ATOMBEAM

In partnership with

Trilliant

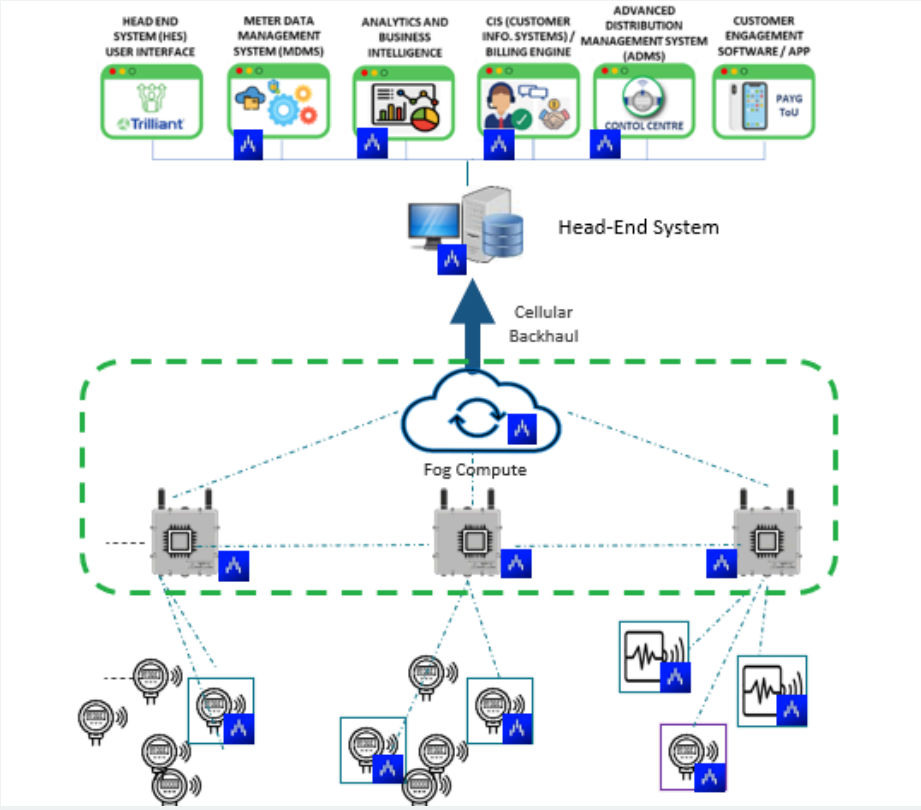
Solving the Smart Grid Data Problem with Atombeam and Trilliant | Joint solution brief

Atombeam and Trilliant accelerate grid data delivery, reduce bandwidth costs, and enable real time intelligence at scale.

Smart grids generate an extraordinary volume of data. Advanced meter reads, load control signals, outage detection alerts, distribution automation telemetry, environmental sensors, and grid edge device communications all contribute to a continuous stream of information that must reach operators quickly to be actionable. Trilliant's device independent AMI platform already manages more than 2.7 terabytes of data per day, connecting utilities and smart cities to critical operational insight. As deployments expand and IoT endpoints multiply, utilities and municipalities are facing increasing pressure on communications networks originally designed for far lower data volumes. The result is growing network congestion, higher transport costs, and reduced operational visibility across distributed infrastructure environments

Atombeam and Trilliant provide an integrated, cost-effective approach to address these constraints. Neurpac is a software only data compaction platform that reduces transmitted data size by 75 percent or more, increasing effective bandwidth by up to four times depending on payload characteristics, without requiring hardware changes or major infrastructure upgrades.,. When deployed alongside Trilliant' s AMI platform, Neurpac helps optimize data movement across the grid communications network so more operational information can be transmitted faster and more efficiently, while maintaining secure data workflows across constrained and diverse networks.

> "Neurpac makes it possible for operations to significantly accelerate the movement of operational data across communications networks, improving bandwidth efficiency and reducing transmission overhead with lightweight software designed to support even highly constrained edge devices."
>
> — **Julien Dersy, Chief Product Officer, Atombeam**



Joint Solution Value

Atombeam Neurpac and Trilliant AMI platform together provide an end to end solution designed to improve communications efficiency, reduce operational costs, and support scalable operational intelligence across utility and smart infrastructure networks.

- Reduces data transmission volume by 75 percent or more, helping lower cellular, satellite, and WAN transport costs
- Increases effective bandwidth capacity by up to 4x with ultrafast encode and decode capabilities and no hardware replacement required
- Reduces transmission latency and improves responsiveness from edge devices to the Head End System
- Supports secure data transport before encryption is applied, protecting mission critical grid data at the edge
- Software only deployment integrates seamlessly into Trilliant' s existing platform and device ecosystem
- Enables utilities and municipalities to scale operational data flows across rural, constrained, and legacy networks without infrastructure upgrades
- Proven in real world deployments across government and commercial environments

Utilities and Smart Grid

For utilities managing thousands of endpoints across wide service territories, bandwidth is both a direct cost driver and an operational constraint. Every meter read, distribution sensor payload, outage notification, and grid monitoring event competes for capacity on communications networks that were not designed to handle current data volumes. As utilities expand smart meter deployments, integrate distributed energy resources, and move toward real time grid monitoring, the gap between required data throughput and available bandwidth continues to widen.

Atombeam Neurpac and Trilliant's AMI address this challenge through software. By compacting grid data by 75 percent before transmission, Neurpac expands the effective capacity of Trilliant's AMI infrastructure and enables utilities to move more operational data faster and more efficiently. Meter readings, load control signals, voltage monitoring feeds, and fault detection alerts can be transmitted with improved responsiveness and lower network overhead. For utilities operating across rural or bandwidth-constrained service areas, this approach helps support scalable operational visibility without requiring costly communications infrastructure expansion.

Smart Cities

Smart city deployments generate volumes of operational data from connected infrastructure. Street lighting, traffic management, environmental monitoring, water and gas metering, public safety networks, and transit systems all produce telemetry that must reach city operators efficiently.

Managing this data across multiple device types, communications technologies, and geographic environments presents an ongoing scalability challenge as municipalities continue expanding IoT deployments and digital infrastructure initiatives.

Deployed across Trilliant's device-independent platform, Atombeam Neurpac helps reduce these constraints. Neurpac reduces data volumes by 75 percent and increases effective bandwidth. This enables municipalities to support more connected services across existing network infrastructure without added cost or complexity. For cities managing multi-vendor deployments across wide geographic areas, including underserved communities with limited connectivity, this joint solution helps support reliable and scalable data delivery for responsive city operations.

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Trilliant®

About Trilliant

Trilliant® solves real-world utility challenges by providing adaptable solutions and building lasting partnerships. We deliver smart technologies that flex with demand, simplify complexity, and future-proof performance across every environment. Our device-independent distributed intelligence platform enables utilities and cities to securely deploy any application on one powerful network, with flexibility and customer control. Delivering solutions for advanced metering infrastructure (AMI), smart metering, and smart grids, Trilliant connects customers to a more strategic path toward the energy transition.

Learn more at:
Trilliant Partner Ecosystem

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About Atombeam

Atombeam is a data and AI technology company that uses AI to enable organizations to shrink the size of their data by 75% while increasing available bandwidth by up to 9x, strengthening security, and decreasing latency and power usage. The company's patented software works within an organization's existing infrastructure, eliminating the need for additional capital expenditures to support expanding data needs. Atombeam's products include Neurpac, for optimizing data workloads; and Neurcom, for video and audio data. Atombeam is also developing the Persistent Cognitive Machine (PCM), a new AI architecture that supports continuous learning with real memory but is light enough for chips and devices—all while complementing Large Language Models (LLMs).

Learn more at:
Atombeam Neurpac Products