Launch Operations Rule Card – Wind & Orientation (Rev A)

Magnetic Rail Gun Campus – Heber–Overgaard, AZ | MECSAI Integrated Control

Wind Speed / Direction Gates

≤ 20 mph (≤ 9 m/s): GO – Launch permitted; MCC Live Mode allowed.

20–30 mph (9–13 m/s): CONDITIONAL – Crosswind operations only; Remote Ops recommended.

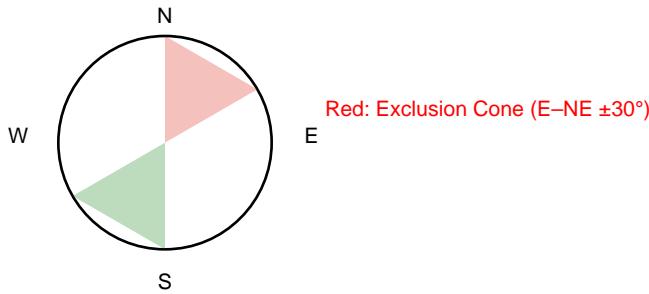> 30 mph (> 13 m/s): NO-GO – Launch inhibited; switch to Remote Ops or scrub.

Directional Limits

- Launch only if MCC, housing, and data center lie upwind or crosswind relative to tower.
- Spring/Summer (W–SW prevailing): Exclusion sector = E–NE ±30°.
- Early Fall (S–SW prevailing): Exclusion sector = ENE–NNE ±30°.
- If real-time anemometer data show MCC within downwind cone at >10 mph, switch to Remote Ops.

MECSAI Automated Logic

- Integrates 360° anemometer data (speed + direction) into launch interlocks.
- Auto-Inhibit trigger if: wind > 20 mph OR gust > 25 mph OR direction within downwind cone.
- Logs conditions; requires manual override authorization for conditional launches.

Wind Rose / Orientation Sketch

Red: Exclusion Cone (E–NE ±30°)

Green: Upwind Safe Zone (W–SW)