# Case Competition: Utilizing Aerospace Technologies for a Wildfire Monitoring and Response System

**Forest fires are increasingly becoming more of a challenge.** Climate change during the 21st century is expected to result in a noticeable increase in the frequency of forest fires, and their severity as well. Additionally, Fire-prone conditions are predicted to increase across Canada; this could potentially result in a doubling of the amount of area burned by the end of this century, compared with amounts burned in recent decades. With severe environmental and economic consequences, the Canadian Government hosting a competition to find an alternative wildfire monitoring and response system which is more effective than the system currently in place.

A monitoring and response system, for example, may use technologies such as Unmanned Aerial Vehicles (UAVs) or satellites with a ground-based response system to alert the Canadian Forest Service (CFS).

Your team must create a wildfire response system to alert the CFS within 5 minutes of an outbreak. Your system must also inform the CFS of the area affected by the forest fire and an estimate of the rate of growth of the fire. Additionally, the system must determine the level of danger to any surrounding communities in the immediate area.

**Deliverables**

You and your team must create a concise plan of your system and present your ideas to the judges. Each team will be judged on how effectively they communicate their design and how well the system utilizes technology. Each team will be given a 15 minute time-slot for their presentation and Q&A period. The presentations are preferred to be in PowerPoint format.

A detailed rubric is attached to this document.

Good luck.

Judging Rubric                                      Team                  #: _____

| | Marks | | | |
|---|---|---|---|---|
| Category | 1-3 | 4-6 | 7-9 | 10 |
| Creativity and Ingenuity | Aspects of the idea and design are somewhat unique, may not be a viable solution. | Aspects of the idea and design are somewhat unique, may not be a viable solution. | Idea and design are somewhat unique and could be a viable solution. | Idea and design are unique and a viable solution. |
| Feasibility of Design | Design is not feasible, cannot be implemented, or cannot be integrated into the current Government design | It may not be possible to implement the design and it isn't possible to integrate into the current design. | Design can possibly be implemented, may be feasible, or integrated into the current design by the Government | Design can easily be implemented by the Government, is feasible, and replace the current design |
| Communication of Ideas | Presentation of ideas and design are not communicated effectively. | Presentation of ideas and design are explained with some ambiguity. | Presentation of ideas and design are communicated well. | Presentation of ideas and design are communicated effectively. |
| Presentation of Ideas | Presenters lack to effectively verbally and orally communicate their design. | Presenters somewhat verbally and orally communicate their design. | Presenters verbally and orally communicate their design well. | Presenters exceptionally verbally and orally communicate their design confidently. |
| **TOTAL SCORE** | | | | |

Creativity and Ingenuity - This category measures extent of the "out of the box thinking" done by the team to create a unique design
Feasibility of Design - This category determines the feasibility of the design and the ease of implementation of the idea should it be carried out by the Government
Communication of Ideas - This category aims to determine how well the plan made by the participants communicates their design.

Presentation of Ideas - This category measures how well the presenters of the idea and design communicate their idea with the judges and other participants.