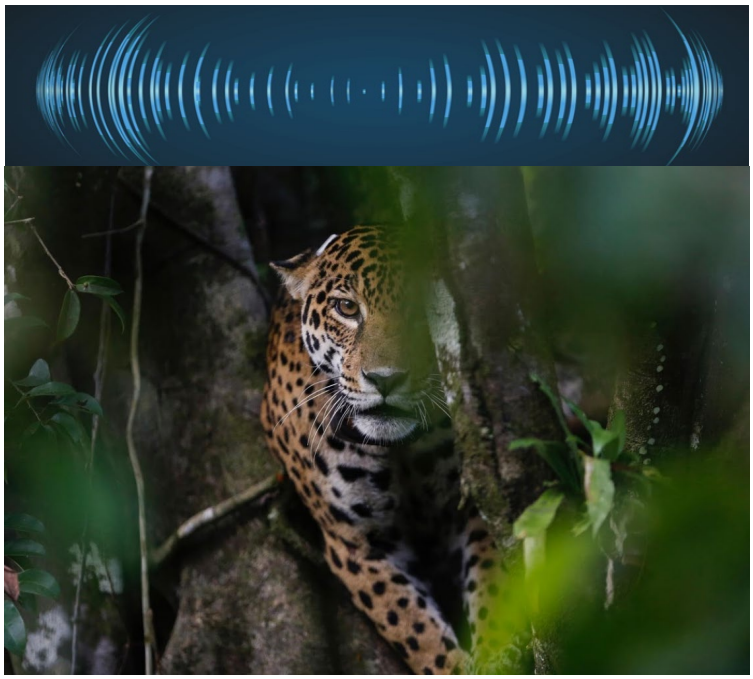
ELECTRONIC RAIN FOREST RANGER



Introduction:

In order to attach radio collars to jaguars in the Mamiraua reserve (Amazonia, Brazil), the jaguars are first caught in traps. The forest rangers monitor the traps up to twice a day to minimize the stress that an animal experiences while inside the trap.

It is possible to attach a system to the trap to monitor if an animal is inside and send an alert with a radio transmitter. This will allow the forest rangers to pass by a trap at some distance without having to visually inspect it, reducing the time needed for checking all of them.
Another step is to make the receptors to automatically send the alert through another channel, for example through WiFi or a satellite link to a ranger's base when a trap is activated. Those receptors (transceptors) can then be deployed strategically to cover a certain area.

Project Brief:

The project's main objective is to design a receiver that can detect the trap at maximum distance and able to distinguish between different traps. Also power consumption and battery life has to be optimized and a way to inform of low battery condition devised.

In addition, the trap design itself has to be studied and redone to include the gadgets needed to detect when is closed, what is inside, etc. as well as the installation of the transmitter, the antenna, etc.

As outcomes of the project a working prototype board of transmitter and receiver is expected, as well as CAD designs of mechanical parts and cages for the electronics.

Company

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Project team:

Number of students: 4 to 6
Students speciality: Electronics engineering Computer engineering. Telecommunications engineering. Design.