



# **Underwriter Agent Using ADK, Gemini And Google Cloud**

## AI-Powered Commercial Property Insurance

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Presented by: Rajesh More

For: The Hartford

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# The Future of Underwriting, Today

**WHAT:** We have built a multi-agent AI system that automates the entire commercial property underwriting process, from submission intake to a final, reasoned decision.

**HOW:** It uses Google's Agent Development Kit (ADK) and the Gemini model to orchestrate four specialized AI agents that analyze risk against The Hartford's trusted COPE framework.

**IMPACT:** This system delivers a dramatic increase in underwriting speed, improves risk assessment accuracy, and creates a fully transparent, auditable trail for every decision.



# The Challenge of Navigating Modern Risk



## Manual & Time-Intensive:

Current processes rely on manual data gathering and validation, which slows down the quoting and binding cycle.

## Inconsistent Assessments:

Subjectivity in risk evaluation can lead to inconsistencies across underwriters, impacting portfolio balance and profitability.



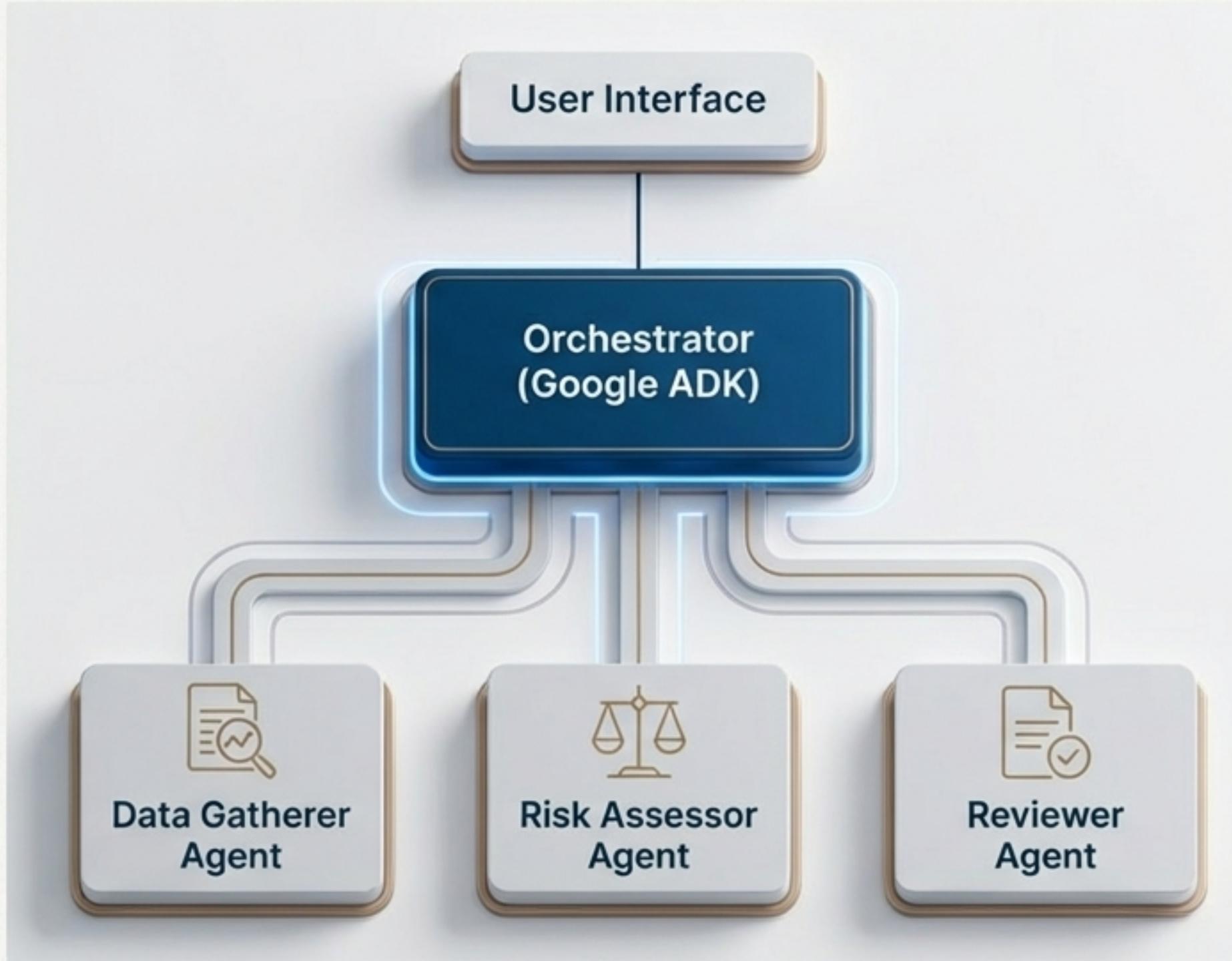
**Data Overload:** The growing volume of valuable external data—from FEMA flood zones to local crime rates—is difficult for underwriters to synthesize effectively on every submission.

# Our Solution: A Team of Specialized AI Agents

We've built an intelligent system where each AI agent has a specific role, working in concert like a world-class underwriting team.



# The Architecture of Intelligence



## Key Components:

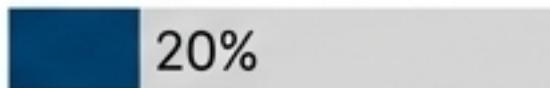
- **User Interface:** A single point of entry via a Streamlit dashboard or chat UI.
- **Orchestrator (Google ADK):** The brain of the operation, dynamically coordinating the workflow between the specialized agents.
- **Specialized Agents:** Each agent is equipped with a distinct set of tools (13 total) to perform its specific function with precision.

# AI Decisions, Grounded in Underwriting Principles

Our agent's logic is built upon the industry-standard **COPE framework**, ensuring decisions align with proven risk assessment methodology.



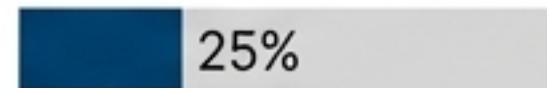
**Construction: 20%**



(Building materials,  
age, fire resistance)



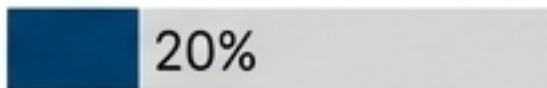
**Occupancy: 25%**



(Business type,  
operational hazards)



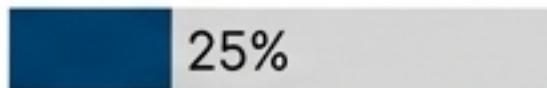
**Protection: 20%**



(Sprinklers, alarms,  
fire department  
proximity)



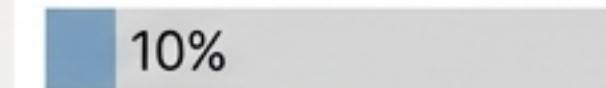
**Exposure: 25%**



(Natural disasters like  
hurricanes and floods,  
crime)



**Claims History: 10%**



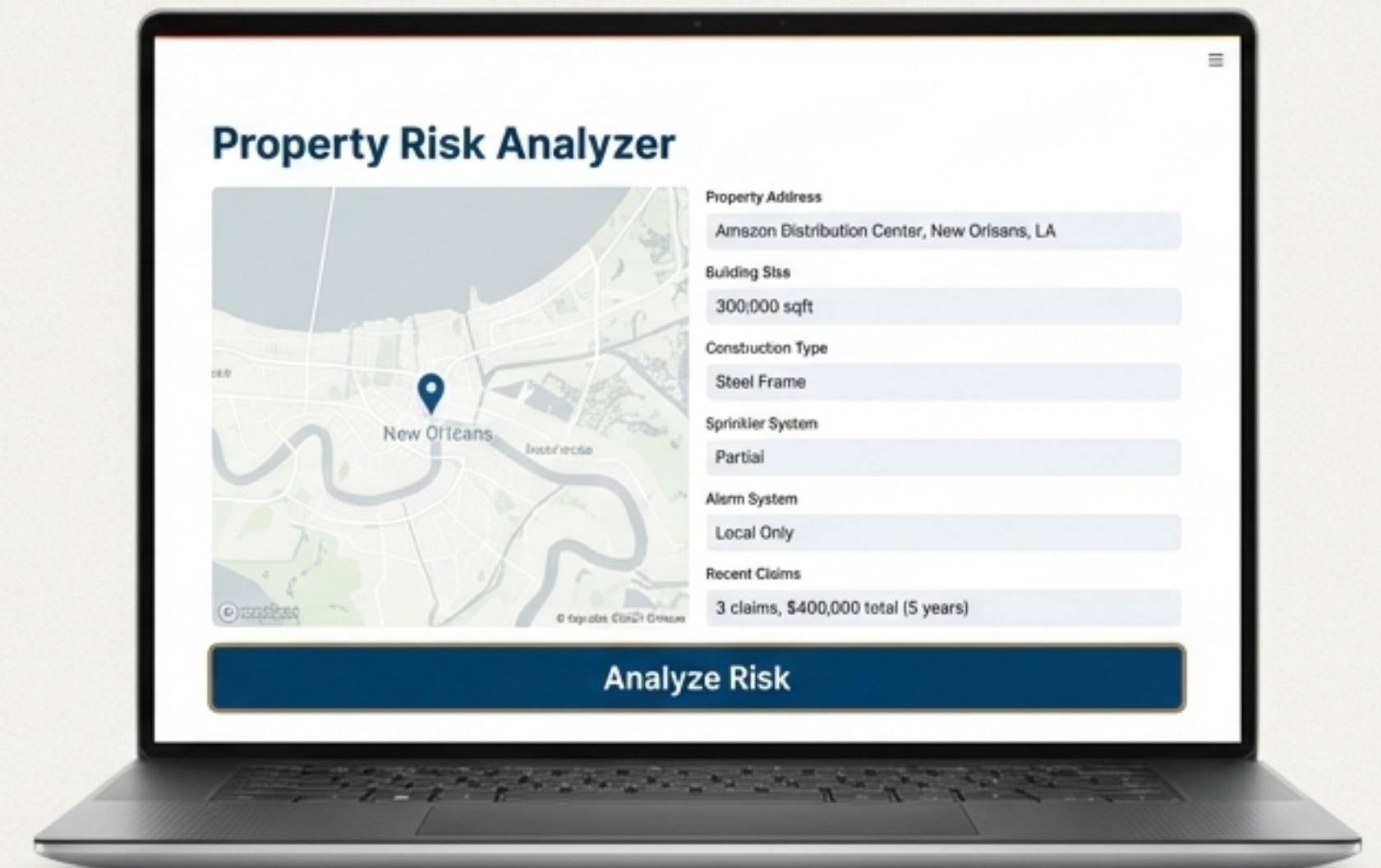
(Past claims frequency  
and severity)

# Live Demonstration: The Agent at Work

We will now run a full underwriting analysis for a high-risk property to showcase the agent's data gathering and decision-making capabilities.

## Demonstration Scenario: High-Risk Profile

- **Property:** An Amazon distribution center in New Orleans, LA.
- **Details:** 300,000 sqft warehouse, steel frame construction.
- **Challenges:** Partial sprinklers, local alarm only, and a history of 3 claims totaling \$400,000 in the past 5 years.



# Analysis Debrief: From Data to Decision in Seconds



Final Decision:

**Approved with Conditions**

## Key Reasoning & Conditions:

- ⌚ Annual property inspection required.
- 🏡 Flood insurance required (Located in FEMA Zone AE).



**Calculated Annual Premium:  
\$52,340**

## Risk Breakdown (COPE Scores):

Construction: 25	<div style="width: 250px;"><div style="width: 100%;"></div></div>	(Low Risk)
Occupancy: 30	<div style="width: 300px;"><div style="width: 100%;"></div></div>	(Low Risk)
Protection: 12	<div style="width: 120px;"><div style="width: 100%;"></div></div>	(Excellent)
Exposure: 65	<div style="width: 650px;"><div style="width: 100%;"></div></div>	(High Risk)
Claims: 8	<div style="width: 80px;"><div style="width: 100%;"></div></div>	(Excellent)

# The Business Impact: Speed, Consistency, and Insight



## Accelerated Quoting

Reduce underwriting cycle time from hours or days to mere minutes, dramatically improving producer and client satisfaction.



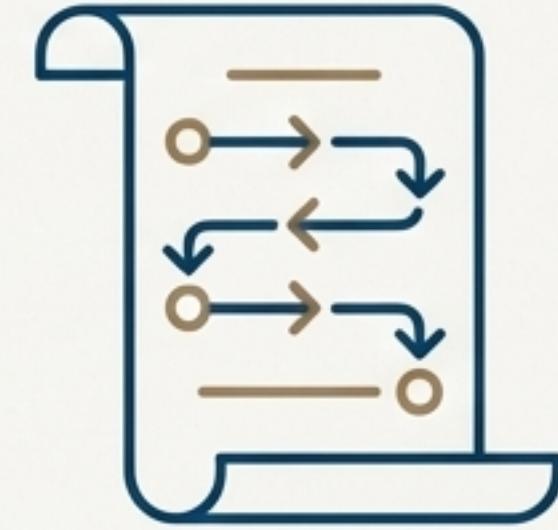
## Enhanced Consistency

Apply best-practice risk assessment uniformly to every submission, reducing human variability and strengthening overall portfolio health.



## Deeper Risk Insight

Leverage a vast array of internal and external data for a truly holistic risk profile that is impossible to replicate manually at scale.



## Transparent & Auditable Decisions

Provide a clear “reasoning trail” for every automated decision, simplifying compliance, quality assurance, and training.

# Built on a Modern, Enterprise-Ready Foundation



## Google Cloud

**Google Cloud:** Ensures a secure, scalable, and reliable infrastructure for enterprise-wide deployment.



**Google Agent Development Kit (ADK):** Provides the framework for rapid development and robust orchestration of sophisticated AI agents.



**Google Gemini:** Delivers state-of-the-art reasoning, language understanding, and complex decision-making capabilities.



## Streamlit

**Streamlit:** Enables the creation of interactive and insightful dashboards for visualizing results.

# A Phased Roadmap to Production





# Discussion & Next Steps

Rajesh More  
Technical Architect, AIML