Security in the Cloud

Cortland tethers delivered crucial support for surveillance at Rio 2016 Olympic and Paralympic Games

Altave, a Brazil based leader in monitoring and telecommunications for large open areas, launched its Altave Omni system at the Rio 2016 Olympic and Paralympic Games. For the games organizers, the tethered surveillance balloons became a key asset to monitor the safety and security of crowds. The high-definition cameras mounted on the balloons were capable of recording 360° views in the four main Olympic areas: Maracanã, Barra, Copacabana and Deodoro.

Cortland Company supplied Aerostat tethers for the Rio 2016 Olympic and Paralympic Games.

The Challenge
The Brazilian Ministry of Justice in partnership with Altave commissioned the use of heavy duty balloons, known as aerostats, as a vital security measure amid a background of high crime rates, political problems and uncertainties about the zika virus and economy in Brazil.

It was necessary for the aerostats to be suspended 200 meters above the ground to provide a 24/7 eye in the sky to counter any criminal activity or potential terrorism at the games. Each balloon needed to provide power and data transfer capabilities for high value camera equipment, and had to be tethered using materials which would secure the balloons but not weigh them down.

Altave's surveillance balloon with Cortland's aerostat tether attached

Key Facts

About Cortland
- cortlandcompany.com
- 335 employees worldwide
- 6 manufacturing locations in 4 countries
- Manufacturer of custom-designed cable, umbilical, high performance rope, and sling solutions

Project
To deliver a powered tether customized for surveillance balloons at the Rio 2016 Olympic and Paralympic Games

Company
Altave

Location
Rio de Janeiro, Brazil

Technologies used
- Optical fiber
- Specialized copper stranding
- Lightweight high modulus, synthetic strength members

Features
- Compact design
- Lightweight
- High strength
- Versatile

"Cortland provided the expertise to develop one of the lightest and thinnest tethers possible. Their role was crucial in the support of our milestone work at the largest sporting event in the world."

Bruno Avena,
Director and Co-founder of Altave

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The Solution
The Cortland team used its experience as a global manufacturer of customized cables and assemblies to provide the tether solution. The aerostat tethers had to reliably supply all power and signals through a single electro-optical-mechanical tether for each balloon. Further critical design input characteristics were the tethers needed to be as small and light as possible. A smaller diameter tether would limit the negative effects of drag, while minimized tether weight would lessen the burden on limited resources that keep the balloon buoyant.

Cortland designed and built a tether with customized electrical and optical components which would not part or break, and which would be able to take the working load. A standard tether could have stretched or broken, while a heavier tether would have required a larger balloon. The team used a synthetic strength member composed of one the lightest weight materials known to man.

The tethers were developed in just a few weeks time, with samples supplied for testing ahead of the tight Olympics time frame. In the end, a series of 10 customized composite tethers with electrical and fiber optic connectors and synthetic strength members were delivered to Rio de Janeiro in time for the start of the games in August 2016.

The Project
The tethered balloons became one of the foremost security measures for Rio 2016 and a milestone project for Altave at the largest sporting event the Omni system had ever been deployed.

During the games the reliability of continuous surveillance depended on Cortland's selection of high performance materials.

Visuals from each aerostat camera were the equivalent of 60 full HD cameras and captured multiple images so that when a crime did take place, the build-up could be viewed from multiple angles and over a wide area.

Bruno Avena, director and co-founder of Altave, said: "Our aerostats performed a different role to other airborne security measures like helicopters or drones, as they were a 24/7 solution to capture the full-picture continuously, complementing the security process to keep athletes and spectators safe.

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For Cortland, the success of the project has resulted in continued business with Altave.

For more information visit cortlandcompany.com.