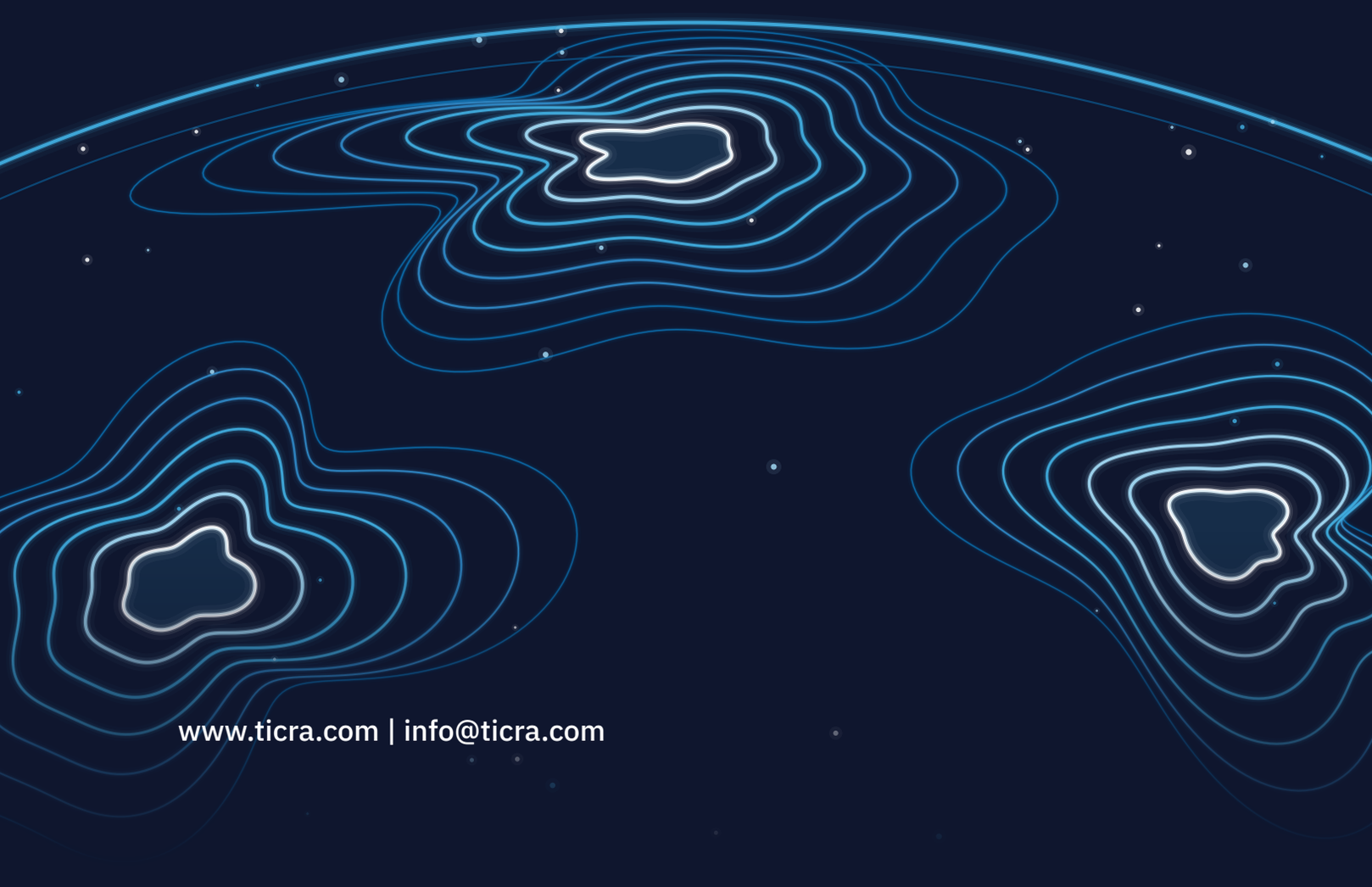
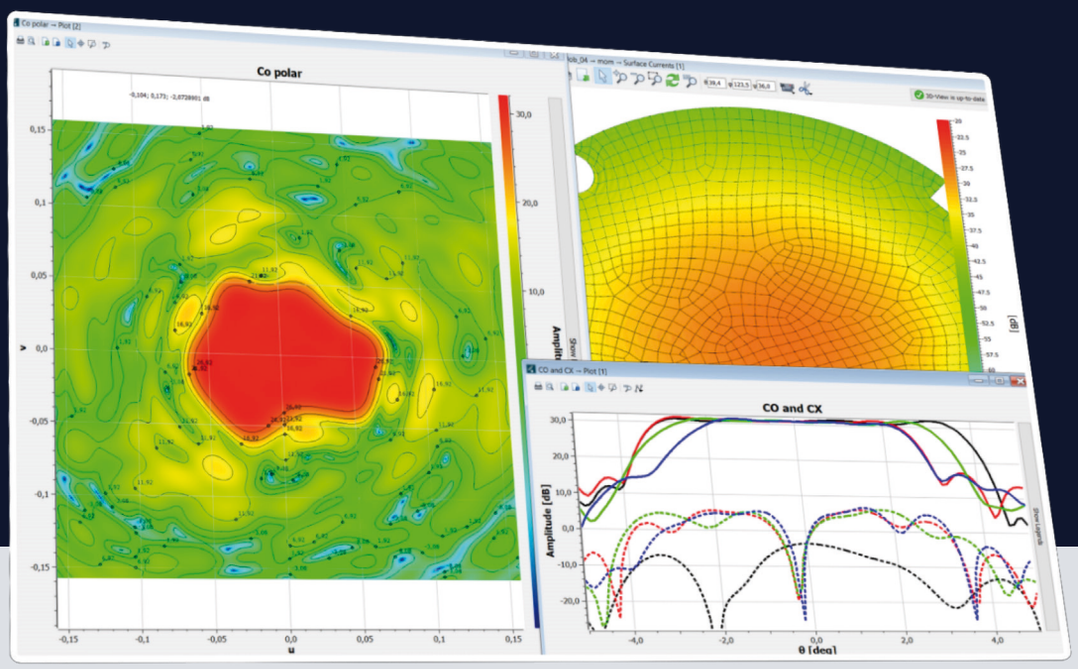
TICRA

POS

The industry standard for reflector shaping and array optimisation: design advanced payload antennas for contoured beams, high-throughput satellites and array-fed systems.



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Design Advanced Payload Antennas with Confidence

Communication satellites depend on antennas whose beams match their service areas, with high gain across the coverage and strong isolation outside it. High-throughput satellites add many spot beams and carrier-to-interference requirements, and flexible payloads add arrays and digital beam-forming.

POS is TICRA's dedicated software for this task. It shapes single-, dual- and multiple-reflector systems, optimises array layouts and excitation coefficients, and combines both for array-fed reflectors, fast and efficiently even for very complex systems.

Manufacturing and payload constraints are included directly in the optimisation, and shaped surfaces are exported to CAD.

From coverage requirement to optimised payload antenna

PRODUCT CAPABILITIES

- Shape single-, dual- and multiple-reflector systems for contoured beams
- Define beam shapes with built-in templates or SATSOFT station files
- Set up arrays with full freedom of element positions and orientations
- Optimise array layout and excitation coefficients
- Export shaped reflector surfaces to CAD

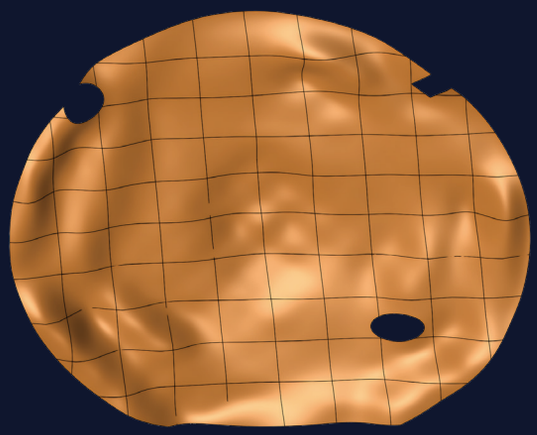
KEY TECHNICAL HIGHLIGHTS

- Industry standard for contoured-beam reflector design
- Dense and sparse arrays with identical or unique elements
- Excitation constraints representing DBF performance
- Dedicated goals for HTS antennas, including C/I
- Excitations optimised for several reflector shapes and thermal conditions
- Curvature, envelope, feed-position and dynamic-range constraints

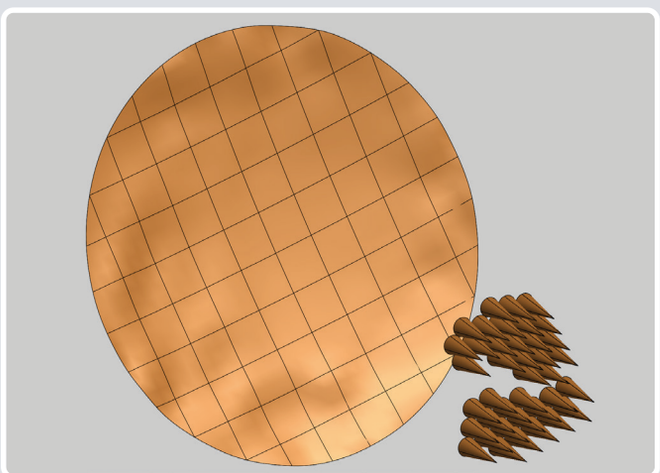
Why POS and TICRA?

Reflector shaping was born at TICRA in the early 1980s, and for decades POS has been the state-of-the-art software for designing contoured-beam payload antennas.

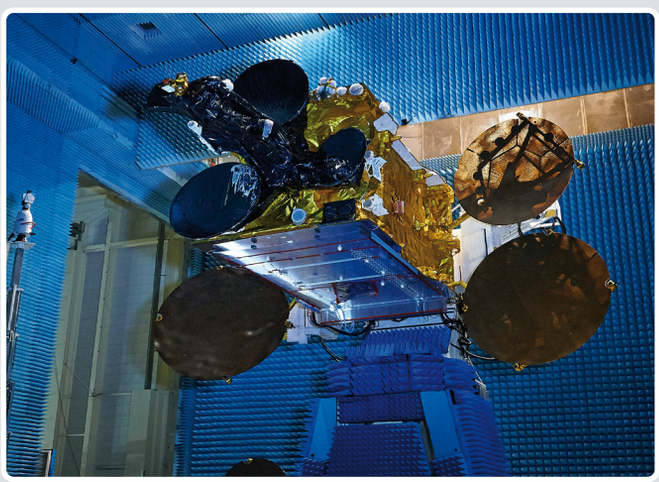
The vast majority of shaped antennas launched into space have been designed with POS, and the software is thoroughly tested by the space industry.



Contoured beams without beam-forming networks.
POS shapes reflectors from conventional paraboloids to match the desired Earth coverage.



Array-fed reflector optimised in POS.



Shaped reflector for Earth coverage applications.

Technical highlights

REFLECTOR SHAPING

- Single- to multiple-reflector systems
- Reflector diameter, offset and angle between foci
- Manufacturing and envelope constraints

ARRAY OPTIMISATION

- Direct-radiating arrays
- Array-fed reflectors
- Dense and sparse layouts
- Digital beam-forming constraints
- Simultaneous element and excitation optimisation

ADVANCED APPLICATIONS

- Contoured-beam communication satellites
- High-throughput satellites
- Multi-beam payloads
- Reconfigurable payloads
- Coverage and isolation requirements

Integration with TICRA Tools

Combine POS with CHAMP 3D for accurate horn modelling, ARRAY for detailed analysis of array elements, ESTEAM for scattering analysis of the optimised design, GRASP for more detailed reflector analysis, UQ to quantify the effect of manufacturing tolerances, and SATSOFT for quick generation of satellite coverage areas.

The result is one consistent environment, from coverage requirements and reflector shaping to full antenna-system analysis and validation.

Get in touch

Advance your payload antenna design capabilities.

Discover how POS takes contoured-beam, HTS and array-fed antennas from coverage requirement to optimised design.

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

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