How Tower Solutions Towers Operate Autonomously

Most portable tower products can be personnel and labor-intensive. Maintenance takes time, and visiting the tower poses a risk if you are positioned in hostile territory. You need an autonomous tower that you can rely on to govern itself, even in the harshest environments. Tower Solution's self-erecting towers allow you to minimize human involvement.

Tower Solutions towers have been shown to be functional for two months or more without human intervention. Additionally, Tower Solutions towers can integrate with Artificial Intelligence and machine-learning equipment, furthering their autonomous capability.

How Tower Solutions Supports Tower Autonomy

Tower Solutions towers can be customized to meet your specific needs. Our engineers can add features to support autonomy such as:

• **Towertalk** to remotely control and monitor tower performance and send operational information.

• **Windstable emergency lowering system**, to lower the tower automatically in high winds

Go to
towersolutionsinc.com
for more information

SURVEILLANCE   COMMUNICATIONS   TACTICAL SUPPORT   LIGHTING

- **Lithium-ion batteries or hydrogen fuel cells** to eliminate the need for external power and reduce generator maintenance

- **Solar panels** to charge your batteries for longer deployment

- **Larger or multiple generators** and fuel tanks for expanded fuel capacity and efficient battery charging

- **Guy wires and outriggers** to support operation in extreme weather

These features keep your tower operational with multiple or redundant power sources. Have confidence in the system's performance with added stability and remote monitoring. Surveil dangerous or isolated regions without scheduling maintenance or responding to emergency weather.

Tower Autonomy Supports Artificial Intelligence and Machine Learning Equipment

Tower Solutions towers can do more than govern themselves and relay information from a distance. Our self-erecting towers are also designed to support your equipment's capabilities.

Tower Solutions towers can support your equipment integration with artificial intelligence (AI) and machine learning technology. If you work with AI technology, you know the frustrations of inaccurate data. An unstable tower with excessive influence from the environment around it can cause pixel movement, degraded radar performance, or missed detection of an important object. Your equipment's position and outside weather conditions determine how accurately you process video for threats.

How Tower Solutions Became Involved with Autonomous Applications

For much of our company history, our self-erecting towers have been used by the US military and homeland security (DHS) for surveillance and long-term deployment missions, which you can read about here. However, they were not used in autonomous applications or to support Artificially intelligent (AI) payloads until recently as the need for the capability has begun to grow significantly. AI systems are used by the defense industry, providing them with constant awareness and security across the air, sea, and land while reducing the personnel required to constantly monitor the operation.

Without human observation and intuition, AI systems need consistently accurate information to perform. We recently allowed a client to try a Tower Solutions tower and test its performance. Within days of receiving and trying it out, they requested to not only purchase the borrowed tower but that their own tower be built specifically to their needs. The AI company valued Tower Solutions because of our stability, ease of use, and advanced technology that can pair well with autonomous artificially intelligent systems.

AI can use the tower sensor data, learn and anticipate its position, and provide more accurate data collection for intelligence, surveillance, reconnaissance, and targeting scenarios. In combination with electro-optical (EO), infrared (IR) cameras, and radar, our towers can be built with sensors and communication protocols that allow the integration of these multiple systems bringing a single common operational picture not only to the AI system but also for utilization in a machine-learning algorithm to continuously improve performance.

For instance, Counter Unmanned Aircraft Systems (C-UAS) can be improved through AI-tower integration. A tall, stable tower can ensure sensors autonomously process information about a UAS's position. Our advanced towers reduce movement that could cause the target to be lost or identified incorrectly. Typical telescoping or similar competitor towers may not even be operational in a weather event that could lead to the loss of a hostile target or incorrectly alerting a bird as a drone, which then takes time and money to be reviewed by a person. Learn more about our C-UAS applications here.

How Our Towers Advance AI Surveillance

Our towers maintain reliable autonomy and improve AI technology through sensor integration, communication, power operational availability, and stability in all conditions. Our largest, most stable mobile tower, the PTX-100, elevates your equipment to 120 ft in under 8 minutes and supports payload weights in excess of a ton.

The autonomous control and monitoring offered by our towers allow for the tower to maintain maximum operational uptime and relay data to AI and machine learning equipment. The result is better performance and unhindered operations.

Enabling the Latest Technology

We have experience working with many other surveillance, lighting, and communications applications. You can learn about all our tower applications here. Whether you want an autonomous system to perform off-grid or raise AI equipment, we will engineer a solution for you.

Contact us today for tower specifications and to learn how we can help.