

NORTHROP GRUMMAN

DEFINING THE FUTURE

Unmanned Systems

Aircraft Builders Conference, Inc

2008 Annual Conference

21-23 September 2008

Doug Fronius

Director, Tactical Unmanned Systems IPT
Program Manager, VTUAV Navy Fire Scout

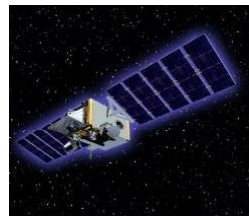
Northrop Grumman Corporation

Approved for Public Release
Control No. UMS-2008-301, 07 July 2008

Northrop Grumman Today

NORTHROP GRUMMAN

- \$32 billion sales in 2007
- 120,000 people, 50 states, 25 countries
- Third largest U.S. defense contractor
- Leading capabilities in:
 - Systems integration
 - C⁴ISR and battle management
 - Information technology and networks
 - Defense electronics
 - Naval shipbuilding
 - Space and missile defense



Focus on Performance

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Corp / IS Overview

Northrop Grumman 2007 Sales



CHAIRMAN & CEO



Ron Sugar

PRESIDENT & COO



Wes Bush

Northrop Grumman Corporation

Total Sales 2007: \$32B*

OPERATING SECTORS



A Portfolio Positioned for the Future

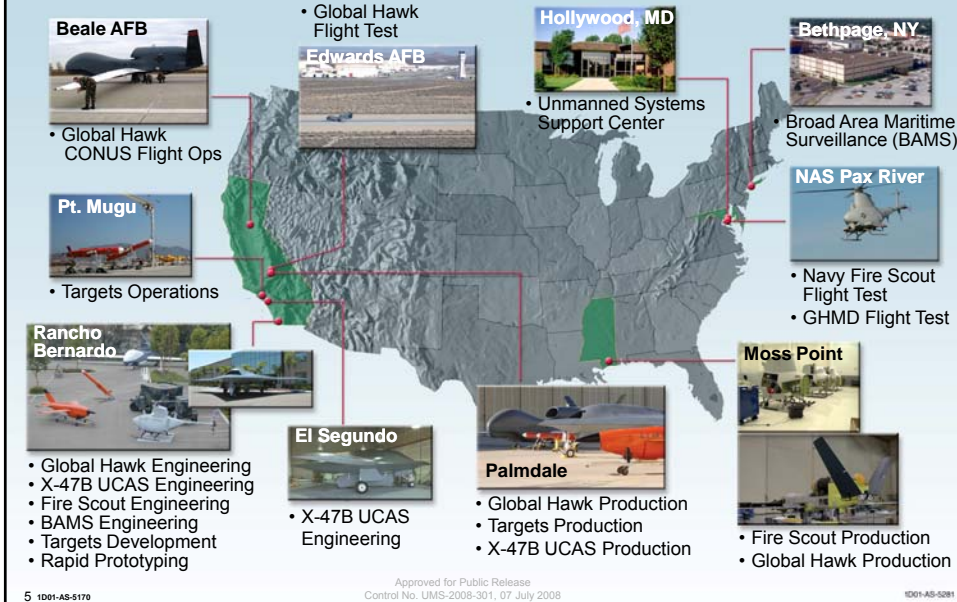
* Includes Intersegment Eliminations
† Realigned Results

Integrated System Structure

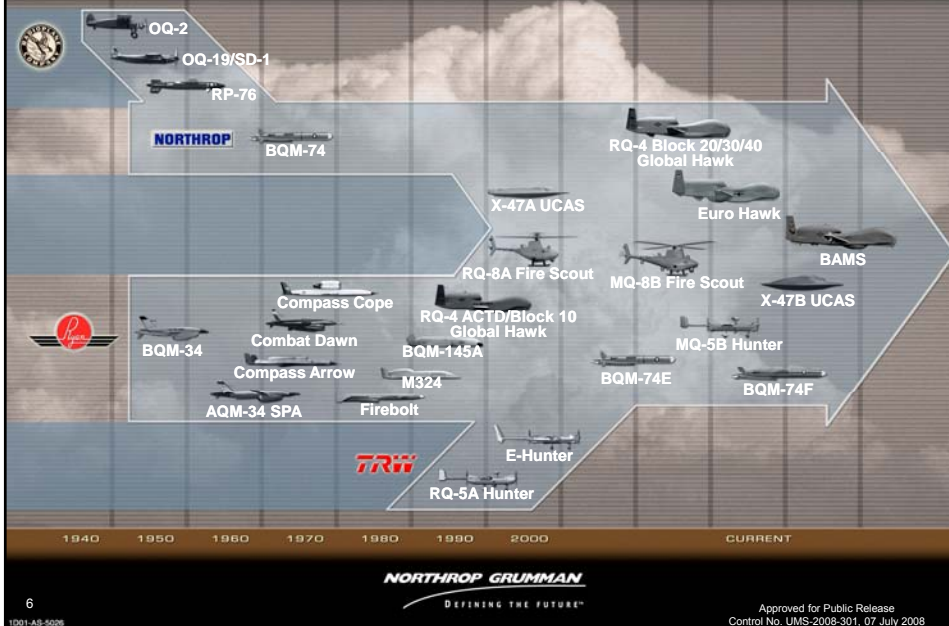


Unmanned Systems Integrated Capabilities and Support

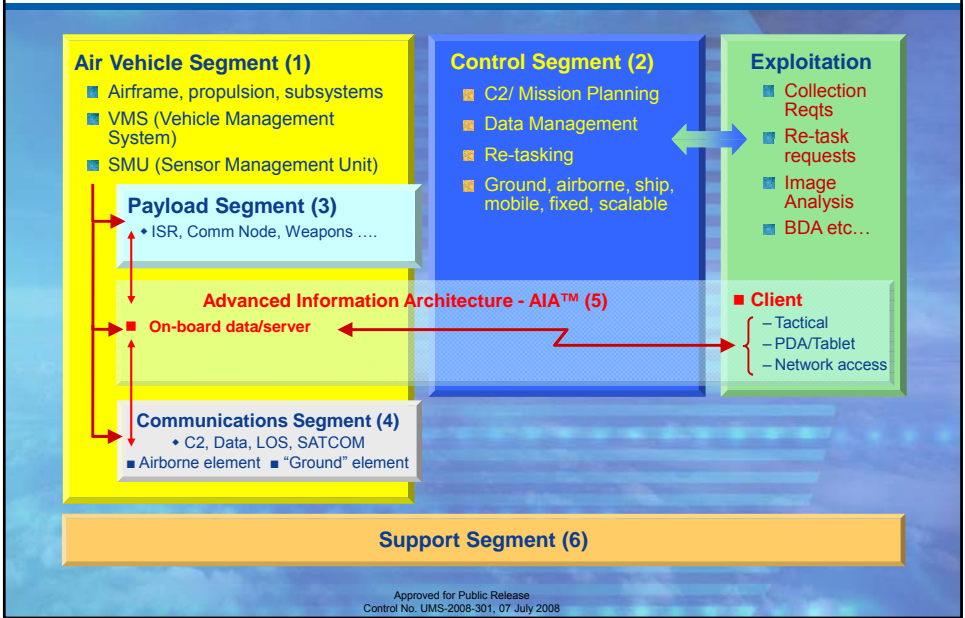
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Legacy of Unmanned Aerial Systems



UMS Architecture – Six Segments














End to End System Integration...



Unmanned Systems Current Contracts



Global Hawk <i>Customer: US Air Force</i>  A combat proven high altitude, long endurance UAS with extraordinary ISR capabilities. Can provide near real time high resolution imagery of large geographical areas all day/all night in all types of weather.	Euro Hawk <i>Customer: German MoD</i>  First International version of high altitude, long endurance Global Hawk UAS with German ELINT/COMINT sensor on board.	X-47B UCAS <i>Customer: US Navy</i>  X-47B UCAS Carrier Demonstration will show that an operational class, tailless, LO-representative air vehicle can operate from a carrier at sea.
BAMS <i>Customer: US Navy</i>  The next generation Global Hawk UAS to provide the Navy with transformational persistent, wide area maritime, Intelligence, Surveillance and Reconnaissance (ISR).	Hunter <i>Customer: US Army</i>  Army Reconnaissance, Surveillance and Target Acquisition (RSTA) system currently in service. Combat proven in multiple theaters and deployed in Iraq.	VTUAV Fire Scout <i>Customer: US Navy</i>  Navy multi-mission system. Operates autonomously from any aviation-capable warship, or unprepared landing zones in battle area.
GHMD <i>Customer: US Navy</i>  Maritime version of the high altitude, long endurance Global Hawk UAS, providing the Navy with a rapid technology Experimentation and Demonstration Capability.	Targets <i>Customer: Multiple</i>  Low cost UAS for simulation of threat aircraft and missiles for combat training and weapons evaluations.	FCS Class IV UAV <i>Customer: US Army</i>  Army Future Combat Systems multi-mission Class IV UAV for the Brigade Combat Team can provide RSTA, countermine, chemical detection, TUGS deployment, and logistics re-supply.
Global Hawk <i>Customer: NASA</i>  Partnership between NASA Dryden and NGC to demo HALE capability for future NGC customers and experiments for the Environmental Science Community, to include NOAA, NASA, DoE and Universities.	Model 324 <i>Customer: Egyptian Air Force</i>  Autonomous, long range reconnaissance UAS providing EO and IR imagery.	








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1001-AS-0281, Current Contracts, 06/2008

Unmanned Systems Pursuits



Navy UCAS <i>Customer: US Navy</i>  Completion of the UCAS-D program in 2013 is the first step toward an operational Navy UCAS strike / ISR platform.	V-UAS <i>Customer: USMC</i>  Potential Fire Scout application for Marines. Autonomous system that can land in battlefield areas and act as communications relay.
Fire Scout International <i>Customer: Multiple</i>  Multi-mission system which has been source of many international requests to US Navy. High degree of interest in Europe and Asia.	Targets International <i>Customer: Multiple</i>  Low cost UAS for simulation of threat aircraft/missiles for combat training and weapons evaluations. Currently sold to various nations.
AGS <i>Customer: NATO</i>  NATO System consisting of Global Hawk Block 40 aircraft to provide day/night Radar Ground Surveillance of the battlefield for NATO Battle Management Centers – a program funded by NATO countries for mutual benefit.	ACIS Projects <i>Customer: Multiple</i>  The Advanced Capabilities and Integrated Solutions Projects Team leads the way for the developmental and implementation of new technologies that will enhance the capabilities of unmanned systems.
USCG Fire Scout <i>Customer: USCG</i>  Potential Fire Scout application for US Coast Guard. Autonomous system that can land on any air capable ship.	

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1001-AS-0281, Pursuits, 06/2008

Global Hawk

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Combat proven high altitude, long endurance UAS with extraordinary Intelligence, Surveillance, Reconnaissance (ISR) capabilities.

Provides near real time high resolution imagery of large geographical areas all day / all night in all types of weather.

Unmanned. Unmatched.

1001-AS-5281
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Fire Scout

Vertical Takeoff and Landing Tactical Unmanned Aerial Vehicle (VTUAV)

NORTHROP GRUMMAN




Navy multi-mission system. Operates autonomously from any aviation-capable warship, or unprepared landing zones in the battle area.

Unmanned. Unmatched.

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Unmanned Combat Air System-Demonstration (UCAS-D) NORTHROP GRUMMAN



The X-47B UCAS-D program will demonstrate the ability of an unmanned, low observable platform to conduct operations from a carrier at sea to include: launch, recovery, deck handling and full integration into Carrier Air Traffic Control Center.

Unmanned. Unmatched.

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1001-AS-5149, UMS All Up

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