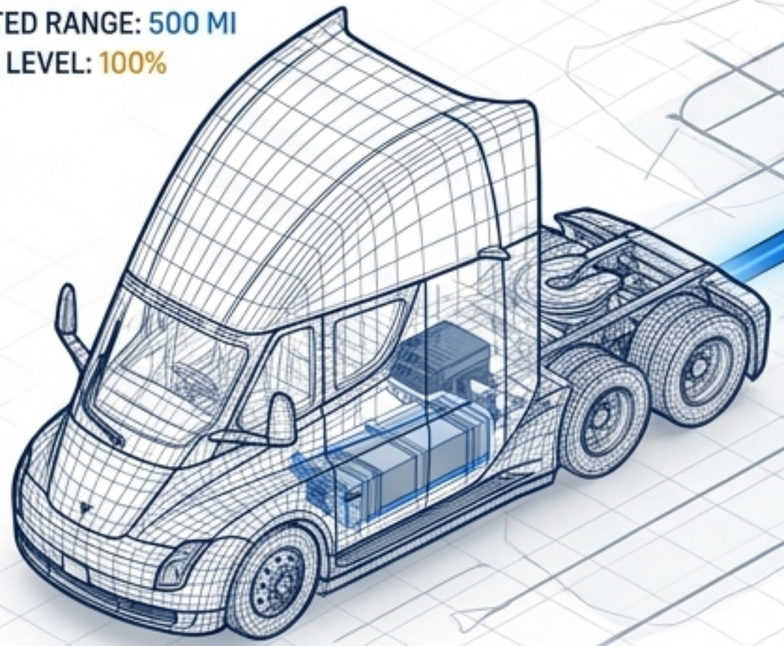
Game 11: Trip Planning Optimizer

The Ultimate CDL Capstone Challenge

ROUTE OPTIMIZATION: 98.5%
ESTIMATED RANGE: 500 MI
CHARGE LEVEL: 100%





DESTINA:
500 MI

TIME TO DESTINATION:

MAX GRADE WARNING
DATA - 13.70

RESTRICTED ZONE:
250 MI

RESTRICTED ZONE
DATA - 58.76

CHARGING STATION BETA:
250 MI

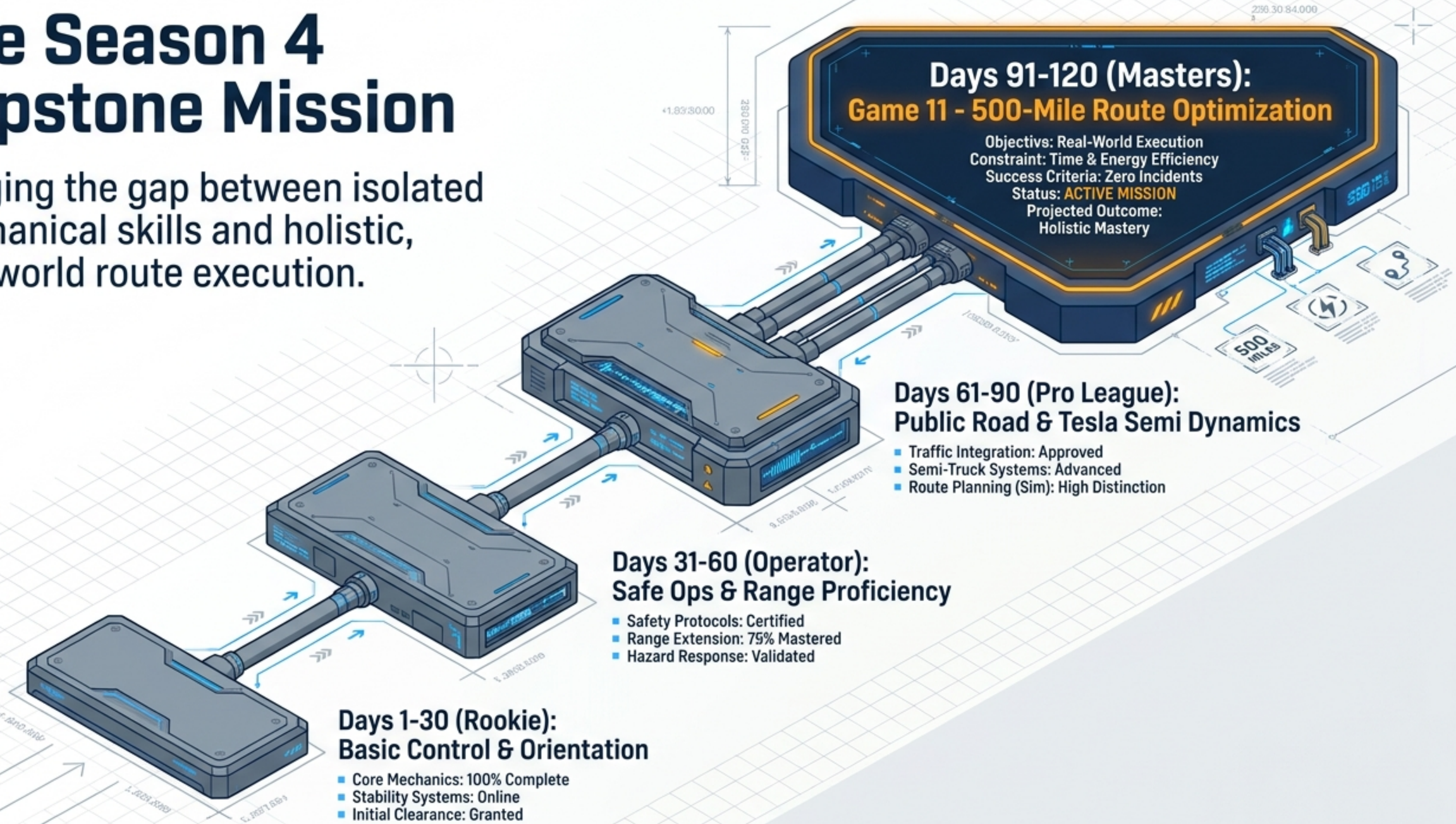
WAYPOINT A:
125 MI

ESTIMATED RANGE: 500 MI
CHARGE LEVEL: 100%
TIME TO DESTINATION: 8H 15M
CONSTRAINT ANALYSIS: ACTIVE

Gemini Notebook

The Season 4 Capstone Mission

Bridging the gap between isolated mechanical skills and holistic, real-world route execution.



Days 1-30 (Rookie): Basic Control & Orientation

- Core Mechanics: 100% Complete
- Stability Systems: Online
- Initial Clearance: Granted

Days 31-60 (Operator): Safe Ops & Range Proficiency

- Safety Protocols: Certified
- Range Extension: 75% Mastered
- Hazard Response: Validated

Days 61-90 (Pro League): Public Road & Tesla Semi Dynamics

- Traffic Integration: Approved
- Semi-Truck Systems: Advanced
- Route Planning (Sim): High Distinction

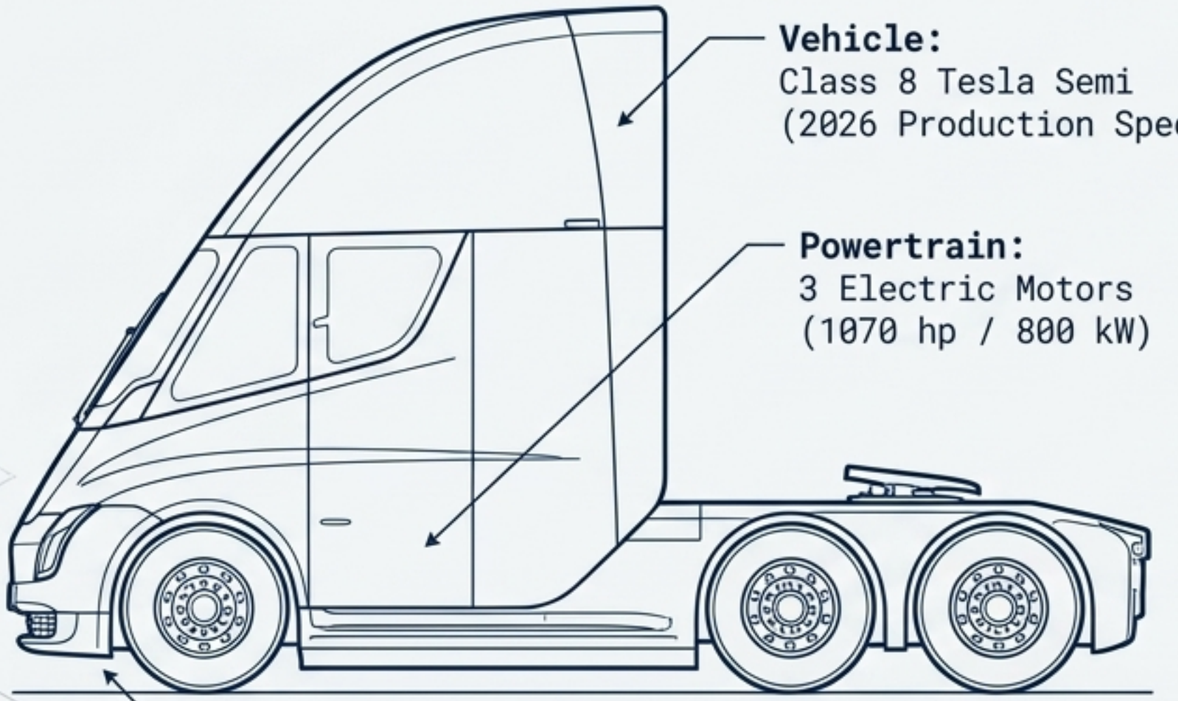
Days 91-120 (Masters): Game 11 - 500-Mile Route Optimization

Objective: Real-World Execution
Constraint: Time & Energy Efficiency
Success Criteria: Zero Incidents
Status: ACTIVE MISSION
Projected Outcome: Holistic Mastery

Gemini Notebook

Layer 1: The Core Objective

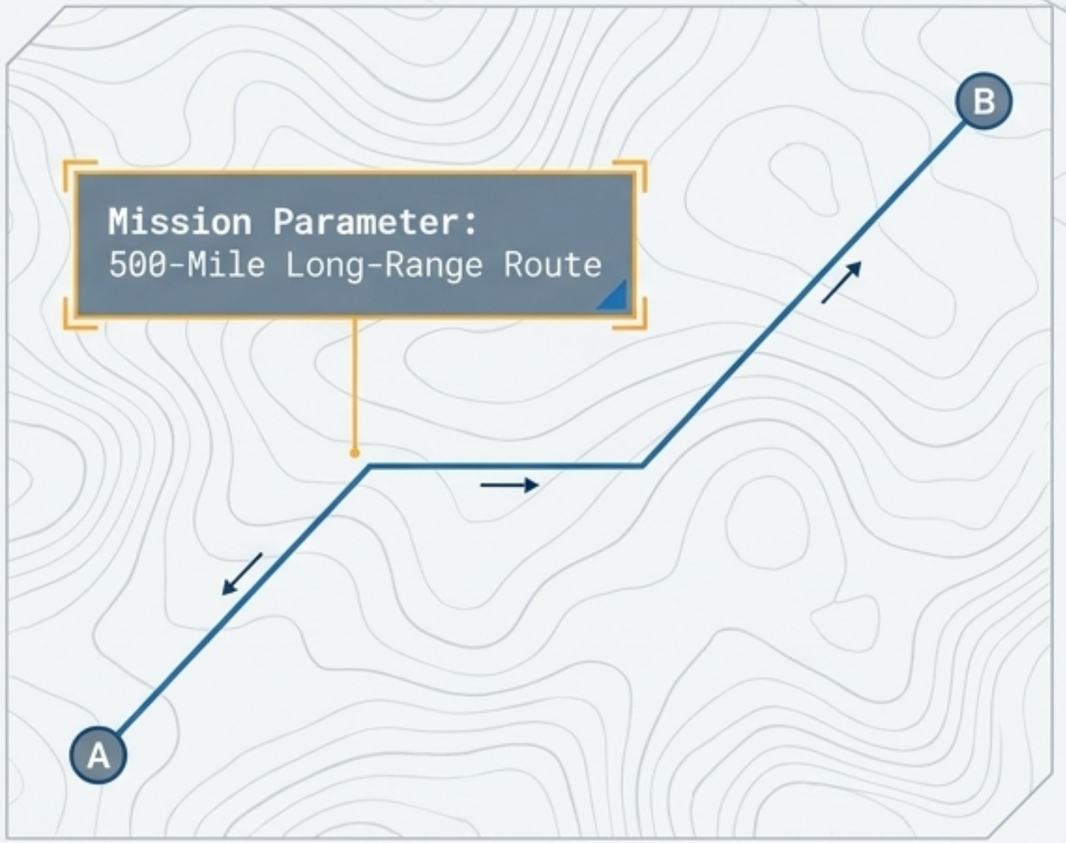
Moving maximum payload across the grid requires an exact understanding of vehicle physics and capabilities.



Vehicle:
Class 8 Tesla Semi
(2026 Production Spec)

Powertrain:
3 Electric Motors
(1070 hp / 800 kW)

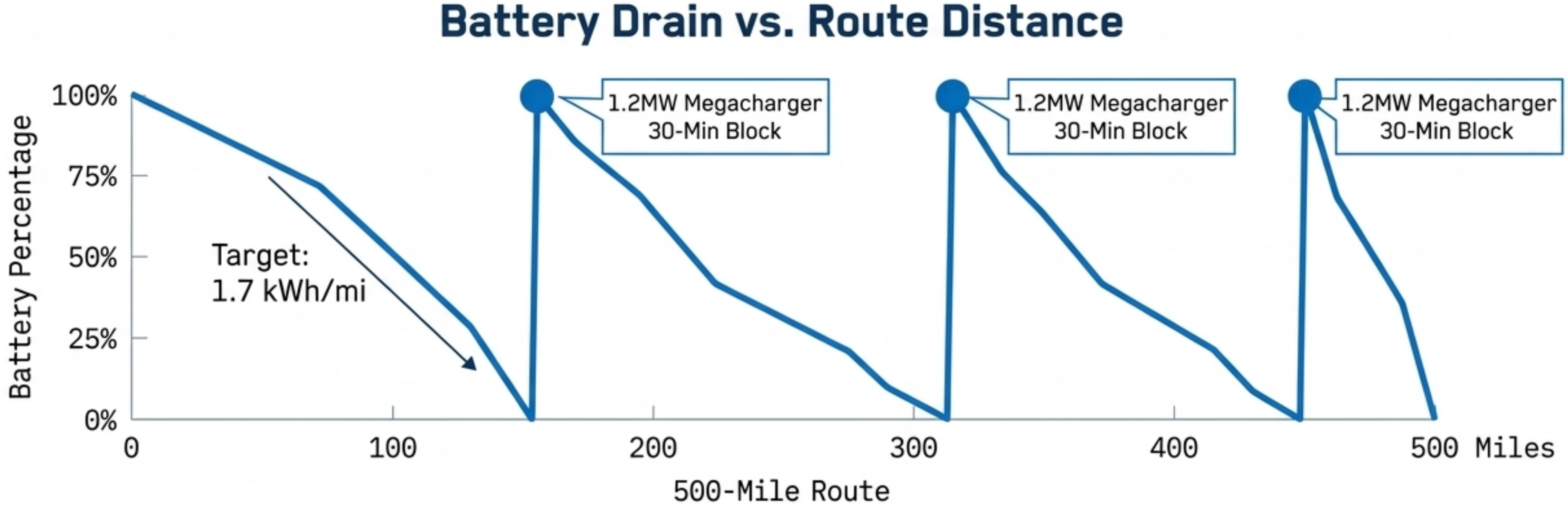
Gross Combined Weight (GCW):
82,000 lbs



Gemini Notebook

Layer 2: Energy Strategy

Precision EV logistics dictate that charge times must perfectly align with energy consumption rates.



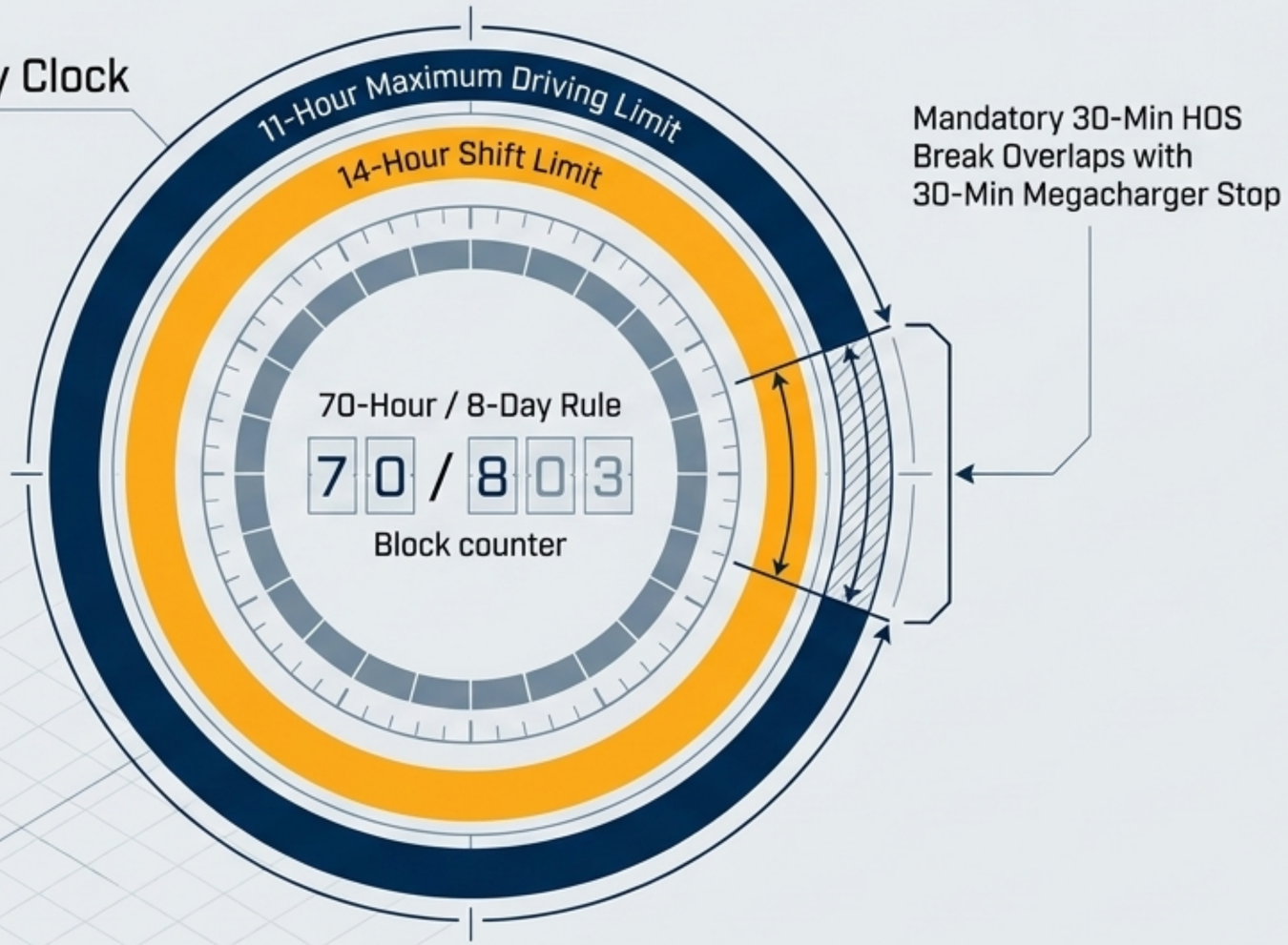
Megacharger Network Integration		
Maintain the strict 1.7 kWh/mi loaded efficiency target.	Schedule mandatory 30-minute charge blocks at 1.2MW Megacharger stations.	Anticipate energy drain caused by weather, temperature, and elevation grades.

Gemini Notebook

Layer 3: The Time Resource

The route is bound by federal law. Total optimization requires nesting mandatory HOS breaks inside required charging blocks.

The Duty Clock



Hours of Service (HOS) Integration:

11/14/70 ELD Logbook rules govern every action.

Zero margin for error: A single HOS violation triggers a game-over state.

The objective: Seamlessly overlap human fatigue management with 1.2MW vehicle charging.

Gemini Notebook

Layer 4: Physical World Compliance

Adapting the route in real-time to navigate infrastructure barriers and maximize carrier economics.

Infrastructure Management:

CAT Scale Compliance:

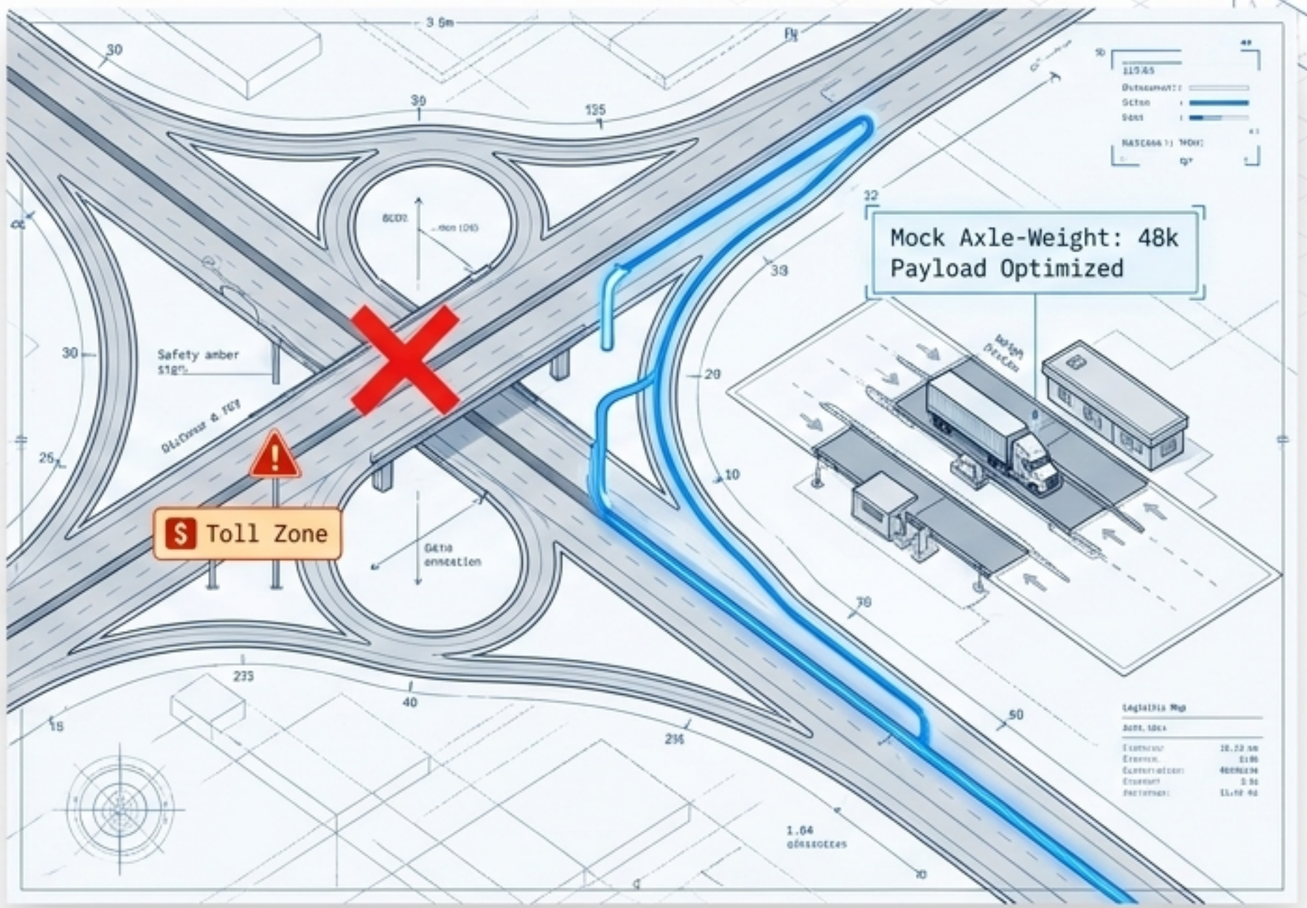
Route deviations for mandatory weigh stations and FMCSA roadside inspections.

Toll Avoidance:

Dynamically adjusting navigation to maintain economic efficiency for the carrier.

Payload Optimization:

Verifying 48k tractor weight distribution before entering federal scales.



Gemini Notebook

Regulatory Synthesis: ELDT Alignment

Game mechanics directly fulfill federal Entry-Level Driver Training theory requirements.

Game 11 Mechanic		FMCSA ELDT Alignment
500-Mile Route Creation		Topic 21: Trip Planning & Map Navigation
Megacharger / Toll Routing		Topic 22: Environmental Compliance & Economics
Weigh Station Integration		Topic 19: Roadside Inspections
Weather & Grade Adaptation		Topic 14: Extreme Driving Conditions

Gemini Notebook

The Operator’s Interface

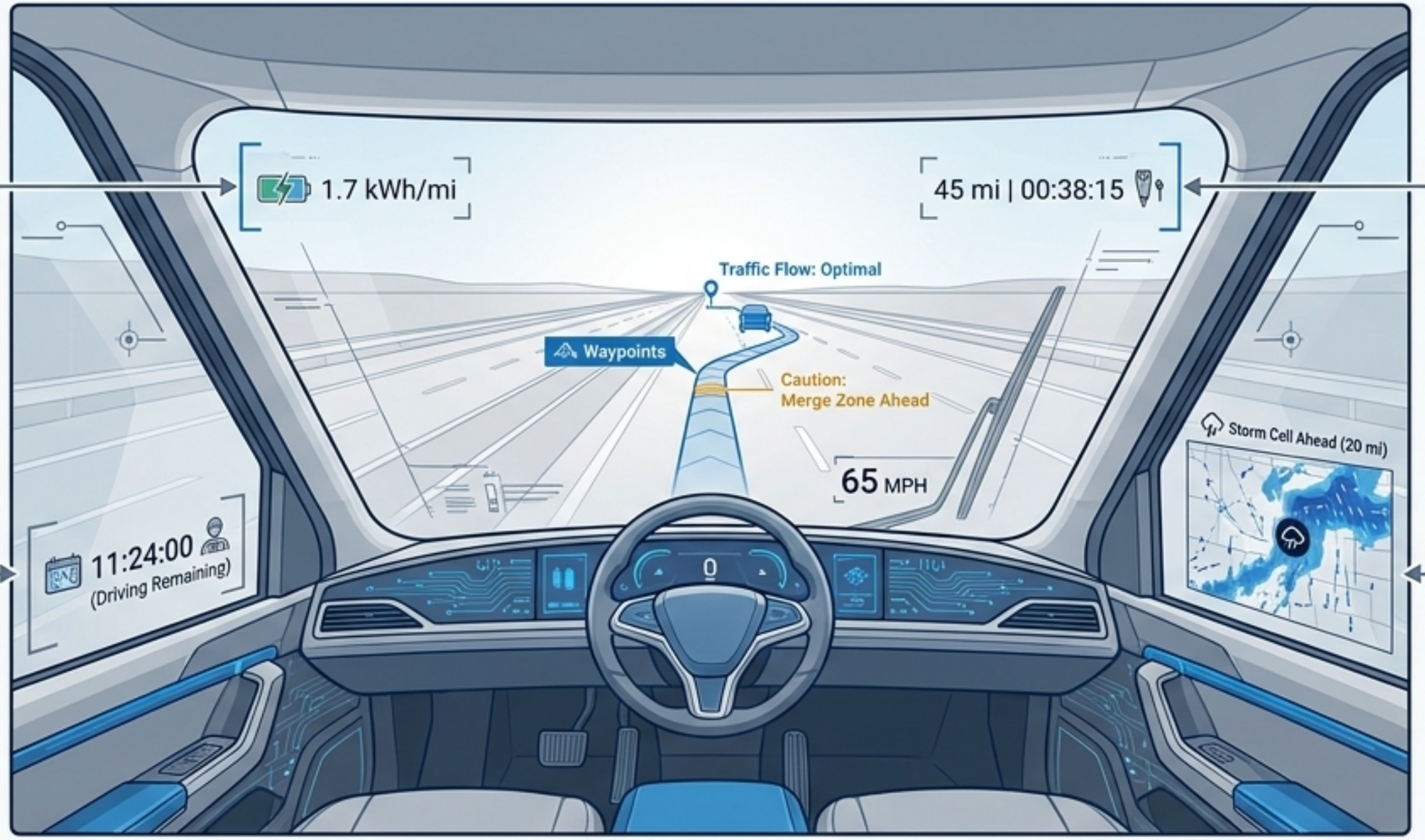
Managing extreme cognitive load through real-time HUD route telemetry.

Live Efficiency:
1.7 kWh/mi

HOS Countdown Clock

Megacharger ETA:
Distance & Time

Predictive Weather Radar



The central seating position of the Tesla Semi is augmented with live data feeds. Trainees must process energy, law, physical space, and weather simultaneously, making micro-adjustments at highway speeds.

Gemini Notebook

Synthesis: Mastering the Grid

Optimization is the exact intersection of energy conservation, legal compliance, and physical routing.
A perfect run leaves zero wasted minutes and zero wasted kilowatts.

The Anatomy of a Perfect Run



Mile 0: Pre-Trip Clearance (Topic 22)

Status: Green
Energy: 100%
Compliance: Verified

Mile 140: Toll Avoidance Reroute

Saved: $45.00
Added: 12 min
Energy Impact: +1.2%

Mile 210: CAT Scale Check

Weight: 78,500 lbs
Axle Balance: Optimal
HOS: 4h 15m Left

Mile 285: 30-Min HOS Rest / 1.2MW Megacharge Overlap

Charge: +450 miles
Rest: Complete
Efficiency: Max Power

Mile 500: Delivery & Logbook Closure

Arrival: On-Time
Energy Remaining: 18%
HOS: Closed Successfully

Gemini Notebook

The Evaluation Engine

Performance is mathematically graded via the 40/30/30 Formula.
Speed without safety equals failure.



40% Accuracy:

Execution of route, toll avoidance, and precise backing upon arrival.

30% Efficiency:

Managing route time and maintaining battery consumption metrics.

30% Safety:

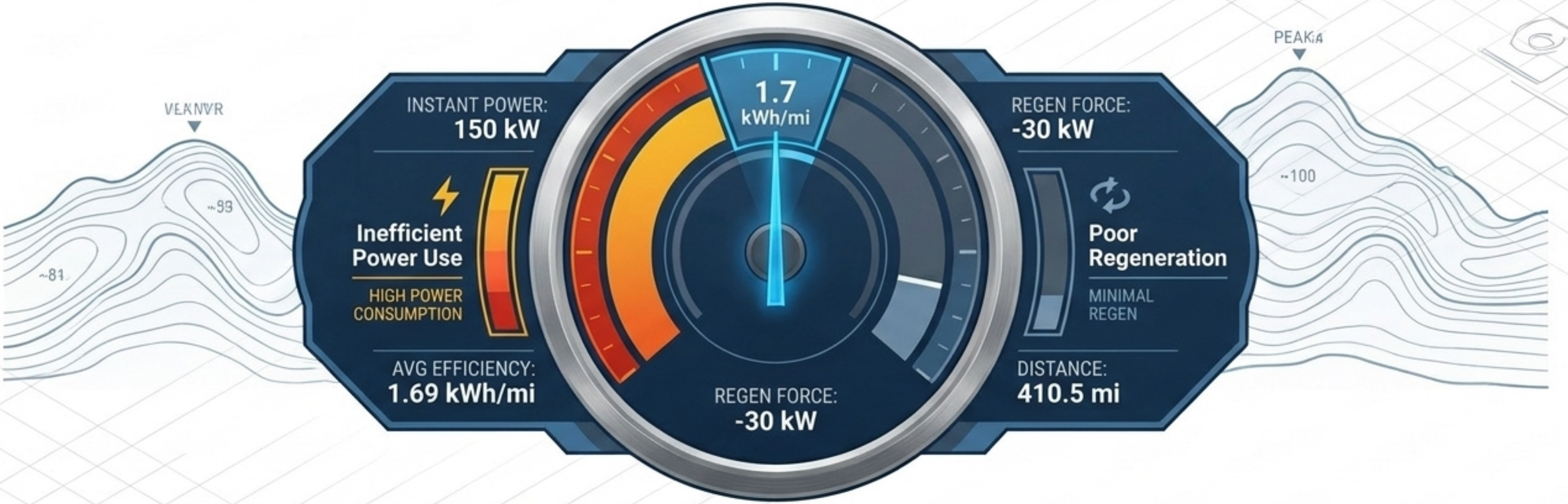
Zero violations of FMCSA regulations or vehicle operating limits.

CRITICAL: A single safety flag or HOS violation results in immediate simulation failure.

Gemini Notebook

The Ultimate Metric: 1.7 kWh/mi

True mastery requires absolute control over vehicle momentum.



To reach the 30% Efficiency cap, players must:

- Feather the throttle to minimize amp spikes.
- Utilize one-pedal regenerative braking perfectly on downgrades.
- Read upcoming elevation and weather to anticipate energy load.

Gemini Notebook

Skill Progression & Certification

Earning XP through the 40/30/30 formula drives trainees through the certification tiers.



Bronze:
Base level



Silver:
+ Range Proficient



Gold:
+ Signal Survival Pass



Platinum

The Platinum Expert Requirement:

- ☑ Achieve 10,000 XP in the simulation.
- ☑ Secure FMCSA ELDT TPR Reporting.
- ☑ Lock in a 1.7 kWh/mi Efficiency rating.
- ☑ Complete finals with ZERO safety flags.

Gemini Notebook

The Real-World Payoff

Game 11 is not just for a high score. Platinum Certification operates as a direct hiring pipeline.



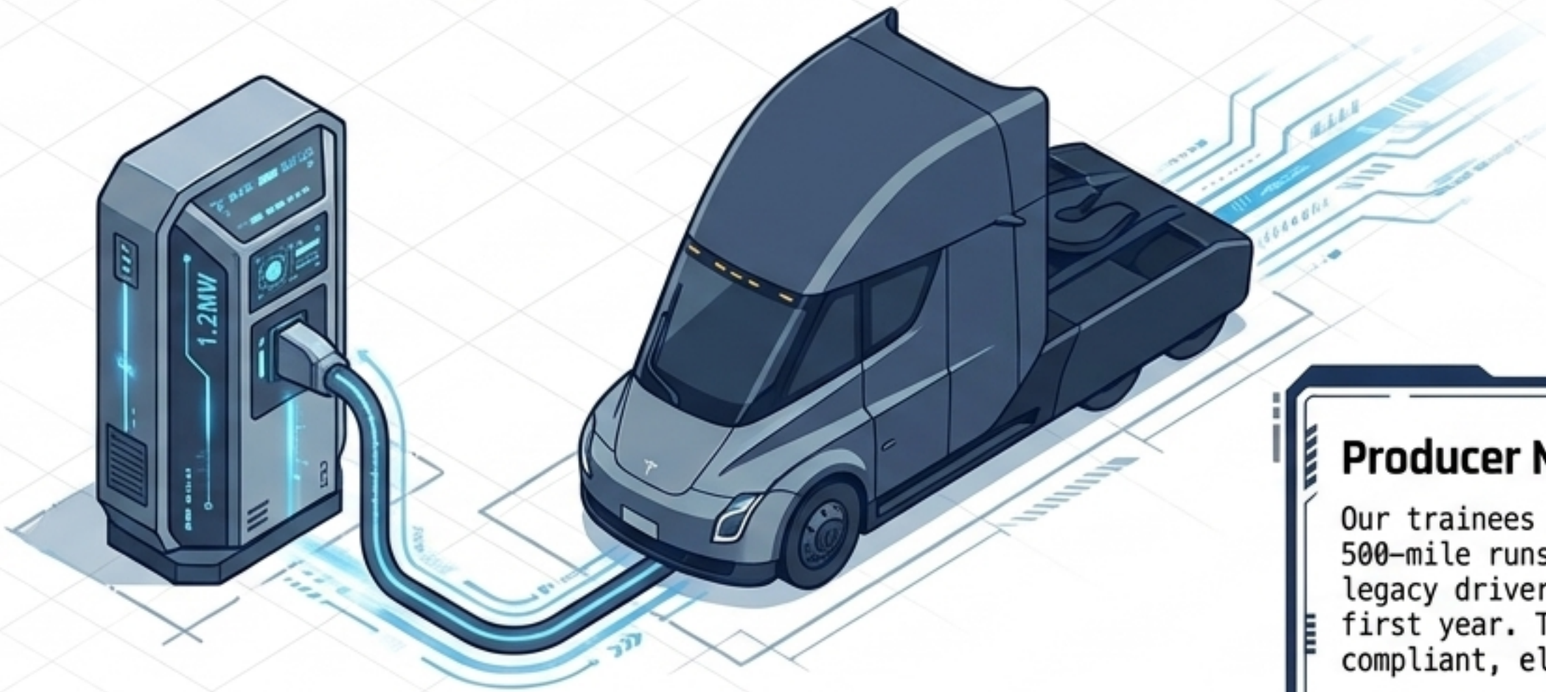


Trainees who master Game 11 are job-ready and explicitly qualified for the Remote Tesla Operator pipelines in Austin and the Bay Area. They have proven they can manage latency, teleoperation redundancy, and high-level route planning under pressure.

Gemini Notebook

The Ultimate Crucible for Modern CDL Drivers

High-repetition, hyper-compressed simulation produces masters, not just drivers.



Producer Note:

Our trainees execute more perfect 500-mile runs in 120 days than legacy drivers complete in their first year. This is the future of compliant, elite fleet training.

Gemini Notebook