At the end of the baseline, we came up with 3 concepts for the trade-off. I will now go over each concept and highlight their differentiating design options.

Concept 1:

Inspired by off-the-shelf, commercial drones. Motorcycle-like position of the user.

Electrically powered by batteries.

Body with 4 rotor arms.

Controlled by differential thrust.

Concept 2:

Inspired by jetpacks and other helicopter backpacks. User has a seat for comfort.

Also electrically powered with batteries

2 Coaxial rotors to provide thrust and yaw stability

Controllable with changes in blade pitch. Like normal helicopters

Concept 3:

Inspired by normal helicopters, just shrunk to smaller size. Provides full user cabin.

Also uses electric propulsion, except this time using hydrogen and fuel cells.

Uses a main rotor and tail rotor.

Uses a similar blade pitch control system as helicopters.