



**INTERNATIONAL  
FREE MISSION  
UNMANNED AIRCRAFT COMPETITION  
CONCEPTUAL DESIGN REPORT**



- The report is expected to be prepared in Arial text, 11 fonts and 1.5 line spacing, taking into account the explanations given under each topic and a total of 10-15 pages. Pages are prepared in vertical A4 format with 2,5 cm margins from the edges. After the report is filled, it is converted to PDF format and uploaded to the system.
- Teams can apply by designing a new aircraft or improving an existing aircraft.

<b>TEAM NAME:</b>		
<b>TEAM RESPONSIBLE NAME/SURNAME:</b>		
<b>TEAM OFFICER SCHOOL/UNIVERSITY:</b>		
<b>AIRCRAFT TYPE:</b> <input type="checkbox"/> Fixed Wing <input type="checkbox"/> Rotary Wing <input type="checkbox"/> hybrid <input type="checkbox"/> Flapping Wing <input type="checkbox"/> Other		
<b>AIR VEHICLE DEVELOPMENT</b>	<input type="checkbox"/> <b>New Aircraft</b>	<input type="checkbox"/> <b>Current Aircraft</b>

### 1. ORGANIZATION SUMMARY (15 Points)

General introductory information is given about the advisor/responsible and members of the applicant teams and the capabilities of the team.

**1.1 Team Organization (10 Points)** (Information about each member of the team and the distribution of tasks in the design process of the UAV are given on an organizational chart.)

**1.2 Workflow Chart (5 Points)** (The work packages to be made during the design or configuration process of the UAV are shown on a work time graph and information about the main work packages is given).

### 2. CONCEPTUAL DESIGN (85 Points)

Preliminary information is given about the main features, weight, dimensions, control system, safety and special design of the UAV to be developed or configured.

**2.1 Missions (25 Points)** (Denotes the tasks to be performed by the UAV, the degree of difficulty, the level of success targeted, etc.).

**2.2 Alleged Matters (25 Points)** (Convincing information is given about which of the Evaluation Criteria in the "Assessment" section of the Rules Booklet will be assertive, what kind of determination and autonomy, ability and task performance, usefulness and task challenge, innovation, locality, design ergonomics, capability, originality or simplicity will be competed) .

**2.3 Production with Aerodynamic, Mechanical and Structural Features (10 Points)** (The methods, calculations and computer programs used / to be used in the geometric dimensioning, aerodynamic, structural and mechanical design and development or configuration of the UAV are clearly indicated. All the methods that will be needed in the design, production or procurement of the auxiliary equipment to be used in production and development are indicated. Here, the original design and productions are expected. However, ready-made personnel can be recruited and changes can be made in accordance with the task to be performed. In this case, the ready-made elements must be clearly declared with their details. If a contrary situation is detected, necessary sanctions are applied).

**2.4 Electrical-Electronics and Flight Control System (10 Points)** (Electronic components and circuit diagram to be used in UAV design and development, control card selected for flight control, sensors, RF receiver and transmitter systems, battery systems, power modules, fuse and current breaker, if any. load holding and releasing systems, electronic equipment to be used, radio control, ground station software and systems).

**2.5 Propulsion and Performance Calculations (10 Points)** (Information about the components of the new UAV to be designed or the existing UAV to be reconfigured, its weight and the effects of the materials used on the UAV, such as the power consumption. In addition, the cruise/weight value of the aircraft and flight performance parameters are given. speed, carrying performance, drag, thrust required for cruise flight, etc.).

**2.6 Visual Design Configuration (5 Points)** (Considering the information given in the previous headings, it is expected to show the visual design / drawing / model of the conceptual design or configuration of the UAV. The visual views given in the conceptual design are visualized with its outlines without including much detail as a preliminary design).