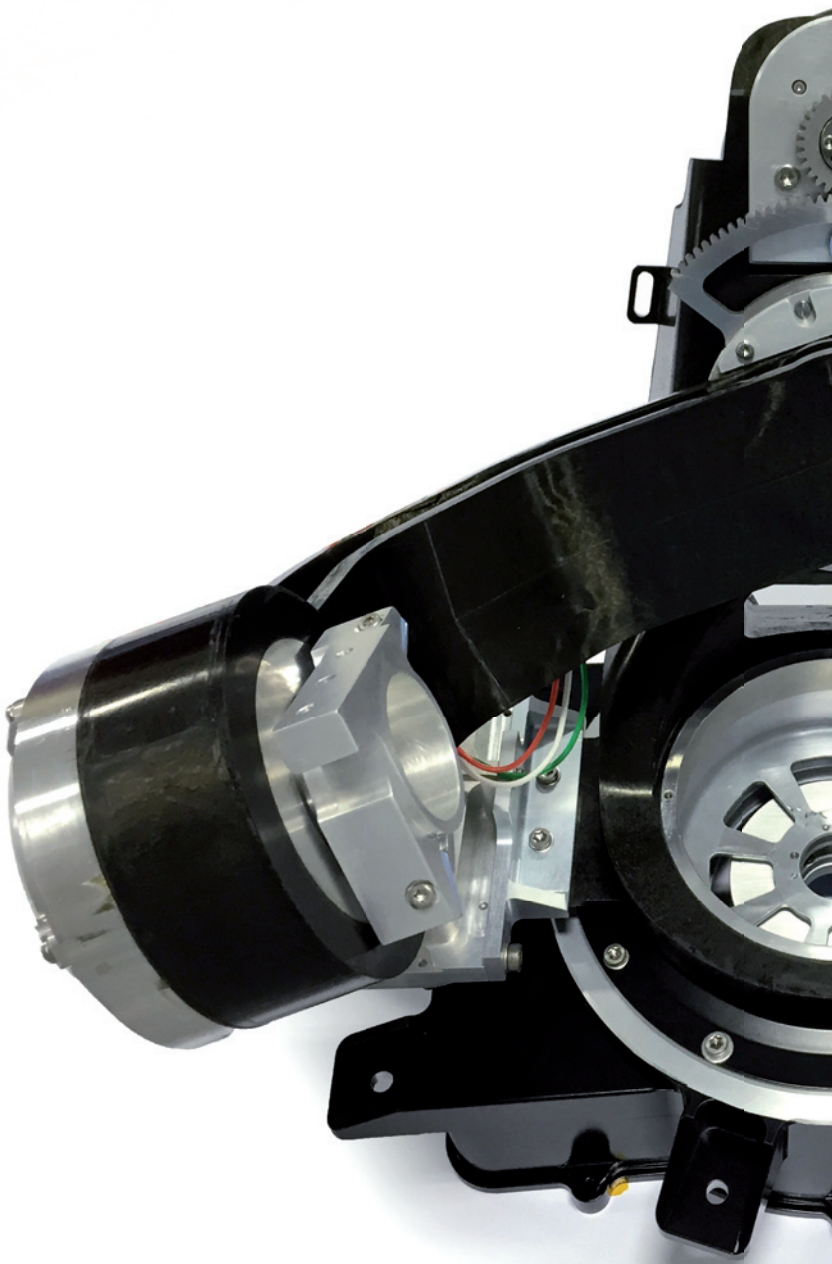


# G3AC Gimbal 3 Axes en Composite Positioner for Aeronautical Satcom



Composite  
electromechanical  
sub-system developed  
through rapid project

## MARKET

### APPLICATION (TCS)

- Small mission aircraft, small MALE UAV or OPV and Helicopters
- Ka-band Satcom – 40 cm parabolic antenna
- New range of positioners without zenith point

## TECHNOLOGICAL INNOVATION

- Mass reduction
- Positioning accuracy
- Objective cost design

## SUBSYSTEMS ASSEMBLED IN CLEAN ROOM ENVIRONMENT

ADR offers its skills and expertise for engineering, integration and industrialization of complete sub-systems.

G3AC developed under support regime for dual innovation (RAPID), has positioned ADR as a key partner for demanding and high-technology sub-systems.

## MASS REDUCTION

- Starting point → Aluminium design;
- Search for a composite material compatible with the environment of an airborne SATCOM positioner and stable lifetime;
- Long fibers and molding monobloc carbon parts;
- Control and orientation of the carbon fibers;
- Mass reduction of up to 15% compared to standard aluminium design.

## POSITIONING ACCURACY

- Development of alternative composite structures with the same level of rigidity than aluminium design;
- Integration of functional interfaces (Metallic inserts and bindings);
- Low friction axis (<0.1 N.m on X and Y axis, <0.5 N.m on Z axis);
- Positioning accuracy <0.1° over the entire temperature range.

## OBJECTIVE COST DESIGN

- Modularity of the positioner;
- Consideration of industrialization and productivity criteria;
- Identical unit price compared to aluminium design.

|                       |  |
|-----------------------|--|
| Dimension             | L = 410 mm × l = 330 mm × H = 340 mm         |
| Weight                | Arr 10 kg                                    |
| Power supply          | 20 V / 10 A                                  |
| Load capacity         | 5 kg   |
| Clearances            | N*360° Z axis, ±20° X axis, -5 / +100 Y axis |
| Operating temperature | -40 / +80°C                                  |
| Inherent frequency    | Arr 60 Hz for 3.5 kg of mass carried away    |



**Régime d'Appui pour l'Innovation Duale**  
Support regime for dual innovation

RAPID is a subsidy facility for SMEs set up by the DGA (General Directorate of Armament) and the DGCIS (General Directorate for Competitiveness, Industry and Services). This scheme is eligible and must demonstrate the technological quality and innovative nature of the project. Prospects for dual applications (civilian and military) and the quality of the project partners are also taken into account.

### G3AC context

Project lead and coordinator



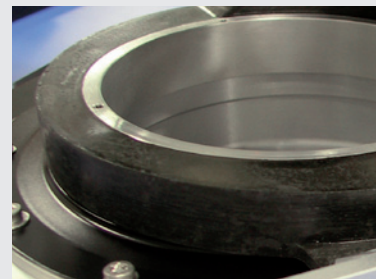
Overall product vision



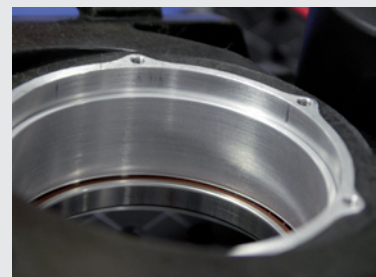
Technology



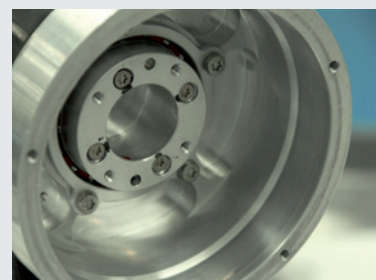
*Our Technical Department remains at your disposal to answer any questions you may have and/or to adapt this technology to your specific needs.*



**Z axis** Metallic inserts for composite interface



**X axis** Specific slip ring and bearing on Z axis



**Y axis** Direct Drive and AISI encoders for Y and Z axis