Federal Aviation Administration
Alaskan Region

Capstone Program Management Office
801 B Street, Suite 300
Anchorage Alaska 99501

Capstone Quarterly Report

4th Quarter FY01

July - September 2001

FAA ALASKAN REGION

Capstone

Investment in Safety

Capstone To Date

Executive Summary

With the budget close out of this fiscal year and the transition to Capstone's Phase II in Southeast Alaska, we pause to re-evaluate what we've accomplished, to reaffirm the direction in which we wish to continue, and to reassess how we can meet Alaska's aviation needs both now and in the future. It is inspiring to reflect on the fact that when it comes to making the skies safer using Automated Dependent Surveillance – Broadcast (ADS-B) technology, Capstone is virtually a new "lifeform" succeeding not only under a national magnifying lens, but withstanding scrutiny under the world's microscope as well. With further support and funding, we will continue to work with our aviation industry partners to "push the envelope", leading the charge for creating safer skies in Alaska and influencing new technologies for the world.

Some of the accomplishments towards our goal of improving aviation safety and efficiency for the fourth quarter of 2001 were:

July

- On July 2, 2001, Capstone team members worked with representatives from the Small Aircraft & Rotorcraft Directorates and the Avionics Systems Branch (AIR-130) to compile technical requirements for a statement of work for Capstone's Phase II avionics in Southeast Alaska. Up to 200 avionics suites are planned to be purchased for installation in commercial service fixed wing and rotorcraft. The closing date for offers was September 19, 2001.

- On July 3, 2001, contracts were awarded to Evergreen Helicopters of Alaska (d.b.a. Avionics Specialists) and Helipro International for Capstone Phase I avionics equipment installations to be accomplished in Bethel. These contracts were intended to help alleviate the cost and impact of aircraft downtime for operators who would otherwise be required to fly to Anchorage for the installation work. The Capstone Program also rented a hangar at Bethel Airport to facilitate installations on site.

- July 24 – 31, 2001, Capstone representatives completed another successful program demonstration at the Experimental Aircraft Association's 2001 Air Venture in Oshkosh. DOT Secretary Norman Mineta and FAA Administrator Jane Garvey visited the Capstone display booth. Program Manager John Hallinan delivered a feature presentation at the FAA hangar on July 30, 2001. While there, team members visited other displays to gather information on evolving technologies that may be useful for future program applications.

August

- August 3, 2001, the FAA dedicated the Mountain Village Automated Weather Observation System (AWOS) in honor of Chief Chekohak. Chief Chekohak was selected by the Asa'carsarmiut Tribal Council for his role as founder and first traditional chief of Asa'carsarmiut, for his role

as a successful hunter and trapper, and for his role as a wise man providing advice, direction, and discipline to the people of the village. Regional Administrator Pat Poe spoke at the dedication and visited with village members. Plaques for other Capstone facilities in the Yukon-Kuskokwim Delta area are planned and local communities have been asked to nominate individuals to be honored.

- On August 7, the Capstone Program Office conducted site investigations for potential installation of a multilateration system at the Juneau Airport and in the vicinity of the Gastineau Channel. The results of the survey indicates that the system will require a processor and approximately four sensors on the airport and six additional sensors spaced along both sides of the channel extending southeastward from the airport. The site survey team included representatives from the Alaska Region Logistics Division, the South Alaska SMO, Airway Facilities, Sensis Corporation, and the Capstone Office.

- During the month of August, personnel selections for the Capstone Program Office were Ray Collins to the Air Traffic Liaison position at the Regional Office, Jim Hill to the Air Traffic Liaison position at Anchorage Air Route Traffic Control Center (ARTCC), and James Hebert to the Safe Flight 21 Liaison position.

- An additional 50 Phase I avionics equipment suites were ordered for installation in aircraft servicing the YK Delta area.

- As of the end of August, there were 124 Capstone avionics equipment suites installed for Phase I and 16 installations were in progress.

September

- On September 17, 2001, the Sparrevohn GBT was installed, and connected to the developmental Micro-EARTS on September 18, 2001.

- During the month of September, personnel selections for the Capstone Program Office were Mark Olson and Wes Mooty. These individuals will be primarily responsible for coordinating Capstone issues relating to the ground infrastructure and the Anchorage ARTCC Micro-EARTS interface.

- The week of September 25, Tom Elledge of South Alaska SMO traveled to Washington, D.C., to initiate the contract with Advancia Corporation that will document software for the Capstone Communications and Control Server (CCCS) at Anchorage ARTCC.

- As of the end of September, there were 135 Capstone avionics equipment suites installed for Phase I and 9 installations were in progress.

Briefings

Capstone personnel provided numerous briefings and avionics demonstrations

this quarter. The following information highlights some of these events:

- A briefing of the Capstone Program and a demonstration of the avionics training simulator was provided to Acting NTSB Chair Carol Carmody and Manager Anchorage NTSB Office James LaBelle July 3, 2001. Ms. Carmody was particularly interested in the applications of moving maps and the feasibility of incorporating ADS-B transmitters into airport maintenance vehicles to help alert pilots to vehicle presence on active runways.

- Jean Southwick of Sensis Corporation presented a multilateration briefing on August 27, 2001, to numerous attendees at the Capstone Program Office and the Regional Management Team.

Meetings

The Capstone Program Office hosted numerous meetings and telecons this quarter. The following information highlights several of those worthy of note:

- July 7 - 13, 2001, personnel from the FAA Office of Communication, Navigation, & Surveillance Systems (AND) visited Anchorage. The group included Ken Leonard, Susan Hedenberg, Bob Schramm, and Steve Zaidman's chief of staff Dave Kerr. The purpose of the visit was to become more acquainted with Alaska and the Capstone Program. Capstone briefings and demonstrations were accomplished along with industry representative meetings in Anchorage, Bethel, and Juneau.

- August 2 - 3, 2001, Capstone representatives met with individuals from the Office of Aircraft Services, the U.S. Fish and Wildlife Service, and the Bureau of Land Management. The group wanted to determine if there was any feasible connection between Capstone program requirements and direct aircraft-to-satellite datalink communications systems that their agencies were investigating for various operational applications such as resource management and fire fighting. After receiving a Capstone informational briefing, the group felt there were possible applications of the Capstone technology to their program areas.

- August 7 – 9, 2001, Capstone team members and representatives from Air Traffic, Flight Standards, and Regulations & Certification met in Juneau to determine safety requirements and initiate planning for Capstone's Phase II in Southeast Alaska. Assistant Air Traffic Division Manager Steve Creamer helped collect requirements input from the managers and personnel at Juneau Automated Flight Service Station and Juneau Air Traffic Control Tower. Geoff Shearer of ARU-200 also participated. Elements of Capstone’s Phase II in Southeast Alaska will be incorporated into a short term initiatives document for Associate Administrator of Air Traffic Services Steve Brown. National and local representatives from the Professional Airway System Specialists and the National Air

Traffic Controller's Association also participated.

- On September 12th, members of the Capstone Program Office attended a planning meeting in Washington, D.C. for the Capstone Joint Resources Council (JRC). Tasks that must be accomplished to present the Capstone Program before the JRC in the January/February 2002 timeframe were identified. JRC review and approval is needed in order to obtain operational funding support for the Capstone ground system delivering services in the Capstone's Phase I Yukon-Kuskokwim delta area. The meeting also served to integrate efforts regarding the Action Plan being developed by Geoff Shearer.

- Capstone representatives hosted a booth at the Air, Land, and Sea Exposition 2001 in Juneau September 28 - 29, 2001. They provided briefings and demonstrated the training simulator at the Capstone display booth.

Watch Items

- Spectrum: A proposed memorandum of agreement (MOA) between the Department of Transportation/FAA and the Department of Defense is needed to define and clarify the way these two organizations will cooperate in the future regarding coexistence in the ARNS band. A preliminary MOA has been proposed. Some cost and technical issues still need to be resolved. However, tremendous steps have been taken in the consensus and support of the proposed MOA with both parties being cooperative.

- Minimum Operational Performance Specification (MOPS): RTCA has established a committee to develop operational requirements and minimum performance standards for ADS-B. Once the MOPS is published and the FAA designates a frequency to be used, the UAT can be made available for commercial sale to private individuals.

- GBT Operations: It is anticipated that the beacon replacement program scheduled for next fiscal year at thirteen MAR sites may involve complete shut down of their power systems. Shut down of power would impact operations of GBT's that were co-located with these MAR's. Airway Facilities representatives will be contacted to confirm impact and determine the schedule for the MAR work.

- Capstone's Phase II avionics: An evaluation team is in the process of reviewing Phase II avionics proposals to identify the most suitable vendor. Based on their recommendation, a vendor will be down selected. It is anticipated that a demonstration of capabilities will take place sometime in the summer of 2002. Pending a successful demonstration, a contract will be awarded.

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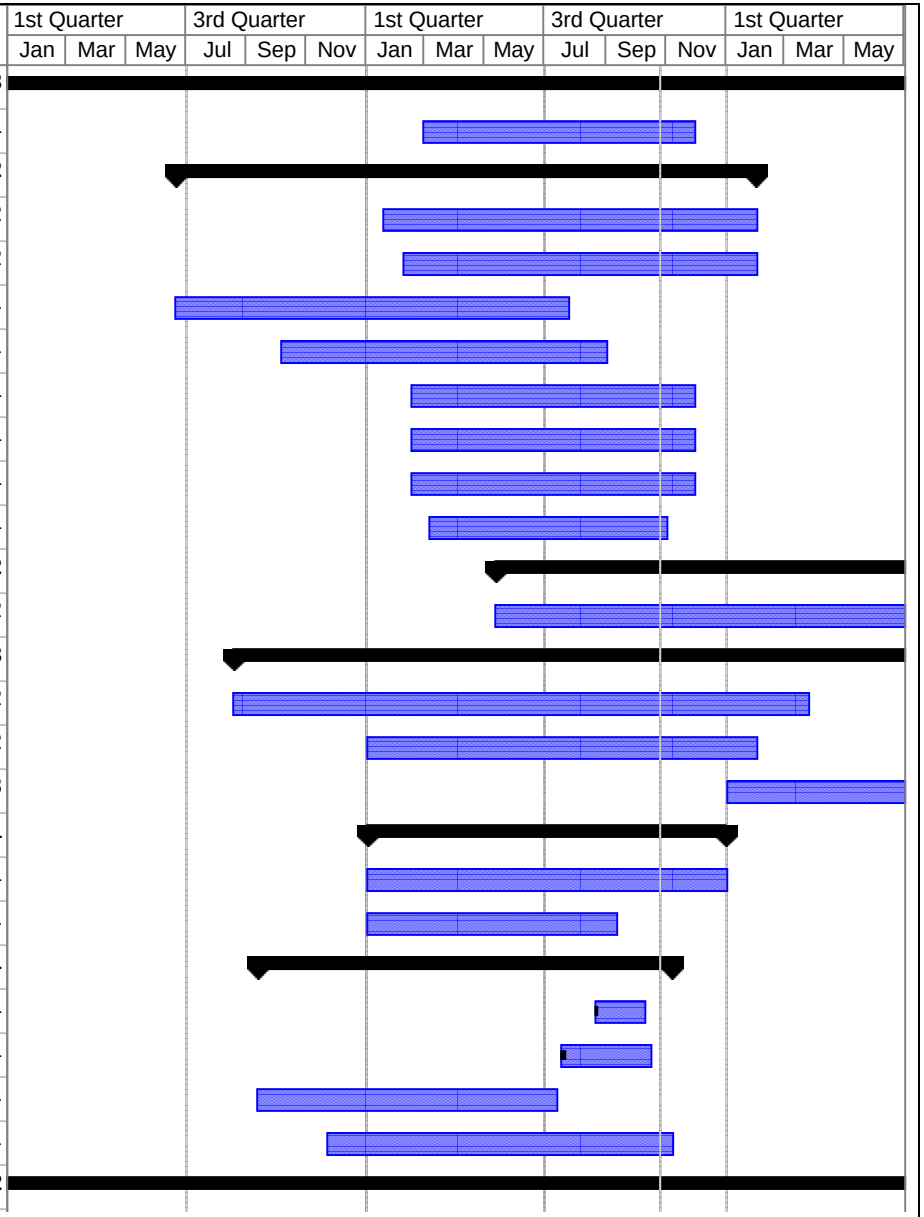
Capstone Timeline

ID	Task Name	Start	Finish
1	**Finsh Bethel/Y-K Delta**	**1/1/00**	**6/27/03**
2	Avionics Installations	2/27/01	11/30/01
3	**GBT Installations**	**6/19/00**	**1/31/02**
4	EHM GBT Installation	1/16/01	1/31/02
5	CZF GBT Installation	2/6/01	1/31/02
6	ANI GBT Installation	6/19/00	7/23/01
7	KSM GBT Installation	6/19/00	8/31/01
8	DLG GBT Installation	2/15/01	11/30/01
9	AKN GBT Installation	2/15/01	11/30/01
10	SUMMIT GBT Installation	2/15/01	11/30/01
11	UNK GBT Installation	3/5/01	10/31/01
12	**ZAN/Capstone Architecture Upgrade**	**5/10/01**	**10/3/02**
13	MEARTS upgrades	5/10/01	10/3/02
14	**Information Services and Dispatch Flight Monitoring**	**8/18/00**	**1/1/03**
15	FIS-B	8/18/00	3/25/02
16	Dispatch Flight Monitoring	1/1/01	1/31/02
17	TIS-B	1/1/02	1/1/03
18	**Bethel Special VFR Improved Operations**	**1/1/01**	**12/31/01**
19	Bethel Tower Display	1/1/01	12/31/01
20	Sector 13 Hi/Low Resectorization	1/1/01	9/10/01
21	**AWOS III Commissioning/JAI**	**9/11/00**	**11/6/01**
22	Scammon Bay	8/21/01	10/10/01
23	Hoonah	7/16/01	10/15/01
24	Platinum	9/11/00	7/12/01
25	Pilot Point	11/21/00	11/6/01
26	**Continued Training**	**1/1/00**	**12/31/02**



Spending Plan for FY01 F&E Funding as of September 30, 2001

Spend Plan	1Q 01	2Q 01	3Q 01	4Q 01	1Q 02	2Q 02	3Q 02	4Q 02	Totals
Avionics		$.4M	$.6M	$2.12M	$.32M				**$3.44M**
Ground		$M	$.5M	$1.15M	$.97M				**$2.62M**
Cert Proced		$.36M	$.61M	$.088M	$.352M				**$1.41M**
FIS/TIS/GPS		$.0M	$.0M	$.009M	$.499M				**$.508M**
MISC/SPO		$.70M	$1.01M	$1.513M	$.003M				**$3.226M**
AWOS		$.17M	$.1M	$.036M	$.164M				**$.47M**
MITRE	.5M								**$.50M**
Totals	**.5M**	**$1.63M**	**$2.82M**	**$4.916M**	**$2.308M**				**$12.174M**
Travel	$89K	$53K	$33K	$106K					**$.281M**

Capstone Spend Plan:

a. 1Q 01: $500K to fund 2 man-years of work from MITRE

b. 2Q 01: $400K for engineering support and avionics spares. $360K for MICRO-EARTS modification. $460K for MICRO-EARTS modification. $700K for contract support and program office operation. $170K for AWOS at Hoonah and commissioning 7 AWOS in Y-K delta.

c. 3Q 01: $600K for avionics installations and modifications. $.5M for ground stations and communications improvement. $1M to purchase contract support and program office expense. $100K for AWOS at Hoonah.

d. 4Q 01: $2.12M for additional avionics and installations in Y-K delta. $1.15M for ground infrastructure work in the Southeast and automation certification at ZAN. $1.5M for ‘02 contract support and program office expense.

e. 1Q-02: Remaining FY01 funds will be combined and provide the $2.31M for multilateration in Juneau.

Capstone Phase 1 Status of Program Elements

Element 1. Aircraft Equipment Package

A. Coordinate and complete a Request For Information (RFI).	Completed
B. Coordinate and complete a Request For Offer (RF0).	Completed
C. Down select prospective vendor	Completed
D. Initial operational capability demonstration	Completed
E. Contract awarded	Completed
F. Install equipment	In Progress

Element 2. Obtain and Install Ground Infrastructure to Support ADS-B

A. Coordinate and complete a Request For Information (RFI).	Completed
B. Coordinate and evaluate purchase of a Mitre Ground Station.	Cancelled
C. Coordinate and complete a Request for Offer (RFO).	Completed
D. Down select prospective vendor	Completed
E. Initial operational capability demonstration	Completed
F. Contract awarded	Completed
G. Install Ground Stations	In Progress

Element 3. Micro-EARTS Adaptation

A. Procure modification to Micro-EARTS.	Completed
B. Conduct BETA Demo	Completed
C. Conduct design reviews	Completed
D. Certification	In Progress

Element 4. Coordinate/Obtain/Implement Flight Information Services (FIS)

A. National contractor selection.	Completed
B. Select contractor	Completed

Element 5. Train Capstone Participants

A. Complete statement of work.	Completed
B. Issue contract	Completed
C. Conduct Training	In Progress

Element 6. Obtain and Install Automated Weather Equipment

A. Select prospective sites	Completed
B. Perform site surveys	Completed
C. Procure the automated weather equipment	Completed
D. Install automated weather equipment	In Progress

Element 7 Conduct Safety and Human Factors Study

A. Complete statement of work.	Completed
B. Issue contract	Completed
C. Conduct Study	In Progress

Program Elements

1. Aircraft Equipment Package

Objective	Purpose
To equip up to 150 aircraft used by the commercial operators in the Yukon-Kuskokwim delta region of Alaska with a government-furnished Global Positioning System (GPS) based avionics package.	A significant number of mid-air collisions, controlled flight into terrain incidents, and weather-related accidents can be avoided with new technologies incorporated into the Capstone avionics package. The Alaskan Region's "Capstone Program" is an accelerated effort to improve aviation safety and efficiency through installation of government-furnished Global Positioning System (GPS)-based avionics and data link communications suites in most commercial aircraft serving the Yukon-Kuskokwim delta area. Capstone-equipped aircraft will be used initially to validate three of the nine high priority Free Flight Operational Enhancements requested by RTCA. • Flight Information Services (FIS) • Cost Effective Controlled Flight Into Terrain (CFIT) Avoidance • Enhanced See and Avoid The Capstone program will provide real world information and experience that will provide enhanced safety and operational capabilities.

Progress/Outcomes

A. Coordinate and complete a Request For Information (RFI). **1st Quarter FY99 - Completed**

The Alaskan Region's Logistics Division published in the Commerce Business Daily a "Request for Information (RFI)." The RFI publicly announced to interested avionics vendors the FAA's proposed Capstone Program and requested submission of information on their products, services, and capabilities which are currently available, to meet the needs for the Capstone program. Information provided by the five vendors who responded will be considered as the FAA prepares performance specifications for Capstone Program avionics and ground transceiver equipment.

Aircraft Equipment Package-cont.

.Progress/Outcomes - cont.

B. Coordinate and complete a Request for Offer (RFO). **2nd Quarter FY99 - Completed**

The Alaskan Region's Logistics Division completed the RFO. The announcement was made on the internet March 22, 1999. The RFO will close April 26, 1999. The Request for Proposals (RFP) for avionics suites will be published in hard copy controlled by the Logistics Division. Standard performance specifications common to the avionics industry are being utilized.

C. Down select prospective vendor. **3rd Quarter FY99: - Completed**

The Avionics RFO closed April 26, 1999. UPS Aviation Technologies (formerly II Morrow, Inc), an Oregon based subsidiary of United Parcel Service was down selected. UPS AT will be required to produce at least two sets of installed avionics (in aircraft provided by UPS AT), a ground station, and related software to demonstrate operation of the proposed avionics system, in flight, at Bethel, Alaska in August 1999. Following a successful flight demonstration, a production contract will be awarded. The number of avionics suites purchased, up to a maximum of 200, will be based on the total available budget of $4 million. It is anticipated approximately 150 units will actually be procured.

D. Conduct Initial operational capability demonstration. **4th Quarter FY99 - Completed**

An initial operational capability demonstration was completed on August 25, 1999. UPS AT, using a company-owned Beechcraft King Air airplane and a specially equipped Cessna Model 208 Caravan furnished by PenAir, UPS AT, demonstrated that its proposed Global Positioning System (GPS) navigation unit, multi-function cockpit display (MFD), and datalink radio system would meet FAA performance specifications for the Capstone Program.

Aircraft Equipment Package – cont.

Progress/Outcomes - cont.

E. Award Contract. **4th Quarter FY99 - Completed**

A determination was made that FAA specifications were met and a contract was awarded on September 13th, 1999. The contract was for Capstone avionics systems, installation kits, terrain databases, ground-based transceivers, an avionics training simulator and training assistance.

F. Install Equipment. **4th Quarter FY01 – In Progress**

One hundred thirty-five (135) aircraft have been installed with Capstone avionics suites with 9 installations in-progress. A Solicitation No. DTFA04-01-R-20140 for avionics installs in Bethel, Alaska was issued on 7/3/01.

2.Obtain and Install Ground Infrastructure to Support ADS-B

Objective	Purpose
To install ADS-B ground stations at up to twelve (12) locations in the Yukon-Kuskokwim delta region of Alaska	To provide enhanced see and avoid information, each ADS-B equipped aircraft broadcasts its precise position in space via a digital datalink along with other data, including airspeed, altitude and whether the aircraft is turning, climbing or descending. This provides other aircraft, as well as ground facilities that have ADS-B equipment a much more accurate depiction of air traffic than radar can provide. To provide the digital datalink capability in a cost-effective manner requires the installation of ground based transceivers.

Progress/Outcomes

A. Coordinate and complete a Request For Information (RFI). **1st Quarter FY99 - Completed**

The Alaskan Region's Logistics Division published in the Commerce Business Daily a "Request for Information (RFI)." The RFI publicly announced to interested avionics vendors the FAA's proposed Capstone Program and requested submission of information on their products, services, and capabilities which are currently available, to meet the needs for the Capstone program. Information provided by the five vendors who responded will be considered as the FAA prepares performance specifications for Capstone Program avionics and ground transceiver equipment.

B. Coordinate and evaluate purchase of a Mitre Ground Station. **4th Quarter FY99 - Cancelled**

The purchase of the Mitre ground station has been cancelled. The proposed vendor ground station and datalink infrastructure does not require an additional Mitre ground station.

Progress/Outcomes - cont.

C. Coordinate and complete a Request for Offer (RFO) for ground stations. **2nd Quarter FY99 - Completed**

The Alaskan Region's Logistics Division completed the RFO. The announcement was made on the internet March 22, 1999. The RFO will close April 26, 1999.The Request for Proposals (RFP) for avionics suites will be published in hard copy controlled by the Logistics Division. After an initial bidding period, FAA will accept written proposals for evaluation. An independent team will then select the best apparent offer based on technical qualifications and cost considerations using previously documented objective selection criteria. The number of ground stations allowed to be purchased as a separate line item under the Avionics contract includes a minimum of 12 and maximum of 50 sets if the line item is exercised. The apparent successful vendor will be required to produce at least two sets of installed avionics (in aircraft provided by the manufacturer), a ground station, and related software to demonstrate operation of the proposed avionics system, in flight, at Bethel, Alaska in July 1999. Following a successful demonstration, the decision to order ground stations from the Avionics vendor will be made. The Avionics RFP will include a delivery line item for data link ground stations compatible with the avionics. FAA may procure all necessary units from the vendor, or purchase some or all from another source, with cost being the primary consideration. Additional units beyond the 12 immediately required may be procured from the vendor if it is determined advantageous to FAA and if funds become available.

D. Down select prospective vendor. **3rd Quarter FY99 - Completed**

UPS Aviation Technologies (formerly II Morrow, Inc), an Oregon based subsidiary of United Parcel Service was down selected. UPS AT will be required to produce at least two sets of installed avionics (in aircraft provided by UPS AT), a ground station, and related software to demonstrate operation of the proposed avionics system, in flight, at Bethel, Alaska in August 1999. Following a successful flight demonstration, a production contract will be awarded. FAA may procure all necessary units from the vendor, or purchase some or all from another source, with cost being the primary consideration. Additional units beyond the 12 immediately required may be procured if it is determined advantageous to FAA and if funds become available.

Progress/Outcomes - cont.

E. Conduct initial operational capability demonstration. **4th Quarter FY99 - Completed**

An initial operational capability demonstration was completed on August 25, 1999. UPS AT, using a company-owned Beechcraft King Air airplane and a specially equipped Cessna Model 208 Caravan furnished by PenAir, UPS AT, demonstrated that its proposed ground station system would meet FAA performance specifications for the Capstone Program.

F. Award contract. **4th Quarter FY99 - Completed**

After analyzing the data from the initial operational capability demonstration, a determination was made that FAA specifications were met and a contract for the ground stations was awarded on September 13th 1999.

G. Install ground stations. **4th Quarter FY01 - In Progress**

Site visits at Unalakleet, Sparrevohn, Tatalina, and Site Summit are complete (this completes site surveys to all Phase I sites). St Marys and Aniak sites have been installed and are awaiting union negotiations to connect to the operational network.

3. Micro-EARTS Adaptation

Objective	Purpose
Adapt the Micro-EARTS at the Anchorage ARTCC to receive and process ADS-B position reports and fuse radar targets for display to air traffic controllers and pilots.	To allow pilots of Capstone-equipped aircraft to see radar targets for all nearby aircraft as well as ADS-B equipped aircraft position reports and radar targets via Traffic Information Service-Broadcast (TIS-B) for all nearby traffic on their multiple function display (MFD). The Micro-EARTS at the Anchorage ARTCC is being adapted to receive and process ADS-B position reports and fuse radar targets for display to air traffic controllers and pilots.

Progress/Outcomes

A. Procure and install modification to Micro-EARTS. **3rd Quarter FY99 -Completed**

Lockheed-Martin Corporation representatives installed the Capstone Micro-EARTS modification during April in preparation of the Beta-demonstration.

B. Conduct Beta Demonstration. **3rd Quarter FY99 -Completed**

The modification was successfully demonstrated during the week of April 19 and again on May 18-19. Radar targets were fused with ADS position reports and displayed on remote displays. Following testing, this capability is expected to reach Operational Readiness Demonstration by August 2000.

C. Design Reviews. **3rd Quarter FY00 - Completed**

Design reviews were completed by AOS in May 2000. Software was delivered and installed in the Anchorage ARTCC in June.

Progress/Outcomes - cont.

D. Certification. **4th Quarter FY01 - In Progress**

The capability to provide TIS-B services in a dispatcher flight-monitoring mode has not been resolved due to a number of issues. There is ongoing discussion if this capability can be provided through either the operational or developmental Micro-EARTS and what additional hardware and software changes are required to accomplish this, much of which is unfunded at this time.

4. Coordinate/Obtain/Implement Flight Information Services (FIS)

Objective	Purpose
To work in conjunction with AND-700 to obtain and field FIS.	There is a significant amount of data in the National Airspace System that, if the pilot could have access to it in the cockpit, would make the flight safer through improved situational awareness (e.g., weather information) or more cost effective (e.g., knowledge of special use airspace restrictions). Without this information the pilot faces uncertain weather hazards and other operational inefficiencies. Capstone will use the Flight Information System (FIS) to receive current and forecasted weather and weather-related information as well as the status of SUAs. The enhanced weather products will be available to pilots and controllers, allowing them to share the same situational awareness. The information will be displayed graphically to the pilot. Expected benefits: increased availability of flight services, increased timeliness and quality of data on weather and system status, increased access to airspace, and reduced flight times and distance.

Progress/Outcomes

A. National contractor selection. **4th Quarter FY99 - Completed**

On July 28, 1999 ARNAV Systems, Incorporated and NavRadio Corporation were selected as the national Flight Information Services Data Link (FISDL) service providers by headquarters. We will be examining the products and services offered by these vendors to determine which might be suitable for the commercial operators in the Capstone service area

B. Select Contractor. **4th Quarter FY00 – Completed**

FIS installed at the Anchorage ZAN and is operational on the developmental system at Bethel and Anchorage.

5. Train Capstone Participants

Objective	Purpose
To ensure all participants in the Capstone program are properly trained on the Capstone avionics.	To ensure the Capstone avionics equipment is utilized properly and to the fullest to achieve the greatest benefit to enhanced safety and operational capabilities all participants must be trained.

Progress/Outcomes

A. Complete the statement of work. **3rd Quarter FY99 - Completed**

The contracting officer has issued the package to UAA and received their response. It is anticipated that the contract will be awarded during the FY99 fourth quarter.

B. Issue contract. **4th Quarter FY99 – Completed**

The University of Alaska has been awarded a contract to deliver a pilot training program for the Capstone equipment and to conduct Capstone participant training.

C. Conduct training. **4th Quarter FY01 - In Progress**

UAA continues to be very active in Capstone in a number of areas. The Cessna 180 continues to provide capstone demonstrations and evaluations on a regular basis allowing the various FAA administrators to gain firsthand experience with an active Capstone display. Training for capstone participants continue to be very active with ERA aviation participating and they have completed Initial Capstone training with UAA and are continuing to train in house. The amount of Initial and Recurrent training being accomplished by the operators has kept the Capstone simulators fully occupied.

6. Obtain and Install Automated Weather Equipment

Objective	Purpose
To obtain and install Automated Weather Observing Equipment at up to 10 sites in the Capstone area.	To assist in providing weather information to accomplish IFR enroute and landings at Capstone area airports and to enable the use of the, up to eighteen, new GPS approaches requires current weather information be available. The weather observation equipment will meet at least the minimum functionality required by the Federal Aviation Regulations to support an instrument approach procedure for commercial operators. Weather sensors will provide the following observations: (a) wind speed, direction, and gusts; (b) altimeter setting; (c) temperature and dew point; (d) cloud height and sky cover; and (e) visibility. The equipment will provide an automatic radio broadcast of observations and have the capability to provide remote weather observations via a telephone line or connection to Service A.

Progress/Outcomes

A. Select prospective sites: **1st Quarter FY99 - Completed**

The Industry Council has selected the following ten (10) villages as prospective sites for installation of automated weather equipment; Kipnuk, Platinum, Scammon Bay, Holy Cross, Kwigillingok, Kalskag, Mountain Village, Russian Mission, St. Michael, and Koliganek.

B. Perform site surveys: **2nd Quarter FY00 - Completed**

ANI 700 has completed the last three survey sites.

C. Procure the automated weather equipment. **3rd Quarter FY99 - Completed**

The 10 plastic equipment shelters were purchased and shipped to Anchorage for retrofitting. Ten AWOS III facilities were purchased from Qualimetrics, Inc. The first item arrived and is being installed in a prototype facility being constructed at the ANI Anchorage Complex.

D. Install Automated Weather Equipment – cont. **4th Quarter FY01 - In Progress**

With the JAI of the Platinum AWOS in late June, 9 of the original 10 AWOS sites are completed. The remaining site, Pilot Point (substituted for Kwigillingok) has telco issues still being worked.

7. Conduct Safety and Human Factors Study

Objective	Purpose
To accomplish independent documentation, measurement, and reporting of the Capstone project.	A major "Capstone" objective is to improve safety in Alaska while offering efficiencies to operators. Key to the Capstones program's overall success is the need conduct an independent evaluation of system safety improvements and to document the user benefits.

Progress/Outcomes

A. Complete the statement of work and issue contract. **3rd Quarter FY99 - Completed**

The contracting officer has issued the package to UAA and received their response. It is anticipated that the contract will be led during the FY99 fourth quarter.

B. Issue contract. **4th Quarter FY99 - Completed**

The University of Alaska has been contracted to conduct an independent analysis of safety improvements related to the Capstone program.

C. Conduct Study. **4th Quarter FY01 - In Progress**

Jason Segar as a student intern working on the Capstone project and has now gathered and entered 3600 sets of tower data on Special VFR operations to provide a base from which to measure the effect of ADS-B on traffic movement in the Capstone area. Wayne Daniels has been working with ISER in the developing a questionnaire to be used in the collection of data from operators and pilots in the upcoming joint NIOSH/ISER survey. This will provide data for Capstone II (SE) and follow on data from the baseline for Capstone effectiveness in the Y-K delta area. OMB approval has now been received for this data collection effort.