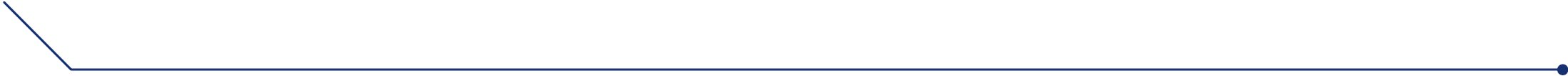
CLIMB Mission Planning Tool Documentation



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# Introduction

For the operation of CLIMB a mission planning software was developed in cooperation with a STP and a master thesis. This document is not a formal document but has the main target to document the operation, structure and working principle of the software so that future students can operate but also further develop this tool. It would be of great sadness if this software gets lost due to missing documentation like so many other great works within university projects.

The software presented supports the mission operation in three aspects: Mission Planning, Flight Dynamics and operation analysis. While many operation systems flight dynamics and mission planning are split, this software combines both in one software to make the CLIMB operation more easy and faster. The GUI and link to STK is provided by MATLAB App Designer, the flight dynamical part is performed by STK and the TLE acquisition and power modelling by Python.

The tool has the following capabilities:

* Acquires the most recent TLE with a Python script by using the spacetrack.org API

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| --- | --- | --- | --- | --- |
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| Senior Team Project |  |  | Aero22 |  |

# Methods

Standard

# Results

Standard

# Conclusion

Insert the conclusion here

# References

[1] R. A. de Carvalho, J. Estela, and M. Langer, *Nano-satellites: space and ground technologies, operations and economics*, First edition. Hoboken, NJ: Wiley, 2020.

# Appendix