MISPEC

MERIT OF INDIVIDUAL SYSTEMS PERFORMANCE CHARACTERISTICS

IFF System Performance Modelling

As a leader in engineering and technology within the defence industry, at Plextek we have a rich heritage of solving complex problems for over three decades. We are committed to enabling the next generation of defence capabilities through our proven track record of novel concepts and technology innovation.

Plextek's MISPEC software enables IFF system performance modelling at the early stages of the development cycle. The MISPEC analysis tool predicts the uplink and downlink outage probabilities and link margins for an interrogator and transponder platform pair in a defined environment.

The invisible nature of electromagnetic waves presents considerable challenges in identifying optimal node placements for IFF (Identification Friend or Foe) systems. Our MISPEC (Merit of Individual Systems Performance Characteristics) Software is a critical tool in this landscape, offering advanced IFF system performance modelling capabilities.

Together with Plextek's antenna radiation pattern modelling capability it can be used to optimise IFF transponder installation on any platform: Air, Land and Sea.

Why MISPEC?

All NATO nations are mandated to switch to the Mode-5 standard IFF, which uses advanced cryptographic techniques to secure the systems against electronic deception by adversaries.

The use of Mode-5 standard IFF is vital when forces are operating together to ensure that air, land and naval crews can reliably recognise their allies.

Key Features of MISPEC Include:

» Early-stage Performance Evaluation: MISPEC enables the assessment of proposed IFF installations on any platform—air, land, or sea—against various interrogators throughout the defined operating envelope.

» Optimisation of IFF Installations: The software significantly speeds up testing and measurement processes, ensuring optimal IFF installation performance across all mission stages.

» Compliance with Mode-5 Standard: All NATO nations are mandated to transition to the Mode-5 standard IFF, utilising advanced cryptographic techniques to secure systems against electronic deception. MISPEC facilitates this transition by modelling and validating systems against these stringent requirements.

MISPEC achieves these outcomes by integrating electromagnetic simulation data with critical parameters, including propagation losses, transponder data, and operating envelope characteristics. This approach provides maximum performance of IFF systems, reinforcing EW strategies.