

Map 36

A horizontal scale bar with four segments. Above the bar, the numbers 300, 200, 100, and 0 are aligned with the segment boundaries. Below the bar, the text "scale bar" is written.

The seal of the City of Mandaluyong is a circular emblem. It features a central illustration of a cityscape with a prominent skyscraper, a bridge, and a sun rising over water. The words "CITY OF MANDALUYONG" are written in a circular border around the central image, with small stars separating the words. The seal is set against a light blue background.

▼ Brief introduction about the customer

Barangay Vergara, is part of the local government branch of the City of Mandaluyong. It has its own constituents, with a total population of 4,153 and land area of 15.12 hectares. Headed by Barangay Chairman Ernesto Mendiola and official address at #38 Elin Cruz Street. As reference, see the attached land map at the center;

▼ CHALLENGES

1. Why the customer needs this project;

Barangay Vergara in Mandaluyong City, requires an end to end point to multipoint (PtMP) connectivity solution to support the first phase of their IP CCTV deployment. The IP CCTV will increase security within the barangay, will deter crime and assist in crime resolution since it will be an aid in identifying suspect(s) and can be used as evidence. The location of the IP CCTVs are disperse across the priority streets/areas within the barangay wherein the farthest IP CCTTV is located approximately 1 KM away from the barangay hall control center or recording location.

2. The scale of this project;

The PtMP connectivity solution should support 17 units of 2MP IP CCTVs that can attain a minimum of 7Mbps of throughput per location and/or end point. Also, some of these locations require not just 1 IP CCTV but two (2) or even three (3) IP CCTVs thus the throughput requirement increases to 2x or 3x the minimum throughput. The IP video needs to be carried through the solution with minimal signal delay or loss.

3. Some important/special functions the customer required;

Barangay Vergara requires a reliable, scalable, easy to setup and affordable PtMP connectivity solution to support their IP CCTV requirement. Also, they need a solution that will connect 2-3 IP CCTVs into one connection end point and send across the IP video with minimal signal delay or loss. Lastly, they require an end to end solution that will minimize the use of active devices per endpoint. Not only to minimize the cost of the project but also increase reliability.

4. The challenges of this project;

- The use of reliable/scalable Point to multipoint (PtMP) connectivity solution to support the IP CCTV deployment.
- Capable of 7 Mbps minimum throughput per location yet can still accommodate 2x or 3x higher throughput for some locations and / or endpoints with minimal signal delay or loss.

5. Some extra points you want to put in.

The availability of an end to end connectivity solution that will support a single IP CCTV without using an active device (switch) per location that will greatly reduced the total project cost, increase reliability but still scalable for future expansion of IP CCTV per location.

▼ SOLUTION

1. Devices model and quantity, and why?

TP-Link's solution is as follows:

- 3 units of PtMP wireless Pharos WBS510 outdoor base stations with TL - ANT5819MS sectoral antennas were deployed at barangay hall which serves as the command control center. These wireless base stations with 120 degrees coverage per pair of WBS510 + TL-ANT5819MS is capable of receiving IP videos from 10 units CPE510 with IP CCTVs.
- 10 units of wireless Pharos CPE510 were deployed to cover priority areas which served 16 IP CCTVs pointing to the WBS510 + TL-ANT5819MS. Each CPE510 were able to attain the 7Mbps minimum throughput while those locations wherein it requires higher throughput were also achieved with clear line of sight, proper setup / configuration and enablement of the TP-Link's Pharos MAXstream TDMA (Time - Division - Multiple - Access) technology. This feature improves product performance in throughput, capacity and latency performance, ideal for PtMP applications.
- 2 units of wireless Pharos CPE510 were deployed independent of the PtMP since the location of single IP CCTV was not within clear of sight of any of the base stations.
- 2 units of Jetstream TL-SG105 unmanaged switch were deployed that supported 2 & 3 IP CCTV per location which in turn was connected to 2 CPE510 on each location. Higher throughput requirement and minimal IP video signal delay/loss were experienced since TP-Link's Pharos MAXstream TDMA technology was enabled.

2. Please draw/describe topology of this solution briefly;

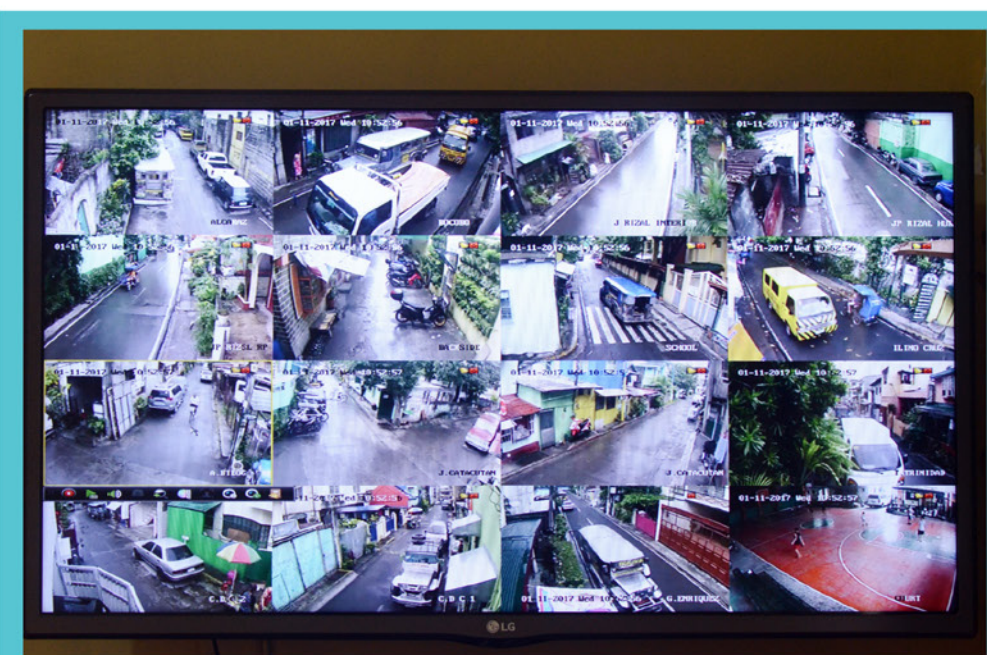
Wireless PtMP network design was utilized to have 360 degrees coverage. Using TP-Link's Pharos WBS510 outdoor base stations with TL-ANT5819MS were deployed at barangay hall which serves as the command control center to receive IP video from different wireless Pharos CPE510. CPE510 serves as wireless connection endpoints for the IP CCTV while those locations with 2 or 3 cameras, a Jetstream TL-SG105 was used to accommodate more cameras.

3. Some extra points you want to put in.

Availability of a secondary Ethernet port on TP-Link's CPE510 greatly reduced the project cost since all single IP CCTV deployed for this project did not require any switch to be connected to the wireless network. It also increases the solutions reliability without the use of additional active device per location, in this case a switch. Lastly, scalability was taken in consideration. For future expansion or additional IP CCTV on any of these locations, they just need to add or purchase a switch to accommodate more cameras.

4. How do we achieve the important / special functions the customer required?

By using an end to end TP-Link wireless PtMP, enabling TP-Link's proprietary TDMA MAXstream technology and availability of secondary Ethernet in our Pharos CPE510. We are able to provide the best fit end to end solution that combined affordability, reliability, scalability and performance.



BUSINESS RESULTS

Barangay Vergara Officials was well pleased with the improvement of their CCTV. Through the proper end to end point to multipoint (PtMP) connectivity solution for the CCTVs, footage of crimes would be recorded and suspects would easily be identified. Although there are Barangay Officials working around the clock, the installment of such devices will further enhance the safety of the Barangay and will serve as a proof for any intruders wandering the barangay illegally or for tracing any damages caused within the premises.