🧠 Ops Insight AIP Agent (Operations Copilot)

🎯 Goal

Enable operations teams to **ask natural-language questions** and receive:

- Data-backed insights
- Root-cause explanations
- Actionable recommendations

All powered by **Foundry Ontology + AIP**.

1️⃣ Core Use Cases

Your agent should confidently answer questions like:

- *"Why did delivery delays increase last week?"*
- *"Which suppliers are impacting on-time delivery?"*
- *"What operational risks should I focus on today?"*

2️⃣ Ontology Design (Very Important)

Key Ontology Objects

```
Order
Shipment
Supplier
Plant
DelayEvent
```

Example Object Fields

Order

- orderId
- orderDate
- promisedDate
- actualDeliveryDate
- plantId
- supplierId
- orderStatus

Shipment

- shipmentId
- orderId
- shippedDate
- deliveredDate
- delayHours
- delayReason

Supplier

- supplierId
- supplierName
- reliabilityScore
- region

Plant

- plantId
- plantName
- downtimeHours
- capacityUtilization

3 Metrics & Signals (Agent Brain Inputs)

Create **derived metrics** in Foundry:

- On-Time Delivery %

- Avg Delay Hours
- Supplier Delay Contribution %
- Plant Downtime Trend
- SLA Breach Count

These metrics become **ground truth** for the agent's reasoning.

4️⃣ AIP Agent Responsibilities

Step-by-Step Reasoning Flow

1. Understand user intent
2. Identify relevant ontology objects
3. Fetch metrics & recent data
4. Compare trends vs baseline
5. Detect anomalies
6. Explain *why* it happened
7. Recommend actions

This is where AIP shines ✨

5️⃣ Prompt Design (Critical)

System Prompt (Example)

```
You are an Operations Insight AI Agent.
You analyze operational data from Foundry Ontology.
You must:
- Use data to support every claim
- Explain causes clearly
- Provide actionable recommendations
- Avoid speculation
```

User Prompt (Dynamic)

```
Question: {{user_question}}

Context:
- Orders, Shipments, Suppliers, Plants
- Time window: last 30 days
- KPIs: on-time delivery, delay hours, downtime
```

6 Example Agent Output

User asks:

"Why did delivery delays increase last week?"

Agent responds:

- 📉 On-time delivery dropped from **94% → 86%**
- 🚨 **Supplier A** caused **42% of total delays**
- 🏭 **Plant B** had **18% higher downtime**
- ⏱ Weather-related delays increased in **East region**

Recommended Actions

1. Prioritize Supplier A escalation
2. Re-route shipments from Plant B
3. Pre-buffer inventory for East region

7 How to Implement in Foundry (Concrete Steps)

Step 1 – Data Ingestion

- Orders & shipments → pipelines
- Supplier & plant master data → ontology

Step 2 – Ontology Mapping

- Link Orders ↔ Shipments ↔ Suppliers ↔ Plants

Step 3 – Metric Creation

- Use Code Workbook / Quiver / Functions
- Persist KPIs as ontology metrics

Step 4 – AIP Agent Setup

- Create AIP Agent
- Attach ontology objects
- Attach metrics & tools

Step 5 – UI (Demo Friendly)

- Chat-style interface
- Predefined example questions
- Insight cards + charts

🔢 Why This Agent Is Perfect for You

- Aligns with **Foundry + AIP storytelling**
- Easy to scale into multiple domains
- Strong interview + workshop artifact
- Ideal for **LinkedIn community content**