

# San Miguel Sets Trend with First Outdoor DAS

Equipping a centuries old city to meet the wireless needs of the future while preserving its historical beauty. With the first city central Outdoor Distributed Antenna System (DAS) in LATAM, San Miguel de Allende, Guanajuato, Mexico stands ready to deliver expanded wireless coverage and capacity with the help of InproTelecom and SOLiD's ALLIANCE-TR Multi-Carrier Outdoor DAS.



## CUSTOMER STORY

City of San Miguel de Allende  
Established 1542  
UNESCO World Heritage Site  
Local Population: 139, 297  
Tourist Influx: 250,000  
Area: 1,537 Km2

## CHALLENGES

- Poor cellular coverage in the city center
- Cell towers would impact the historic aesthetics of the city
- Adding cable infrastructure without disrupting aesthetics
- Complex cellular carrier coordination
- Project required a partnership between city officials, governing authorities's and integrator
- Anticipated capacity growth from tourism required a flexible, robust solution

## SOLUTION

- ALLIANCE-TR Multi-Carrier DAS
- 35 Remotes (20w)
- 6 Sectors
- 1900 MHz, 2100/2100 MHz, 850 MHz
- LTE-AWS MIMO
- ALLIANCE-TR Head End and eNode B co-located at BTS Hotel
- 9 KM underground Fiber

## WHY SOLiD

"It is because of SOLiD's excellent reputation for outstanding service both during and after an installation that we chose them to partner with us on the San Miguel de Allende project."

Luis Alva, Chief Executive Officer  
(CEO) at InproTelecom



## San Miguel de Allende - Voted the Best City in the World

The almost 500-year-old city of San Miguel de Allende has existed as a community before the 16th century. Founded as a missionary and military outpost, the city has endured wars, the rise and fall of economies, and a variety of governance. Throughout it all, the city center, Jardin Principal, remains very much the same as it was 250 years ago. A UNESCO World Heritage site, Travel + Leisure Magazine named San Miguel as "The Best City in the World" in 2017. Currently the number three tourist destination in Mexico, this magical city will no doubt continue to be a favorite tourist destination for years to come.

## The Needs of a New Century

Anticipating the needs of continued modernization for the city, the local government in San Miguel well understood the need to deploy cellular networks for both its residents and the booming tourism industry. New data and voice services, faster speeds and increased bandwidth were all required to help the city work towards its goal of becoming a truly Smart City.

Considerations in modernizing:

- New infrastructure without compromising aesthetics
- Limited disruption to residents
- Retaining structural integrity of streets and buildings
- Considerable local, state and national coordination among governments, suppliers and integrators
- Retaining old world charm while providing new services

## Solutions for a Smart City

With so many considerations ranging from aesthetics to minimal disruptions for residents to ensuring the best cellular coverage possible, it was of ultimate importance that San Miguel methodically review every facet in bringing a new solution to their city. Factors included:

- Experienced Partners
- Network Analysis and Requirements
- Industry Proven & Reliable Equipment
- Ideal Component as
- Affordable
- Deployment

### Experienced Partners

City leaders turned to Mexico's largest DAS Systems Integrator InproTelecom, to help determine the ideal solution for San Miguel. InproTelecom analyzed many factors in this complicated deployment and after in-depth research, began the process of designing the complex network with minimal disruption to beloved residents and to reduce unsightly infrastructure.

### Network Analysis and Requirements

InproTelecom uncovered multiple coverage and capacity issues that needed to be addressed. In order to deliver additional coverage and capacity for the city, a new fiber network would need to be installed throughout San Miguel central to provide a backbone for the new cellular services. Installation of the fiber was no small feat in a city with such challenging installation scenarios, and a lengthy, involved architectural approval processes.

### Industry Proven & Reliable Equipment

Tasked with finding the ideal solution that would provide maximum penetration for a city filled with walls and buildings constructed of dense, ancient masonry, InproTelecom partnered with trusted partner SOLiD, a global innovator of DAS solutions, to supply an Outdoor Distributed Antenna System. The solution selected, the ALLIANCE-TR Multi-Carrier DAS, deliv-



Remote installation on existing utility poles.



ALLIANCE-TR Multi-Carrier DAS Remote

**SOLiD ALLIANCE™R**



Optical fiber underground installation.

ered maximum impact with a minimal footprint, and the ability to extend coverage and capacity to the city, which was ideal. The ALLIANCE-TR has proven experience in rugged environments and provides the best Mean Time Between Failure in the industry. The high-power DAS solution also provided excellent signal penetration and coverage throughout San Miguel.

### Ideal Components

A challenge in deploying this system was keeping the footprint minimal while allowing for a multiple operator solution. The ALLIANCE-TR Multi-Carrier DAS was the ideal product with a single remote unit per site, which supported four cellular operators. This system maximized the limited space that existed on San Miguel's utility poles where the remotes were installed. The ALLIANCE-TR remote unit allows multiple wireless technologies in one compact remote per installation. This Multi-Carrier DAS provided a clean, yet rugged and streamlined solution, to meet each carrier's requirements, plus the modular design allowed for cost-effective network expansion when needed.

To provide complete coverage and capacity in the city, deploying a DAS system from SOLiD allowed InproTelecom to incorporate 35 remote units on existing infrastructure within the city. Each remote was configured with four radios in three bands, with one of the bands supporting MIMO. With no extra fans for cooling required, the indoor/outdoor units were installed in a single box per utility pole and were sealed from the elements, therefore, requiring no additional enclosures. The ALLIANCE-TR remotes provided critical coverage and capacity and were artistically painted to blend with the environment meeting the stringent requirements of the city. The system is expandable for future growth due to the modularity of the ALLIANCE-TR solution. The aesthetics of this new system in no way compromised the pristine beauty of this historic city.

The head-end was constructed approximately a kilometer from the city center with multi-strand optical fiber installed underground connecting the remotes. In many cases, the optical fiber was installed under the cobblestone streets, which necessitated removing the cobblestones one-by-one and carefully replacing them in their original location to keep within the city's dedication to maintaining the area's authenticity and old-world charm.

### Affordable

InproTelecom acted as a neutral host for the system where carriers paid them to plug into the system so there was no cost to the city for the DAS. Thanks to the support of local government and heritage, it was possible to meet the challenge of the implementation process, taking care of the local services and facilities of all people who visit the city.

### Deployment

An important benefit for this deployment was that the SOLiD equipment required only a single optical fiber to each remote resulting in reduced costs. The multi-strand optical fiber installed allows for additional services to be utilized on the unused portion of the optical fiber as needed for decades to come. The robust system is future-ready with LTE-AWS MIMO and turned up for the much needed additional coverage and capacity.

With the combined expertise of San Miguel city leaders, InproTelecom, the local cellular carriers and SOLiD, this magical city is now able to deliver required products and services demanded by a Smart City of the future.

## Results

With SOLiD's modular and stable DAS solution, InproTelecom maximizes system and remote functionality via their regional Network Operations Center (NOC), as well as providing local operations and management.

SOLiD's rapid ship and advanced replacement programs provide uninterrupted coverage for the San Miguel DAS system. Combined with 24/7 customer support the integrator helps operators realize cost savings and limited downtime resulting in a better overall customer experience for the end user. As a premier provider in the DAS marketplace, SOLiD's proven expertise and superior product line help cities like San Miguel conquer the needs of the next century.

## ABOUT SOLiD

SOLiD helps keep people stay connected and safe in a rapidly-changing world through a portfolio of RF Amplifier, RF Radio and Optical Transport solutions around the world. SOLiD enables indoor and outdoor cellular and public safety communications at some of the world's best-known and most challenging venues including leading hospitals; professional, and college sports venues; government, university and Fortune 500 corporate buildings and campuses; international airports and metropolitan subways; and other high-profile sites.

## About INPRO TELECOM

INPRO TELECOM S.A. DE C.V provides telecommunications industry project management and solutions, including deployment, acquisition, lo-gistic, RF design & optimization, network quality, RAN/CORE engineering, and LATAM first DAS network operations center (NOC) and operations. InproTelecom delivers high quality services with deep understanding of customer needs for indoor solutions (Biggest DAS integrator in Mexico), outdoor solutions, fiber optic, microwave, repeaters, as well as platforms for cellular carriers (deployment, performance and capacity network). [www.1nprotelecom.com](http://www.1nprotelecom.com)

For More Information  
EquipoCALA@solid.com  
+1 972-409-9997  
SOLiD.com

equipo/equipe  
**CALA**



800 Klein Road, Suite 200, Plano, Texas 75074 | +1 972-409-9997 | [EquipoCALA@solid.com](mailto:EquipoCALA@solid.com)