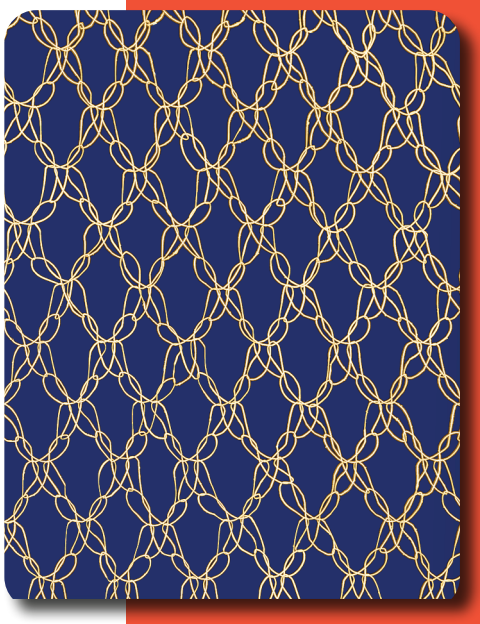
secant group

PARTNERS FROM INSPIRATION TO REALIZATION

CASE STUDY

Secant Group's custom-engineered knit gold antenna mesh enables **groundbreaking cube satellite missions for communication and radar instruments**



Challenge

An aerospace company had developed a cube satellite that demonstrated a substantial increase in data communication rates at the same power input as the previous technology. However, the satellite still needed a reliable mesh that could fold into small stowing compactions, smoothly deploy in space, and communicate at or above Ka-band frequency.

Like most textile manufacturers, the previous mesh supplier was not prepared to work with gold-plated wire. The mesh frequently broke and experienced delamination. To complicate matters, the supplier could not produce a mesh at 40 openings per inch (OPI), which is the most sought-after OPI configuration because it produces the clearest radio signals.

Until the company could find a more reliable mesh supplier, the satellite mission was grounded indefinitely.

Solution

One of the project leads reached out to Secant Group. After learning that Secant specializes in knitting gold-plated mesh at 40 OPI, the client hired Secant to get the satellite mission back on track.

With unmatched expertise in providing custom solutions for aerospace applications, Secant Group is uniquely qualified to knit gold wire into mesh more than any other textile supplier.

Working with the client, Secant Group's engineers utilized state-of-the-art machinery to produce a stronger, more consistent mesh at 40 OPI, eliminating the breaking and delamination issues with the previous wire. The mesh also showed sufficient mechanical stiffness for smooth deployment of a parabolic convex- or concave-shaped antenna reflector according to the client's specifications.

Result

After successfully testing a breadboard engineering unit, the client prepared a second antenna for an upcoming mission using the new mesh. Since hiring Secant Group as its materials supplier, the client has experienced more than 400% growth.

From Practically Impossible to Practical Reality

To learn more about Secant Group's leading capabilities in space, energy, filtration, and other industrial markets, please visit ***secant.com/technicalmaterials.***

Secant Group • 551 E. Church Ave., Telford, PA 18969 • 215.257.8680 • www.secant.com