



## PUBLIC SAFETY Critical Network Planning

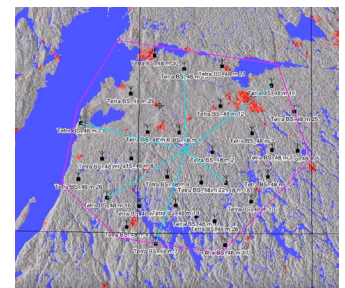
Diverse radio communication systems in public safety services, or common modern technology – Altair® WRAP™, an Altair® Feko® component, handles them all. It incorporates functions that support the radio planning process for public safety, with a variety of HF/VHF/UHF and microwave systems. Cost and coverage optimization ensures the best network for the budget.

### Intuitive Workflows, Comprehensive Results, Actionable Insights

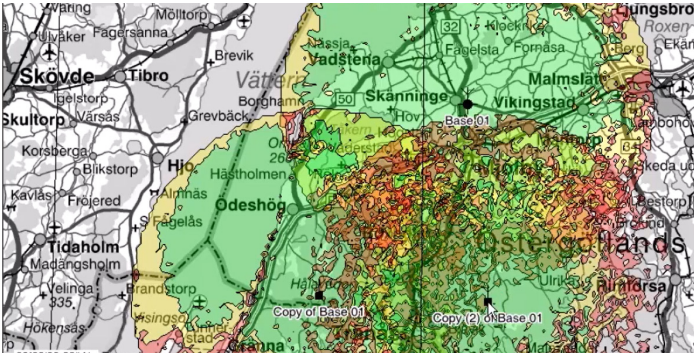
Radio communication networks for public safety need to be planned and designed for very good coverage, capacity to cope with special events, and redundancy for high availability. WRAP is comprehensive software, ideally suited for public safety applications.

**WHENEVER THERE ARE LIVES AT STAKE, DON'T TAKE ANY CHANCES WITH SUBOPTIMAL RADIO COMMUNICATIONS. PLAN YOUR NETWORKS WITH THE BEST SYSTEM.**

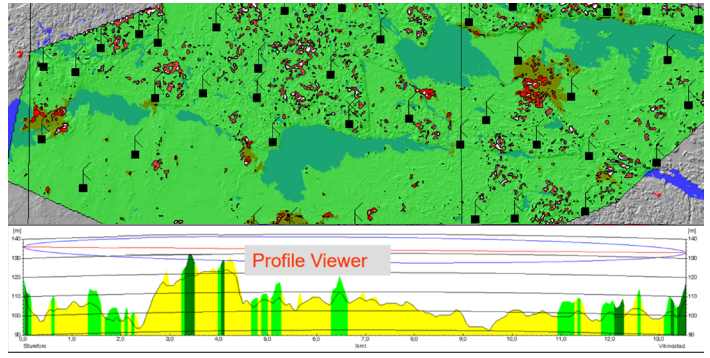
Establishing an area-covering radio network requires careful planning to ensure optimum location of the base stations, repeaters, and backbone microwave links. The available frequency spectrum is small. The integrated tools of WRAP allow optimization of the network with respect to cost, coverage, and spectrum utilization to achieve the most stringent requirements.



TETRA station locations proposed by cost and coverage optimizer

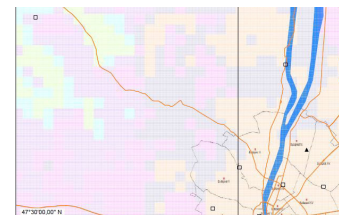
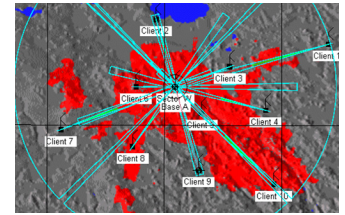


Overlapping view of radio coverage of three base stations

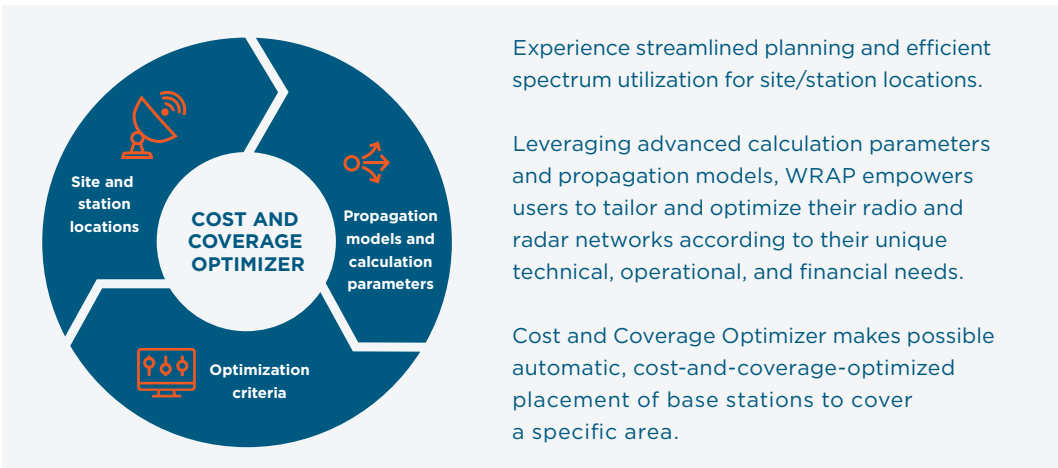


**TOP:** Proposed base station locations from Cost and Coverage Optimizer **BOTTOM:** Profile viewer for point-to-point scenarios

WRAP's efficient tools give a cost-effective network design with minimal manpower effort. WRAP can handle several databases containing information on stations, technical characteristics, and frequency allocations/allotments/assignments. Collocation interference calculations account for all interference types encountered on small platforms and deployments. In addition, WRAP can perform remote interference calculations, accounting for interference between stations that are widely separated. Radio coverage calculations can be defined along roads and/or railways, while automatic and manual frequency assignment is also possible inside WRAP. Backbone network planning and microwave link performance analysis can be carried out with dedicated tools inside WRAP. Support for geographical data for propagation calculations and map displays adds to the accuracy of system design and simulation.



**TOP:** Point-to-multipoint map showing clients associated with a base station **BOTTOM:** TETRA map showing number of servers (yellow: 2, pink: 3, green: 4, blue: 6)



WRAP is the ideal solution for long range radio network planning as well as frequency assignment and interference analysis. For short- to medium-range wireless network planning, antenna design, and placement, Altair® Feko® and Altair® WinProp™ offer all the required modules with sophisticated features, also for the 5G network planning in urban and indoor scenarios.

Please visit [Altair 5G Design](#) for further details.

Learn more at [altair.com/wrap-applications](http://altair.com/wrap-applications)