# UNIVERSITY-NATIONAL OCEANOGRAPHIC LABORATORY SYSTEM

*An association of Institutions for the coordination and support of university oceanographic facilities*

**Guidelines For Incorporating New Assets and Operators**
**As UNOLS Oceanographic Aircraft Facilities**

In the coming years there will be significant demand to utilize aerial platforms (manned and/or unmanned, remotely-piloted and/or autonomous) and sensor packages designed to carry out or support research, exploration, and observations within the ocean basins, and in the littoral seas. In conjunction with the development of new airborne assets, there will also be an increasing need for uniform community access to them. Because of these important pending issues, the UNOLS Scientific Committee for Oceanographic Aircraft Research (SCOAR) has undertaken to develop criteria for incorporating assets into the national academic oceanography endeavor, and as guidance to Institutions that apply for designation as UNOLS Oceanographic Aircraft Operators. This document provides guidelines for how new oceanographic aerial assets and their institutional operators will be evaluated for incorporation into the UNOLS community.

If not already a UNOLS Member, an academic institution interested in becoming a UNOLS Oceanographic Aircraft Operator will first apply for UNOLS membership. Once the institution has been accepted as a UNOLS Member, it can submit a request to SCOAR for designation as a UNOLS Oceanographic Aircraft Operator. SCOAR will contact the applicant for further information that may be required. In consultation with subject matter experts with similar experience in the scientific community, SCOAR will evaluate the information provided. The Committee will then forward to the UNOLS Council and the applicable Federal Agencies its recommendation as to whether the application should proceed, undergo further evaluation, or be deferred.

An operator of oceanographic aircraft should be prepared to provide the following information to the SCOAR in order for the application to be evaluated as a potential addition to the UNOLS resource and institutional operator pool:

1) Is there presently, or is there anticipated to be a significant demand by the community for the aerial asset(s) to be offered, and will this demand continue – or increase -- in the future? Evidence for meeting this requirement should include a likely stream of funding and any successful deployments to date, as well as documentation that includes publications based on such prior operations, and letters of endorsement from the user community.

2) Would incorporating the institution's aerial asset(s) into the UNOLS resource pool make it (them) significantly more beneficial to the community than it is (they are) now? How would the community benefit by having the asset(s) in the facility?

3) Will the platform(s) provide a unique capability to the UNOLS research community that is not currently available from other facility assets and/or is the anticipated demand

so high or different that a single existing asset cannot fulfill the demand? A full description of the aircraft platforms and sensor packages should include their unique capabilities, the type of environment they are suited to work in, and the types of science (present and future) that these platforms are suited to address. Operators should also include a statement regarding what type of vessels, embarked infrastructure and personnel, and capabilities that are required to operate the asset (e.g. is a flight deck a requirement or can the vehicle(s) be launched and recovered from existing vessels not so equipped?)

4) How mature is the technology? Is (are) the proposed asset(s) proven to be robust and beyond a developmental stage? Documentation of successful missions/deployments should be included with records of reliability, durations of deployments, and life expectancy. Additionally, applications must include the statement of airworthiness, for each platform to be utilized, created either by the manufacturer or by the owner and the basis for establishing airworthiness, if it is not a manufacturer determination.

5) What is the proposing operator's plan for transitioning these assets into the UNOLS and how will they be incorporated operationally into the facility? This plan should include a detailed time line as well as a commitment to provide access to the platforms and sensors to any appropriately funded investigator in a manner consistent with the UNOLS operating philosophy. Additionally, the proposing institution must be willing to assist and support investigators in compliance with regulatory requirements, such as obtaining a Certificate of Authorization (COA) for proposed aircraft operations. (A statement of the institution's experience in obtaining such permissions is also required and should be accompanied by a list of approved COAs for the specific UAS and similar operations.)

6) What are the financial costs associated with operating the aerial asset(s)? Proposing operators must include complete documentation of the anticipated operational, maintenance and personnel costs (current and estimated into the future), complete inventory of high-priced components and spares, documentation of off the shelf versus one-of-a-kind required components, and number of required shore-based and ship-based personnel. Consideration should be given to the logistical support required for ship-based expeditions as well as shore-based utilization of the aircraft. Additionally, any components or aerial platforms that may trigger International Traffic in Arms Regulations (ITAR) concerns need to be identified. Information on liability insurance coverage must accompany the application.

7) What is the mechanism for providing high-quality data products from the aerial asset(s) in a timely fashion that are easily accessible to the users? Are the data products in a standard format useable by the general community, similar to those from other UNOLS assets? Products such as navigation track lines, real-time and recorded video, and other data streams should be produced by the end of the expedition. Other products may require longer time periods for processing. Information regarding expected timeline for completion of products should be included in the request.

SCOAR will review all designated UNOLS aircraft assets on a periodic basis. New aircraft assets will be formally reviewed in the first and third year after initial incorporation into the proposed operating facility. For these reviews, the operator will provide SCOAR a detailed analysis of the performance of the asset, including evaluations from recent users and a summary of true costs associated with the tool's use over a period of time designated by SCOAR. SCOAR will make recommendations to the UNOLS Council regarding continued inclusion of aircraft assets in the National Oceanographic Aircraft Facility..