

ATC Advisory System for the Prevention of Bird Strikes

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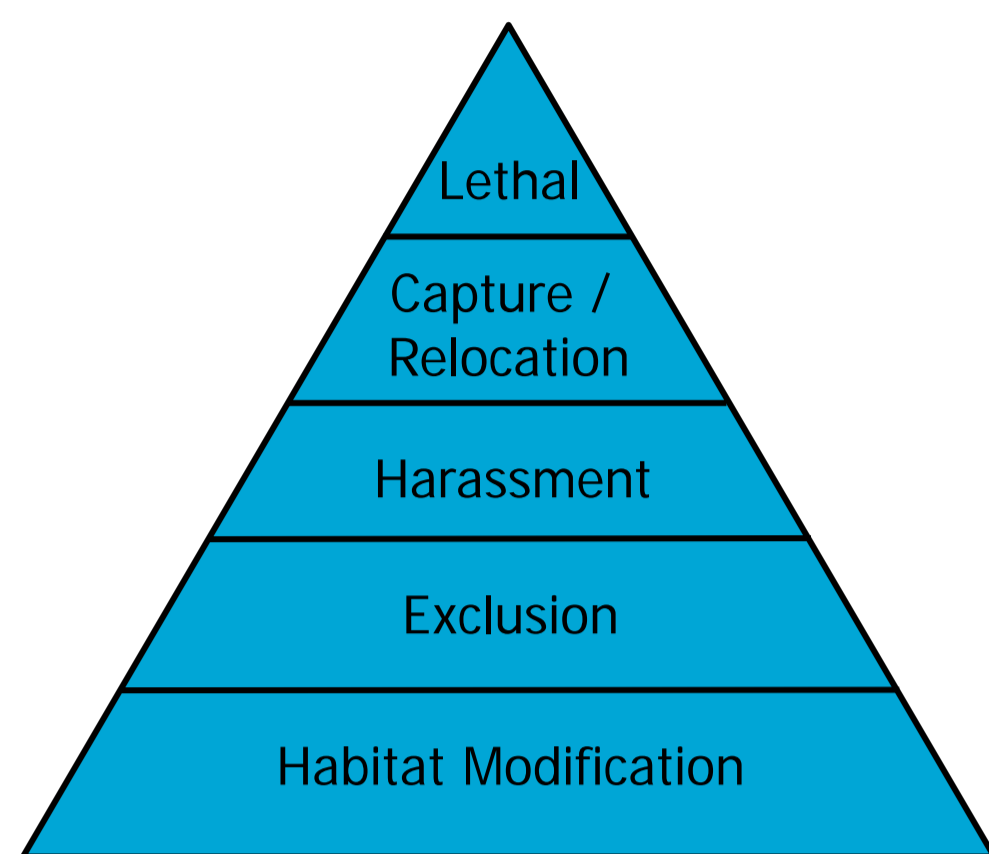
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ATC Advisory System for the Prevention of Bird Strikes

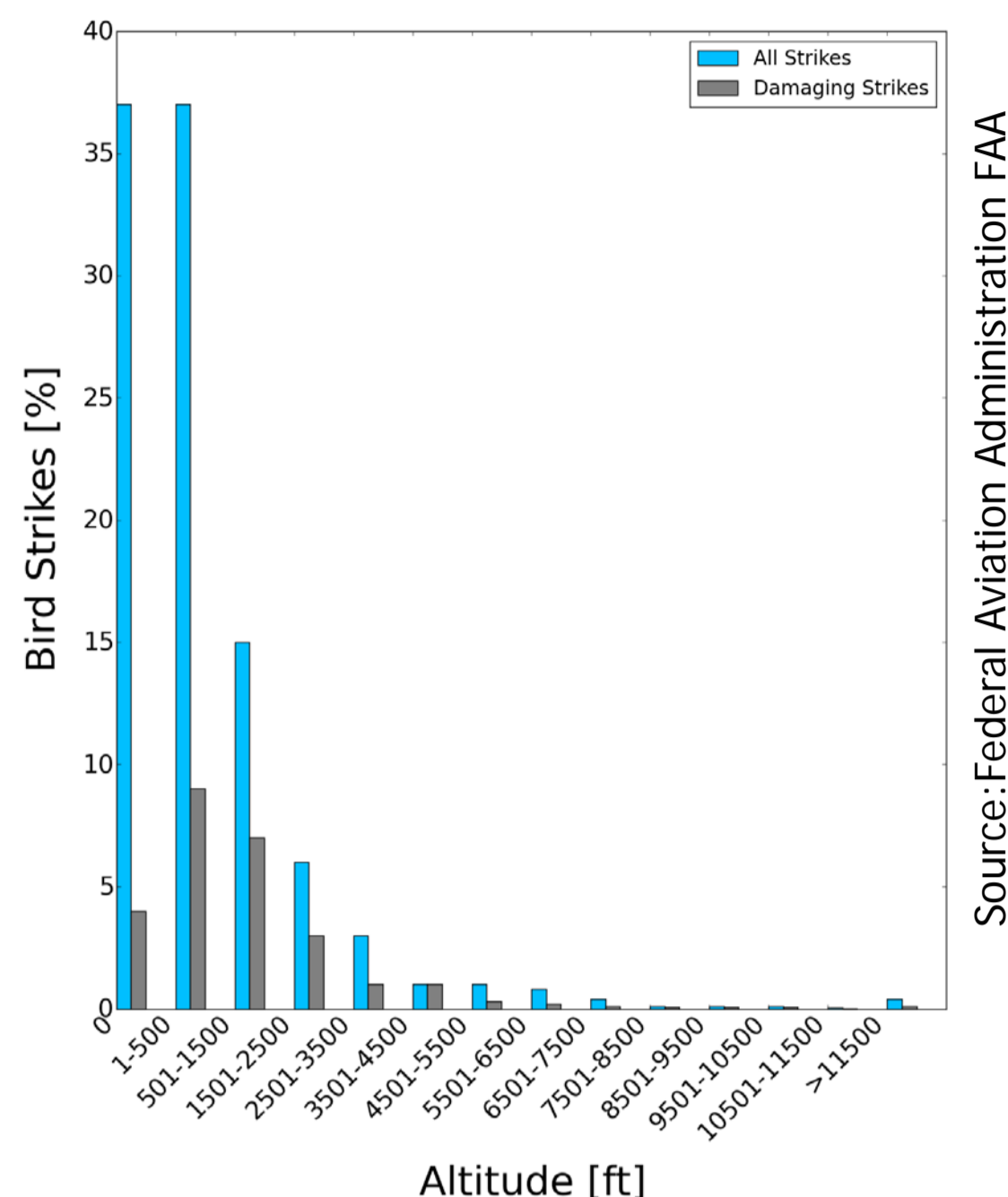
Isabel Metz, Joost Ellerbroek, Thorsten Mühlhausen, Dirk Kügler, Jacco M. Hoekstra

Current Bird Strike Hazard Mitigation Measures at Airports



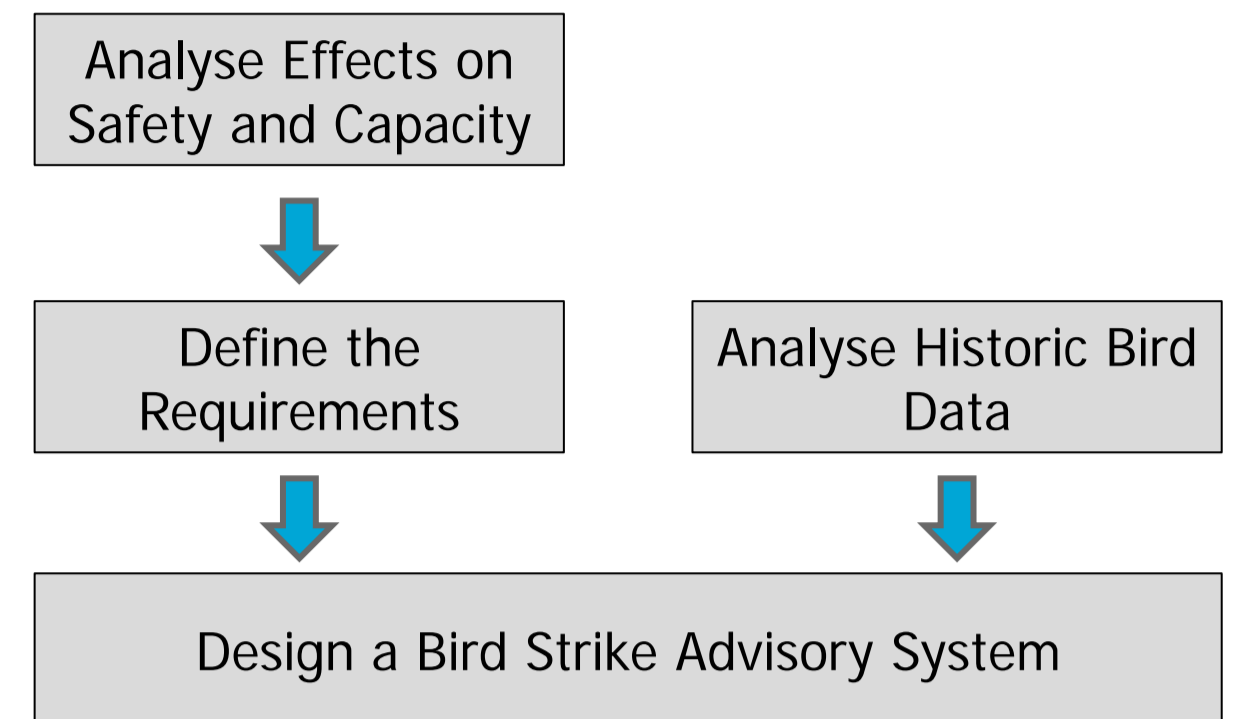
- carried out exclusively by the Wildlife Control Unit
- habituation to the measures
- geographically limited

Current Situation



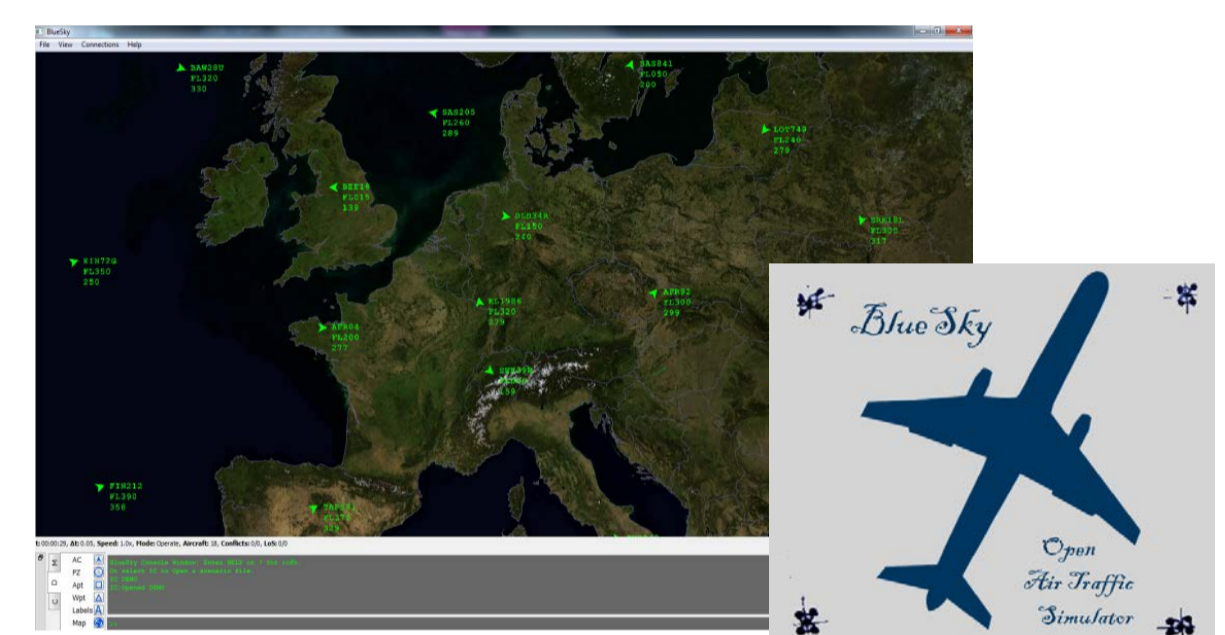
- delays and operational impacts
- costs of ca. one billion US\$ per year for commercial aviation worldwide
- increasing risk due to increasing bird populations and rising air traffic
- **a threat to aviation safety**

Approach

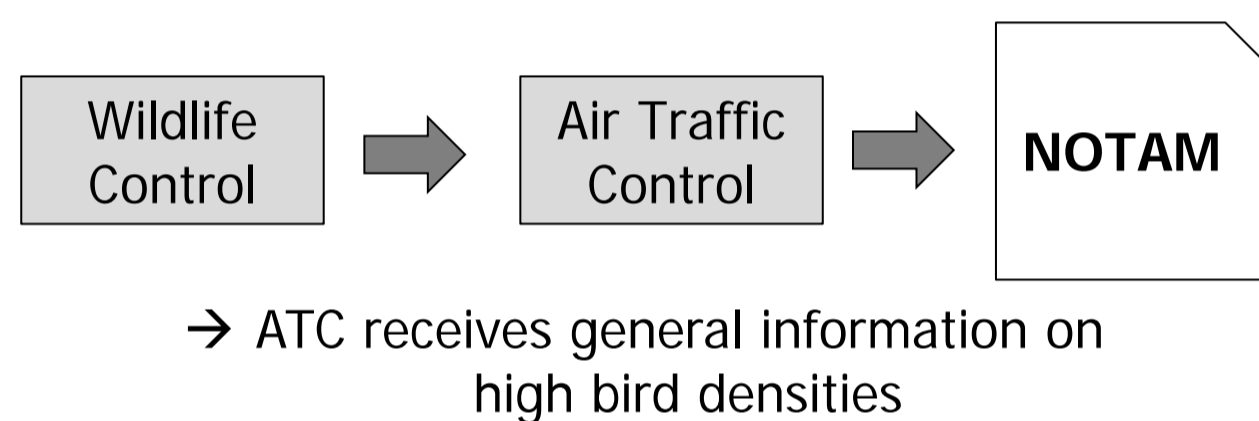


Method

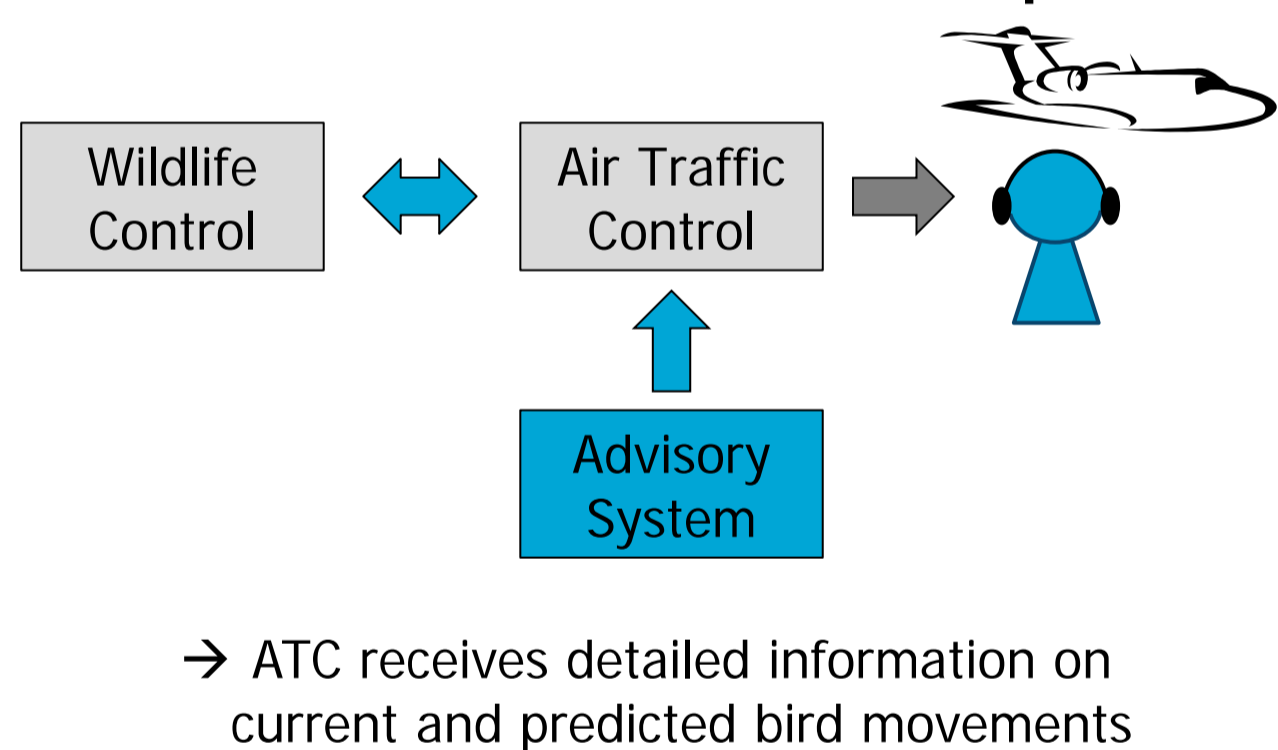
fast-time simulations using the BlueSky Open Air Traffic Simulator



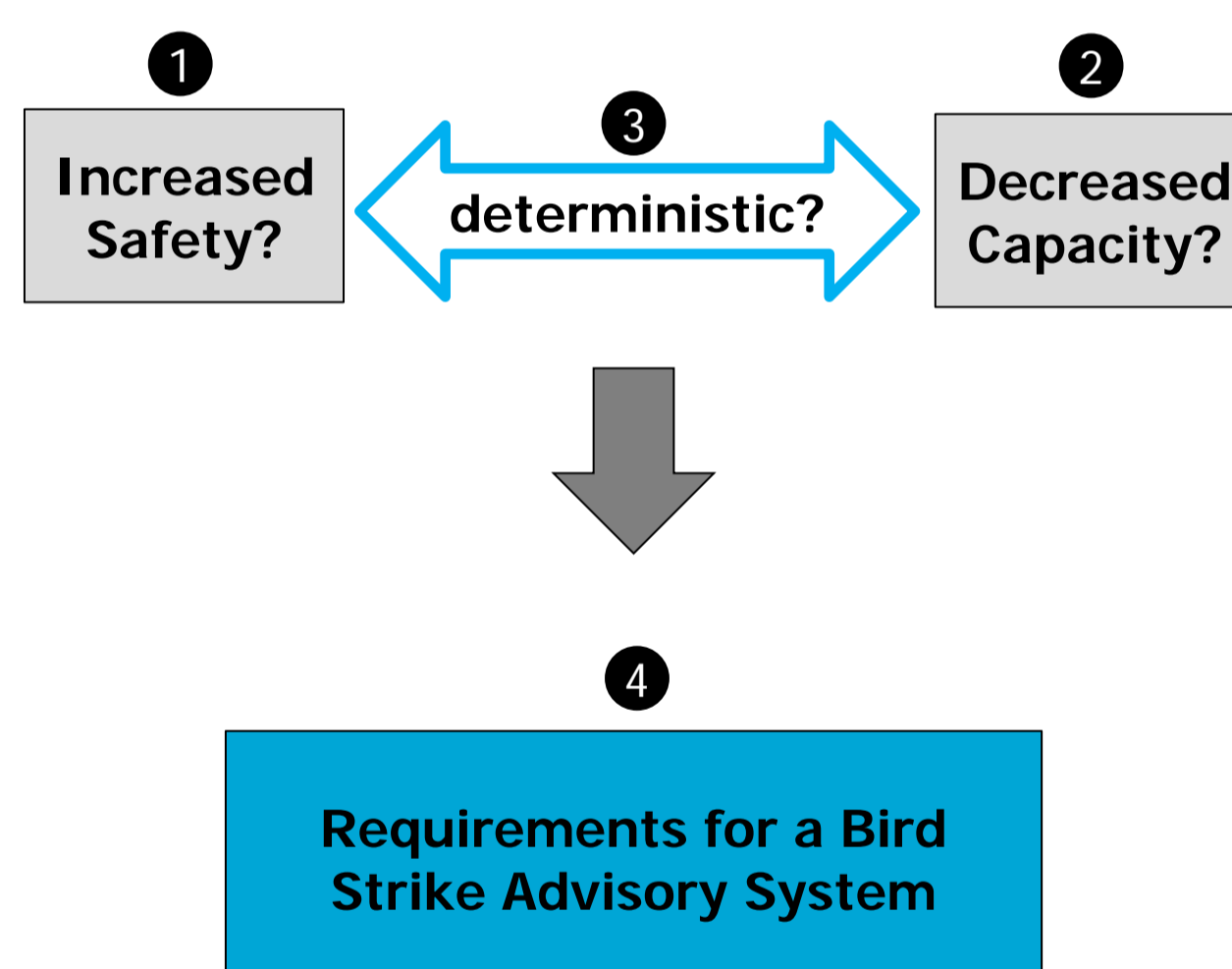
Current Information Flow at Airports



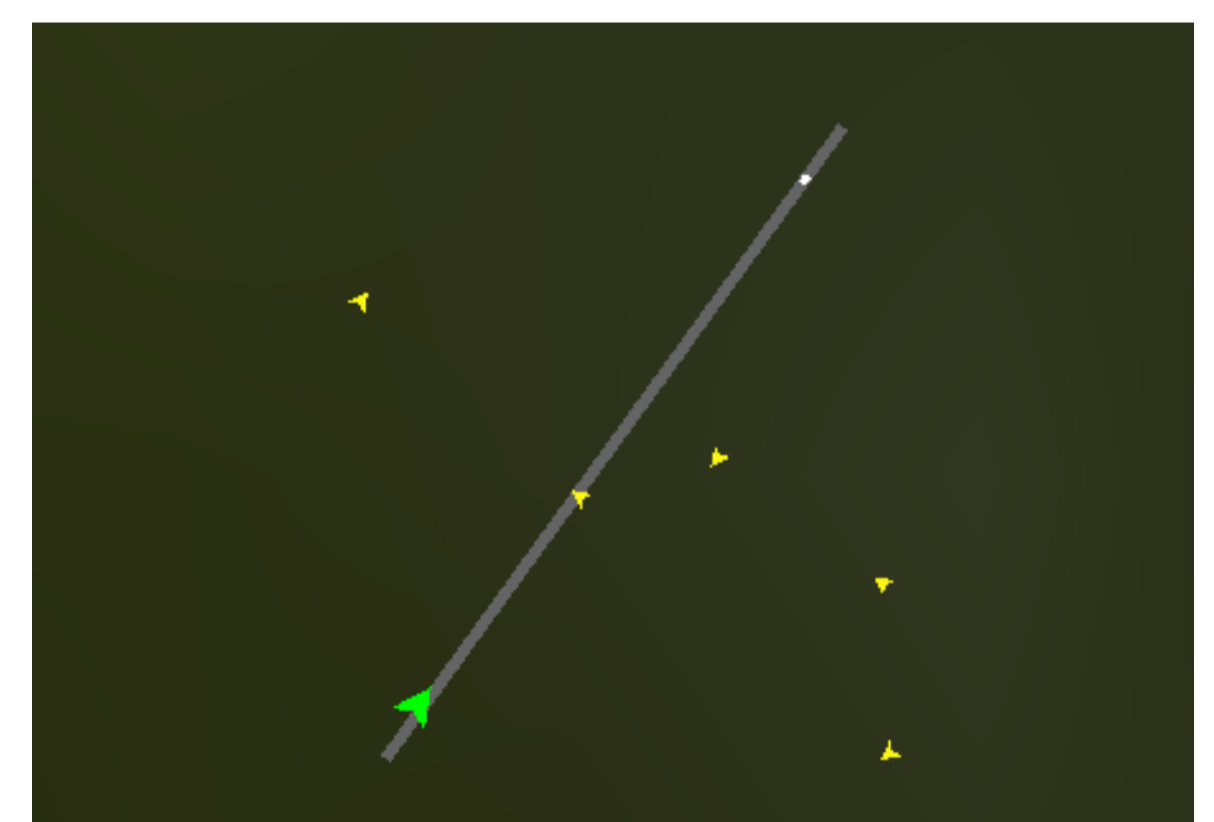
Intended Information Flow Airports



Four Main Research Questions

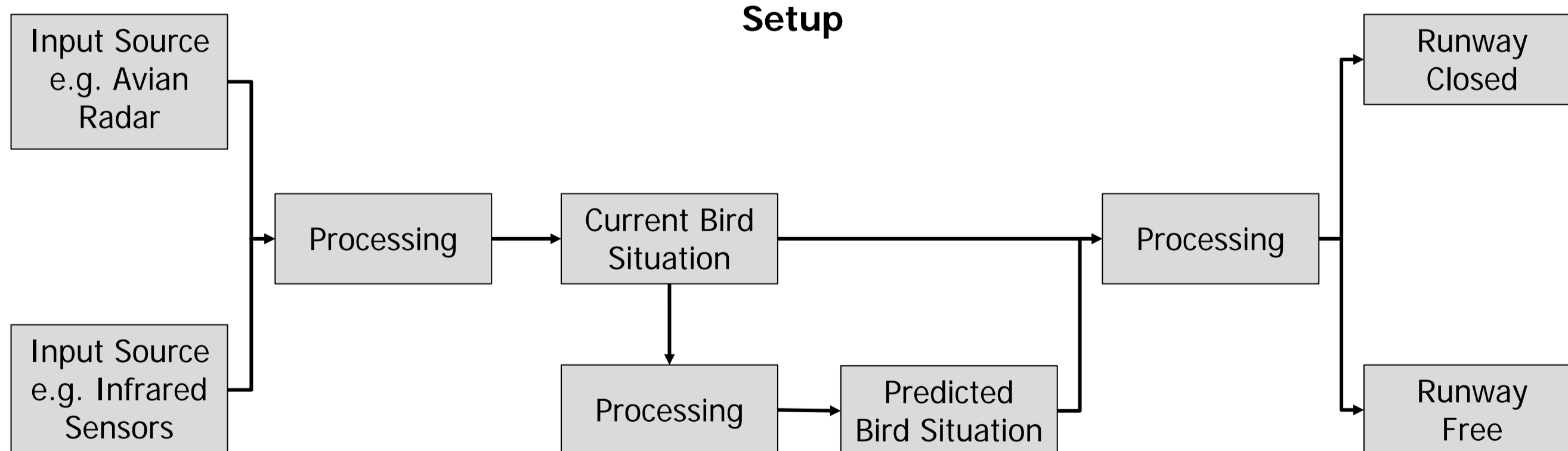


Scenario Screenshot



air traffic in green, bird traffic in yellow

Setup

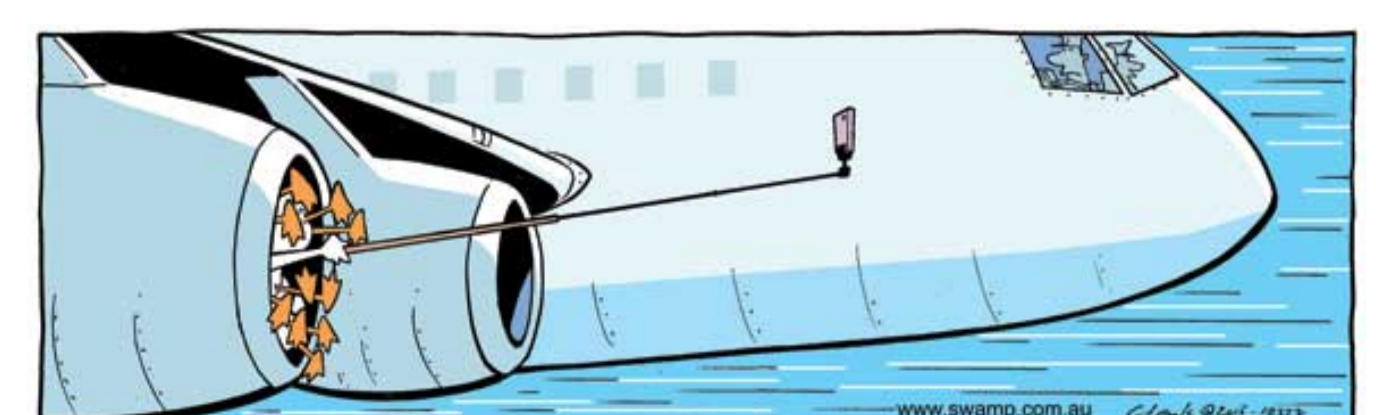


Simulation Variables

Birds <ul style="list-style-type: none"> • Size • Number • Predictability 	Environment <ul style="list-style-type: none"> • Season • Visibility • Topography
Aircraft <ul style="list-style-type: none"> • Size • Performance Characteristics 	Airport <ul style="list-style-type: none"> • Traffic intensity • Runway Direction & Configuration

Key Literature

- Dolbeer, R. (2013). The history of wildlife strikes and management at airports. In *Wildlife in airport environments. Preventing animal-aircraft collisions through science-based management* (pp. 1-6). Baltimore, MD, USA: The John Hopkins University Press.
- Mckee, J., Shaw, P., Dekker, A. & K. Patrick (2016). Approaches to Wildlife Management in Aviation. In *Problematic Wildlife. A Cross-Disciplinary Approach* (pp. 465-488). Cham, Switzerland: Springer.
- Thorpe, J. (2016). Conflict of Wings: Birds Versus Aircraft. In *Problematic Wildlife. A Cross-Disciplinary Approach* (pp. 443-464). Cham, Switzerland: Springer.



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