**R.E.A.C.H. MkX Data Sheet**

**Key**

1. **(?UL) - Indicates that value falls in the higher range of possible values**
2. **(?LL) - Indicates that value falls in the lower range of possible values**

**Project Overview**

Our aim is to achieve the following with R.E.A.C.H.:

1. Develop & test a cost-effective solution for experimental testing of new concepts;
2. Test a novel recovery method;
3. Set Amateur Asian Record for Altitude (Apoapsis) and Eurasian Record for Range of an Amateur Rocket;
4. Ultimately breach the Karman Line.

**TGT: Cheap Concept Testing**

**Total Budget (?UL): 400,000 INR**

We will require assistance from other organizations for Infrastructural Support.

[Infrastructure Outsourcing List](http://localhost:6419/External_Infrastructure.md)

This is our final vision for the project: To launch hardware upto 10kg-100kg mass into Low Earth Orbit for as low as 400,000 INR/Launch (~6,500 USD).

**Rocket Statistics**

| **Attribute** | **Details** | **Numbers** | **Notes** |
| --- | --- | --- | --- |
| Dimensions | 8m Cylinder with 0.25 Nose Cone of 0.11m Radius | 8.25 x 0.11 | Aluminium |
| Mass (Dry) | - | 221Kg (?LL) | 50Kg payloads |
| Mass (Wet) | - | 320Kg (?LL) | - |
| Range | Multiburn Orbit Insertion | 400Km/240Mi | Low Earth Orbit |
| Communications | Satellite Networks | 500+Km Range | Undecided |
| Fuel (Liquid) | Hybrid Bipropellant: Methane / Hydrogen With Oxygen | 140 MJ from 1.11Kg (?UL) | Energy Capacity |
| Motor Dimensions | 5.7m PVC Pipe 50mm with 0.105m Radius with 5-star bore | 5.7 x (0.005 + 0.105) | Designed to be detachable with minimal Thrust variance |
| Recovery | Parachute-less Hybrid Recovery | Internal Sustained Gmax = 473G | Insanity |