JJ CANSAT TEAM COOPERATION PROPOSAL

For Delphi Poland S.A.

OVERVIEW

JJ CanSat Team is a team of students participating in the Polish edition of CanSat competition. Our team is pleased to send this proposal to cooperate with Delphi Poland S.A., which may result in benefits for both parties of agreement. Our offer involves including Delphi in our marketing activities in exchange for the financing of our team's work and activity.

Goals

- Expanding Delphi's presence in social media and it's marketing reach
- Promoting Delphi among STEM (Science, Technology, Engineering, and Mathematics) community
- Providing financial and operational independence for JJ CanSat Team in order to prepare solutions needed to win the competition and qualify for the European stage of the competition

Capabilities

Delphi designation as the main partner and sponsor of the team would result in:

- Placement of Delphi's logo on CanSat's casing, social media sites of our team and other promotional materials
- Highlighting cooperation with Delphi at presentations and events in which the team participates
- Presentation of Delphi on a promotional film about the project

Solution

- **Our team asks Delphi for 500€ financing, which is top limit specified by competition's rules**
- This amount will be consumed on: buying electronic components, mechanical parts and 3rd party production support
- JJ CanSat Team offers to Delphi involving it in marketing activities
- Delphi Poland S.A. becomes strategic partner of JJ CanSat Team

OUR PROPOSAL

Delphi has a deserved reputation in the automotive industry. However, due to the increase in the demand for complete technical solutions, economic influences on the industry and increasing competition in attracting qualified engineers Delphi is faced with the need to increase activities aimed at attracting new employees.

We offer solutions to meet this need - a wide range of opportunities to reach future engineers and IT specialists is in the hands of our team. Our marketing activity is flexible and willing to adapt it to the official line of Delphi. The people to whom our promotional activity is addressed in are lovers of science and technology.

Our project

As a team participating in the CanSat competition we are obliged to prepare a complete simulation of a space mission - our device is fired in a rocket at 3km and during the fall it is to achieve mission objectives. The project involves designing mechanical and electronic layers of device, preparing reliable recovery system, establishing stable radio connection with ground station, writing programs both for on-board and ground uses.

Technical issues come with fundamental need to manage project, gain funds, establish deadlines and procedures aimed to improve quality of created solutions. Test will help us to assess whether the device is suitable for take-off. Model of our marketing activity was chosen in order to promote both us and our partners.

Mission objectives

The basic mission objective is to measure temperature and pressure, and the altitude of device above the ground on the basis of these measurements.

Project is space mission simulation and we have chosen that our device will imitate probe send to the planet's surface in order to collect and send data about mission area to the ground station. Ground station processes this data and decides whether place is suitable for heavier lander or not.

On-board systems

We plan to use following systems:

- Parachute
- Main computer (Raspberry Pi Zero)
- Sensors (temperature, pressure, wind, other)
- Landing airbag
- Simple camera
- Power systems (accumulators)
- Casing
- Communication system (radio transmitter, antenna)
- GPS system

Ground systems

Ground station consists of a computer and a radio receiver. We will be operating some additional equipment (camera for further video relation, spare batteries, a collection of spare parts).

Software

On-board software is aimed to trigger systems on at take-off, provide radio transmission, take photos during fall and deploy airbag just before intercepting the surface.

Ground software will consist of desktop application communicating with receiver through USB port, processing received data and displaying it in form of tables and graphs.

Tests

We plan to test following subjects:

- Radio communication
- Parachute parameters
- Ground station output
- Power supply

Outreach

We have got Facebook page, which provide brief information on the progress of our work.

We run DevBlog at which we put more detailed information about the technical solutions we used, the problems with which we face and breakthroughs we make.

After reaching some level of project competition we plan to participate in local events connected with topic of our device.

Project timeline

- Preliminary Design Review 6 November 2016
- Critical Design Review 15 January 2017
- Final Design Review 12 March 2017
- Competition 13-16 April 2017