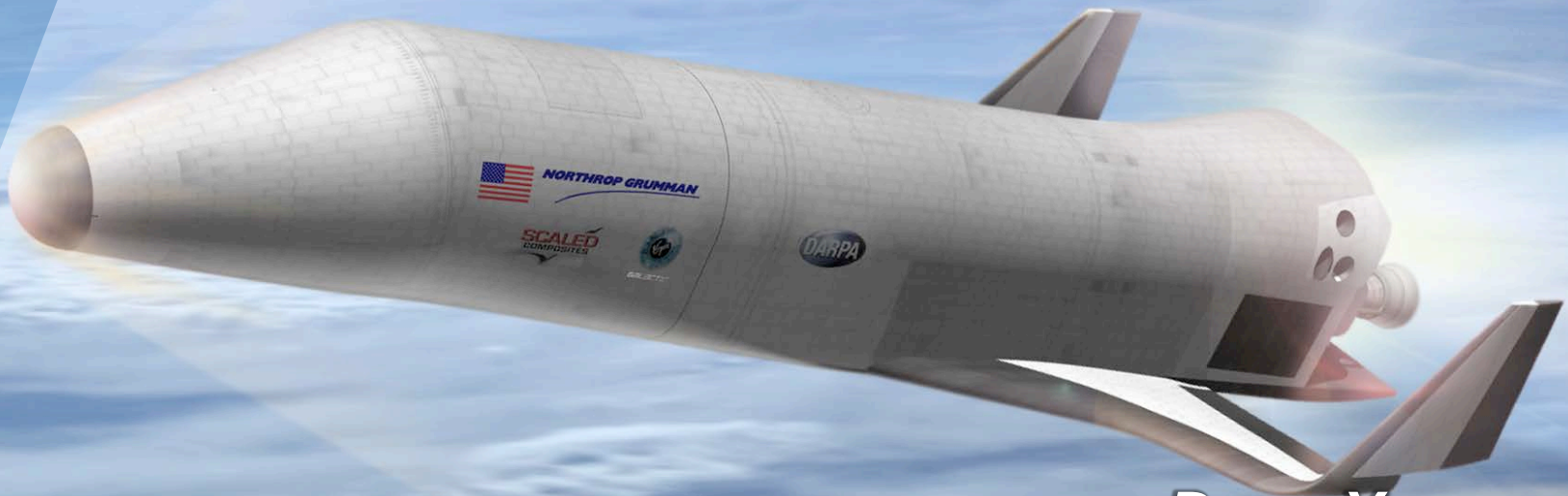


XS-1

The Time Has Come



Doug Young

Vice President, Missile Defense and Advanced Missions

Northrop Grumman Aerospace Systems

XS-1 WHY NOW?

Divergent Drivers Prompting XS-1

High demand for LEO access requires

Routine – Pace of Operations
Affordable, Reusable Boosters



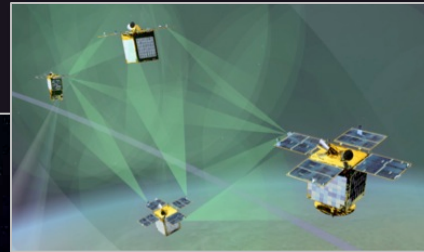
Moore's Law



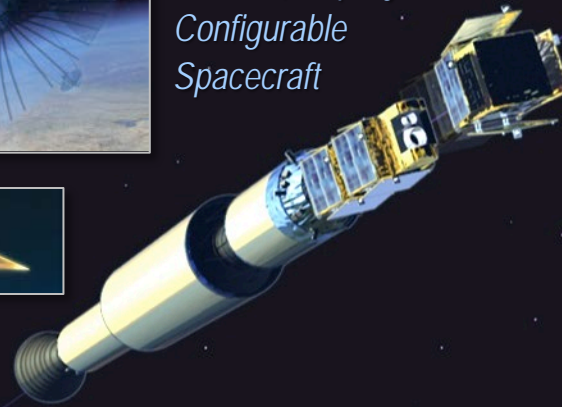
Modular, Rapidly Configurable Spacecraft



Global Reach



New Small Sat Concepts



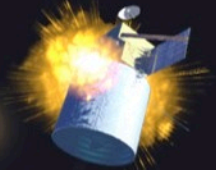
Multi Spacecraft Launch

Contested Space Requires

Architecture Resiliency

Rapid Reconstitution

Adaptability



XS-1 WHY NOW?

Technological and Regulatory Convergence Enabling XS-1

*Maturation has been Achieved
in Key Enabling Technologies*



*Autonomous
Flight
Certification*



*USN X-47B
Northrop Grumman*

Revolution in Autonomous Flight



*Virgin Galactic
SpaceShipTwo*

Revolution in Commercial Space Flight

THE VALUE OF PERFORMANCE.

NORTHROP GRUMMAN

