

# Platform RF Performance

OPTIMISING ANTENNA SYSTEMS IN REAL-WORLD  
OPERATIONAL ENVIRONMENTS

Defence platforms create RF complications — curved structures, crowded topsides, and mission-specific modifications all affect installed system performance.

**Predict and optimise before testing** with fast, validated simulation software to place antennas with confidence, reduce costly trial-and-error, and ensure mission-ready performance across air, sea, and land environments.

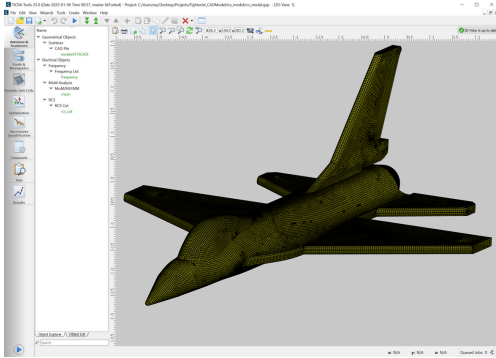
$$T_{1mn}(k_x, k_y, z) = \frac{e^{ik_z z}}{k_z} \frac{(-i)^{n+1}}{\sqrt{\eta} \sqrt{n(n+1)}} Y_n^m(\alpha, \beta)$$



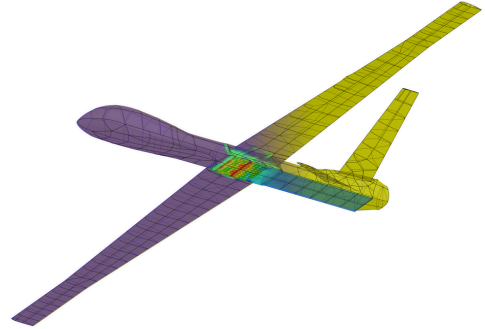
TICRA for defence

# From platform geometry to mission-ready performance

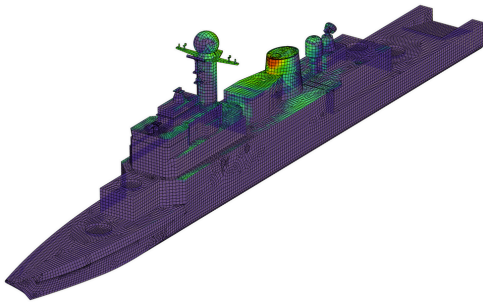
ACCURATE ELECTROMAGNETIC SIMULATION FOR ANTENNAS INSTALLED ON COMPLEX DEFENCE PLATFORMS — FROM GROUND VEHICLES TO SHIPS AND AIRBORNE SYSTEMS.



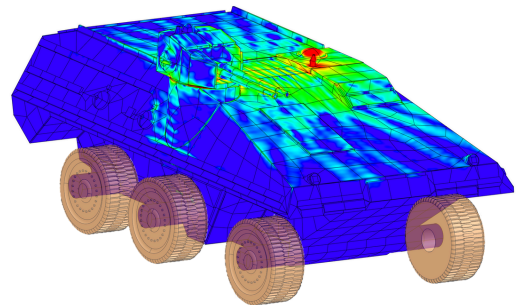
Airborne integration — Beam distortion and coverage from fuselage/fairing effects.



Coexistence — Coupling/isolation between radar, comms and EW prior to field tests.



Naval installations — Mast/topside scattering; isolation on crowded decks.



Ground vehicles — Blockage/interference from armour kits, turrets and mission modules.

## Operational advantages

- **Speed** – Rapid scenario setup with CAD integration and automated meshing
- **Accuracy** – Full-wave and hybrid solvers capture complex platform effects
- **Cost-efficiency** – Reduce physical testing and rework
- **Mission-readiness** – Confidence in system performance before deployment

## Key Platform simulation capabilities

- Full-wave & hybrid solvers for installed antenna analysis
- Accurate in-situ predictions with embedded element patterns
- Model blockage, scattering & coupling from real geometry
- Assess isolation (S-ij) & system coexistence
- CAD import & meshing for complex platforms
- Evaluate coverage, isolation & scan performance across bands

## Our software

TICRA's simulation platforms bring together industry-leading solvers and workflows for installed antenna performance. Built on decades of electromagnetic expertise, they are used by defence contractors and agencies worldwide to meet demanding mission requirements.

Assess installed performance before testing -  
[www.ticra.com/defence](http://www.ticra.com/defence)