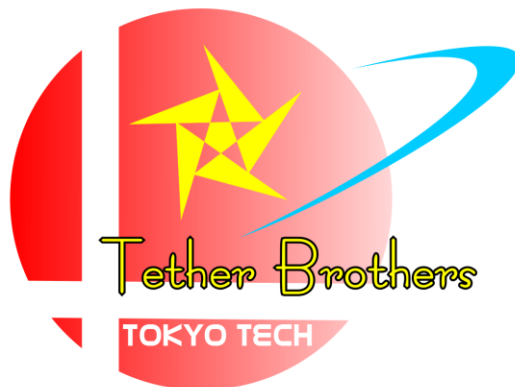
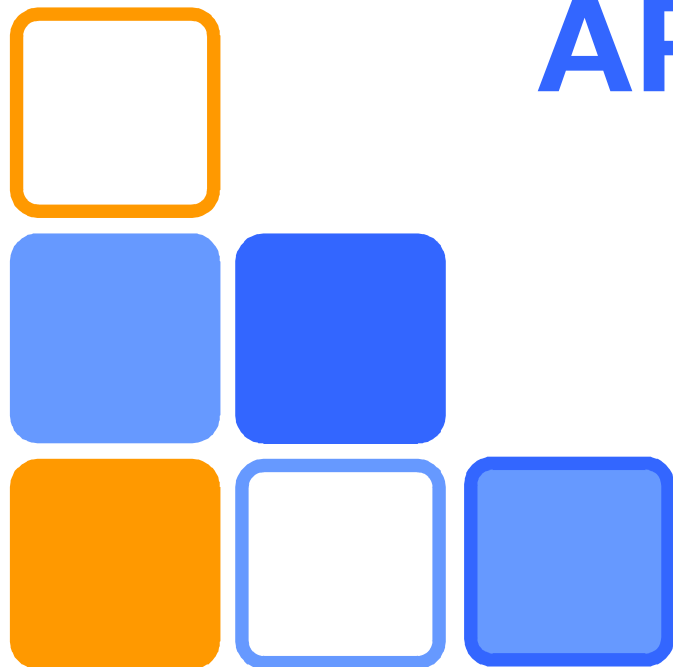




Tether Brothers

ARLISS2014

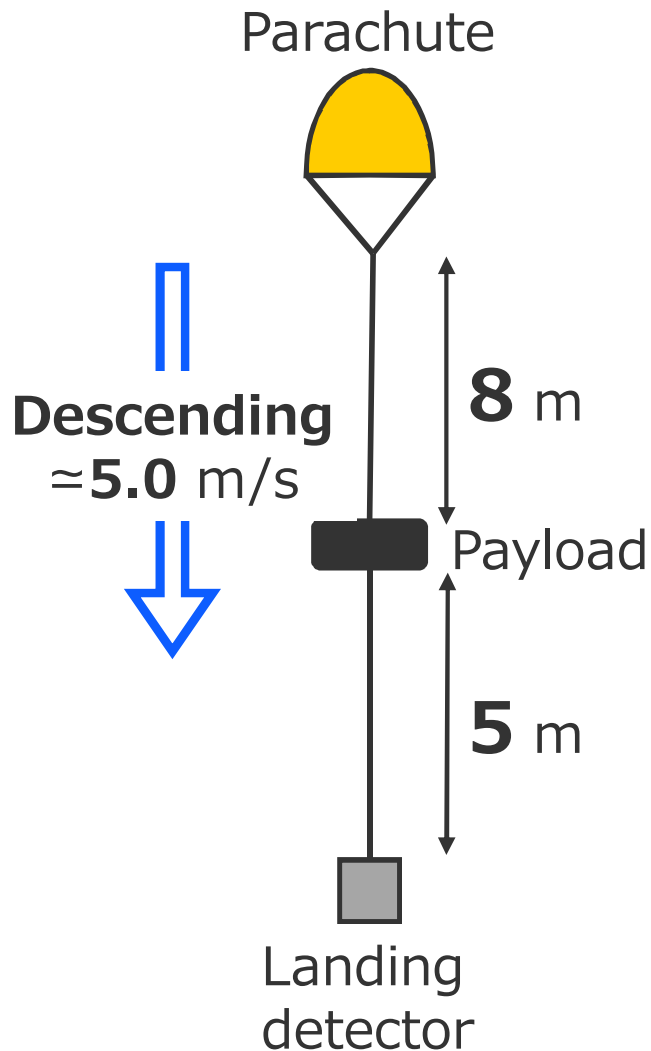


- members -

鈴木聡太	俵京佑	宮里和良
瞿蕊	安部拓洋	泉裕一朗
上田直樹	太田佳	高橋正人
宝来亮汰		



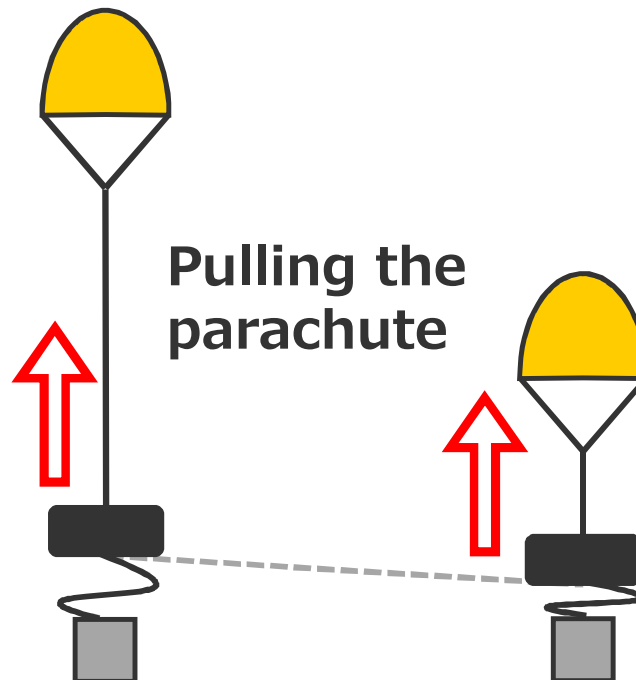
Soft Landing Mission



Runback

Flyback

We attend **Mission Competition!!**



Soft Landing





Motor Module

Let's check the Driving System!

Double Motors!!

No Gears!!

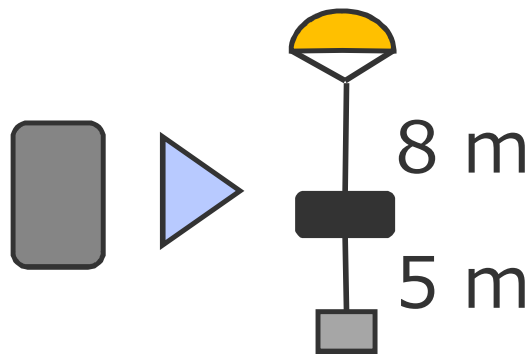
Huge Current!!



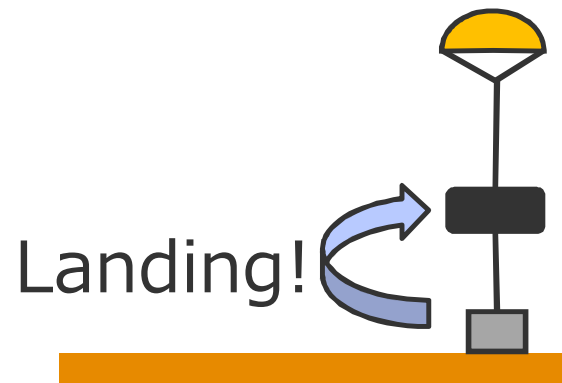
Success Criteria

■ Minimum success

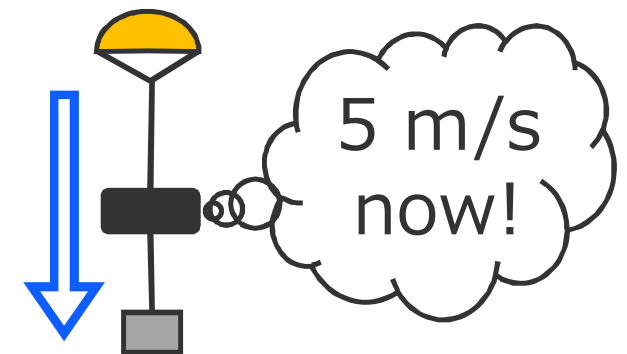
1. Extension



2. Landing Judge



3. Measurement

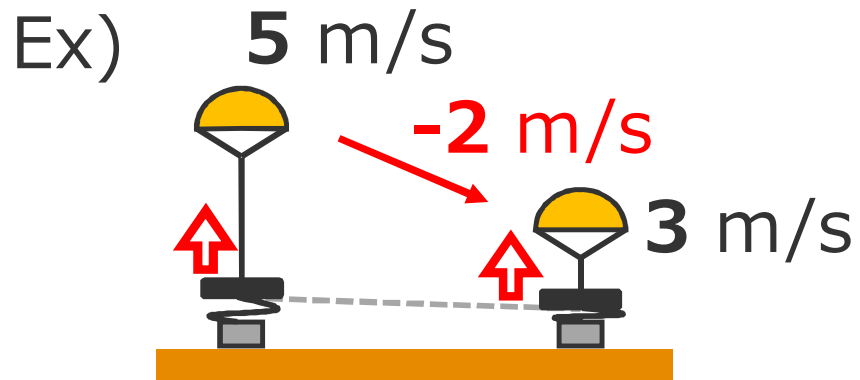




Success Criteria

■ Full success

Reducing descending speed



■ Advanced success

Landing speed

Under **1.0** m/s



First Flight

Minimum Success: **SUCCEEDED**

Full Success: **FAILED**

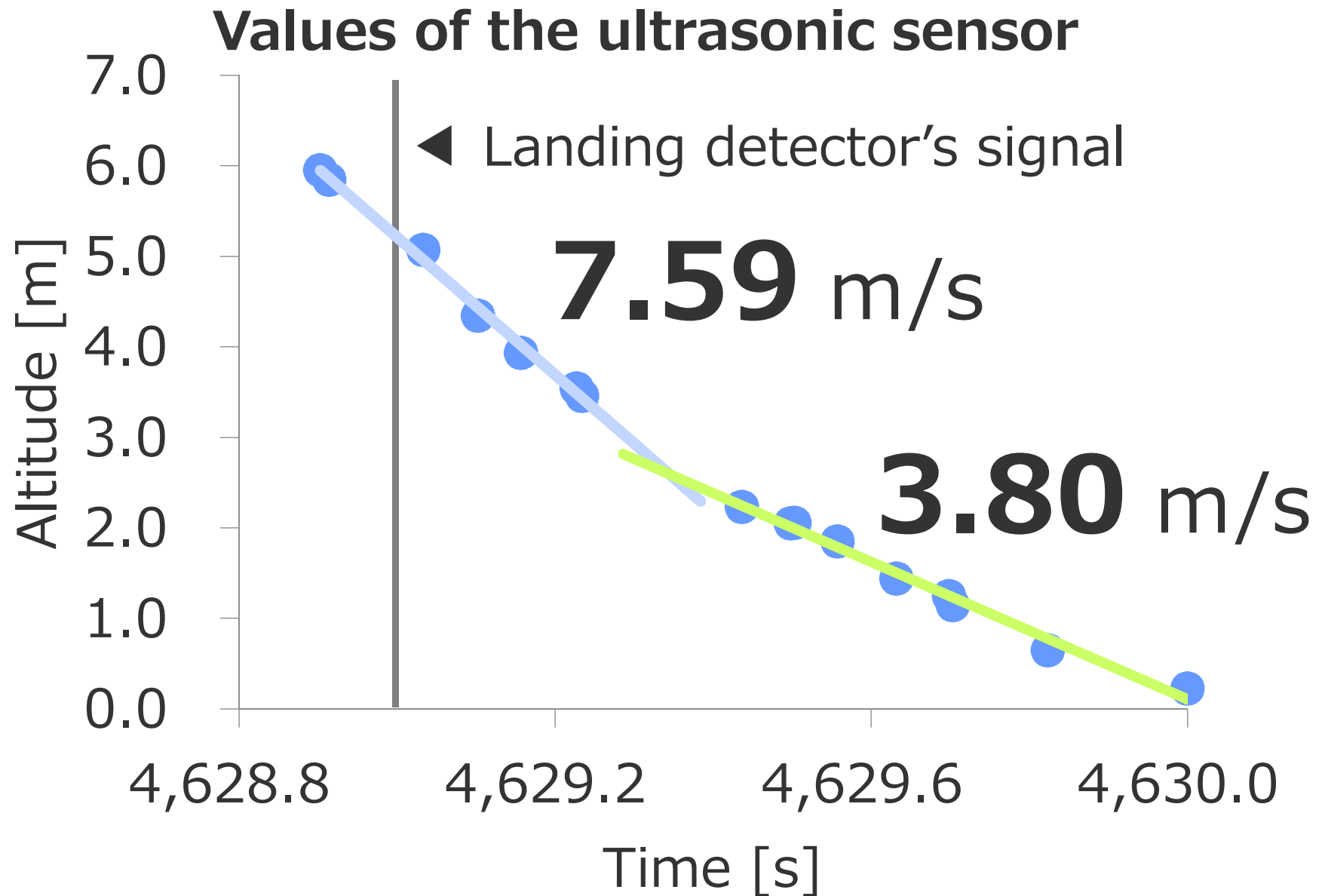
Motor cable cover was **MELTED** by heat of repeated tests, and the cable came off from a connector...







Second Flight





Second Flight

Difference of descending speed

BEFORE

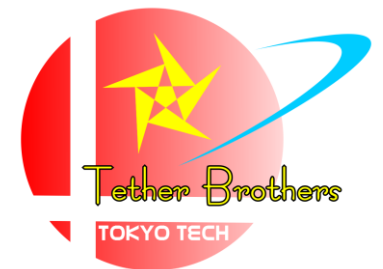
7.59 m/s



AFTER

3.80 m/s

Reduced by 3.79 m/s = **49.9%**





Second Flight

Difference of the maximum acceleration between the 1st and the 2nd flight

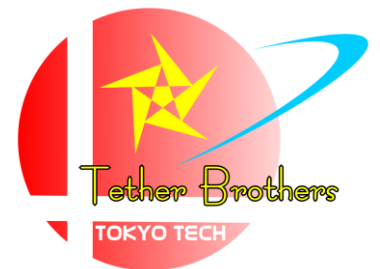
First

24.18 G



Second

14.94 G



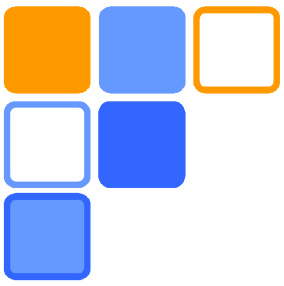




Thank you!

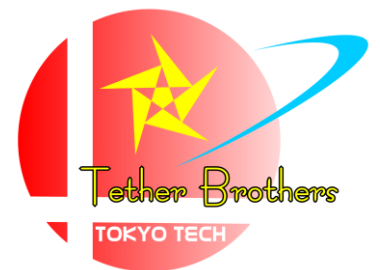


Failure teaches success.



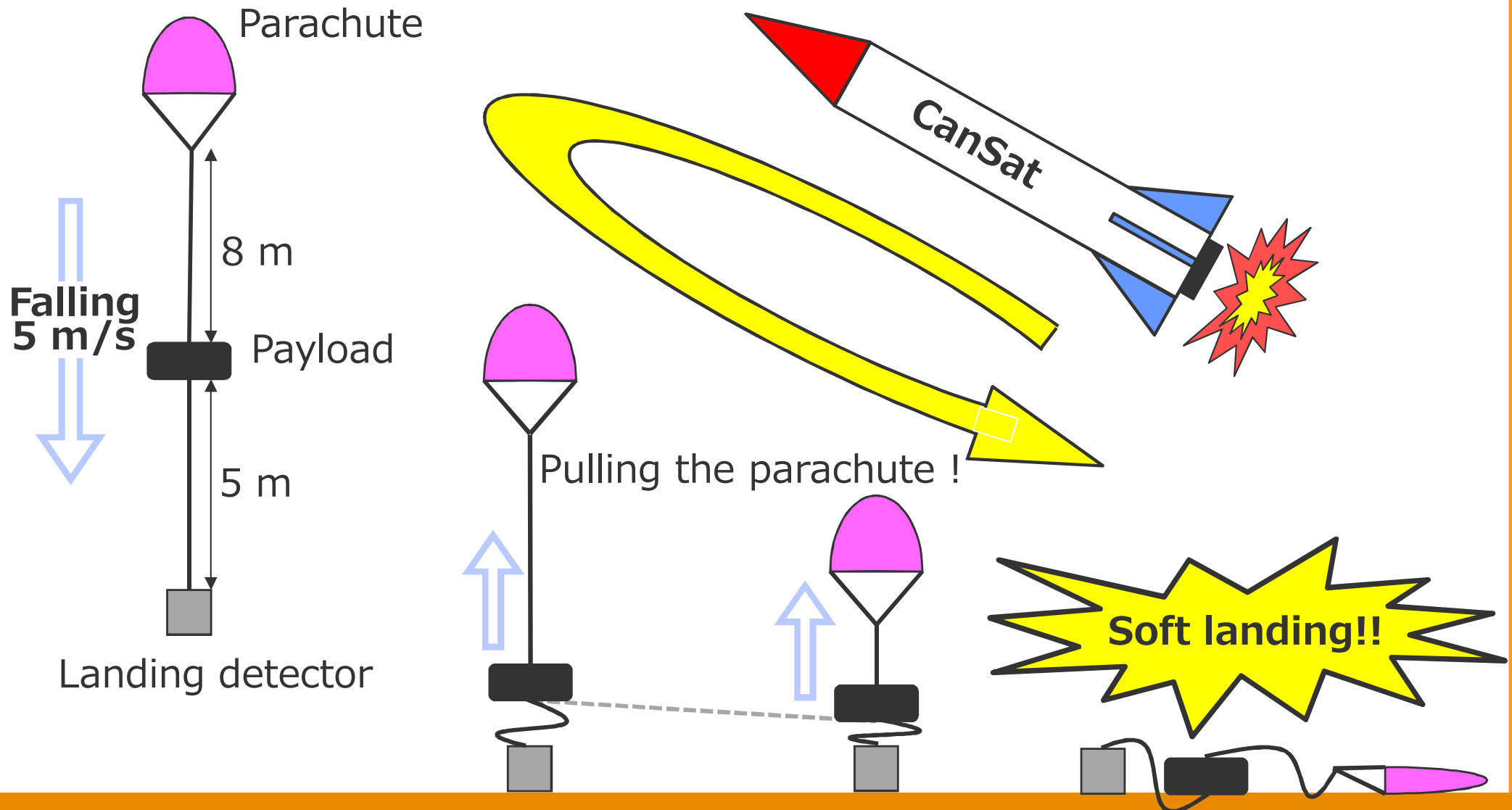
Backup Slides

2014/10/3



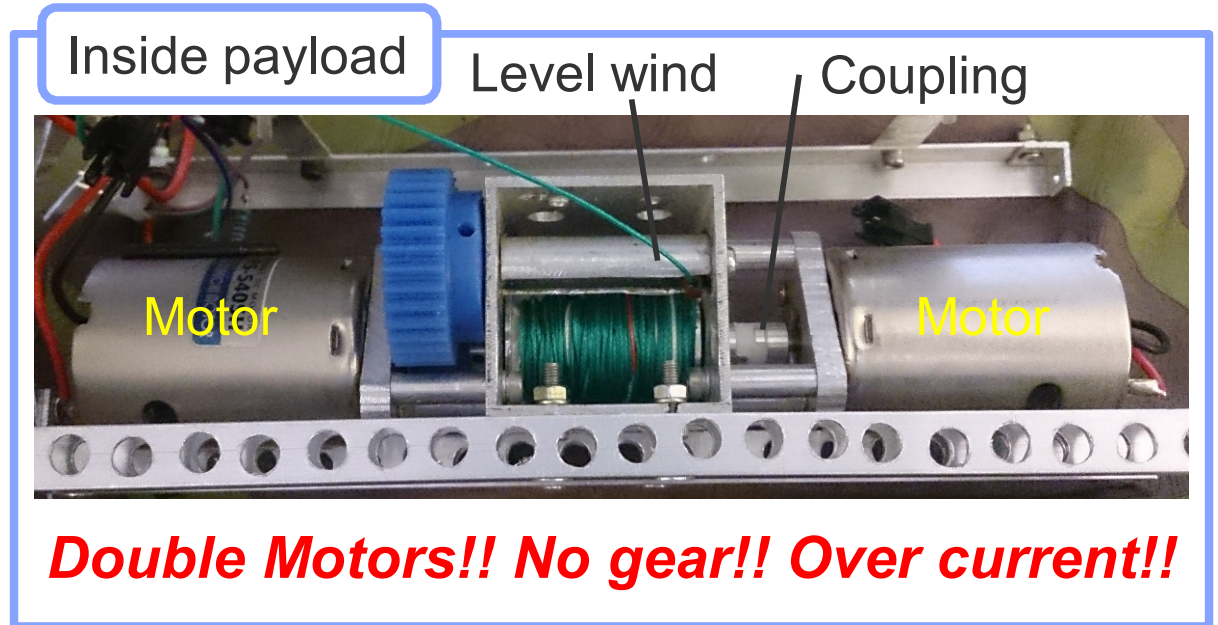
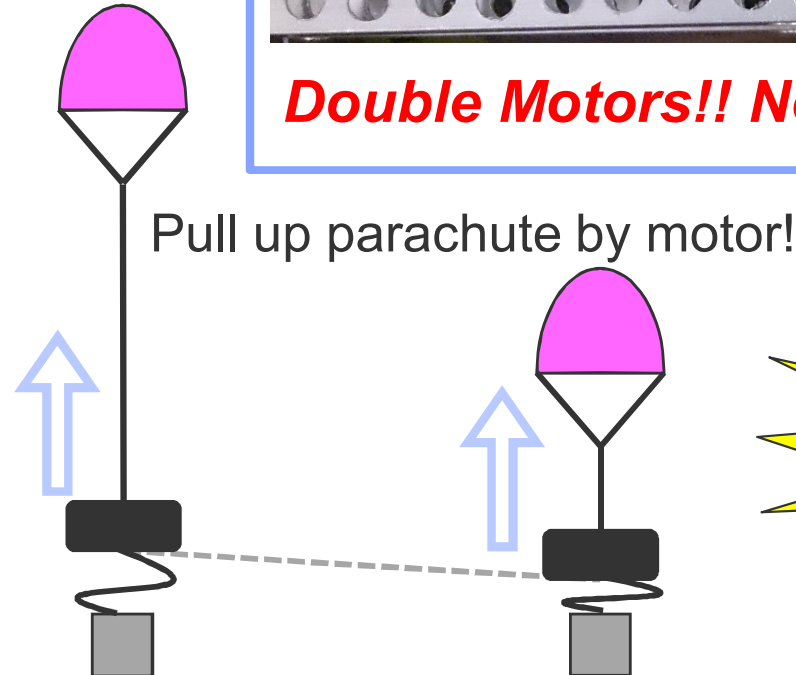
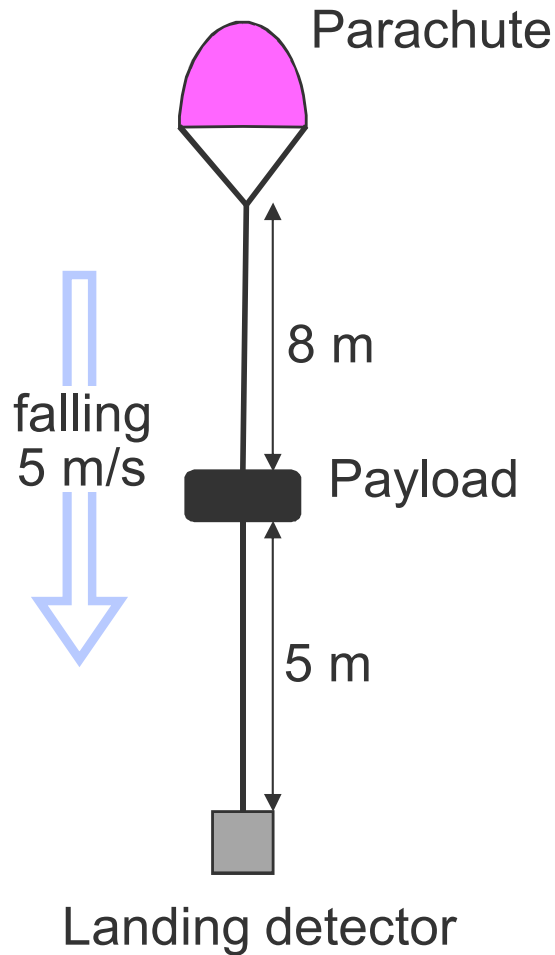


Soft Landing Mission





Soft Landing Mission

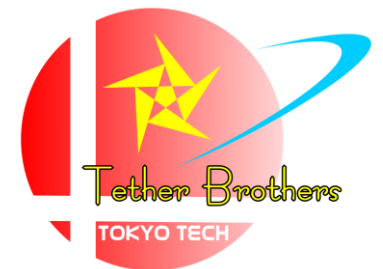




サクセス・クライテリア

■ ミニマムサクセス

- a. 落下中にCanSat本体がパラシュート，軟着陸部，着地検知部に，絡まることなく展開できる.
 - ✓ 評価方法：目視（＋オンボードカメラ映像？）
- b. 着地検知部が着地を判定し，軟着陸部へ情報を伝えることができる.
 - ✓ 評価方法：ログの確認
- c. 落下速度を測定できる.
 - ✓ 評価方法：ログの確認，カメラ映像





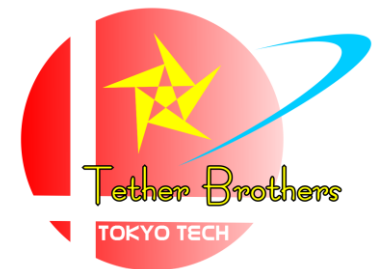
サクセス・クライテリア

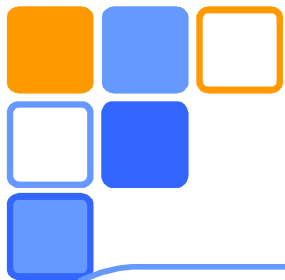
■ フルサクセス

- ◆ 着地検知からパラシュート巻き取りができ、
降下速度を巻き取り直前よりも低減させることができる。
 - ✓ 評価方法：ログの確認，カメラ映像（＋目視）

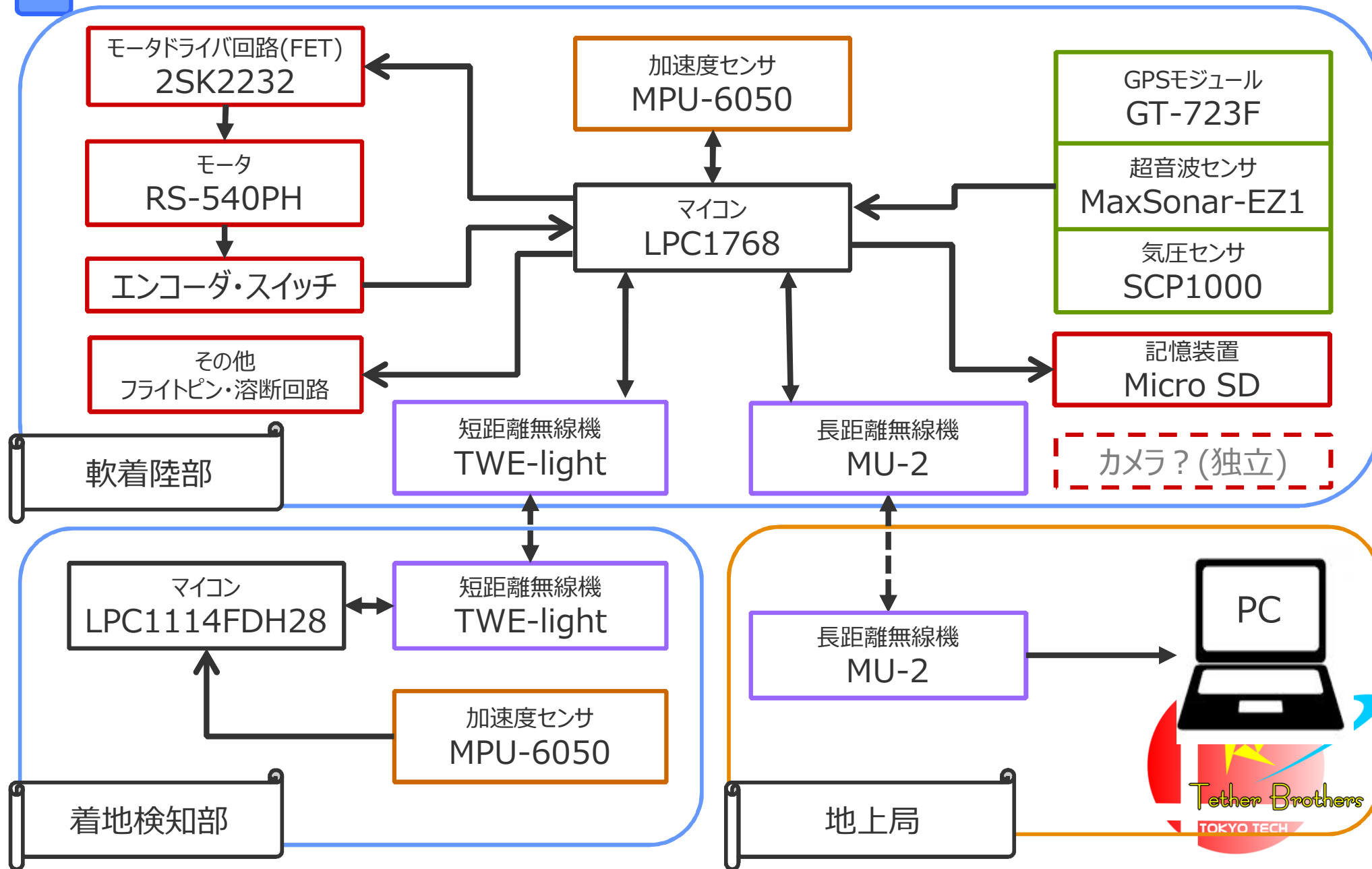
■ アドバンスドサクセス

- ◆ 最終的な降下速度を1.0 m/sに低減させる
ことができる。
 - ✓ 評価方法：ログの確認





システム・ダイアグラム





モータ巻き取り試験

■ 動画からの推定された、高度の時間変化

