Dear Business Partner,

As the Chief Operating Officer of **United Air Lines Inc. (UA)**, I am providing you with the final mandate for your operational audit. Your role is to utilize the provided 2015 flight data to develop a data-driven **Operational Risk Mitigation Strategy (ORMS)**.

Your deliverable must be a concise, evidence-based report addressing the following critical tasks.

□ United Air Lines Inc. (UA) Operational Risk Mitigation Mandate

Phase 1: Revenue Protection - Delay & Cancellation Focus

1. Cascading Delay Control on High-Impact Routes

We need to understand precisely where network failures cascade, indicating flaws in our scheduled aircraft turnarounds.

- **Task:** Identify the **Top 5 routes** (Origin-Destination pairs) based on total accumulated arrival delay in minutes.
- **Deliverable:** For these 5 routes, quantify the **proportion of the total delay** that is directly attributable to **Late Aircraft Delay (LAD)**.

2. Cancellation Failure Rate Assessment

We must quantify our internal failure rate and establish a decisive point for intervention to mitigate downstream costs.

- **Task:** Categorize cancellations based on the `CANCELLATION_REASON` field to isolate our **Controllable factors (Reason A: Airline/Carrier)** versus External/Uncontrollable (Reasons B, C, D).
- **Deliverable:** Report the network-wide **percentage of cancellations attributable to Controllable factors (Reason A)**.

Phase 2: Operational Efficiency - Time & Resource Optimization

3. Morning Hub Congestion Strategy

We must pinpoint and address any systemic delays that jeopardize our early operations.

- **Task:** Analyze the average **Departure Delay** distribution across all 24 hours of the day.
- **Deliverable:** Identify the **single one-hour time block** that records the highest average departure delay, and specify that average delay (in minutes).

4. Ground Crew Process Streamlining

Inefficient ground movements waste fuel and time.

- **Task:** Identify the **Top 5 Origin Airports** that exhibit the longest average **TAXI_OUT** time across the entire dataset.
- **Deliverable:** Calculate the overall **network median** for **TAXI_OUT** time. Then, quantify the **total estimated minutes of saving** achievable at those 5 airports if they could match the calculated network median.

Your cooperation in swiftly delivering these quantitative results is paramount to our strategic planning.