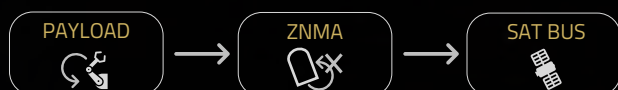


Momentum-Decoupling Joints for Dynamic Payloads

Zero-Net Momentum Actuator (ZNMA)

Middleware infrastructure that decouples the dynamic motion of a payload from a spacecraft so that **no momentum is imparted onto the bus** from dynamic payload operations.



Max Payload Speed & Mass	Configurable
Payload Rotational Range	$\pm 180^\circ$ (N360° w/slip ring)
Holding Position Accuracy	0.01°/Joint
ZNMA Mass	2-10% of Payload Mass
ZNMA Estimated Lifetime	>10 years

APPLICATIONS

In-Space Servicing, ISAM, De-Orbit,
Earth Monitoring, Scanning

ACCELERATES TIME-TO-FLIGHT

Reduce integration complexity during development
and operational complexity during flight

EXPANDS FOV

Swing scanners and sensors in LEO to increase
coverage with fewer satellites

SAVES FUEL

Reduce or eliminate fuel consumption from ACS
corrections driven by frequent payload motion

MULTI-DOF

1-DOF within a single housing, or add to individual
joints to create a fully decoupled gimbal or arm

