Arctic Round Table Discussion

UAS Applications

August 2016

Approved under "AS-DSEA-16-03853: Non Export-Controlled"
The Arctic Stage

Arctic Council
USA (Chair), Russia, Canada, Norway, Denmark, Sweden, Iceland, Finland
Observers: China, France, Germany, India, Italy, Japan, South Korea, Netherlands, Poland, Singapore, Spain, UK

• “... Russia’s actions – and future plans – are by far the most ambitious. ... in 2015, it completed its largest Arctic military exercises involving 80,000 troops, 220 aircraft, 41 ships, and 15 submarines”

• “... approximately 90 billion barrels of oil (13 percent of the world total), 1,669 trillion cubic feet of natural gas (30 percent of the world total), and 44 billion barrels of natural gas liquids (20 percent of the world total).”

• “... utilizing the NSR to ship to Kirkenes, Norway, could save 16 days from Shanghai, China, 18.5 days from Busan, Korea, and 20.5 days from Yokohama, Japan”

NGC Analysis Center Whitepaper

Northern Sea Route (NSR)
Northwest Passage (NWP)

Arctic Domain Awareness Mission Challenges

• Long Distances
  – 5.5 Million Square miles (approximately half the size of Africa)
  – Arctic Ocean covers an area of 6 Million square miles
  – Limited Basing

• Harsh Climate
  – Average winter temperature is -30° F (-34°C)
  – Average summer temperature is 37-54° F (3-12°C)
  – Slow Situation Development

• Limited Communications
  – Very few polar communication systems
  – Polar (North of 70°) SATCOM limited in bandwidth
  – Most SATCOM limited to below 65 Degrees Latitude
  – No existing LOS Ground Entry Points

Very Challenging Environment – Calls for Autonomous Systems

Approved under “AS-DSEA-16-03853: Non Export-Controlled”
Grand Forks Arctic Reach
Equidistant to Most Concern Areas
NASA Global Hawk

Approved under “AS-DSEA-16-03853: Non Export-Controlled”
Potential Arctic Mission ‘17-’18 NASA GH Flights

Inuvik

Oil, Ice, and Maritime Sensing

Fire Sensing

Grand Forks

Ottawa

Approved under "AS-DSEA-16-03853: Non Export-Controlled"
Global Hawk Arctic Reach

Basing: Grand Forks

Time On Station

- 10.6 hours
- 13.9 hours
- 17.1 hours
- 20.3 hours
- 23.5 hours
- 26.8 hours

Range Rings

Approved under "AS-DSEA-16-03853: Non Export-Controlled"