Project PJ03b

Safety is aviation's top priority. To work for even safer airports, Project 03b SAFE will define, consolidate and validate additional safety barriers to mitigate the risks of runway incursion, runway excursion and more generally the risk of incidents and accidents involving aircraft at the airport.

The project is declined into four solutions:

- Solution **Enhanced airport safety support tools for controllers** will provide Air Traffic Controllers with means to prevent the delivery of conflicting clearances and detect non-conformance to clearances on the entire airport.
- Solution **Conformance monitoring alerts for pilots** will warn pilots when an inconsistency between the aircraft behaviour with either ATC Clearance or procedure is detected.
- Solution **Traffic alerts for pilots for airport operations** is a key feature to significantly decrease the risk of collision with any mobile on runway and taxiways, improving safety on airport surface.
- Solution **Safety support tools for avoiding runway excursions** will address the most frequent type of runway safety accident (22 % of all accidents over the 2010 - 2014 period according to IATA Safety Report). The work will focus on how the risk of runway excursion can be mitigated by on-board and ground systems that could warn pilots, controllers or both when appropriate. This solution requires a better knowledge of runway braking conditions, and can improve the runway capacity and environmental aspects through a better management of decontamination operations.

Dedicated tasks to support standardization activities will be performed in each solution when appropriate.

PJ03b Consortium involves key stakeholders of Airborne Industry, Ground ATM Industry, Service Providers (ATM and Airports), Aerospace Research and EUROCONTROL. Those members of the SJU will cooperate for implementing SESAR 2020 in an efficient, open and timely manner, providing a wide range of expertise and committing together to deliver high-quality results.

Solution PJ03b-06

Runway excursions represent the most frequent accident category for world wide accidents for the 2004 - 2009 period (cf. the 2004 - 2009 Runway Excursions Analysis in the IATA Safety Report 2015 (Issued April 2015, 51st Edition)).

The proposed solution will be developed to provide:

Enhanced runway condition awareness for the Airport Operator, using data from the following external sources:

- runway built-in sensors;
- weather-based runway condition model;
- aircraft on-board sensors providing runway friction data.

Safety support tool for controller, which would use the data output by the enhanced runway condition awareness system (and other potential criteria such as surveillance information) to inform the controllers on the runway condition and to provide possible alerts on risk of runway excursions, depending on the outcome of V1 activities.

Safety support tool for pilots, which would be based on emerging airborne capabilities in order to provide a Runway Overrun Awareness and Avoidance System (ROAAS).

It is important to note that the project will focus on the processing of the various input data and on the presentation of the output data to the final users (pilots, ATC and Airport Operator), and not on the sensors themselves.

The partners involved in this solution represent the main airport stakeholders in order to work together on this major safety issue: airborne industry (Airbus for mainline aircraft, Dassault Aviation for business aircraft), air navigation service providers (DSNA and ANS CR (B4) for major airports, PANSA (B4) and LPS SR (B4) for regional airports) and airport operator ADP (SEAC2020).

Microstep-MIS intends to contribute by providing its knowledge and expertise in aviation meteorology through the work on technical and partially operational aspects of WP and development of prototype.