Aircraft Total Lightning Advisory System (ATLAS)	

LEAD AGENCY POINT OF CONTACT: Dr. Ralph Markson, Airborne Research Associates, 781-899-1834, rmarkson@mediaone.net

TRAINING POINT OF CONTACT: Same

PROGRAM/PROJECT DESCRIPTION: ATLAS is a ground-based or aircraft-based sensor and mapping system for detecting and displaying total lightning (cloud-to-cloud and cloud-to-ground) information.

I. TRAINING REQUIREMENTS:

A. Trainees	B. Skill Level of Designated Trainees
Air Traffic Controllers	
⇒ Flight Service Station	Developmental☒ Journey Level☒ En-Route Flight Advisor☒ Operations Supervisor☒
⇒ En-Route	Developmental☒ Journey Level☒ Operations Supervisor☒
⇒ Terminal (Radar Control/Tower)	Developmental☒ Journey Level☒ Operations Supervisor☒
⇒ DoD Controllers	Apprentice☒ Journeyman☒ Craftsman☒
Traffic Managers	Command Center Traffic Management Specialist ☒ Traffic Management Unit Traffic Management Specialist ☒
Dispatchers	Flight Dispatcher☒
National Trans. Safety Board	Accident Investigator☒
Pilots	
⇒ Commercial	Flight Engineer ☒ First Officer ☒ Captain ☒
⇒ General Aviation	Student ☒ Private ☒ Commercial☒ Air Transport☒ Instrument Rated☒ Instructor ☒
⇒ Military	Student ☒ Line ☒ Instructor ☒ Examiner ☒
Navigators (DoD)	Student ☒ Line ☒ Instructor ☒ Examiner ☒
DoD Forecasters/Meteorologists	
Air Force	
⇒ Enlisted	Apprentice ☒ Journeyman ☒ Craftsman ☒
⇒ Civilian	Forecaster ☒
⇒ Officer	Entry Level ☒ Fully Qualified ☒
Navy	
⇒ Enlisted	Apprentice Forecaster ☒ Forecaster ☒ Master Forecaster ☒
⇒ Civilian	Forecaster ☒
⇒ Officer	Accession Forecaster ☒ Forecaster ☒
National Weather Service	
⇒ Forecasters/Meteorologists	Intern ☒ Journeyman ☒ Senior Forecaster ☒ Science and Operations Officer ☒
	Warning Coordination Meteorologist ☒ Meteorologist-in-Charge ☒
	Hydro-Meteorological Technician ☒ Incident Meteorologist (e.g. Fire Weather) ☒
	Center Weather Service Unit Meteorologist ☒ Applied Research Meteorologist ☒
University/Laboratory	Instructor ☒ Research Scientist ☒
Private Sector	
⇒ Forecasters	Independent Forecaster ☒ Senior Forecaster ☒
⇒ Researchers	Master's ☒ Doctorate ☒

C. Training Required
Familiarization ☒ Refresher Training ☒
Basic Knowledge ☒ Basic Task Performance ☒
Intermediate Knowledge ☒ Intermediate Task Performance ☒
Advanced Knowledge ☒ Advanced Task Performance ☒
Other: Specific audience dependent.

II. TRAINING DEVELOPMENT/DELIVERY:

A. Training Program Status
Determination of Training Requirements ☒ (current) Determination of Training Concept ☒ (current)

B. Training Method
Other: While all of the above could be used, video presentation of total lightning spatial and temporal variations over-laid on radar data would be the most effective way of teaching the relationship of the total lightning data to radar returns.

C. Training Delivery Resources
Other: Each could be used as appropriate.

D. <u>Training Provider</u> Contractor (manufacturer) ⊠ Other: Each agency/organization could provide such training but all would not be required. Airborne Research Associates could provide a detailed monograph describing the application of total lightning to aviation safety and operational problems that could be utilized by various training organizations.
E. <u>Training Measurement</u> Performance (task performance and evaluation) ⊠ Other: Performance with real stored data would be the most realistic way to measure understanding of the material.
F. <u>Training References</u> Technical References   ⊠ Product Description Document/Guide ⊠ System Manuals ⊠ Other: Assuming an ATLAS or LASI Total Lightning Mapping System were utilized, these manuals would be necessary.
G. <u>Training Completion Documentation</u> Other: User dependent.
III. TRAINING IDENTIFICATION/DESCRIPTION
A. <u>Training Identification</u> Name: Airborne Research Associates Location: Weston, MA Cost: TBD, would depend on what had to be done Other: training could be at various locations
B. <u>Training Length</u> 2-10 days Other: Two days to two weeks, depending on how deep we get into the subject and other factors. For example, for full training we would want to set up actual systems, observe data, have to wait for storms, and go through troubleshooting procedures for operating equipment. At a minimum level it could simply be a lecture with video presentation.
C. <u>Group Size</u> Minimum: 4   Desired: 10 Maximum: 30
D. <u>Trainer to Trainee Ratio</u> One trainer for 6 to 12 trainees   ⊠ One trainer for more than 12 trainees ☐ only as a lecture
E. <u>Point of Contact to Request Training</u> Name: Dr. Ralph Markson Organization: Airborne Research Associates Phone Number: (781) 899-1834 E-mail Address: rmarkson@mediaone.net