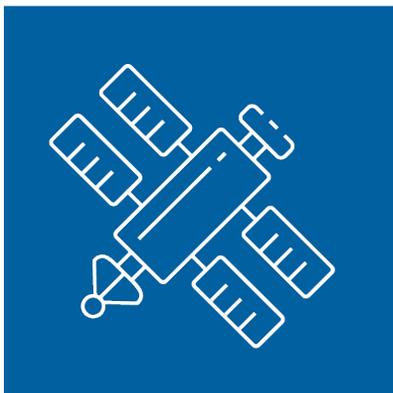# How Cloud-Based AI/ML is Transforming the Aerospace Industry

Tim Sills

Senior Solutions Architect
Aerospace & Satellite Solutions
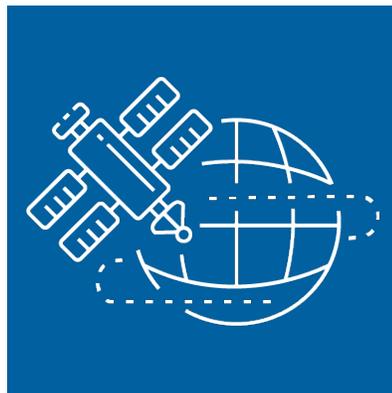Amazon Web Services

aws

Customer challenges

Satellite capacity forecasting

Maximizing fleet value while meeting customer demand

Advanced image processing

Automating management of large volumes of data

Data process & analytics

Fusing data sources to derive meaningful insights

The cloud is enabling space industry success

Driving down the cost of innovation	Managing and transforming data on earth and in space	Automating and Optimizing Space Systems	Providing modernized infrastructure and process	Faster Time to Insights and More Value for Data
Only pay for what you use	Low-latency access to global cloud infrastructure	Apply artificial intelligence (AI) and machine learning (ML)	Focus on mission	Easy access to high performance compute
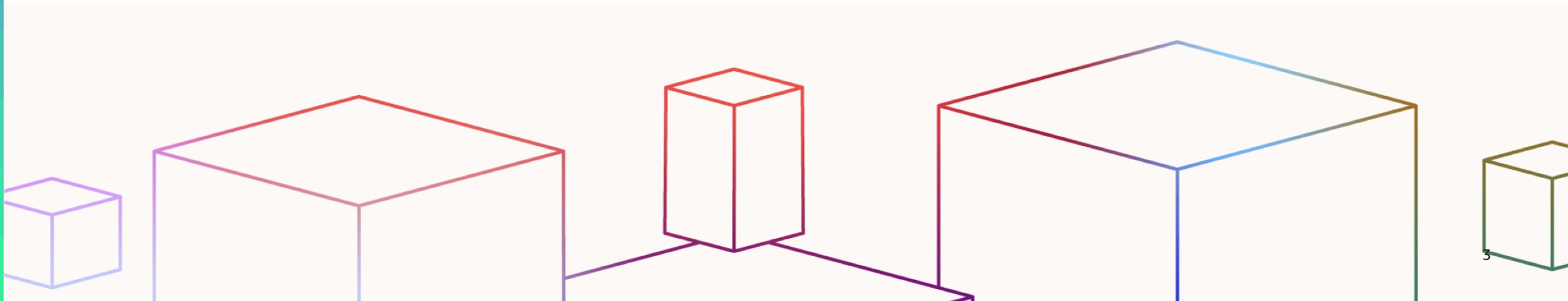
Satellite capacity forecasting – the challenges

- Manually intense process for monitoring & control

- Need to forecast and allocate to highest areas of demand

- Maximize fleet value

- Dynamically managing satellite constellation at scale

Satellite capacity forecasting – the solutions

Operational efficiency gains for spacecraft, networking, and processing

- Use natural language prompting (NLP) for tasking orders

- Leverage Amazon SageMaker Machine Learning models to dynamically forecast demand

- Real-time optimization, scalability, and prioritization based on events

Advanced image processing – the challenges

- Managing large volumes of data

- Data quality and consistency

- Availability of compute resources

- Optimizing collection and downlink to reduce turnaround

Advanced image processing – the solution

Amazon SageMaker reduces cost and time to output

- Cost effective, scalable storage & compute in the cloud

- Machine learning models quickly process/filter images

- Deep learning models for object identification

- Generation of synthetic data for model training

- Data pipeline automation

Data processing & analytics – the challenges

- Lack integration with automated analytics & tasking engines

- Data is siloed and inconsistent format

- Incomplete picture of ground conditions

- Significant output delays due to manual intervention
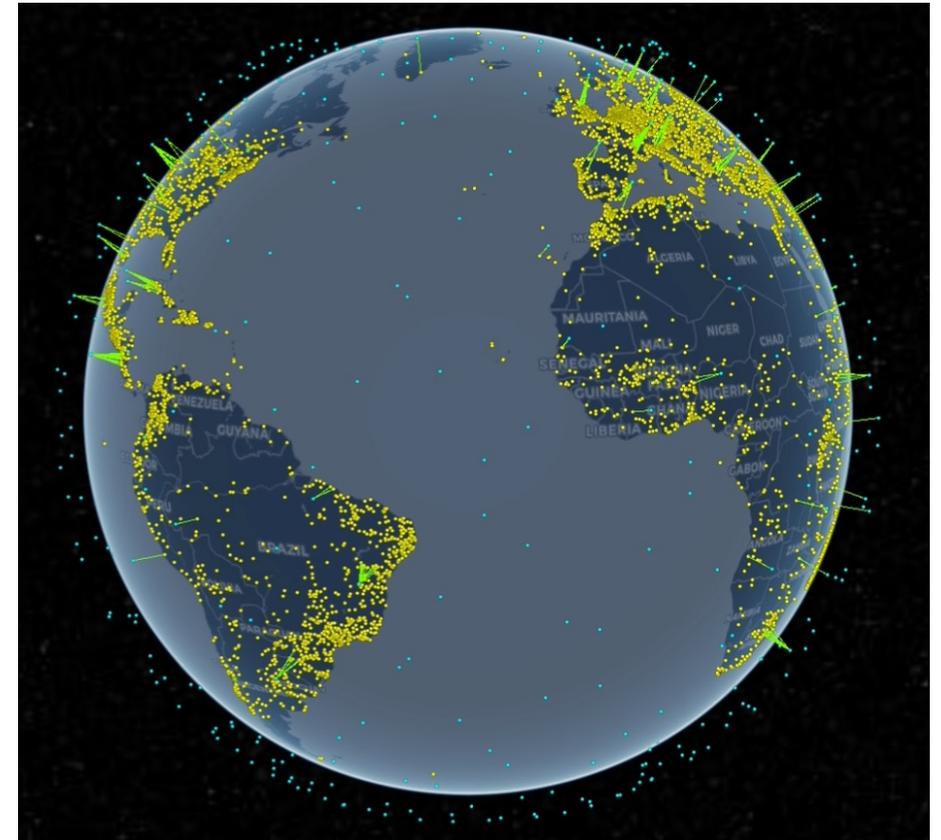
Data processing & analytics – the solution

Amazon Bedrock helps delivers insights in hours and not days

- Use natural language prompting for requests
- AI agents orchestrate activities:
    - Contact scheduling
    - Collection of data across multiple resources
    - Fusing of data to derive insights
    - Report generation

Satellite Communications analytics pipelines on AWS
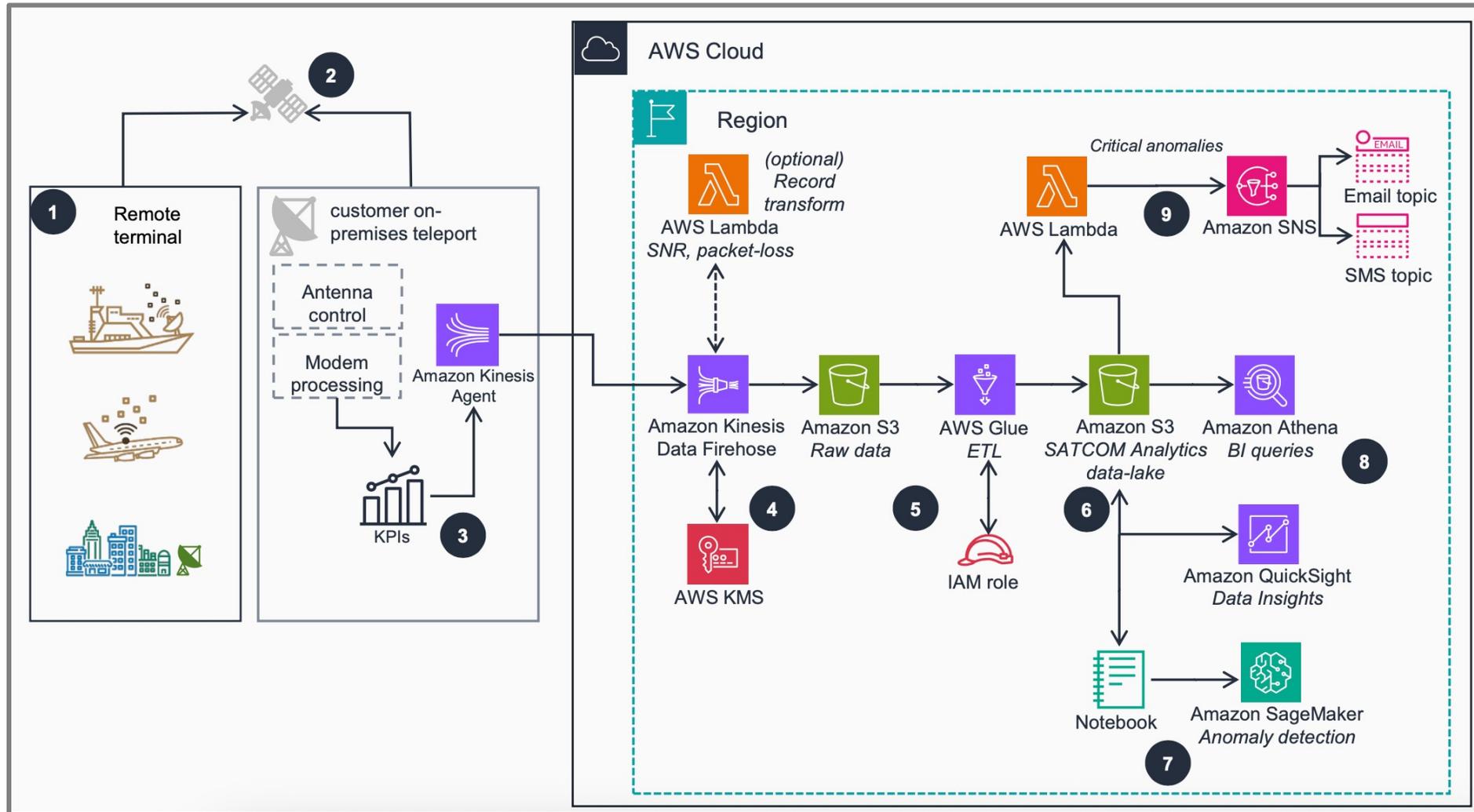
Key takeaways

Our GenAI Value Proposition

🌐 20 years of AI / ML experience

⤢ Democratization: Flexibility & Choice of FMs

🛡 Secure customization

⊞ Broad integration to AWS services

▦ The most cost-effective infrastructure

☁ Rapidly deploy GenAI-powered applications

How to engage us

DISCOVERY
Let's work backwards

DEVELOP & PILOT
Proof of concept

PARTNERSHIP
Solutions and go to market

Thank you!

Tim Sills

tssills@amazon.com