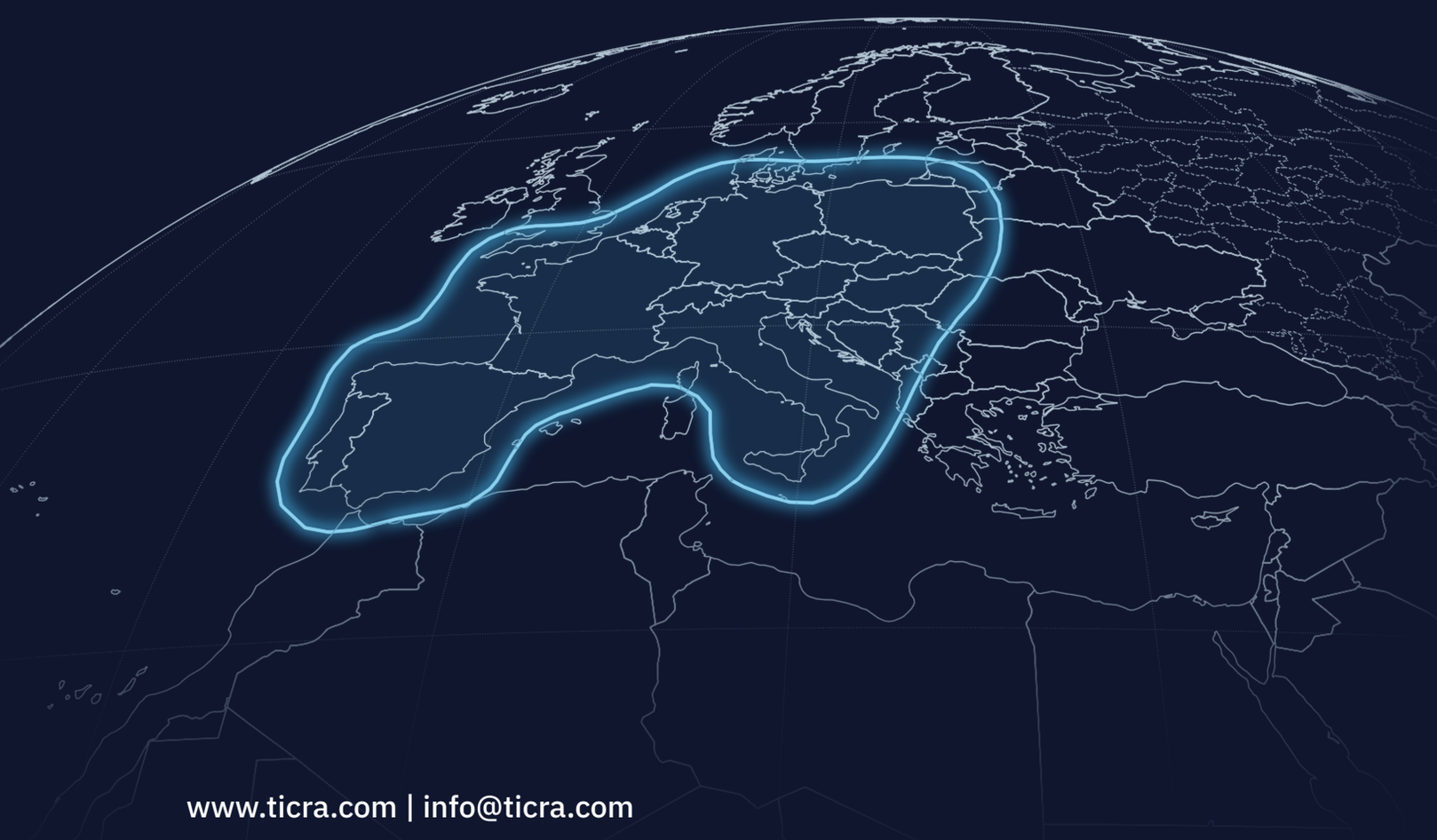
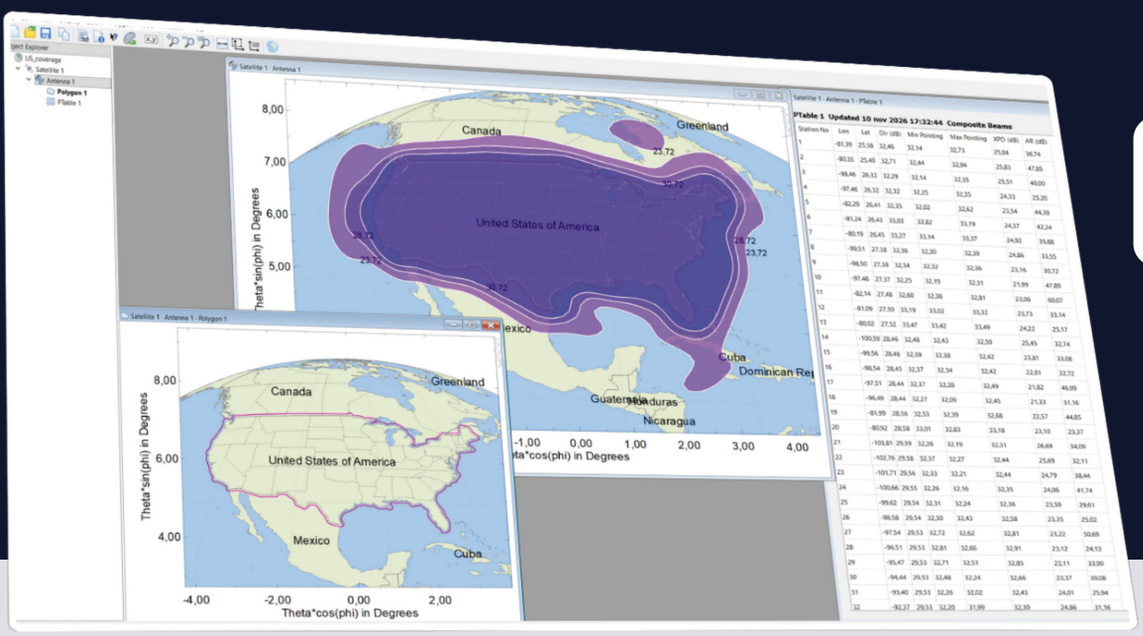
TICRA

SATSOFT

Coverage planning and payload antenna design for communication satellites - from coverage definition and beam synthesis to ITU filings.



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Contoured beam over the contiguous United States, with coverage polygon and Performance Table in SATSOFT.

From coverage requirement to realistic payload

Every communication satellite starts with a question: Where must it serve, and what can the antennas deliver there? Operators and manufacturers must answer it early, often during a bid, and then check that the final antenna patterns meet the coverage requirements.

SATSOFT is TICRA's dedicated software for satellite coverage planning and payload antenna design. It puts coverage areas and antenna patterns on one map of the Earth.

Define coverage areas from countries or draw polygons, import measured or predicted patterns, or use fast built-in models. SATSOFT synthesises contoured and spot beams and reports directivity, EIRP and G/T over the service area.

With the Payload Antenna Planner add-on, the same workflow uses physical optics reflector models, so trade-offs rest on antennas that can be built.

Plan, design and present your payload in one tool

PRODUCT CAPABILITIES

- Define coverage areas by picking countries on the map or drawing polygons
- Synthesise contoured and spot beams, with or without pointing error
- Run antenna trade-off studies early in the planning or bid phase
- Check performance over the service area with Performance Tables
- Prepare ITU filing documents and present coverage to your customers

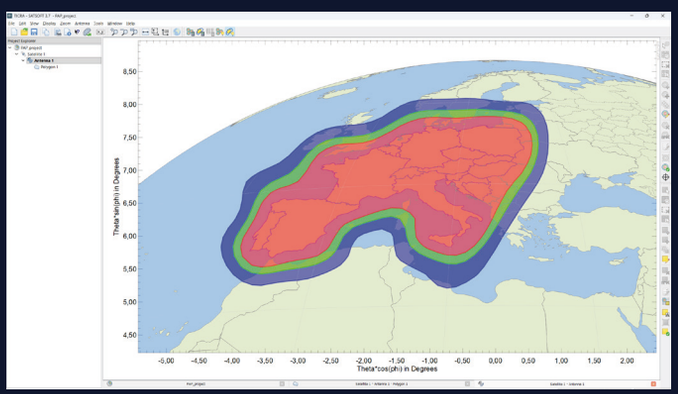
KEY TECHNICAL HIGHLIGHTS

- Pattern Data Manager for measured and predicted patterns
- Gaussian beam models with prescribed footprints
- Antenna noise temperature for G/T calculations
- Beam Layout Polygons with 3- and 4-colour schemes
- Polygon Performance Analysis: Get the percentage of the coverage area that meets its requirement

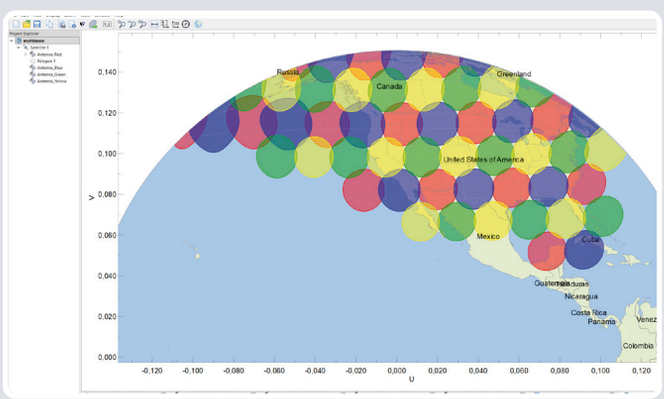
Why SATSOFT and TICRA?

SATSOFT speaks the language of both the operator who specifies the coverage and the engineer who designs the antenna. It is backed by TICRA, who has created antenna software for the space industry since 1971.

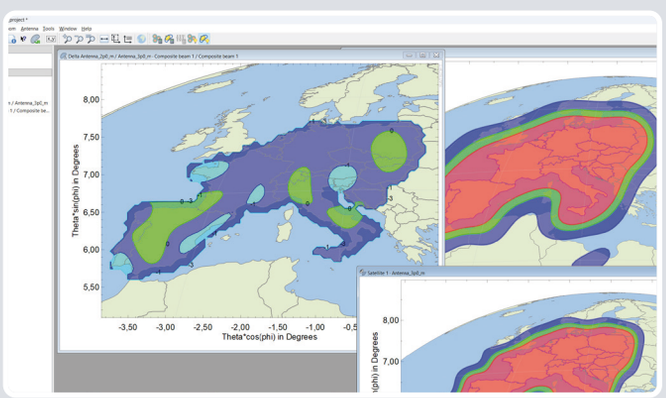
Combined with POS, GRASP and ARRAY, SATSOFT takes a payload from first coverage estimate to shaped reflector or array design and full system analysis.



The Payload Antenna Planner shapes the reflector surface to the coverage polygon using the same optimisation algorithm as POS.



Multi-beam layout over North America with a 4-colour scheme: One antenna per colour.



Delta Pattern: The difference in dB between a 2 m and a 3 m shaped reflector over the European coverage.

Technical highlights

COVERAGE AND MODELS

- Country and freehand polygons
- Polygons grown for pointing error
- Imported pattern grids and HDF5
- Gaussian beam models
- Shaped and multi-feed reflectors (PAP)
- Direct-radiating phased arrays (PAP)

ANALYSIS AND OUTPUT

- Contour plots and pattern cuts
- Directivity, EIRP, G/T and XPD
- Min and max versus pointing
- ITU GXT and KML export
- Polygon export to STK
- Station files for POS optimisation
- Ready-to-run POS and GRASP projects

APPLICATIONS

- Contoured-beam GEO coverage
- Multi-beam HTS payload planning
- Antenna trade-off studies
- Bid and proposal support
- Verification of supplier patterns
- ITU regulatory filing

Working with POS and GRASP

Import pattern grids from TICRA Tools, check them against the coverage requirements and export the contours for filing and marketing.

Export Payload Antenna Planner designs as ready-to-run POS and GRASP projects with station files, so SATSOFT becomes the pre-processor for detailed reflector shaping and analysis.

Get in touch

Advance your payload planning capabilities.

Discover how SATSOFT turns coverage requirements into antenna designs you can analyse, build and file.

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

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