CIVIL AVIATION
Wireless Communication and Radar Planning

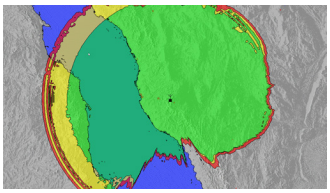
When it comes to air traffic, safety is priority number one, especially when it involves radio-based transfer and data communication. To ensure optimal safety, 100% coverage and minimal interference is essential. During the planning stage, you need analysis and computational tools that meet the strictest criteria. Altair® Feko®, Altair® WRAP™, and Altair® WinProp™ are the best tools for the job.

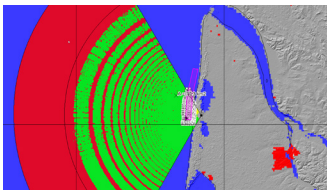
Intuitive Workflows, Comprehensive Results, Actionable Insights

As the volume of air traffic continues to increase, so does the load on air traffic control systems. Lack of frequency spectrum, full coverage for radio communication, navigation, and airspace surveillance are critical factors that require handling with capable simulation tools.

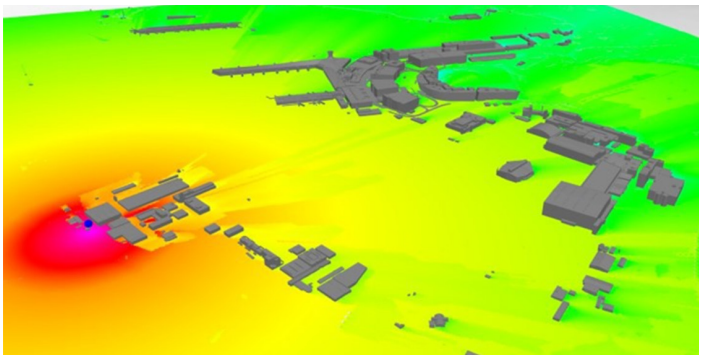
THE ULTIMATE GOAL IS SAFE COMMUNICATION. ACCURATE ANALYSIS AND PLANNING ENSURES THAT SAFETY.

Leverage WRAP for easy management of radio communication coverage in air traffic control, frequency assignment to minimize interference, collocation interference scenarios, optimal frequency usage, and required radar coverage of airspace.

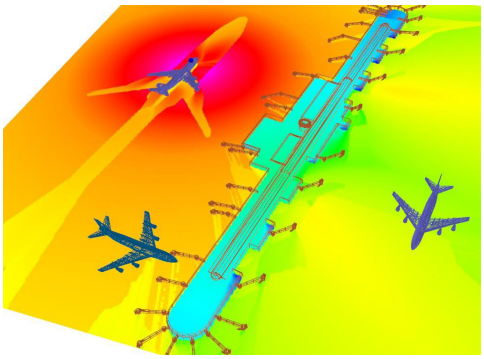




TOP: Ground control station coverage over mixed terrain/sea environment **BOTTOM:** Radar coverage for areas containing wind turbines



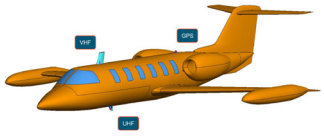
Airport GBAS radio coverage



Simulated high-precision landing at an airport

High-Precision Automatic Landing at Complex Airports

The ground-based augmentation system (GBAS) landing system is a global navigation satellite system (GNSS) that transmits corrected GNSS data to aircrafts, enabling them to fly a precision approach with much greater flexibility. Air traffic control teams can leverage WinProp to verify GBAS radio coverage at different heights on and around major airports. On a broader level, teams can simulate "what-if" landing scenarios, such as new towers or docks that might be planned for the airports, and gain insight into the resulting impact on radio coverage. Simulation results can reveal the best locations for new structures and indicate any needed GBAS station design modification.

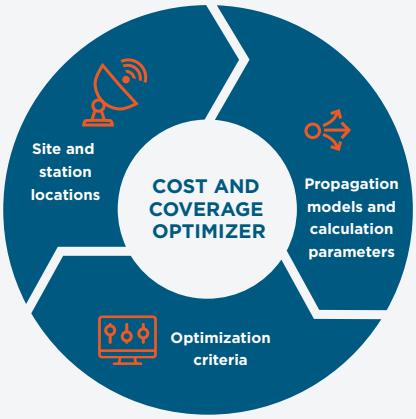


Co-site/collocation interference

Short- and Long-Range Management

WRAP is the ideal solution for long-range radio and radar network planning as well as frequency assignment and interference analysis. For short- to medium-range wireless network planning, antenna design, and placement, Feko and WinProp offer all the required modules with sophisticated features for more detailed analysis.

Please visit **Altair Feko applications** for further details.



Experience streamlined planning and efficient spectrum utilization for site/station locations.

Leveraging advanced calculation parameters and propagation models, WRAP empowers users to tailor and optimize their radio and radar networks according to their unique technical, operational, and financial needs.

Cost and Coverage Optimizer makes possible automatic, cost-and-coverage-optimized placement of base stations to cover a specific area.

Learn more at **altair.com/wrap-applications**