SCOUT ANALYTICS PLATFORM - ETL ARCHITECTURE Data Sources Staging Layer Bronze Layer (Raw) Silver Layer (Cleaned) **DATA SOURCES** Gold Layer (Business Ready) Views & Procedures API Layer CDC (Change Data Capture) **Retail Stores External APIs IoT Devices** Audio Al **Vision AI** (POS Systems) (Third Party) (Microphones) (Sensors) (Cameras) STAGING staging.StoreLocationImport $dbo. Payload Transactions Staging_csv$ **BRONZE LAYER (Raw Data) CDC LAYER** bronze.bronze_transactions (3 records) bronze.dim_stores_ncr dbo.bronze_device_logs CDC Schema: cdc.dbo_SalesInteractions_CT cdc.dbo_Stores_CT cdc.poc_transactions_CT 35+ CDC stored procedures Real-time change tracking **SILVER LAYER (Cleaned & Validated)** dbo.silver_location_verified dbo.silver_transcripts (VIEW) dbo.silver_vision_detections (VIEW) dbo.silver_txn_items GOLD LAYER (Business Ready) gold.scout_dashboard_transactions (12,101 records) gold.tbwa_client_brands gold.v_transactions_crosstab (VIEW) ANALYTICAL VIEWS & PROCEDURES • dbo.v_transactions_flat_production (12,192 records) • dbo.v_transactions_flat_v24 (12,192 records) • dbo.v_SalesInteractionsComplete • dbo.v_store_health_dashboard • gold.v_transactions_flat_v24 KEY STORED PROCEDURES: • gold.sp_extract_scout_dashboard_data dbo.sp_scout_health_check **API LAYER** Scout DAL Agent (/api/dash) Single Endpoint Bundle API • KPIs • Brands • Transactions • Store Geo • Comparisons Deployed: scout-dashboard-xi.vercel.app **PRODUCTION DATA VOLUMES TECHNICAL STACK**

- □ REAL PRODUCTION SCALE:

 SalesInteractions: 165,485 records (6 months)

 PayloadTransactions: 12,192 records

 Active Stores: 13 locations

 Device Coverage: 15 loT devices

 Facial Recognition: 91.7% coverage

 Audio Transcription: 44.2% coverage

 Date Range: Apr 2025 Sep 2025

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- ☐ ARCHITECTURE:
- Database: Azure SQL Server
 ETL: Medallion Architecture (Bronze→Silver→Gold)
 CDC: Real-time change data capture
 API: Next.js 14 serverless functions

- Frontend: React with TypeScript
 Deployment: Vercel Edge Functions · Authentication: Bearer token