Airline Dispatchers Federation
UAS Operations

Rose Mooney
October 5, 2011

Unmanned Aircraft Systems

UAS – Unmanned Aircraft System

- UAS is an unmanned aircraft and its associated components and persons required for operation.

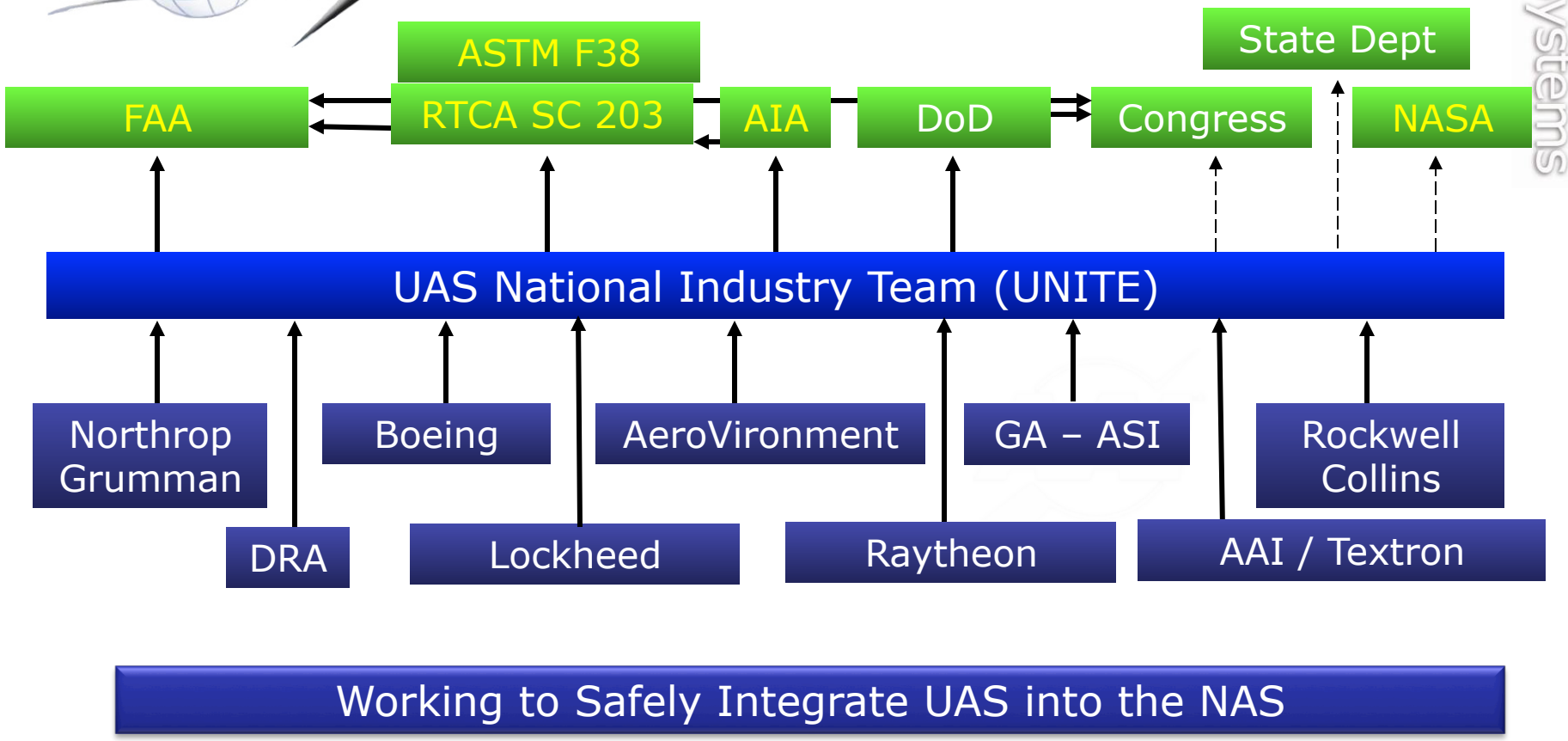
Unmanned Aircraft

- Unmanned Aircraft is an aircraft operated without the possibility of direct human intervention from within or on the aircraft. The Aircraft Segment includes the airframe, propulsion unit, flight controls, health monitoring systems, data comms, electrical system, navigation system, sensors, and any other component onboard or attached to the aircraft.

UNITE Participants and Interaction

UAS National Industry Team

www.uniteaero.com



Working to Safely Integrate UAS into the NAS

Non-Military UAS Applications

- Science

NOAA NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
UNITED STATES DEPARTMENT OF COMMERCE

NOAA Flies WISPAR Winter Storm Mission - June 23, 2011
By CDR Phil Hall – Office of Oceanic and Atmospheric Research

The Global Hawk also remotely sensed atmospheric temperature and water vapor profiles continuously during the 24 hour mission …

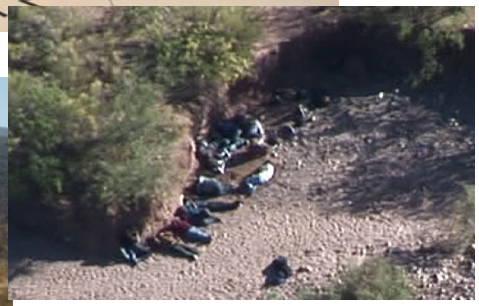
UAS VISION
a global forum for the unmanned aircraft systems community

NASA UAS Flies Greenhouse Gas Mission - July 11, 2011
By Ruth Marlaire – Ames Research Center, Moffett Field, CA

… (SIERRA), carried sensors to measure greenhouse gases and winds and flew at altitudes of 100 – 2,500 feet ….. and flew from a public airstrip at Currant Ranch, Nevada.

Non-Military UAS Applications

- Science
- Border Surveillance



Texas on the Potomac

Washington news with a Texas accent

Texas gets a second aerial drone for border security – July 14, 2011

Houston Chronicle

… "They routinely now flying nightly not only in the Rio Grande Valley but up through, Laredo and up to El Paso"…. "Technology is part of the long-term solution to securing the borders," says Rep. Michael McCaul.

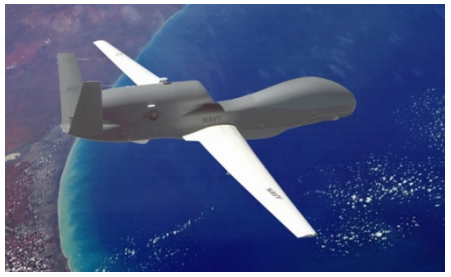
Non-Military UAS Applications

- Science
- Border Surveillance
- Maritime Surveillance

InstantNewsKaty.com

McCaul, Cuellar Help Texas Land Second UAV To Secure Boarders - July 13, 2011
Local News

… a second unmanned aerial vehicle will soon be based in Texas in an effort to better secure the US-Mexico border…. The Texas UAV, the Guardian, is assigned to the Corpus Christi Naval Air Station to perform surveillance of both border region and Gulf of Mexico.



Non-Military UAS Applications

- Science
- Border Surveillance
- Maritime Surveillance
- Forest Fire Detection

U.S. Customs and Border Protection

CBP Unmanned Aircraft Provide Firefighters Aerial Reconnaissance - July 17, 2011

By Hugh Holub – Tucson Citizen.com

… UAS program provides reconnaissance, intelligence, surveillance, tracking and acquisition capabilities in areas that are difficult to access or otherwise consider too high risk for

Non-Military UAS Applications

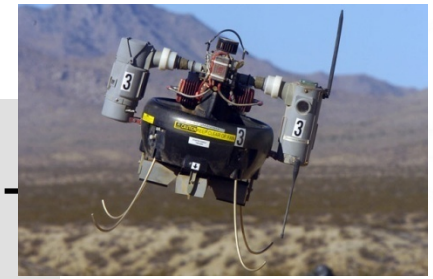
- Science
- Border Surveillance
- Maritime Surveillance
- Forest Fire Detection
- **Emergency Services**

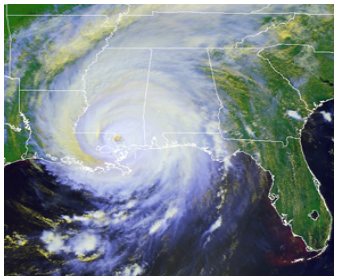
zimbio

T-Hawk UAV enters Fukushima danger zone, returns with video -

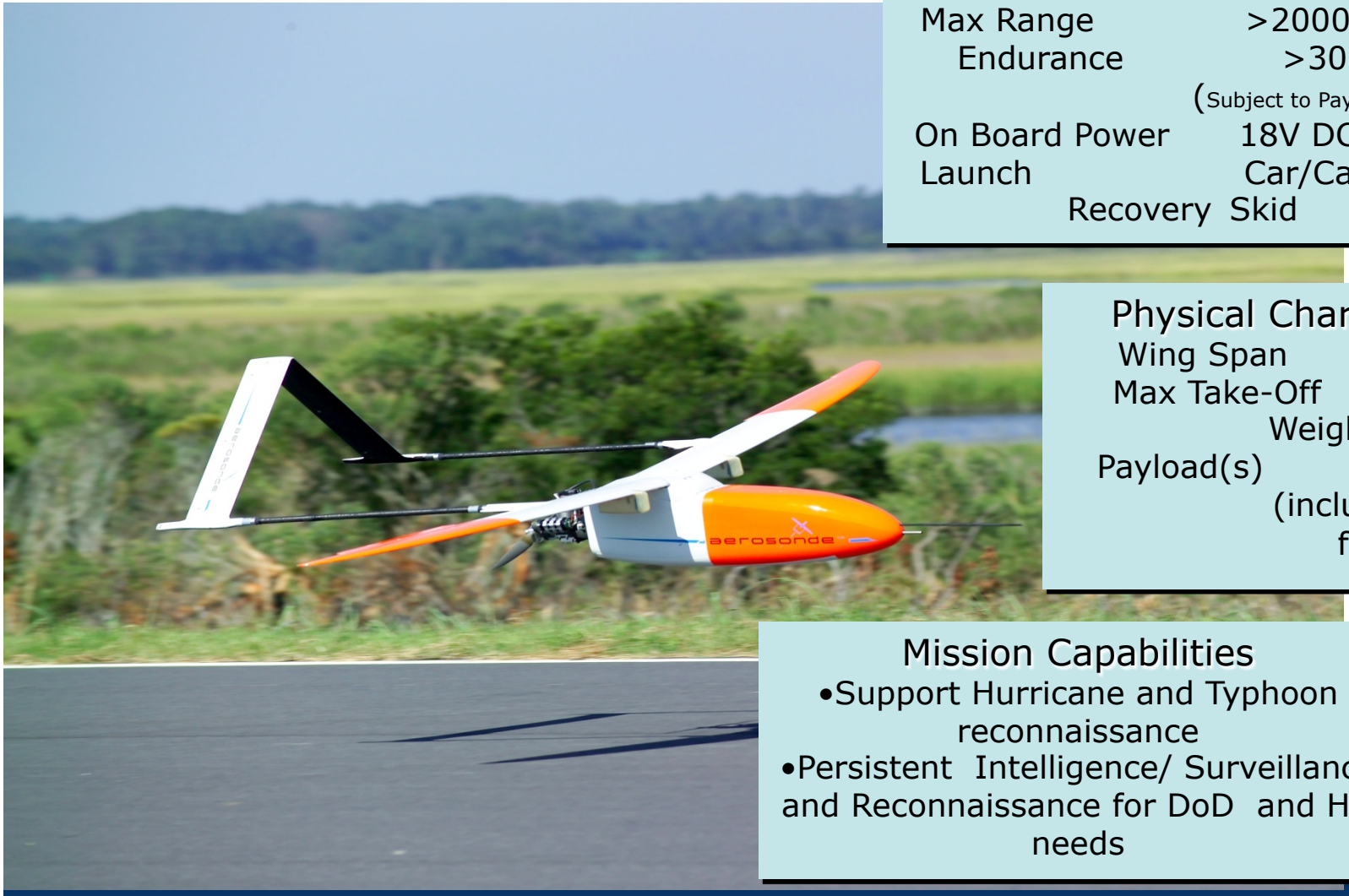
April 21, 2011
By Ivzhoujie

… Sending in a flying robot seems to be the next best thing… and that's exactly what Tokyo Electric Power (TEPCO) has done. T-Hawk, a US-made MAV (Micro Air Vehicle) commonly user to search for roadside bombs in Iraq, made its Japanese debut last week when it photographed the nuclear plant from above. ….





Aerosonde MK 4.4



Performance Specifications	
Airspeed	40-60 kts
Max Altitude	20K ft
Max Range	>2000 miles
Endurance	>30 hrs (Subject to Payload)
On Board Power	18V DC 75 W
Launch	Car/Catapult
Recovery	Skid

Physical Characteristics	
Wing Span	9.4 ft
Max Take-Off Weight	33 lbs
Payload(s) (including fuel)	13.5 lbs

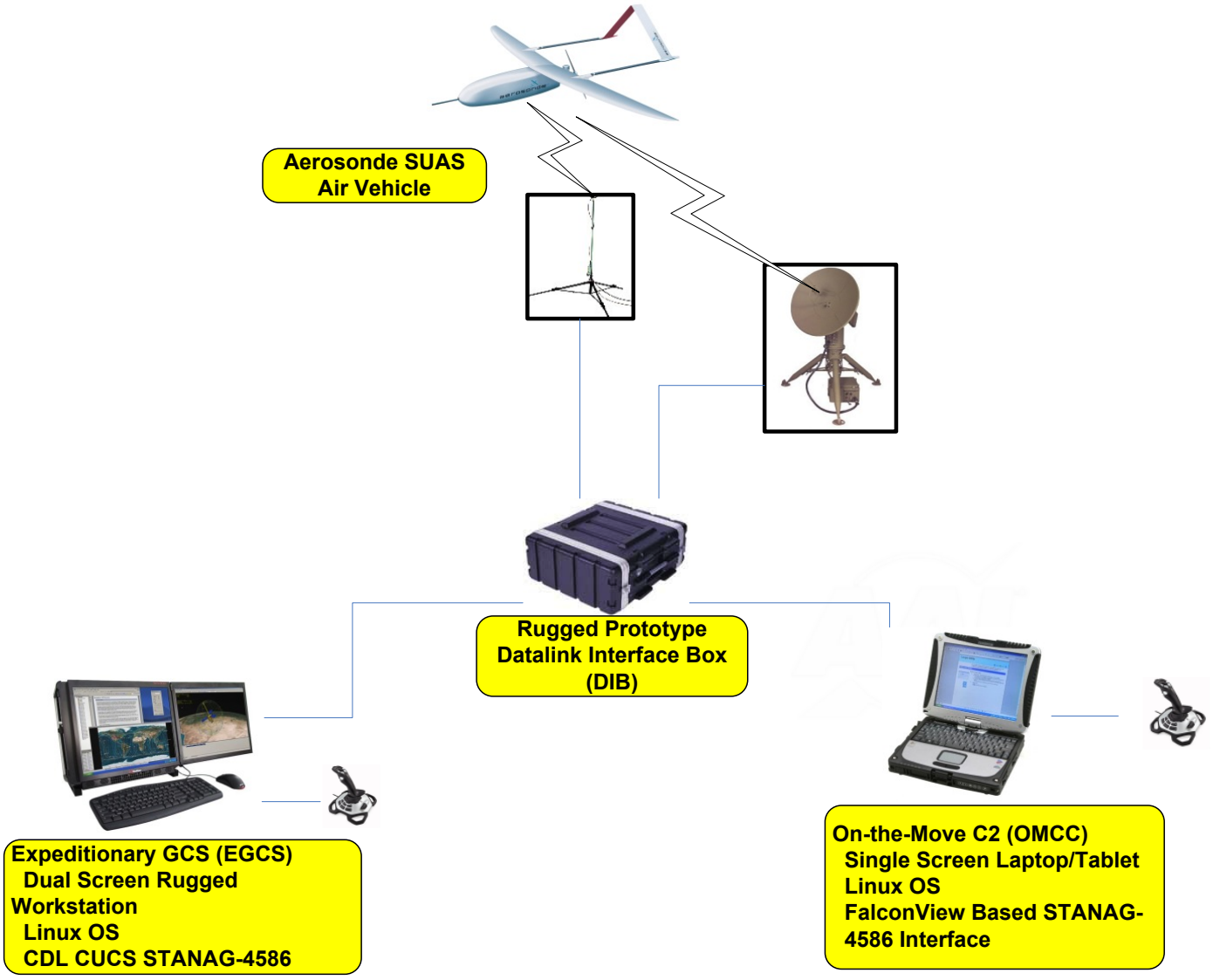
Mission Capabilities

- Support Hurricane and Typhoon reconnaissance
- Persistent Intelligence/ Surveillance and Reconnaissance for DoD and HD needs

TEXTRON Systems

AAI

Aerosonde UAS



Shadow RQ- 7B

- Max GW: 375 lbs
- Max Payload wt: 65 lbs
- Endurance: 6 hrs
- Wing span: 14 ft
- Length: 11.2 ft
- Max Altitude: 15,000 ft
- Avg Misson Alt 8,000 ft
- Range: 125 km
- Max Speed: 123 kts
- Cruise Speed: 84 kts

Over 800,000 total flight hours

TEXTRON Systems

Shadow System

Ground Control Station

Ground Data Terminal

Air Vehicle with Payloads

Arresting Net

Air Vehicle Launcher

Portable Ground Control Station

Automatic Landing System

Ground Control System – Cockpit on the Ground

TEXTRON Systems

AAI

AAI Shadow Operator (Pilot) Training / Certification

- Prior Experience
  - Look for personnel with prior DoD UAS Flight experience
  - AVO
- Starting Credentials
  - Class 2 Medical
  - FAA Private Pilot's Ground School Certification
- AVO Training
  - 12 Hours of flight time to qualify after additional ground training
- All AAI training complies with Army regulations
- Pilot in Command – (First Officer)
  - Private Pilot License
- Log time in UAS Pilot Logbook

Industry Initiatives to NAS Access

- Flying Shadow RNP / RNAV with GE 737 FMS
- UFIT – UAS FAA Industry Team
  - WT Hughes Technical Center – Atlantic City NY
    - Shadow / Predator Simulator
- ADS B Integration and Flight Test
- Boeing NEO / ERAM / UAS Testing
- NASA UAS Initiatives – NASA Advisory Committee
- RTCA SC203 – UAS – Co Chair
- ASTM F38 – Subcommittee Chair sUAS 107
- sUAS ARC – NPRM out December / ops 2013
- UAS ARC

Questions