

Active Inceptors for Flight Control

Fixed Wing and Helicopters

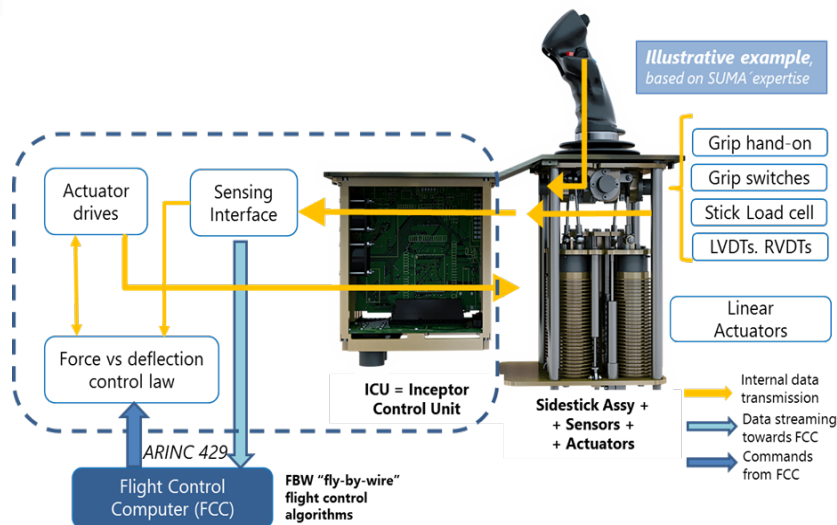
- **Purpose**

- ACTIVE Solution designed to provide Flight Commands whilst experiencing dynamic Feel Force
- In one way, commanding:
 - pitch and roll manoeuvres of Wing-fixed aircrafts
 - Cyclic control of Helicopters
- In return, providing feel forces onto Grip, and which are related to the actual A/C dynamic response

- **Modular architecture:** Grip (including switches), "Spider" mechanism and Electronic Control Unit

- **Main Technical features**

- Quadruplex position Sensing of Grip's position & motion rate, besides using dissimilar processing techniques
- Position and rate commands issued to FCC through ARINC429 digital databus
- Triplex actuation redundancy, incl. a "passive" back-up mode which generates feel forces by springs and dampers



- **Product Specificity & Achievements**

- Smooth Stick motion without experiencing Force rippling.
- Totally configurable Force Feedback curves for both Axes, make this solution virtually compliant to all type of Aircraft platforms
- Modular configuration with hardware able to be scaled up/down depending on the force requirements
- A higher force/volume ratio combined to a simpler and well proven "spider" mechanism.

- **SUMA's Value Added**

- Innovative topology - without gearboxes- offers an optimum compromise between volume, weight, dynamic response, feel force range, and cost
- Drawing upon to mostly COTS components means a minimum development risk besides securing multiple sourcing.

Grip Deflection	Voltage supply	Volume (length x height x width)
(2 DOFs: Pitch & Roll) ±20·deg	28·VDC	400x300x170·mm