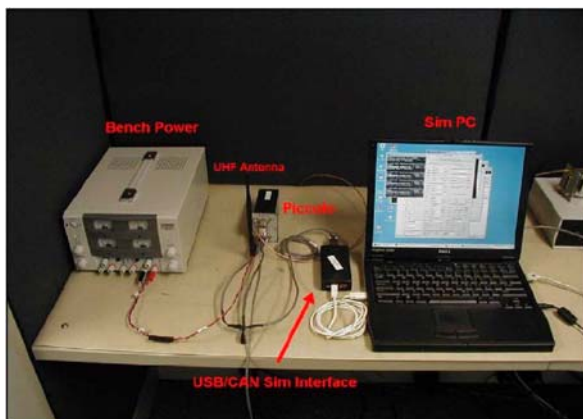


# TEMA: DEZVOLTAREA CAPABILITATII DE TIP UAV LA UN AVION ULTRAUSOR

## DATE DE IDENTIFICARE

Program:	INOVARE
Categoria de proiect:	PDP
Cod proiect / Numar contract:	CUAVF / Nr. 266 / 22.10.2008
Valoarea totala a proiectului:	603.275 lei
Valoarea cofinantarii (sursa - bugetul de stat):	233.100 lei
Perioada de derulare:	22.10.2008 – 30.10 2010
Participanti:	S.C. Aerostar S.A. Bacau



## PREZENTARE TEMA

Proiectul se refera la realizarea sistemului UAV Festival, compus dintr-un avion ultrasor de tip Festival, modificat constructiv si echipat cu pilot automat, si din alte echipamente necesare pentru conducerea zborului in regim autonom, cu monitorizarea misiunilor de la o statie de control de la sol.

Modificarile constructive ale avionului vizeaza in principal cabina, sistemele de comanda avion - motor, sistemul de franare, instalatia electrica si tabloul de bord. Va rezulta un avion Festival convertibil, care va putea fi utilizat fie ca o aeronava obisnuita, cu echipaj uman la bord, fie ca un UAV.

Avantajul major al unei astfel de variante consta in faptul ca aeronava va avea o utilitate extinsa, prin implementarea, conform temei propuse, a capabilitatilor de tip UAV. In plus, se pot efectua activitati de instruire in conditii reale pentru operatorii programatori de misiuni, in vederea realizarii zborului autonom, eliminandu-se practic posibilitatea de distrugere accidentala a aeronavei in timpul testelor si zborurilor de scolarizare, datorita faptului ca pilotul de incercare aflat la bordul aeronavei va putea prelua comanda manuala in orice moment critic al zborului.

### OBIECTIVE:

- Sistem operational UAV-Festival, compus dintr-un avion ultrasor Festival, cu capabilitati suplimentare de tip UAV, si dintr-o statie de sol pentru conducerea zborului autonom; manuale de operare;
- Servicii de instruire pe UAV-Festival, atat pentru pilotaj clasic, cat si pentru insusirea programarii zborului autonom (prin simulari cu ajutorul unui software specializat si in conditii reale);
- Servicii de mentenanta pentru UAV-Festival.

### ETAPE CONTRACTUALE

Etapa	Termen	Rezultate/Documentede prezentare a rezultatelor
<b>Etapa I.</b> Elaborare referential initial pentru sistemul UAV-Festival (vector si statie de conducere a zborului) Analiza tehnico-economica	20.01.2009	Caiet de sarcini; Studiu de piata; Raport
<b>Etapa II.</b> Asigurarea documentatiei tehnice de constructie a prototipului UAV-Festival	27.11.2009	Raport; Documentație tehnica de constructie
<b>Etapa III.</b> Realizarea si testarea prototipului UAV-Festival. Elaborarea documentatiei de operare	30.10.2010	Sistem UAV Festival functional; Manual de prezentare si utilizare; Certificat de inregistrare model industrial; Proces verbal de omologare; Pagina web
<b>Etapa IV.</b> Raportarea efectelor economice obtinute de catre agentul economic beneficiar, ca urmare a utilizarii produsului Evaluarea posibilitatii de integrare in piata UE.	30.10.2011	Raport privind efectele economice obtinute

### REZULTATE

- Statie de conducere a zborului autonom de la sol functionala; Software operational
- Avion UAV Festival - in stadiul integrarii echipamentelor aferente realizarii capabilitatii UAV

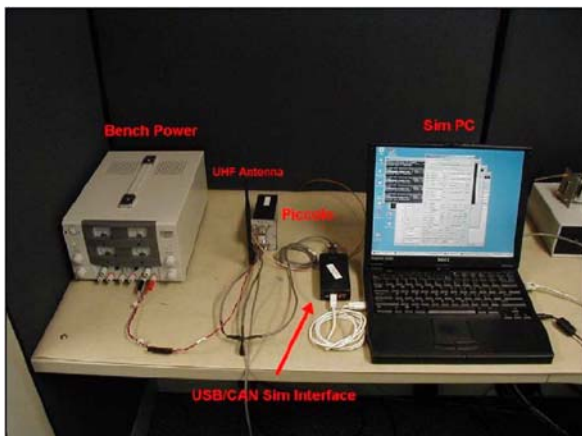
### DATE DE CONTACT

Firma/adresa	Persoana de contact	Tel./Fax	E-mail/website
S.C. Aerostar S.A. Bacau	Director de Proiect: Ing. Valeriu Turbatu	(0234) 575070 int.1332	<a href="mailto:aerostar@aerostar.ro">aerostar@aerostar.ro</a> <a href="http://www.aerostar.ro">www.aerostar.ro</a>

# TOPIC: DEVELOPING THE UAV CAPABILITY ON AN ULTRALIGHT AIRPLANE

## IDENTIFICATION DATA:

Program:	INOVARE
Project category:	PDP
Project code / Contract number:	CUAVF / Nr. 266 / 22.10.2008
Total value of project:	603,275 lei
Co-financing value (source – state budget):	233,100 lei
Application period:	22.10.2008 – 30.10 2010
Participants:	S.C. Aerostar S.A. Bacău



## PRESENTATION

This project refers to the creation of the UAV Festival system, consisting of the ultralight airplane Festival, of modified design, equipped with autopilot and other pieces of equipment necessary to coordinate the flight in autonomous mode, at the same time monitoring the flight missions by means of a control unit located on ground.

The airplane design changes refer mainly to the cockpit, the airplane control systems - engine, brake system, electrical system and control panel. The result will be a convertible Festival airplane, that could be used either as a regular aircraft, with human crew aboard, or as a UAV.

The major advantage of such a version consists in the extended utility given to the aircraft, by implementing the UAV capabilities, in accordance with the proposed topic. Besides, training activities can be carried out in real conditions, for the mission programmers-operators, in light of the autonomous flight, thus practically removing all risks of accidental damage of the aircraft during training flights and tests, since the test pilot aboard the aircraft will be able to switch to manual control at any critical time during flight.

### GOALS:

- Operational system UAV-Festival, consisting of an ultralight Festival airplane, with extra capabilities of UAV type, and a ground unit for the autonomous flight control; operating manuals;
- Training services on UAV-Festival, both for traditional flights, and for learning to program the autonomous flight (via simulations by means of a specialized software and in real conditions);
- Maintenance services for UAV-Festival.

### CONTRACTUAL STAGES

Stage	Due date	Results/Documents showing the results obtained
<b>Stage I.</b> Preparing an initial reference documentation for the UAV-Festival system (flight control unit and vector) Technical – economical analysis	20.01.2009	Job specification; Market research; Report;
<b>Stage II.</b> Providing the technical design documentation for the UAV-Festival prototype	27.11.2009	Report; Technical design documentation;
<b>Stage III.</b> Creating and testing the UAV-Festival prototype. Preparing the operating documentation.	30.10.2010	Functional UAV Festival system; Presentation and operating manual; Industrial model registration certificate; Homologation report; Web page
<b>Stage IV.</b> Reporting the economic effects obtained by the beneficiary economic agent, as a result of using the product Evaluating the possibility to integrate the product on the EU market.	30.10.2011	Report on the economic effects obtained.

### RESULTS

- Functional control unit for the autonomous flight, located on ground; operational software
- UAV Festival airplane - in the stage of integrating the equipment related to the UAV capability

### CONTACT DATA

Company/address	Contact person	Phone/Fax	E-mail/website
S.C. Aerostar S.A. Bacau	Project Manager: Eng. Valeriu Turbatu	(0234) 575070 int.1332	<a href="mailto:aerostar@aerostar.ro">aerostar@aerostar.ro</a> <a href="http://www.aerostar.ro">www.aerostar.ro</a>