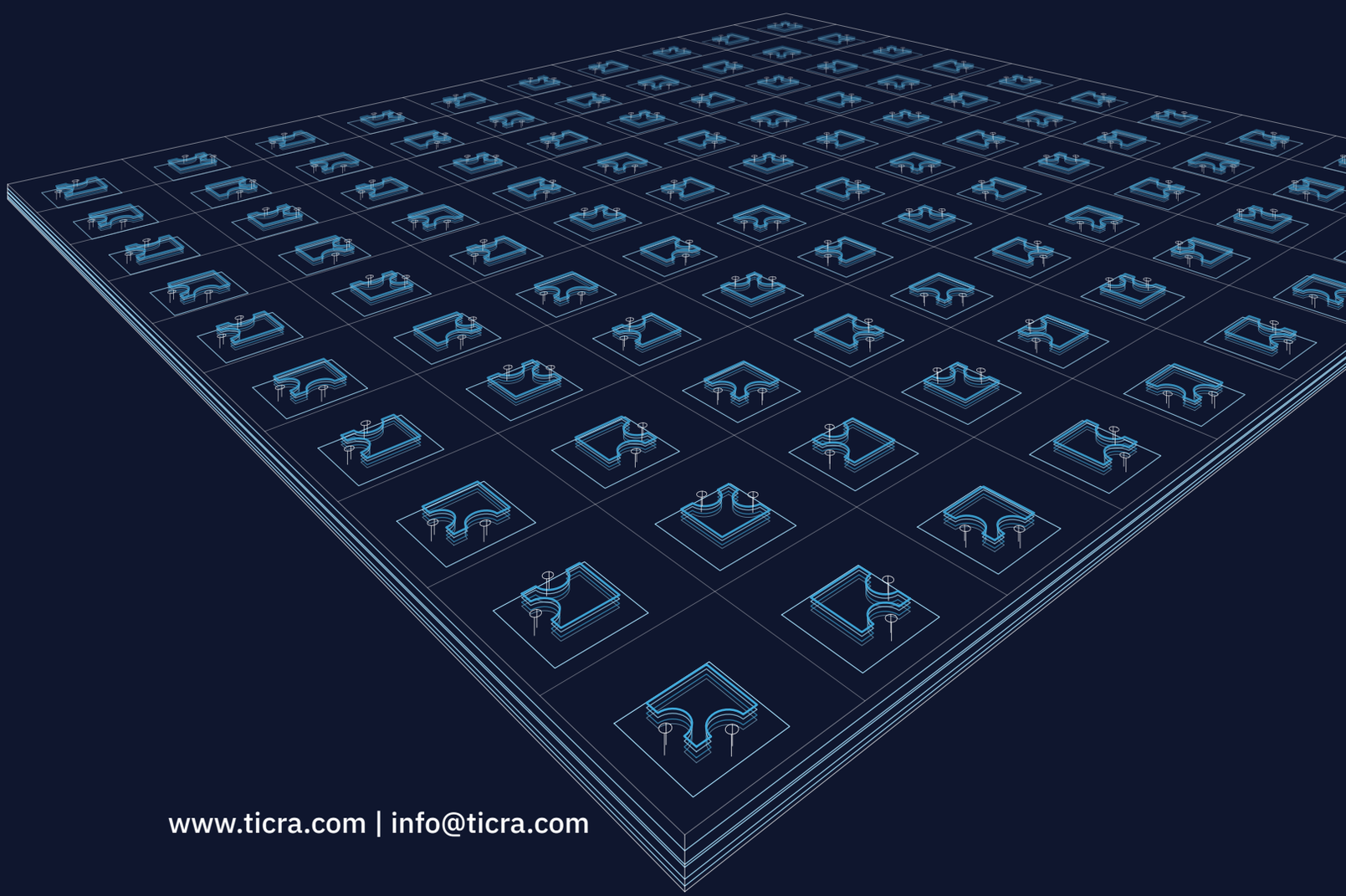
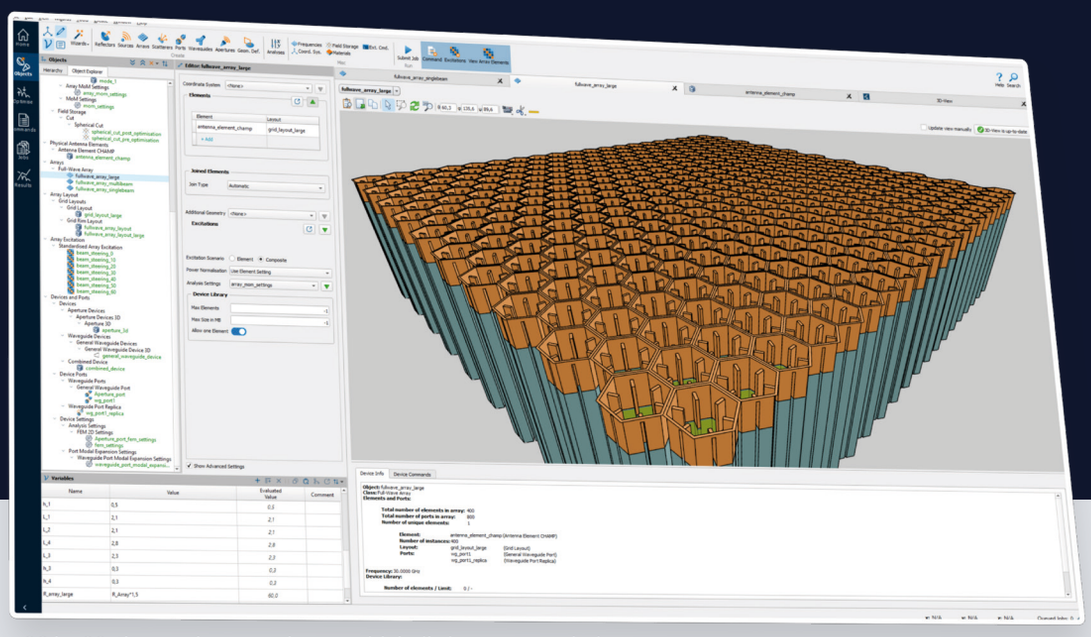
TICRA

ARRAY

Purpose-built software for design and analysis of phased array antennas: element design, fast full-wave analysis of large arrays, and built-in beamforming and optimisation.



www.ticra.com | info@ticra.com



20 by 20 element hexagonal array with built-in septum polarisers.
Analysed in 18 minutes using 25 GB RAM on an Intel Core i9-14900K

Unified Design Workflow for Modern Arrays

Modern phased-array antennas are central to next-generation radar, satellite, and communication systems. They must deliver precision, speed, and reliability, often under demanding mission conditions. From multilayer PCB designs to general 3D elements, each array must meet tight performance requirements while minimising development time and testing effort.

ARRAY is engineered to meet these challenges. It provides fast, full-wave analysis and built-in optimisation within one unified framework - enabling engineers to explore design trade-offs, validate and optimise array performance, and accelerate system-level development with confidence.

Scalable environment for advanced array design

PRODUCT CAPABILITIES

- Simulate large arrays using reduced computational resources
- Analyse elements in stand-alone or infinite-array configurations
- Perform beamforming and optimise on both element and array level
- Easily switch between analytical and full-wave analysis
- Use the Array Liveplot for fast synthesis and instant feedback

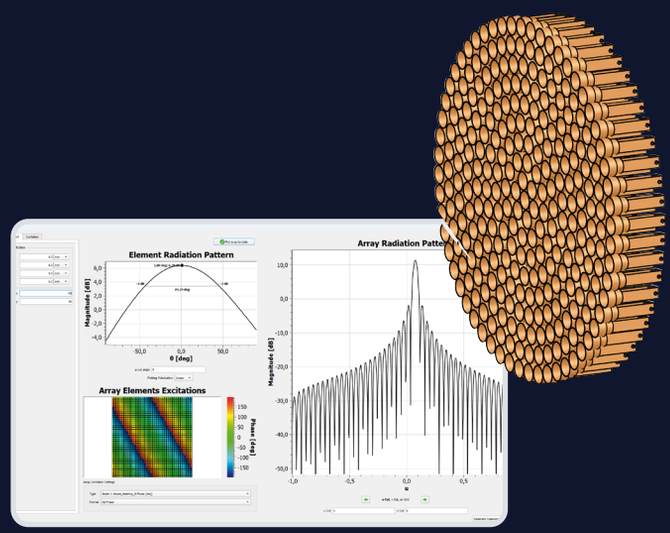
KEY TECHNICAL HIGHLIGHTS

- Define arrays with multiple element types and unlimited layout freedom
- Model advanced geometries, including multilayer PCB and horn arrays
- Reduce physical testing requirements with accurate full-wave prediction
- Shorten system-level simulation time through integration with other products in TICRA Tools

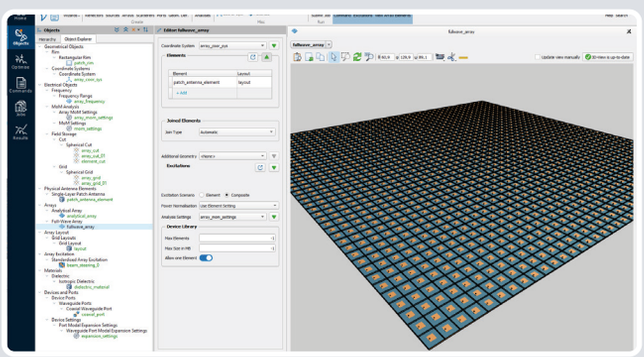
Why ARRAY and TICRA?

Purpose-built for fast, accurate, and unified array-antenna design.

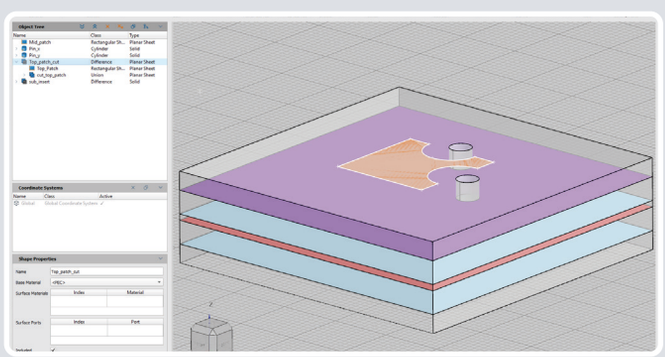
Backed by over 50 years of expertise in electromagnetic simulation and trusted by engineers developing mission-critical radar and communication systems.



Array Liveplot: Use it to perform quick system-level analyses with instant feedback.



Patch array: 40 by 40 element S-band SAR patch array. Modelled in 29 minutes using 71 GB RAM on an Intel Core i9-14900K.



Multi-layer patch: The fully parameterised CAD editor in ARRAY makes it easy to set up and optimise even complex array elements.

Technical highlights

ARRAY provides advanced full-wave and analytical capabilities for efficient, high-fidelity analysis of complex array structures.

Each feature is designed to combine speed, accuracy, and flexibility from the concept stage to final validation.

DESIGN AND MODELLING

- Library of predefined element types: Get started quickly with a library of easy-to-customise elements and wizards
- Parametric CAD editor: Build and modify 3D geometries with complete parametric control
- Array layouts: Use the predefined rectangular and circular layouts or individually define the position and orientation for each element, allowing full flexibility to also set up 3D layouts
- Array Liveplot for fast synthesis and immediate feedback on performance

ANALYSIS AND OPTIMISATION

- Full-wave simulation using Fast Direct Solver (FDS): Efficient analysis of large arrays with high numerical precision
- Optimised solvers: Dedicated capabilities for multilayered PCBs and radomes
- Horn array analysis: Accurate prediction of performance and coupling effects when combined with CHAMP 3D
- Optimisation: Built-in routines for beamforming and optimisation of geometry to meet both pattern and scattering-parameter goals

Integration with TICRA Tools

ARRAY integrates seamlessly with TICRA's portfolio for complete antenna-system simulation.

Combine ARRAY with GRASP for array-fed reflectors, CHAMP 3D for detailed feed-chain and horn array analysis, and ESTEAM for installed performance.

The result is a unified, consistent workflow — from element definition to system-level optimisation.

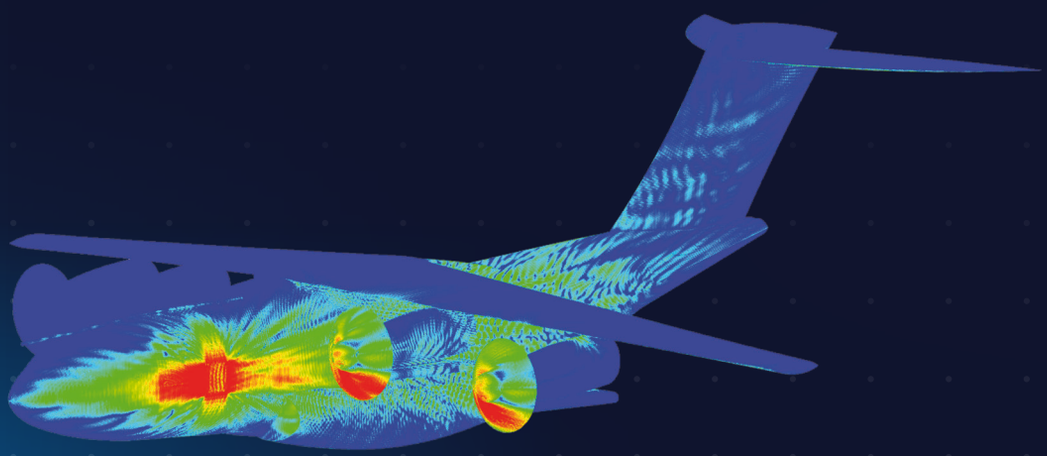
Get in touch

Advance your array design capabilities.

Discover how ARRAY enables accurate, scalable, and unified simulation workflows.

Request a demo or discuss your application with a TICRA engineer.

www.ticra.com/software/array/
info@ticra.com



40 BY 40 ELEMENT S-BAND SAR ARRAY MOUNTED ON AIRBUS A400M.
ANALYSED IN 56 MINUTES USING 98 GB RAM ON AN INTEL CORE I9-14900K

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