

Digital Taxi Instructions Exploration

Turning Information into Working Technology

Noureddin Ghazavi

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INTRODUCTION

Recent advances in aviation technologies and high-speed communication links now enable aircraft to be “fully connected” during all phases of flight.

Leveraging real-time information via the Connected Aircraft presents opportunities to increase efficiency for aviation communities.

The FAA Info-Centric NAS will leverage a multitude of opportunities across technology and business practices with availability of information to enhance operations.



The airport surface can be a complex environment due to lengthy detailed taxi instructions, congested voice-based communication systems, etc. This presents opportunities to provide enhanced tools and capabilities to improve flight crew communications with air traffic controllers.



Current Surface Operational Environment

Communication

- Voice over UHF/ VHF Radio



Current
Connectivity

Compliance Monitoring

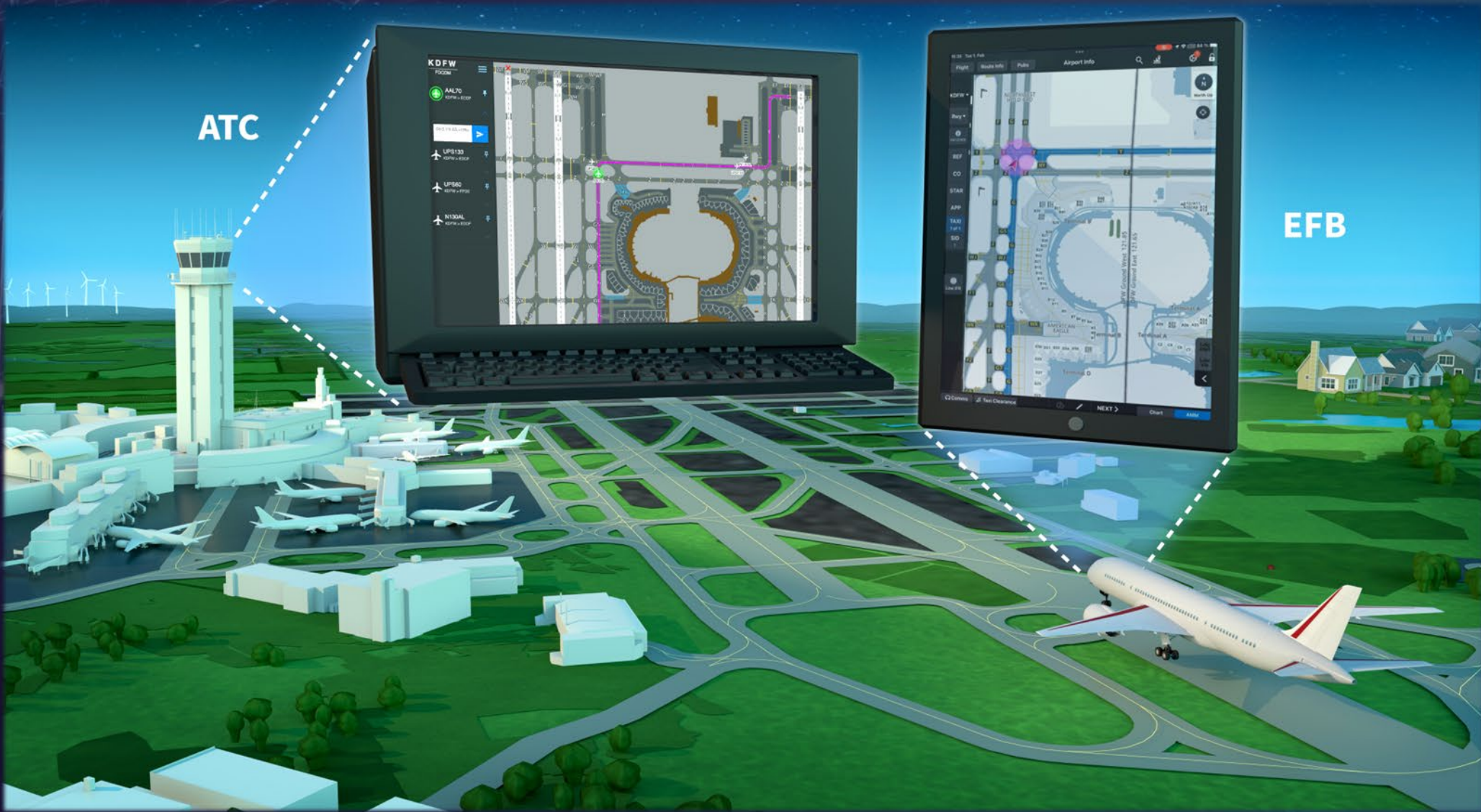
- Done through visual identification and controllers familiarity with airport surface environment



Actors

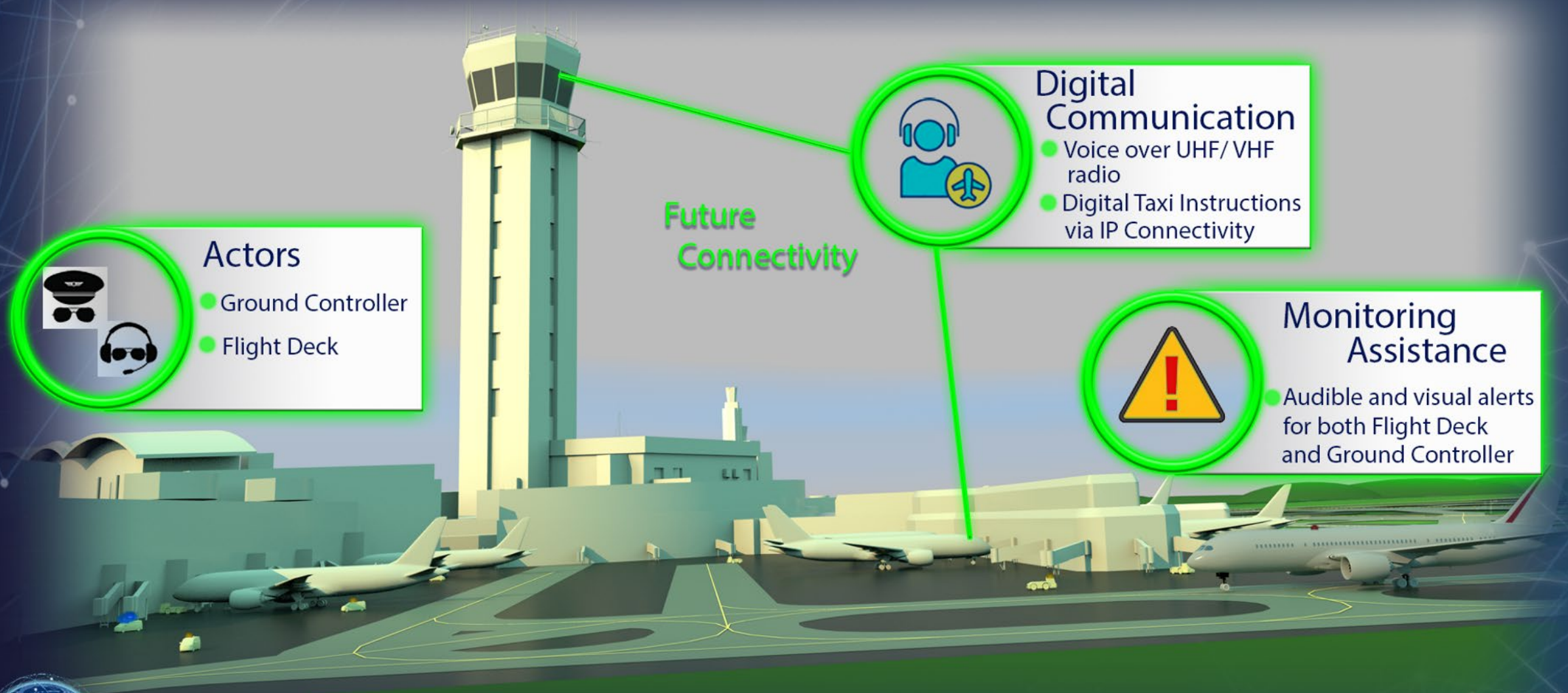
- ATC Ground Controller
- Flight Deck





To achieve this vision, robust data exchange and information sharing can deliver innovative applications leveraging Electronic Flight Bags (EFB) to improve surface movement. Seamless flow of data to stakeholders is needed to support effective decision making. Digital Taxi Instructions that communicate controller instruction and flight crew responses are the foundations of this project.

Future Surface Operational Environment



Taxi Instruction Delivery

Flight
Plan Filed

Connection
Established

GC Develops
Taxi
Instructions

GC Provides
Taxi
Instructions

FC Reviews
& Accepts
Instructions

FC Executes
Instructions

Compliance
Monitoring

Taxi Route
Removed



EFB Application Features

- Digitally interact with the air traffic controller
- Display airport layout with variable geometry
- Request Taxi Instruction
- Aircraft position and turn-by-turn instruction on Airport Moving Map
- View airport surface operations



SCENARIO 1: **DFW**

DTIs IN A COMPLEX ENVIRONMENT



ATC

Conclusion

EFB

The Info-Centric NAS improves the speed and magnitude of operational improvements to existing users while integrating the expected growth of new operations and their missions into the NAS. It provides a flexible framework that allows the NAS to adapt quickly to evolving operations and to leverage new technologies.





Questions?

For additional information contact Nouri Ghazavi
Noureddin.Ghazavi@FAA.GOV