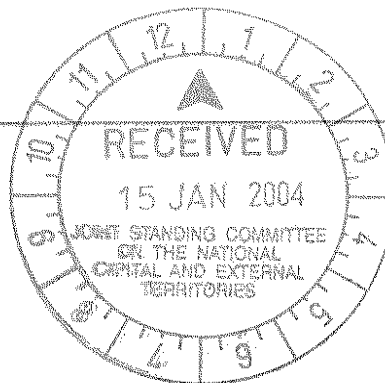


From: Fred Moreno
Sent: Thursday, 15 January 2004 12:04 AM
To: Committee, NCET (REPS)
Cc: 'Mark Pitts-Hill'; Bruce Manning
Subject: Antarctic Fisheries Monitoring via UAV



Dear Mr. Clements:

I am contacting you at the suggestion of Mark Pitts-Hill of the Great Southern Development Commission (GSDC) and Jon Berry of the City of Albany. I have met with both organizations discussing potential opportunities for Unmanned Aerial Vehicles (UAVs) which we propose to develop initially for use by Australian Customs – Coastwatch. Our approach is innovative and aims to produce a UAV family having a range in excess of 4000 nautical miles and endurance greater than 30 hours while cruising at 140+ knots over the ocean. Optical and infrared detection sensor on board combined with clever software and data compression will permit low resolution video to be sent back to a base station using low bandwidth satellite communications, and high resolution still pictures to also be transmitted using the same method. High resolution video imagery will be captured on board using compact disks for retrieval and possible evidentiary use after landing.

Through the use of novel imaging methods and software, we believe that while operating at 20,000 feet, we will be able to detect objects down to one meter in size automatically and with a low false alarm rate. In our vision, the aircraft will fly a prescribed search pattern. When it detects a target, it will send an alert signal to a ground operator together with a high resolution still image of the target. Vertical or oblique "photos" can be obtained. At lower altitudes (a few thousand feet) resolution will be adequate to permit identification of the ship or boat and the activities thereon. Based on an assessment of the imagery, the ground operator can loiter over the target, capture more imagery (overtly or covertly depending on weather and altitude) or proceed with the search pattern.

Our primary focus is to satisfy the Coastwatch mission requirements while delivering surveillance at a cost that is one-tenth of current Coastwatch manned aircraft operations. We are forecasting total loaded operating costs of \$350 per hour and surveillance costs below ten cents per square nautical mile. Our technology will not compete with the large, heavily equipped manned aircraft being used by Coastwatch at present. Rather it will compete with "non-surveillance" providing the ability to survey areas beyond the reach of Coastwatch because of budgetary and resource limitations and it will leverage existing Coastwatch.

I was asked if this technology, still in the emerging stages, might be suitable for monitoring of Antarctic fishery areas. The difficulty is the extreme distance from mainland Australia, and the extremely hazardous environmental conditions if manned aircraft are used. Our approach to developing our UAV is to keep costs sufficiently low that they become, in effect, disposable with a cost comparable to the cost of a large scale search and rescue operation as might be launched if a manned aircraft were to be lost. Our UAV is thus a natural for use in hostile environments where one is hesitant to deploy manned vehicles.

I learned that Australia operates airstrips in Antarctica, and that these airstrips are manned much of the year. Using these locations as deployment bases, one could, in theory, launch our UAVs from Antarctica and deploy them to the fishery areas where the prolonged range and endurance would permit extensive monitoring of the fishery areas. Data collected would be relayed back to our planned central command and control facility near Albany, WA and relayed to authorities for assessment and possible action.

I have attached a brief summary paper which I left with Jon Berry and Andrew Hammond of the City of Albany. It describes our primary mission, our stage of development, and other applications (including environmental monitoring) for which our UAV would be suitable.

Let me emphasize that our company is early stage, currently searching for financial resources, and thus our products will not be available for some time yet. Nonetheless, I believe that your Inquiry should be aware of emerging technologies and how they may be applied to environmental monitoring and fisheries surveillance as well as other areas that may be of interest to the Inquiry.

Please feel free to contact me if you have any questions or comments.

16/01/2004

Respectfully yours,

Fred Moreno
Chief Executive Officer
I3 Aerospace Technologies

16/01/2004