STRATEGIC ALLIANCE BRIEF · PUBLIC-SAFETY TECHNOLOGY

Mission-critical by design.

How Skytec, Inc. built its dispatch, tracking, and emergency-response platforms on a single data standard—and deploys it in the model each mission demands.

01 Executive summary

Skytec builds the software that public-safety and emergency-medical operations rely on to see their fleets, dispatch their responders, and manage incidents in real time. Underneath every one of those platforms is a single, deliberate decision about data.

MongoDB is the official database of every Skytec development. What makes that decision strategic is not simply the choice of engine—it is how Skytec deploys it. The same data standard runs **on-premises**, alongside the operation, where a platform must live next to the people it serves; and **multi-region in the cloud**, on Google Cloud, where geographic redundancy and elastic scale matter most. One standard, deployed where the mission lives.

That architecture is already proven at the scale of an entire U.S. jurisdiction—across dozens of municipalities, a territory-wide 9-1-1 network, and a large private ambulance sector—through the operational reality of Atlantic hurricane season, when incident volume spikes exactly when the system can least afford to fail.

77	140+	1000s	3
MUNICIPALITIES & AGENCIES ON SKYCAD	PRIVATE AMBULANCES MANAGED	AVL RECORDS PER DAY, PER PLATFORM	DEPLOYMENT MODELS, ONE STANDARD

> “A dispatch platform is only as dependable as the database beneath it. Skytec standardized on the one built for this kind of load.”

02 Why the database is the mission

THE PROBLEM BENEATH THE PRODUCT

Automatic vehicle location, computer-aided dispatch, and incident management look like map-and-screen problems. They are, first, data problems. Every vehicle on the road emits a continuous stream of position, speed, heading, and status. Multiply that by a fleet, sustain it around the clock, and a single platform is absorbing **thousands of location records a day**—heterogeneous telemetry that has to be written fast, queried by location, and kept available without interruption. When a hurricane makes landfall or a mass-casualty incident unfolds, call and incident volume surges precisely when latency and downtime are least survivable.

A relational database can be forced to do this. But the shape of the data—varied, evolving, geospatial, high-velocity—is exactly what document databases were built for. That is why Skytec did not treat the database as an afterthought. It chose one standard, and engineered around its strengths.

- **Heterogeneous by nature**
  AVL pings, incidents, unit status, and call records rarely share one rigid schema. A document model absorbs that variety without brittle migrations.
- **Geospatial at the core**
  Native GeoJSON indexes and queries make "nearest available unit" and live map rendering first-class operations, not bolt-ons.
- **Built to surge**
  Horizontal scaling absorbs incident spikes—storm season, major events—without re-architecting the platform.
- **Always on**
  Replication keeps the data layer available through node failure, the baseline expectation for anything touching 9-1-1.

03 One standard, three deployment models

The strategic move is not "we use MongoDB." It is that Skytec deploys the same standard in the model each platform actually needs—on-premises where the software must live beside the operation, and multi-region cloud where availability and redundancy come first.

PLATFORM	MONGODB MODEL	WHERE IT RUNS	LOAD PROFILE
SkyTrackers AVL / FLEET TRACKING ON-PREM	Enterprise Advanced, self-managed	On Skytec infrastructure	Thousands of AVL records daily
Sky911 EMERGENCY DISPATCH ON-PREM	Enterprise Advanced, self-managed	Hosted at the 9-1-1 center	Same demand profile as SkyTrackers
SkyCAD COMPUTER-AIDED DISPATCH ATLAS / CLOUD	Atlas, fully managed · multi-region	Google Cloud (GCP)	77 municipalities & 140+ private ambulances

Skytec's broader suite—including **SkyCall** and **SkyDesk**—is built on the same MongoDB standard, keeping one data discipline across the whole platform rather than a patchwork of engines to secure, staff, and maintain.

HOW ATLAS HOLDS UP ON GOOGLE CLOUD

Availability, engineered in

An Atlas cluster distributes a replica set across separate zones—typically three nodes—so the loss of any single zone doesn't take the service down. Atlas runs across major cloud regions worldwide on AWS, Google Cloud, and Azure; Skytec runs SkyCAD on Google Cloud, pairing MongoDB's data layer with the cloud where MongoDB has been named Partner of the Year for seven consecutive years.

REPLICA SET › NODE_A · NODE_B · NODE_C › ZONES: DISTRIBUTED

04 Proven at the scale of a jurisdiction

Most public-safety technology is validated one agency at a time. Skytec's is running, today, across an interconnected network the size of a U.S. territory—public safety and private EMS on the same data standard.

SkyCAD delivers computer-aided dispatch to **77 municipalities and their agencies**. The same operational fabric carries **more than 140 private ambulances**, which live in both SkyCAD and SkyTrackers—meaning the government side and the commercial side of emergency response both run on MongoDB. This is not a pilot or a proof-of-concept; it is a production system under continuous, real-world load.

> Storm season is the stress test. Skytec's platforms are built to hold their performance when incident volume spikes—the moment a public-safety system exists for.

For agencies evaluating a dispatch or fleet-intelligence partner, that track record answers the question that matters most: has this architecture already survived the conditions we're most worried about? The combination of on-premises platforms hosted beside the operation and a multi-region cloud backbone for CAD is a deliberate answer to resilience—redundancy where it counts, proximity where it counts.

Gov+EMS	24/7	Hybrid
ONE DATA STANDARD ACROSS BOTH SECTORS	CONTINUOUS PRODUCTION LOAD	ON-PREM & CLOUD BY DESIGN, NOT BY ACCIDENT

05 Why MongoDB — and why it matters for U.S. agencies

MongoDB (NASDAQ: MDB) is the leading document database for modern applications, trusted with mission-critical workloads by tens of thousands of organizations. For a public-safety vendor, four qualities make it the right foundation.

- **A data model that fits the work**
  Flexible documents map cleanly to AVL, incidents, and telemetry—plus native geospatial indexing for location-first dispatch.
- **Scale and availability**
  Horizontal scaling and replication deliver the surge capacity and uptime that emergency response demands.
- **Deploy anywhere**
  The same database runs self-managed on-premises or fully managed in Atlas—so architecture follows the mission, not the vendor.
- **Security built in**
  Encryption and enterprise controls support the compliance posture government and healthcare workloads require.

RECOGNITION & COMPLIANCE SIGNALS

A foundation regulators and buyers recognize

These are the credentials a U.S. procurement team looks for when a platform touches government data and emergency services.

GOOGLE CLOUD · 2026	SOVEREIGNTY	PUBLIC SECTOR
Partner of the Year, Marketplace Data · 7th consecutive year	**Google Cloud Ready—Regulated & Sovereignty Solutions**	**Validated for air-gapped, distributed-cloud deployments**

06 The takeaway

Skytec made one foundational decision and carried it through the entire platform: standardize on MongoDB, then deploy it with discipline—on-premises where the operation lives, multi-region cloud where resilience is paramount.

The result is a public-safety technology stack that behaves the way emergency response has to: fast under load, available through failure, geospatial at its core, and coherent from one data standard rather than a patchwork of databases. It’s proven across an entire jurisdiction’s worth of agencies and private EMS, and it rests on a data platform that the industry—and cloud regulators—recognize.

Let’s talk about your operation.

See how Skytec’s MongoDB-backed platforms fit your dispatch, tracking, and incident-management needs.

CONTACT SKYTEC ›