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## A Human-Systems Approach to Proactively Managing Risk through Training in an Evolving Aviation Industry

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# A Human-Systems Approach to Proactively Managing Risk through Training in an Evolving Aviation Industry

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Embry-Riddle Aeronautical University  
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# NextGen will introduce new procedures & operational conditions

## **Changes Impact Performance**

- New human-system and human-human interactions
- New off-nominal conditions
- Gaps in existing checklists & SOPs
- Gaps in existing training programs



# Human Organizational Safety Technique

- Human-centered method for proactively bridging the gap between current & future operations

- Identifies task impacts, sources of resiliency, emerging risks, and performance metrics

- Data-driven outputs that are repeatable and scalable to evolve training platforms



# HOST Approach

## Baseline

- 1 Review Change vs Current Operations
- 2 Identify Actors, Tasks, KSAs, & Systems
- 3 Strategic Impact Analysis

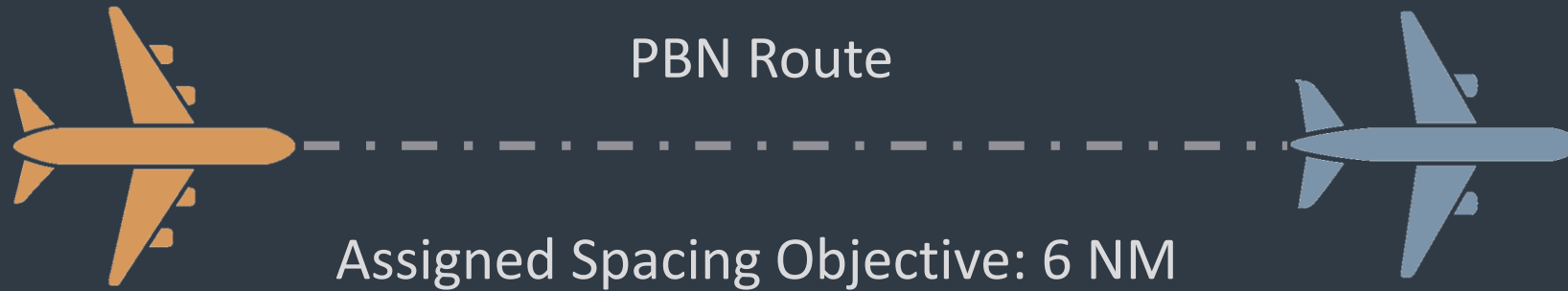
## Model

- 4 Human-System Interaction Models
- 5 Key Interaction Analysis
- 6 Assess, Quantify, Prioritize Impacts

## Implement

- 7 Develop Mitigation/Implementation Strategies
- 8 Implement Mitigations Into Training Platform

# Interval Management



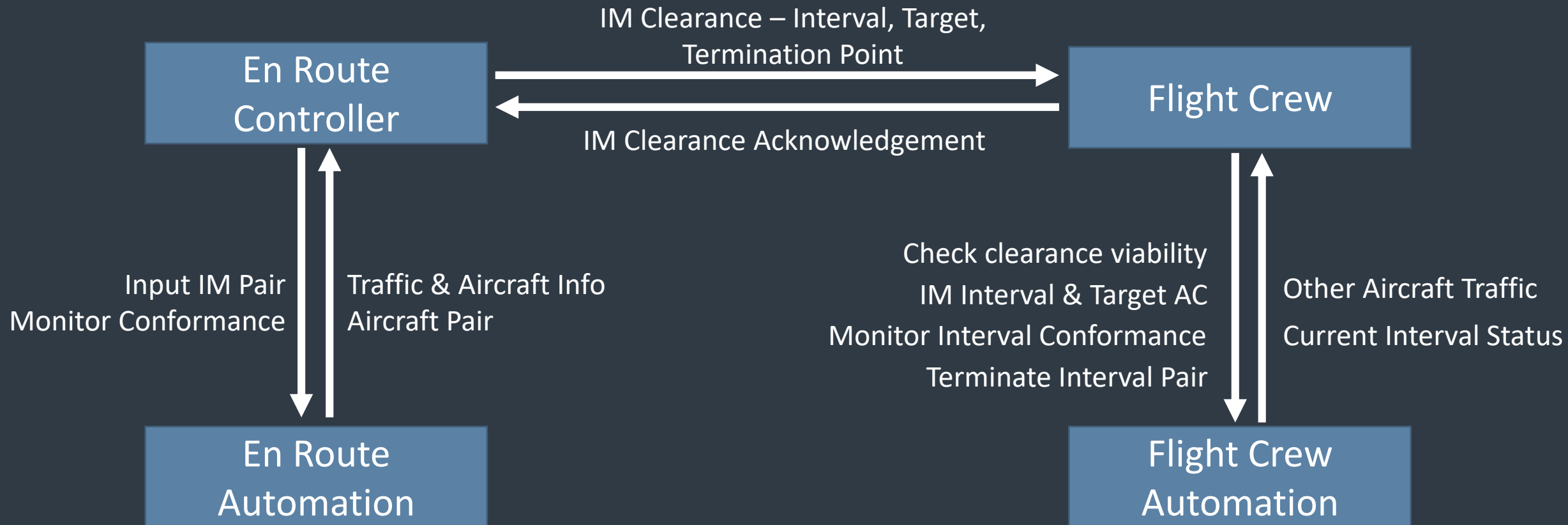
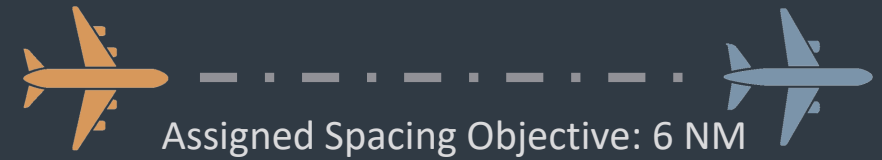
## Current Operations

- ATC utilizes speed instructions & vectors to maintain spacing
- Vectoring and speed instructions may create system inefficiencies
- Flight crews may not be aware of controllers purpose or plan

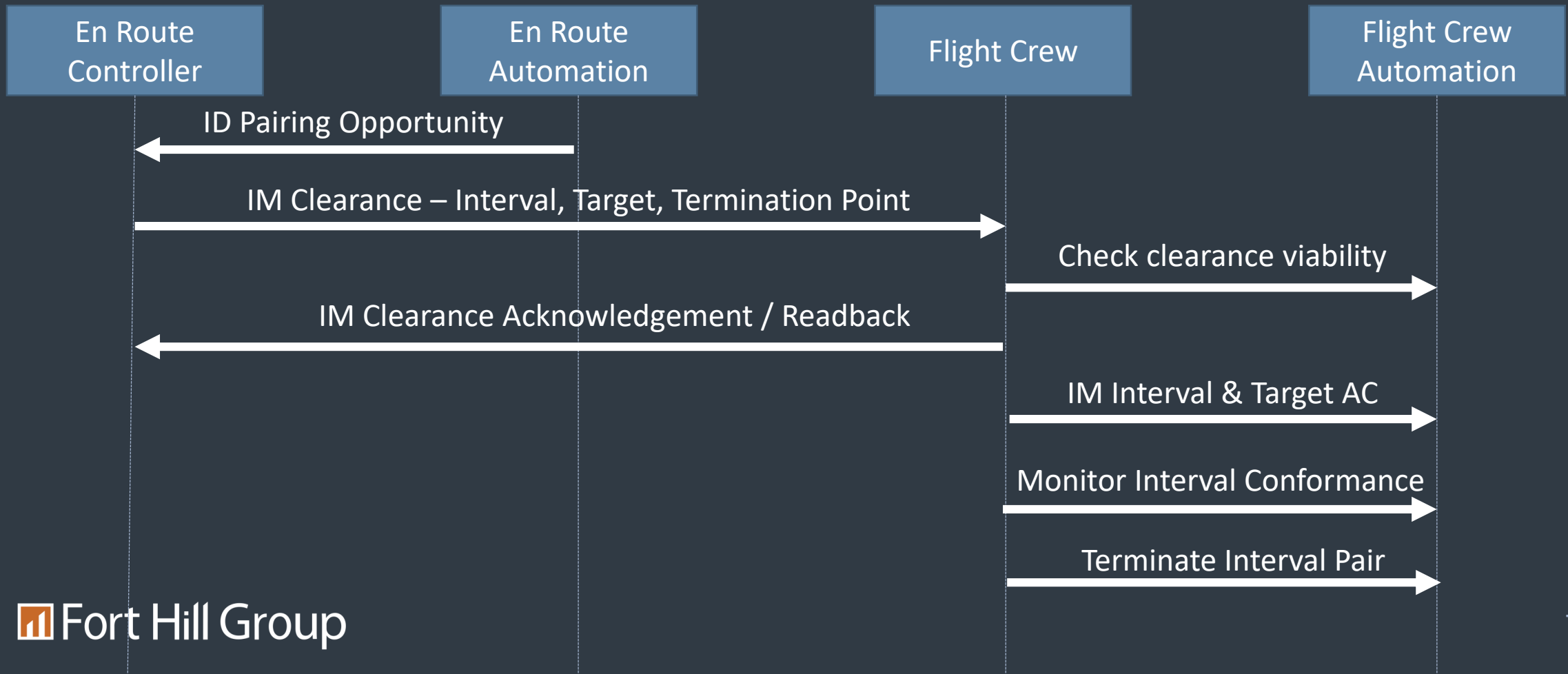
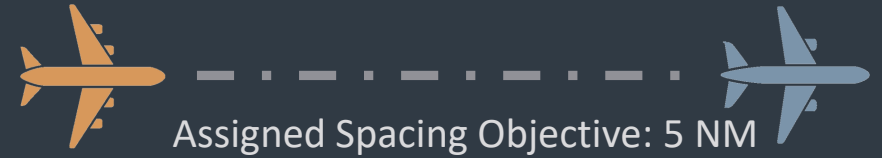
## Future Operations

- ATC assigns eligible aircraft pairs an interval management clearance
- Trailing flight crew will maintain an assigned interval behind lead aircraft
- Capability utilizes ADS-B in/out capabilities & advanced avionics

# Interval Management

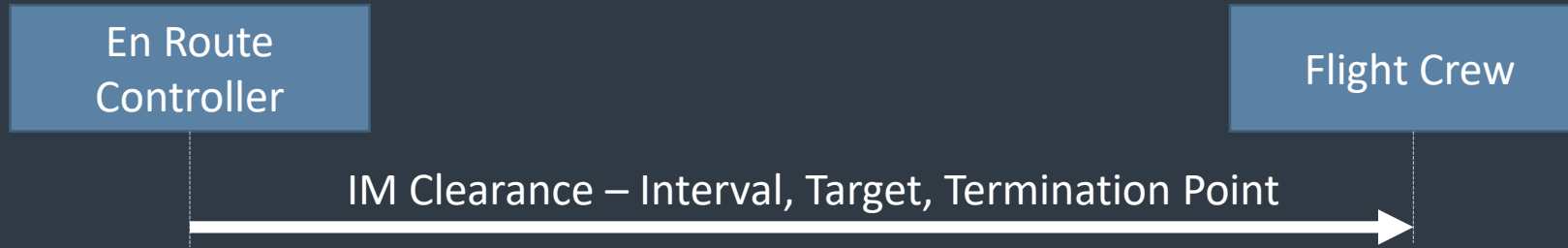
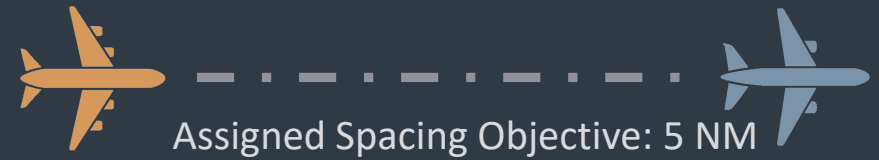


# Interval Management





# Interval Management



- ▶ Task-specific KSA impacts
- ▶ Sources of human-system resiliency
- ▶ Emerging risks
- ▶ Post-implementation performance measures



# Key Takeaways

HOST identifies key intersection points between task impacts, risks, and training opportunities

HOST may be used to revalidate and/or evolve an existing training platform

Guides the use of safety performance indicators & post-implementation alerting thresholds



# THANK YOU



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Fort Hill Group provides strategic guidance, analysis, and training to empower organizations to improve human performance and reduce operational risks.

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