NASA UAS

ICCAGRA Update

March 15, 2012

UAS-Enabled Science (A.40)

Earthquake mission

Long-term earthquake hazards and groundwater resources in a tectonically active region: Critical insights from UAS

PI: Jonathan Glen, USGS

Swift UAS

SIERRA UAS

Status: SIERRA Payload data system duplicated for SWIFT; flight planning

Schedule:

-First flights scheduled for Northern California (Surprise Valley) in Sept.2012.

-Second campaign January 2013.

MIZOPEX (Arctic Sea Ice)

Marginal Ice Zone Ocean and Ice Observations and Processes Experiment

PI: James Maslanik, Univ. Colorado

Ikhana UAS

Scan Eagle UAS

Status: Summer 2012 mission planned with NOAA. Oliktok Point, AK. IRIDIUM pod in work.

Schedule:

-Risk-reduction mission summer 2012.

-Joint Ikhana mission summer 2013.

-Ikhana upgrade for long-term Arctic capability.

UAS-Enabled Science (A.40)

Sea Grass and Coral

High Resolution Assessment of Carbon Dynamics in Seagrass and Coral Reef Biomes

PI: Stan Herwitz, UAV Collaborative

MLB BAT UAS

SIERRA UAS

Status: Flight planning, air space; instrument tests

Schedule:

-Florida Keys deployment beginning May, 2012;

-Tobago deployment January 2013.

Global Hawk East:
Hurricane & Severe Storm Sentinel (HS3)

- Five-year mission using 2 Global Hawk UAS specifically targeted to investigate the processes that underlie hurricane formation and intensity change in the Atlantic Ocean basin. Missions schedules for Aug. – Oct. 2012 to 2014.
- Layouts for N-159 space utilization continues.
- Updated floor plan layout of D-1 Global Hawk Operations Center received.
- Science Meeting has been scheduled at WFF for 5/7 and 5/8.

Proposed WFF Global Hawk Operations Center

Global Hawk West

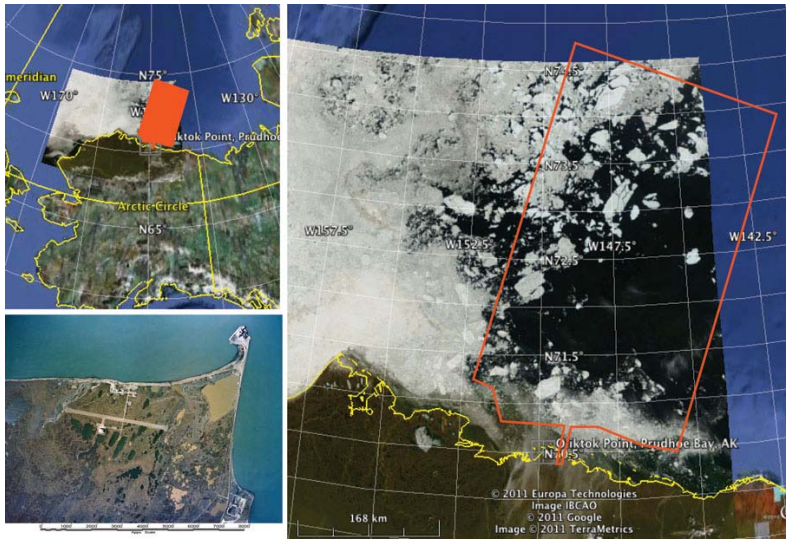
- ATTREX:
  - Recertification of minimum ambient “structural temperature limit”

Mobile GHOC

Mobile Ku

Ikhana NASA SMD Support

- The Airborne Science Program (ASP) has funded the development of a generic science pod for use on Ikhana
  - The new pod will be used for the Marginal Ice Zone Observations and Processes Experiment (MIZOPEX) missions to be flown in Alaska in summer of 2013 to study the critical increase in Arctic ice melt.
- National Oceanographic and Atmospheric Administration (NOAA) and US Coast Guard have requested yearly collaborative science missions in the Pacific and Arctic
- Working on plans to support Operation Ice Bridge (OIB) missions for ASP in 2014



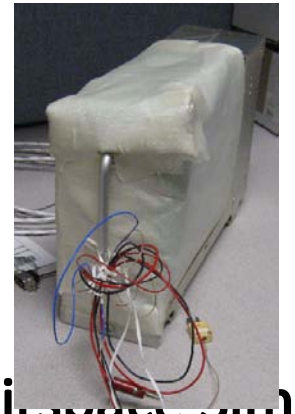
Beaufort Sea, Alaska

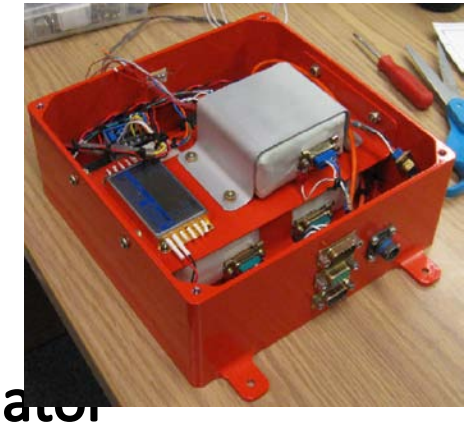
Ikhana NASA ARMD Support

- Automatic Dependent Surveillance-Broadcast (ADS-B) Integration
  - Currently in support of ARMD's UAS Integration in the National Air Space (NAS) Project (and in collaboration with the FAA), Ikhana has incorporated ADS-B capability that is currently under test – Tech Brief is scheduled for 3/13

Ikhana in the NAS

Ikhana / ADS-B hardware





- Live Virtual Constructive (LVC) Airspace Simulator
  - Also in support or UAS Integration in the NAS Project, this will enable integration of the Ikhana via its simulator and its Ground Control Station (GCS) with a virtual reality NAS.