of the organisations involved. It will provide valuable input for the move to the new Bugusera International Airport in 2019.

## Objective

The students are to propose a number of measures to improve the safety & efficiency of ground operations during fixed-wing aircraft turn around at Kigali International Airport, Rwanda. The measures are to be based on:

- A thorough understanding of state-of-the-art literature
- Current safety issues in ground handling at Kigali International Airport
- Current safety issues in ground handling elsewhere
- The infrastructure constraints at Kigali International Airport
- The cultural issues (if any) of Rwanda

The proposed measures will be presented in a video of not more than 7 minutes, available to the organizers on April 18<sup>th</sup> 2018 at the latest.

## Approach

The following deliverables are expected as intermediate products of the challenge. These are primarily intended to give visibility of your progress to the organization and local support staff. They may also contribute to the evaluation of the final proposal.

- Literature review of ground safety
- A risk analysis of current safety issues in ground handling at Kigali International Airport
- A risk analysis of current safety issues in ground handling elsewhere
- A “long list” of 5 to 10 potential measures that can be taken to improve safety & efficiency during fixed-wing aircraft turn around at Kigali International Airport
- Pareto analysis of these potential measures to assess effort required for implementation and expected impact
- Final report that introduces the five measures with greatest impact and least effort, and justifies how these constitute the best way to improve safety & efficiency during fixed-wing aircraft turn around at Kigali International Airport when taking into account the specific cultural and logistical challenges that staff and management in Rwanda will face.
- A curriculum or training outline of approximately five days that will allow AviAssist to facilitate the improvement of safety & efficiency of turn arounds at African airports, aimed at operators and regulators.
- Video presentation of no more than 7 minutes that summarizes the final report.

The teams are encouraged to set up a collaboration with (aviation) students of the University of Tourism, Technology & Business (UTB) Studies in Kigali in the course of this project. The AviAssist Foundation will facilitate contacts with the Deputy Vice Chancellor of Research at UTB.

## Timing

The project runs from November 1<sup>st</sup> 2017 to April 18<sup>th</sup> 2018.

The following timing is intended as a guideline:

- It is expected that the literature review will be completed by January 2018.
- Mid-March 2018:
  - A risk analysis of current safety issues in ground handling at Kigali International Airport
  - A risk analysis of current safety issues in ground handling elsewhere
- End of March 2018:
  - A long list of potential measures that can be taken to improve safety & efficiency during fixed-wing aircraft turn around at Kigali International Airport
  - Pareto analysis of these potential measures to assess effort required for implementation and expected impact
- April 18<sup>th</sup> 2018:
  - Final report including training outline
  - Video presentation
- April 25<sup>th</sup> 2018
  - Evaluation of the video presentation & proposals
  - Allocation of the two winning teams

- May 2018: Detailed feedback to all the teams

The two winning teams will be entitled to visit Kigali International Airport on a sponsored trip in May 2018 to further detail their plans and come up with an action plan as to how to introduce the proposed measures into the ground operations policy and procedures. They will also be invited to present their improved proposal at the INAIR conference in November 2018.

## Support

The students will be based at their home universities and supervision by the home university will be offered. In November 2017 there will be a fact pack available to the students to initiate their analysis but state-of-the-art literature needs to be found and reviewed by themselves.

The following experts have offered their support to this challenge and are available for consultation:

- Deputy Director ICAO in Nairobi, Mr. Ndikumana
- Deputy Director-General of the Rwanda CAA and Director Airports
- Head of Airside Safety at Rwanda CAA
- Safety manager of Rwandair
- Ground safety officer of Rwandair

The students will have to sign a non-disclosure agreement to govern the distribution of the information they obtain. This will assist the Rwandan partners in getting the co-operation from the relevant authorities in an ever developing safety culture. You are expected to find other experts locally that can shed light on ground safety issues and the particularities of aviation in Africa and Rwanda. Consider consulting airline pilots that fly to African destinations, that have done business with Rwanda or people that have lived in Rwanda in the past.

## Eligibility

This safety challenge is open for teams of between 3 and 4 students that are currently studying towards a Bachelor or Master degree in Aviation or an Aviation-related field. At present participation is limited to one team from each ATAERA network member universities:

- Amsterdam University of Applied Sciences, Amsterdam, The Netherlands
- University of Zilina , Zilina, Slovakia
- Vives University College, Oostende, Belgium
- Zurich University of Applied Sciences, Zurich, Switzerland
- IUBH International University of Applied Sciences Bad Honnef –School of Business and Management, Bad Honnef, Germany
- Aeronautical University on Querétaro, Querétaro, México
- Coventry University, Coventry, United Kingdom
- Instituto Superior Técnico, Lisboa, Portugal
- Purdue University, West Lafayette, Indiana, United States of America
- Institute of Technology Carlow, Carlow, Ireland
- Embry-Riddle Aeronautical University – Worldwide

Teams need to have completed the registration process before November 1<sup>st</sup> 2017 to be eligible to participate.

## Credits

Check with the contact person at your institution for the exact credits for this project.

## Follow-up

The video presentations of each team will be shown and evaluated at the AviAssist Conference on April 25<sup>th</sup> 2018. The jury will appoint two winning teams who will get the chance to further detail their plans, amongst others through a sponsored field trip to Kigali International Airport. The two winning teams will present their final solution (live) at the INAIR conference in November 2018 for an international audience.