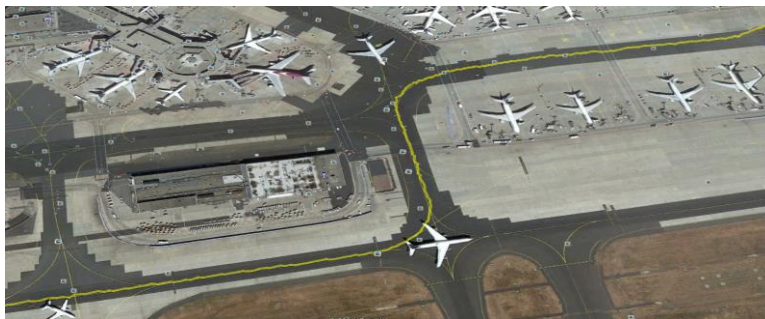




WORLD ATM CONGRESS – SJU WALKING TOURS



Martin Puskar
Jolana Dvorska
March 6, 2018

AIRPORT SURFACE ALERTS SYSTEM (SURF IA) SESAR 2020 - PJ03B-05



Airport Surface Traffic Indications & Alerts system for pilots

SURF IA

Project partners :



Goals:

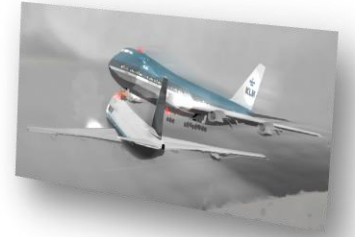
- Assist crew in reducing runway incursions & collisions

Project is part of S2020 Industrial Research with the objective to reach V3 (TRL 6).

Project Execution: Nov 2016 – Sep 2019

Airport Surface Traffic Indications & Alerts System for pilots

SURF IA



THE NEED

- EASA and FAA concerns about overall airport surface safety and runway incursions.
- Incidents/Accidents statistics on airport surface as Tenerife accident of two B747s as the worst accident in history.
- Frequency of serious Runway Incursions indicates need for the SURF IA application.

THE SOLUTION

- SURF IA directly contributes to SESAR objective to significantly increase the level of Safety in Europe.
- Honeywell is developing an **onboard** Airport Surface Traffic Indications & Alerts system prototype under SESAR^(*) project PJ03B-05 to address concerns of surface operations safety defined by FAA and Eurocontrol.

Airport Surface Traffic Indications & Alerts System for Pilots

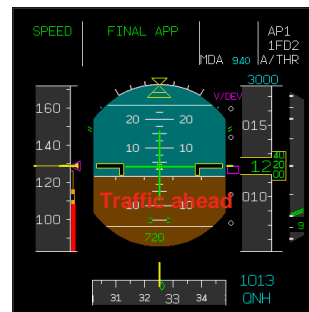
SURF IA

INTENDED FUNCTION

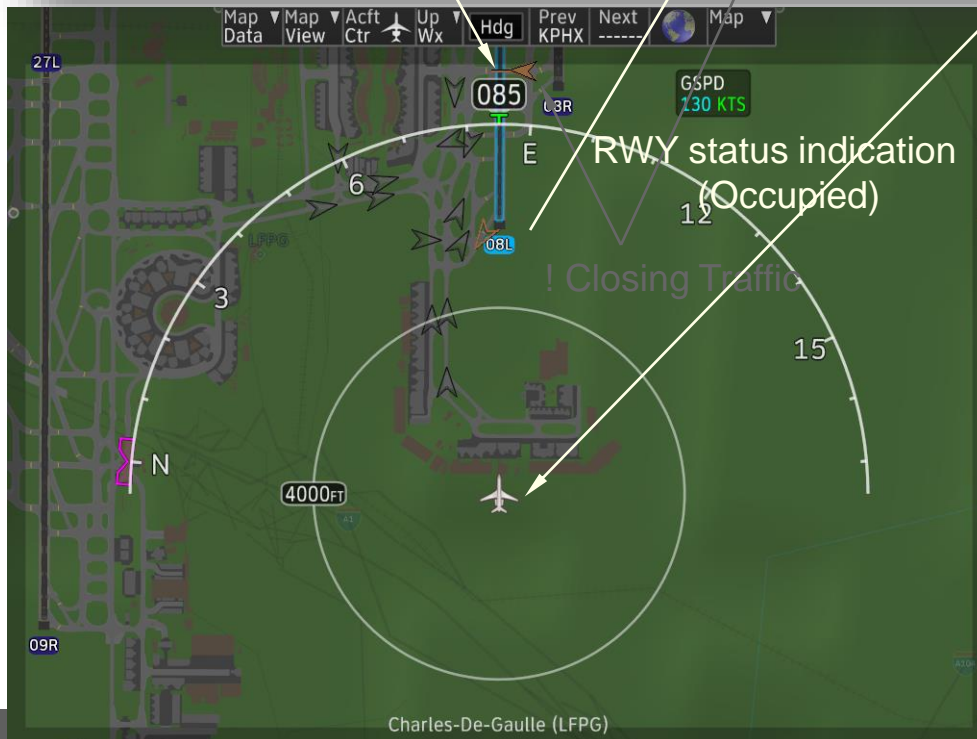
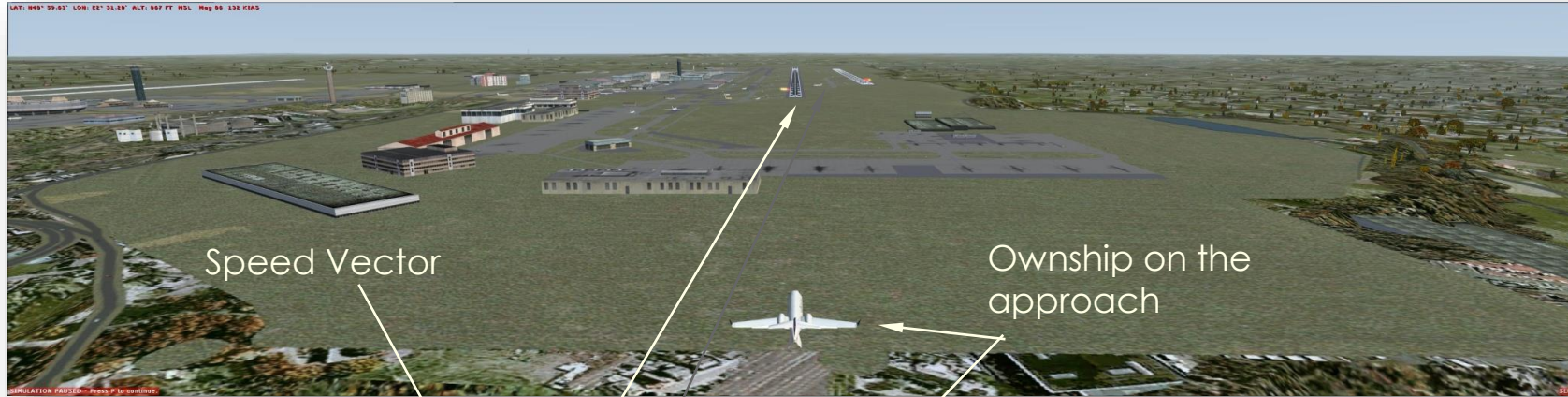
- The system intends to assist flight crews in reducing the probability of runway incursions & collisions with other traffic using ADS-B technology.
- Onboard system provides flight crew with timely information:
 - Visual awareness on the airport moving map display
 - Aural alert messages + visual echo on PFD.
- Simple installation

THE SURF IA CONSISTS OF:

- Traffic indications and alerts on runways Traffic indications



Airport Surface Traffic Indications & Alerts System for Pilots SURF IA



Runway – Situational Awareness

- EPIC – iNav Display
- Moving Map
- Ownship and Traffic position
- Runway status indication – occupied
- Traffic speed vector (where it will be in 15s)

Ground Traffic inside Runway relevant zone

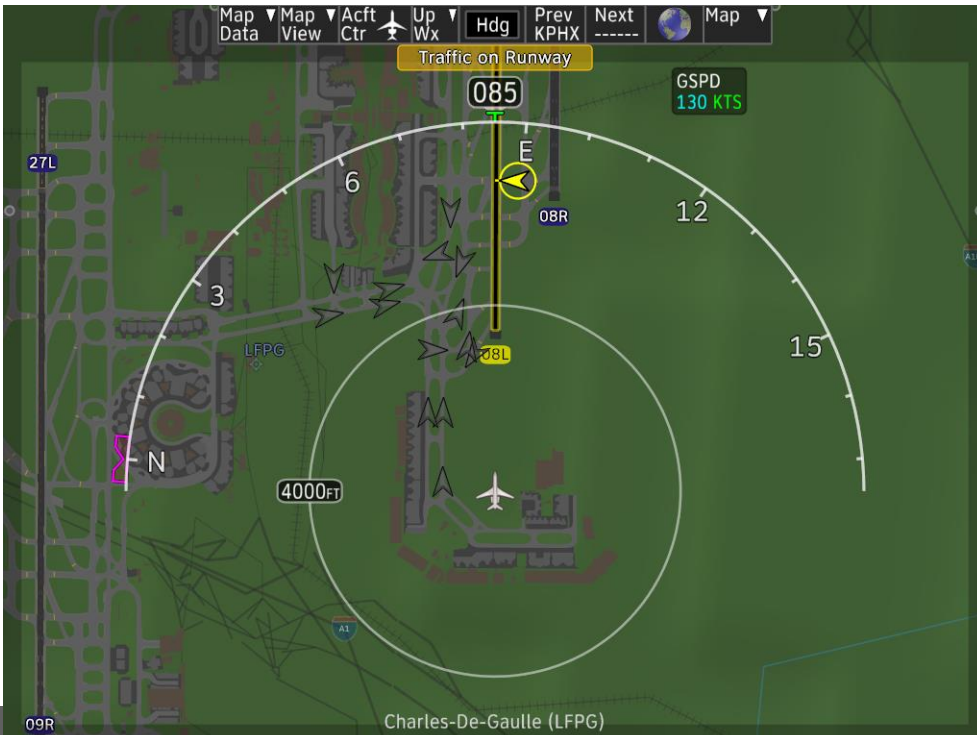
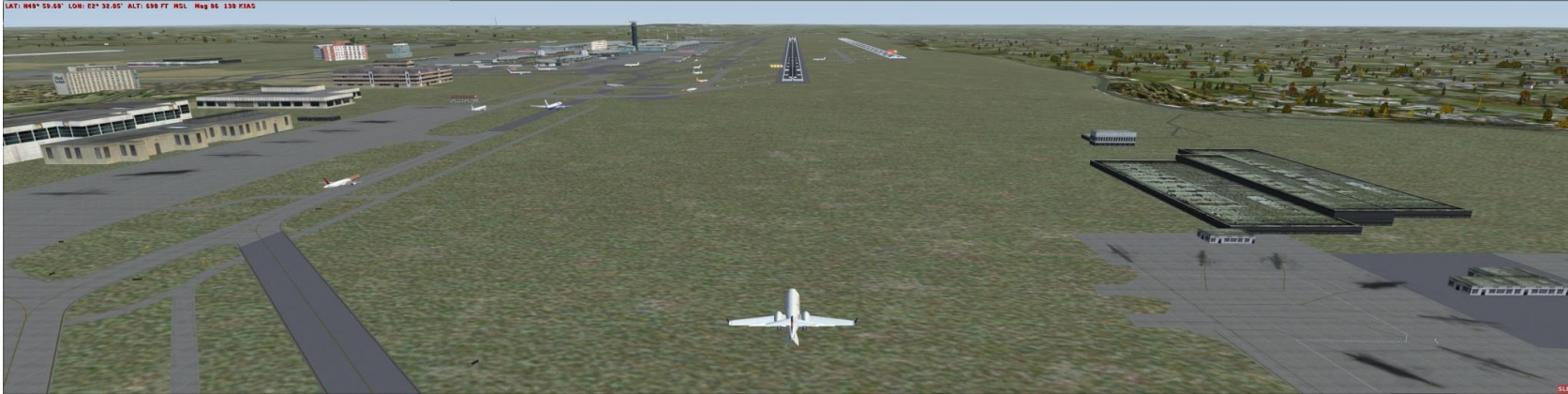


Ground Traffic Closing to

Ground Traffic Not- Closing to
Ownship

Airport Surface Traffic Indications & Alerts System for Pilots

SURF IA



Caution Alert

- Time to Collision 30sec.
- Text message – Top Center
- Aural message
- Color 'Yellow'

Airport Surface Traffic Indications & Alerts System for Pilots

SURF IA

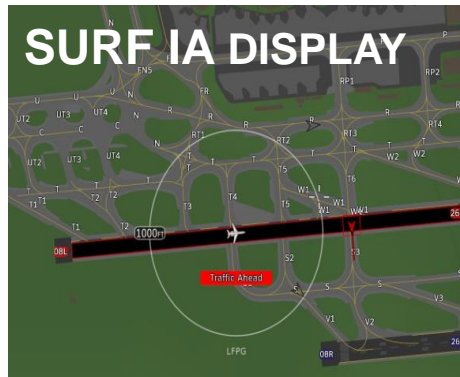


Warning Alert

- Time to Collision **15sec.**
- Text message – Top Center
- Aural message
- Color '**Red**'

Airport Surface Traffic Indications & Alerts System for Pilots SURF IA

Objective: Assist crew in reducing runway incursions & collisions



Visual awareness on the airport moving map display.



Aural alert messages + visual echo on PFD.

FLIGHT TESTS in July 2017

5 US airports used with ~ 50 scenarios.

- Falcon F900EX
- Cessna Citation V (intruder)

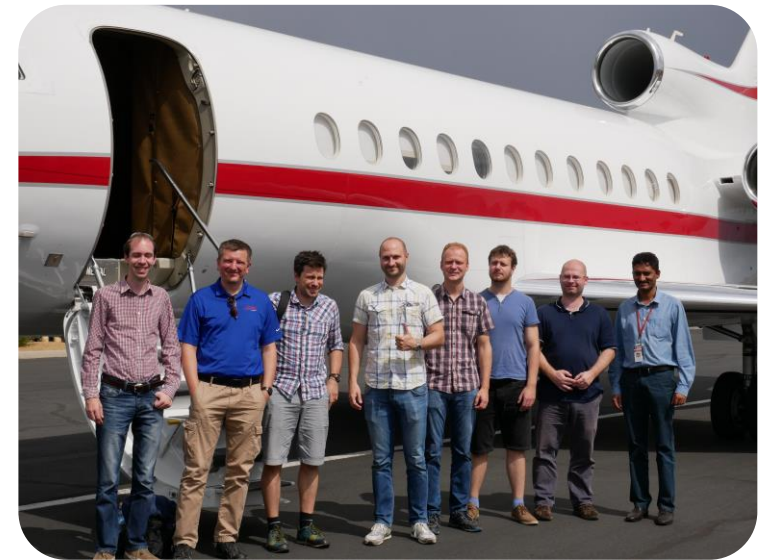
Tested overall functionality of the system in real environment.

Assessed operational concept and final HMI.



SurfIA Next Steps

- **Honeywell Flight Tests - March 2018 / US**
 - Cessna Citation & F900EX
- Honeywell Bench Tests – Q2, 2018 / Brno – with Dassault pilot/experts
- **Business & Mainline Flight Test Demonstration**
 - Airbus, Dassault, Honeywell
 - A320 & F900EX
 - Q1-Q2, 2019
- **Final V3 Validation Plan & Report**
- Preparation of Very Large Demonstrations with Airlines





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WAC, Madrid – March 2018

THANK YOU

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Honeywell

THE POWER OF **CONNECTED**