# Demonstration of the impact of realtime MODIS imagery on operations during a major Arctic research cruise

*Presented by*

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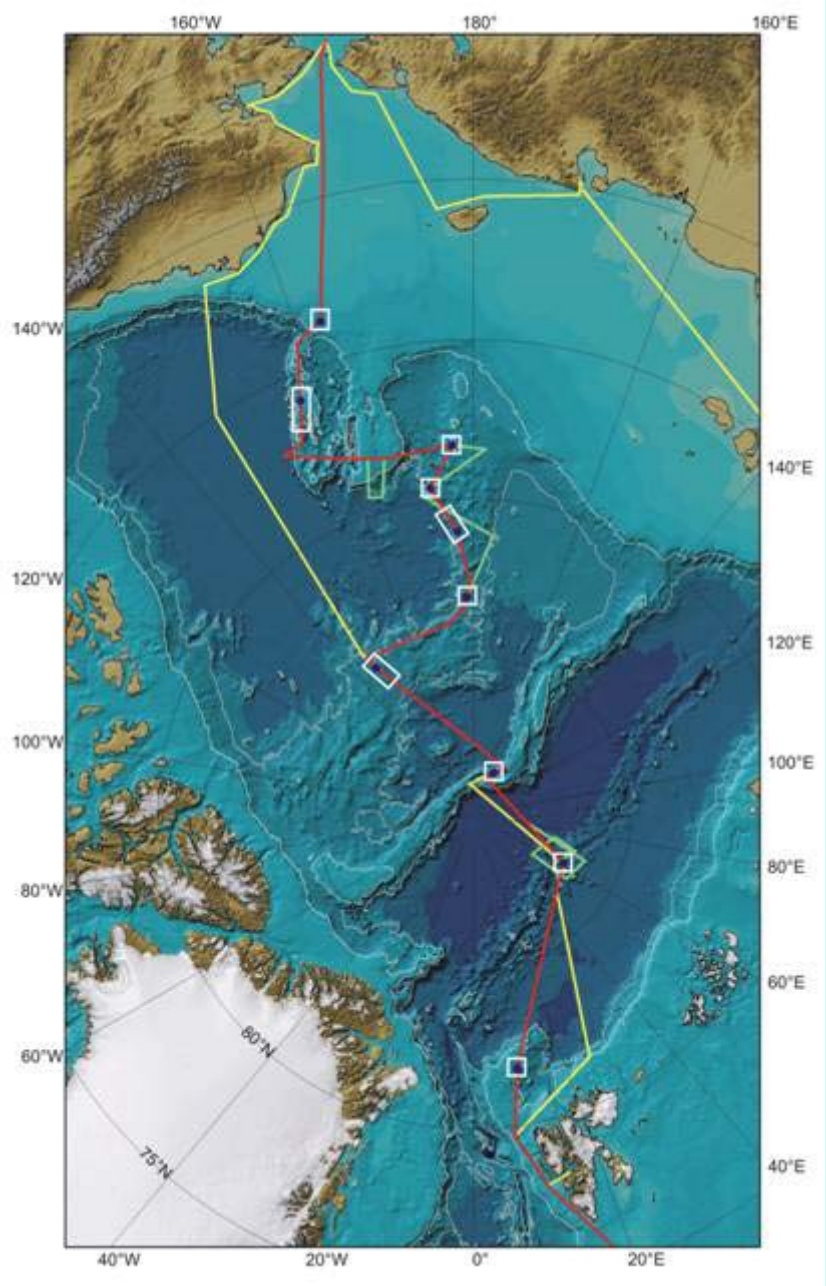
# Realtime MODIS for the HEALY – Beringia 2005

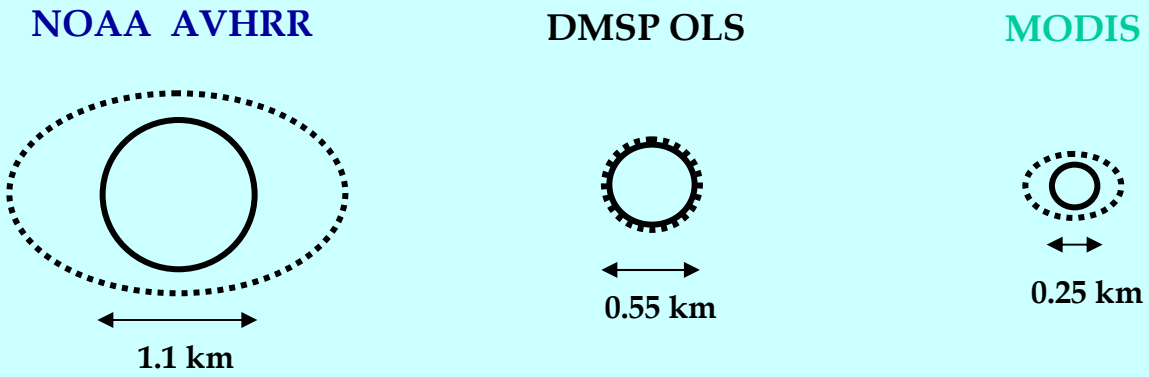
**HEALY has been equipped since commissioning with a SeaSpace TeraScan system, used to acquire realtime NOAA/AVHRR and DMSP/OLS imagery at 0.6 to 1.5 km spatial resolution**

**SeaSpace proposes to *temporarily* place one of its new generation systems aboard HEALY for summer 2005, to acquire NASA's Terra & Aqua MODIS data in realtime, for improved operational decision-making (e.g., ice navigation)**

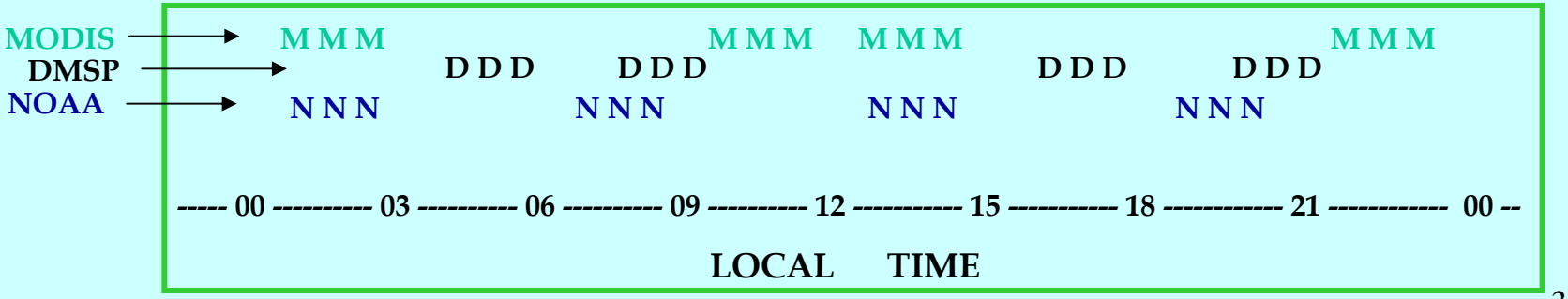
**MODIS provides 2 to 4 times finer spatial resolution (250 m) plus additional spectral channels to help "see" open water leads through the low clouds and fog that are typical of the summertime arctic**



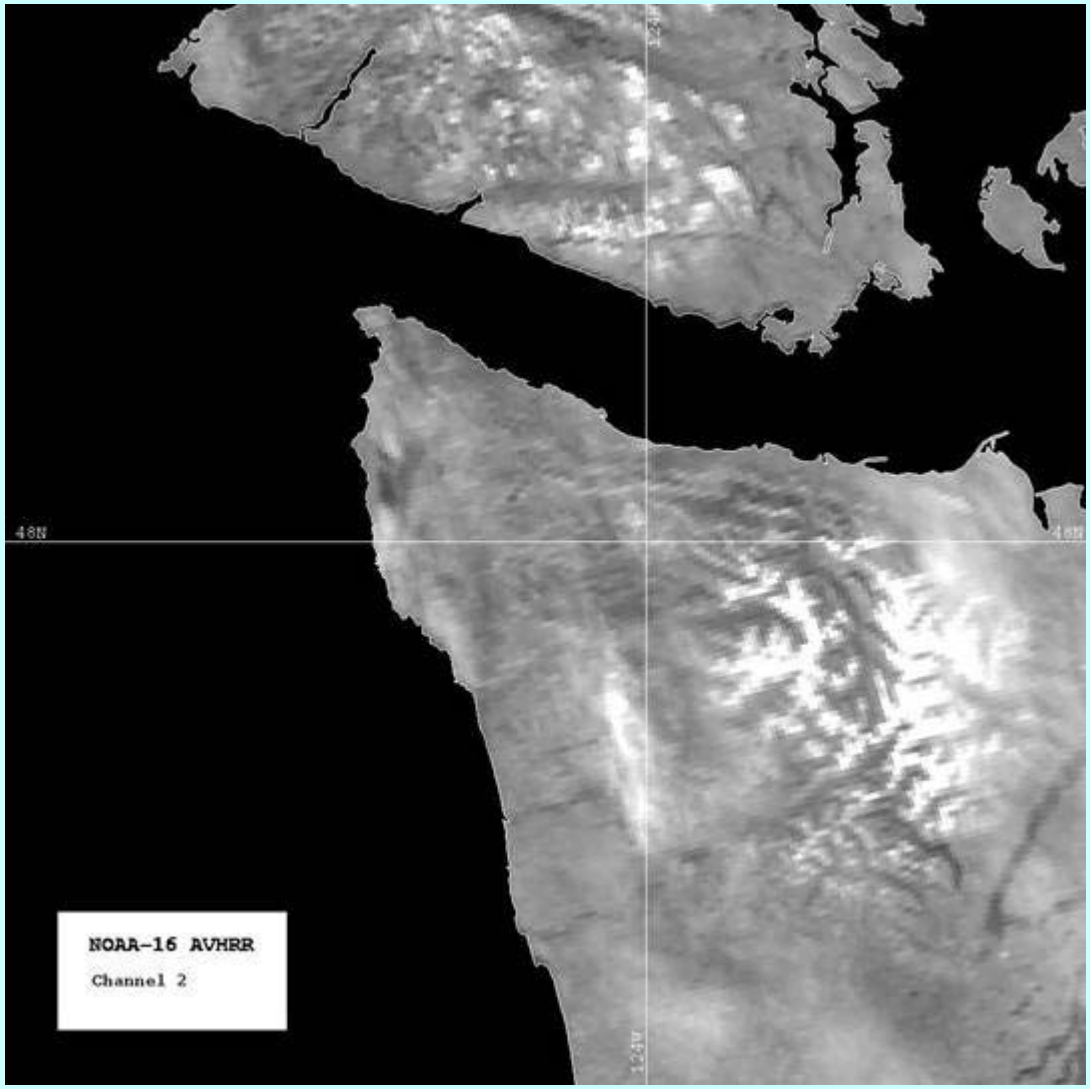
# MODIS provides 4x improvement in spatial resolution



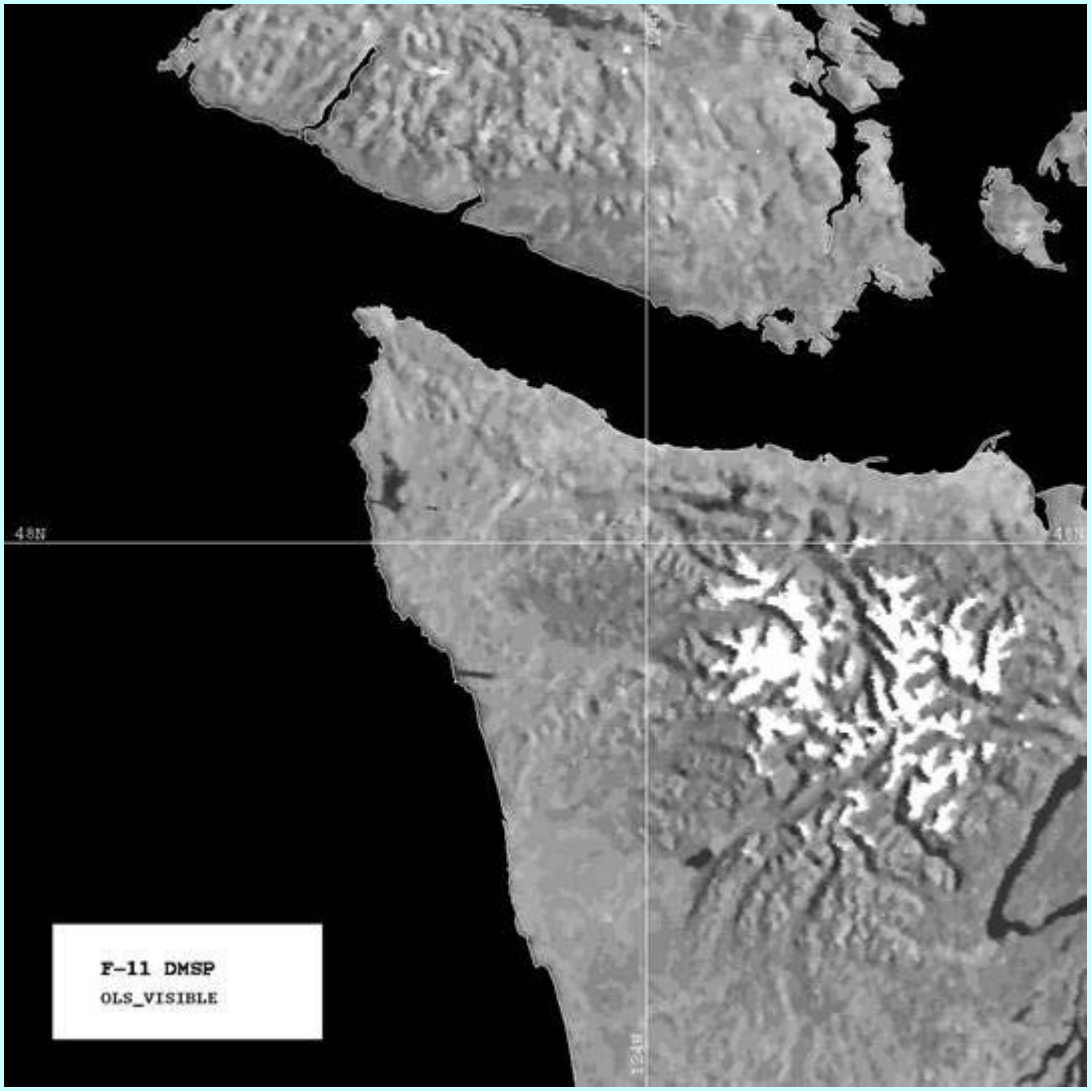

## In addition, MODIS flies on both the Terra (10:30AM) & Aqua (1:30PM) satellites, providing more imaging opportunities every day



# Vancouver B.C. AVHRR 1.1 km

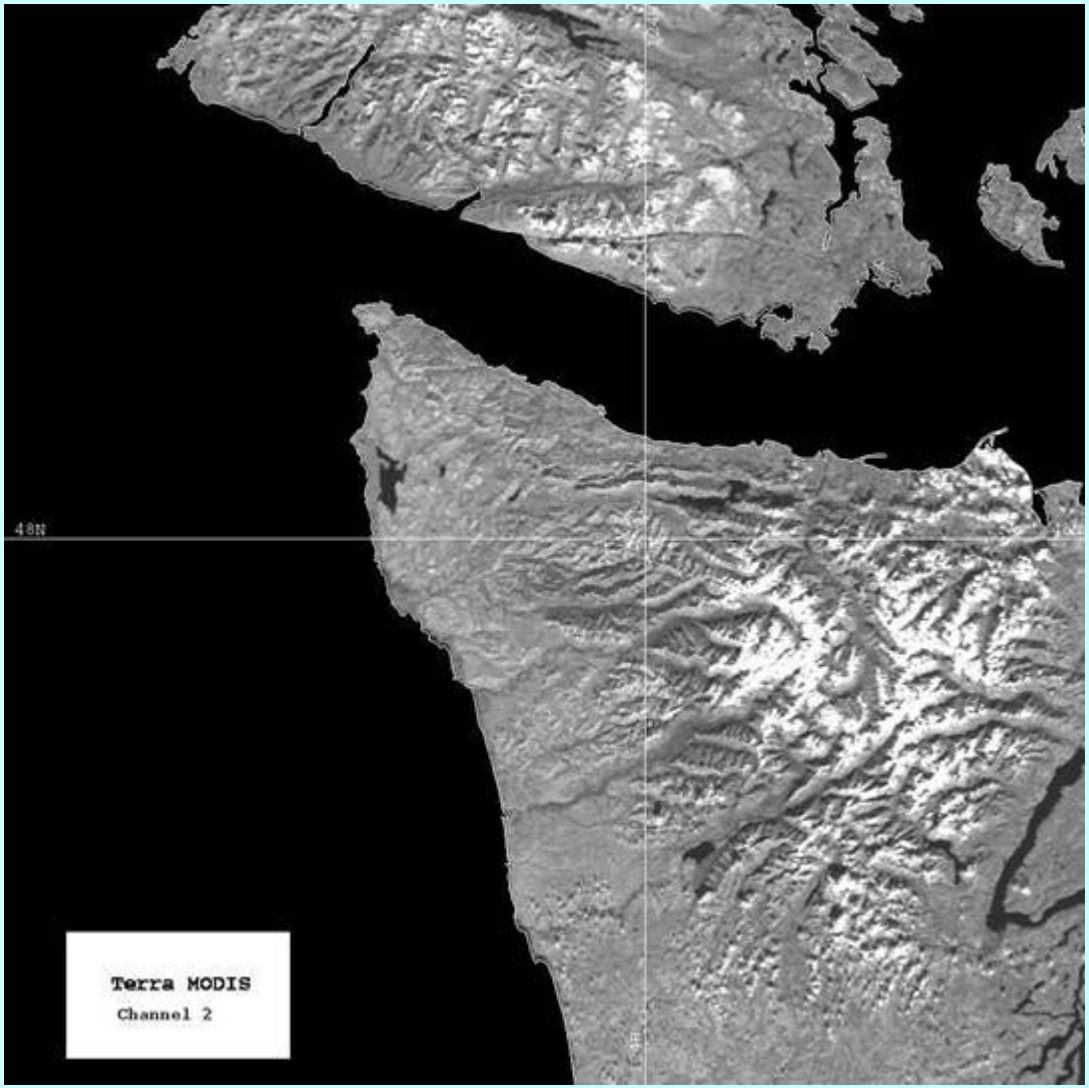


# Vancouver B.C. DMSP OLS 0.55 km

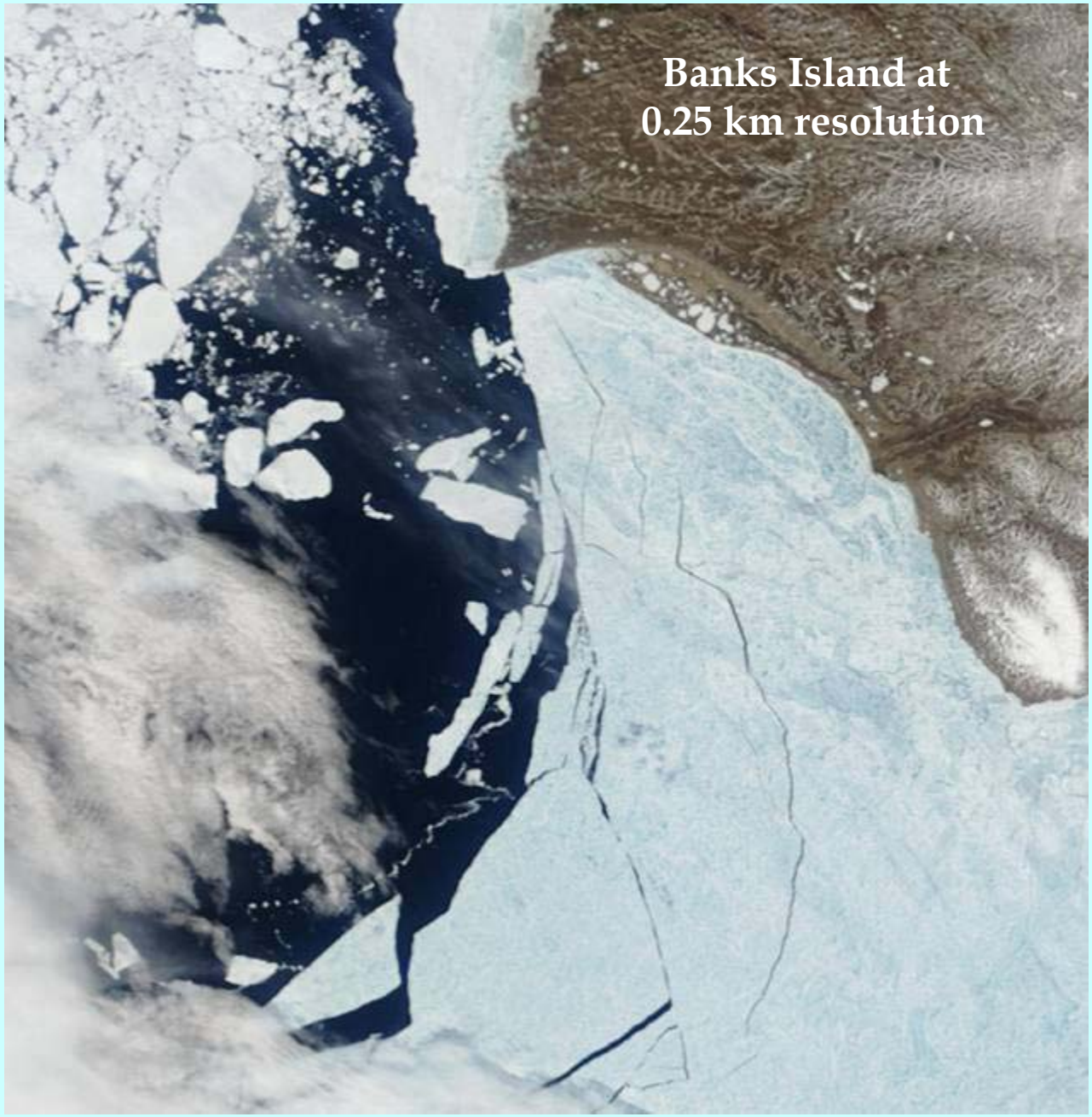


## A factor of 4 improvement in spatial resolution provides factor of 16 improvement in sampling density

# Vancouver B.C. MODIS 0.25 km




Banks Island at
1 km resolution


Banks Island at
0.25 km resolution

## Shipboard 1.2 m NOAA/DMSP system


**MODIS reception requires a 2.4 m antenna, but adequate room should be available on the deck above the bridge**

**Note: SeaSpace has installed over 35 of these MODIS systems at land-based sites, most recently at McMurdo Station in Jan 2005**

**All of these systems are shipboard-capable (i.e. no development required)**

**Fully compatible with the existing NOAA/DMSP system on HEALY**

# SeaSpace Plan

- Make temporary installation while HEALY still in Seattle, then remove the system when HEALY returns to homeport
- Place SeaSpace engineer on board for testing & training during one of the shorter legs in Alaskan waters
- Only charge for actual expenses (shipping, personnel, travel) estimated to be approx $30 - $40K
- Definition of success: ***substantial*** positive impact on operational efficiency, as determined by the commanding officer and chief scientist

**For further information:**

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