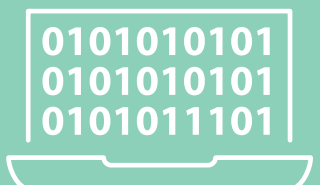
VITRIA

TECH BRIEF

Analytic Data Flow



Problem

Network connectivity of devices, equipment, factories, products and business processes delivers massive volumes of data every second. When you combine streaming real-time data with data from internal information systems and advanced analytics, you can gain the timely business insights needed to improve operational efficiency, grow revenue, and reduce risk.

But lacking the skilled resources and the right development environment are challenges for most organisation. The inability to easily manage the diversity of data sources and connectors required for the analytic solutions needed is yet another difficult obstacle to overcome. Although the return in implementing IoT solutions is high, the cost and time required to build these real-time analytic solutions creates a barrier and slows implementation.

Solution

Vitria's VIA self-service, model-driven development environment, Analytic Data Flow enables the creation of highly effective IoT applications in days not months. Analytic Data Flow (ADF) provides a visual modelling environment that requires minimal coding. A visual dataflow language enables solution developers to rapidly lay out the analytic value chain consisting of multiple data and analytic processing steps with a library of reusable "drag and drop" building blocks. The ADF development environments allows rapid creation of real-time analytics solutions involving devices/things, people and processes or any combination of these.

VIA's ADF Analytic Flow Engine processes the data flows defined in the visual development environment. This engine is a run-time framework to manage Analytic Data Flow processing. Consistent with the visual modeling environment, the Analytic Flow Engine provides the run-time environment to process streaming and batch applications over descriptive, predictive, and prescriptive analytics.

Real Time Analytic Pipeline

Analytic Data Flow (ADF) Features and Benefits

CAPABILITIES	FEATURE	ADVANTAGE	BENEFIT
Advanced Analytics	Fast Real-time analytics	Provides contextual awareness and situational intelligence using descriptive analytics, multidimensional analysis, pattern matching, anomaly detection, trend analysis, and behavioural analytics leveraging streaming data.	Gain more relevant business insights faster to deliver better business outcomes.
	Descriptive Analytics	Real-time streaming analytics include: • Correlation • KPIs • Multidimensional Analysis • Summary Statistics • Anomaly Detection • Geospatial • Pattern Matching • Time-series Analytics • Population Analytics • Trending • Activity Analytics • Behavioural Analytics • Track and Trace • Link Analysis • Hypothesis Testing • Root Cause Analysis	Delivers the functionality required to provide "as-is" contextual awareness and situational intelligence in real-time.
	Historical Analytics	Delivers the historical KPIs and baselines, auto regression and time-series analysis that provides the historical context for real-time analysis and machine learning.	Combine historical data with real time streaming data to quickly Identify anomalies and take proactive measures to improve performance.
	Predictive and Prescriptive Analytics	Supports regression, classification, and clustering using hundreds of predictive techniques based on machine learning algorithms.	Enables the next best action based on the current situation and latest predication. Scoring can be done in real-time or in batch mode.
	Machine Learning Algorithms	Can be applied to your open data lake to produce predictive and prescriptive analytic models. Supports supervised and unsupervised learning Incudes a repertoire of classification, regression, and clustering algorithms	Delivers a rich and flexible environment for continuous learning and refinement to continuously improve predictions and determine the "next-best" action to take.
	Intelligent Action	Supports both fully automated processes and human-guided workflows. Supports Integration of ERP, CRM, and other enterprise systems.	Enables intelligent business processes that are analytics-driven, situationally aware, and adaptive. Handles IoT use cases where both complex logic and fast actions are required. Enables development of IoT applications that leverage and use existing enterprise management systems
	Single visual modeling paradigm	Provides a single visual modeling paradigm for streaming and batch applications over machine learning, descriptive, predictive, and prescriptive analytics.	Enables the rapid creation of IoT Analytics solutions in days, not months.

Analytic Data Flow (ADF) Features and Benefits (Cont'd)

CAPABILITIES	FEATURE	ADVANTAGE	BENEFIT
Analytic flow designer	Library of reusable building blocks	Leverages an extensible library of reusable "drag and drop" building blocks including: • Data sources and target connectors supporting protocols and data formats for a wide variety of data • Data preparation (e.g. filtering, parsing, transforming or enriching data) • Descriptive, predictive, and prescriptive analytics libraries • Machine learning algorithms • SQL execution	Empowers citizen developers and analysts to rapidly create analytics-based solutions using visual models requiring little or no coding.
	SDK	Encapsulates custom-built or imported code and enables the creation of custom libraries of reusable blocks. Enables implementation of analytics and custom processing steps that are unique to your organization.	Delivers the flexibility required to support unique client requirements.
Run time environment	Interactive testing and debugging	Interactive testing with runtime debugging, manages the data flows and the handling of late and out-order-events.	Supports and manages the full lifecycle from interactive testing deployment and secure running of ADF analytic pipelines.
	Logical (Event) time-series processing framework	Time-series processing can be used to identify security threats (i.e. cyber-attacks) and failing devices (predictive maintenance).	Spotting trends and anomalies fast allows you to conduct root-cause analyses and avoid costly downtime.
	Geospatial Correlation Indexing for Performance	Provides a holistic perspective on a situation and improve decision making.	Supports collaboration, problem solving, and decision making in crisis management situations. Can be used to understand the behavior and paths of customers to improve customer interaction.
Scale out architecture	Big Data Technologies	Leverages leading big data technologies, including Spark and Hadoop enabling the handling of volumes exceeding tens of billions of events per day.	Provides a robust, scale-out architecture.

The VIA IoT analytics platform empowers business to **ANALYZE FASTER**, **ACT SMARTER**, and **INNOVATE RAPIDLY** to transform business processes, deliver competitive advantage, and improve operational performance.

Contact us today for a demonstration.

VITRIA®

About Vitria Technology

Vitria VIA IoT Analytics Platform empowers enterprise and industrial customers to analyze faster, act smarter, and achieve better outcomes in their IoT and business operations. The company has a history of success in streaming analytics, business process management, enterprise application integration, and operational intelligence.

Vitria is now a leading player in the rapidly growing IoT (Internet of Things) analytics market. Customers include Fortune 500 companies and enterprises across a wide range of industries, including finance, manufacturing, telecommunications, utilities, retail and more. For more information, visit www.vitria.com.