# SURESHIELD INSURANCE

BETTER COVERAGE, BETTER CARE

# Table of Contents

## Introduction

SureShield Insurance (SI) is committed to delivering exceptional health insurance services by leveraging innovative Azure Cloud technology. This innovative project focuses on migrating on-premises systems to a secure, scalable cloud platform. SureShield aims to enhance decision-making, optimise costs, and provide a customer-centric approach to health insurance services by harnessing the power of advanced analytics and AI-driven tools.

## Mission

We aim to deliver seamless and innovative health insurance solutions by adopting a robust cloud infrastructure. We aim to enhance customer satisfaction, streamline operations, and ensure future readiness.

# Objectives

1. **Modernize Infrastructure**

- Migrate on-premises SQL databases and applications to Azure Cloud for high availability, scalability, and performance.

2. **Enhance Data Insights**

- Use Azure Synapse Analytics and Azure Databricks to derive actionable insights from patient and policyholder data.

3. **Improve Resilience**

- Implement Azure Backup and Azure Site Recovery for disaster recovery, minimizing downtime and data loss.
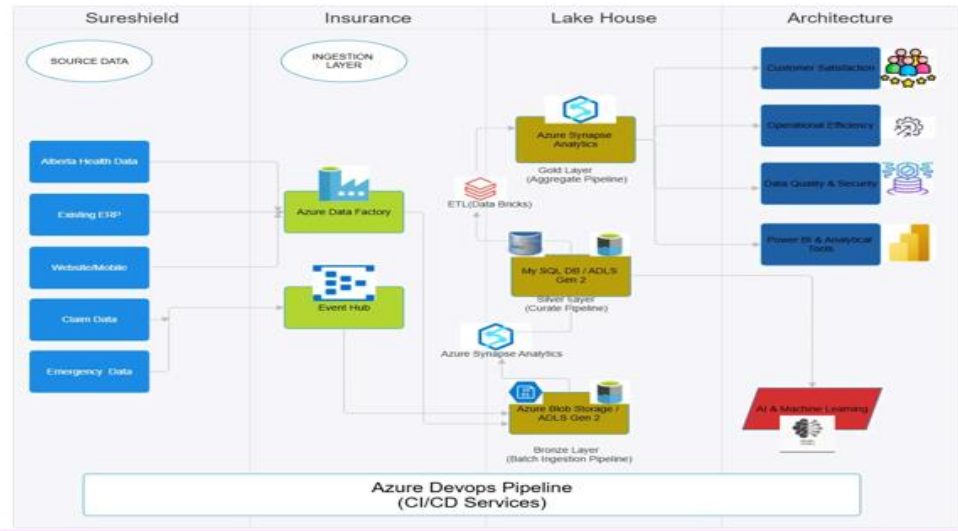
4. **Support Innovation**

- Utilize AI and ML tools integrated with Power BI to create innovative health insurance solutions.

5. **Optimize Costs**

- Adopt Azure Data Lake Storage for cost-effective, long-term data storage and analytics.

# Proposed Cloud Architecture



**Proposed Cloud Architecture**

The SureShield cloud architecture integrates the following layers:

1. **Ingestion Layer**

   o Tools: Azure Event Hubs, Azure Data Factory

   o Sources: Alberta Health Data, Claims Data, ERP Systems, Website/Mobile Interactions

2. **Bronze Layer (Raw Data Storage)**

   o Tools: Azure Data Lake Storage Gen2

   o Description: Central repository for unprocessed data.
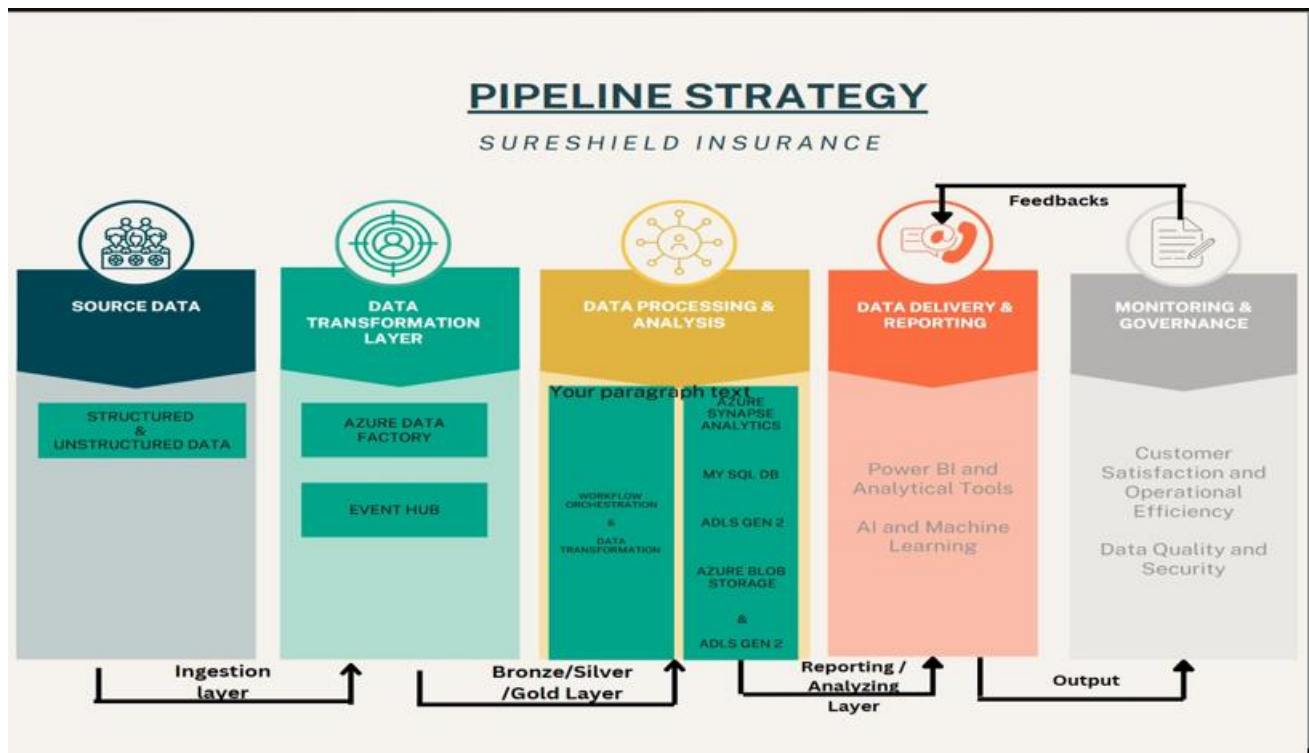
3. **Silver Layer (Curated Data)**

   o Tools: Azure Synapse Analytics

   o Description: Structured and cleaned data for analysis.

4. **Gold Layer (Aggregated Data)**

   o Tools: Azure Databricks, Power BI

   o Description: Final datasets used for reporting, AI/ML, and visualization.

## Proposed Data Pipeline



**Proposed Data Pipeline**

**Data Flow:**

1. **Ingestion**:

   o   Data from multiple sources is streamed into Azure Event Hubs.

   o   Azure Data Factory ensures structured data delivery to the bronze layer.

2. **Storage and Transformation**:

   o   Data is stored in Azure Data Lake Storage Gen2.

   o   Delta Lake processes raw data to ensure consistency and accuracy.

3. **Analytics and Insights**:

   o   Azure Synapse Analytics executes complex transformations and delivers insights.

- o Power BI visualizes metrics like claim processing times and customer satisfaction scores.

4. **Advanced Applications**:

   - o Machine learning models support predictive analytics for risk assessment and premium customization.

## Conclusion

This project positions SureShield Insurance as a technology-driven leader in health insurance. By embracing Azure Cloud solutions, SureShield ensures operational excellence, enhances customer experiences, and establishes a foundation for future innovations. The proposed architecture and pipeline promise cost optimization, scalability, and real-time insights, enabling SureShield to thrive in a dynamic industry.