

Bulk Port Terminal 'IGMA/Cargill' at Amsterdam Harbor Improves Efficiency and Productivity with Seamless Connectivity from Proxim Wireless

Introduction

Founded in 1959, under an agreement between Tradax (a trade company at that time a part of Cargill) and the city of Amsterdam, joined to create the Internationale Graanoverslag Maatschappij Amsterdam better known as the IGMA. IGMA is a bulk terminal in Amsterdam harbor. IGMA commenced operations in 1960, starting with deliveries from relatively small (up to 35,000 tons) ships. IGMA over the years has constantly upgraded and grown into a modern company with highly trained personnel and state of the art shipping equipment including cranes, grabbers, conveyor belt systems etc. Today IGMA is capable of annually transshipping 8 to 9 million tons of goods.

Challenge

From an operations aspect, IGMA/Cargill is a bulk port terminal specializing in handling dry products such as agricultural bulk, coal, ores and big bags. Products arrive via large sea vessels and are transferred by mobile floating cranes into floating weighing towers from where the grains are then transferred to smaller bulk transport boats. All the real-time logistical and weighing statistics are aggregated via a network from the quay to a main terminal operating center.

The primary requirement for the port management was to ensure seamless network connectivity across all its shipping assets such as floating cranes and weighing towers even when shifted from one location to another in the port. The biggest deployment challenge faced was the unloading of the shipment. The unloading of shipment causes the vessels to rise higher in the water, often blocking Wi-Fi signals from the quay to the operation monitoring center.

Solution

On learning the challenges, Dimension Data, a global leader in ICT solutions and services, took on the challenge together with their preferred partner for professional WLAN RF designs, Skyline Networks. This project needed a high performance Point to Multipoint solution with the ability for seamless mobility. Multicap a leading equipment distributor of Wi-Fi, PtP & PtMP, 3G/4G mobile data networks and satellite connections recommended the Proxim Tsunami[®] 8200 PtMP products for this project. On surveying the location, the Skyline Networks team decided to assign the central weighing tower (CWT) as the base network site. The CWT (as shown in the deployment below) stands about 50 meters tall and is centrally located at a distance of about 600-800 meters with clear line of sight from each of the two docks, thereby mitigating any Near Line of Sight issues.



Highlights

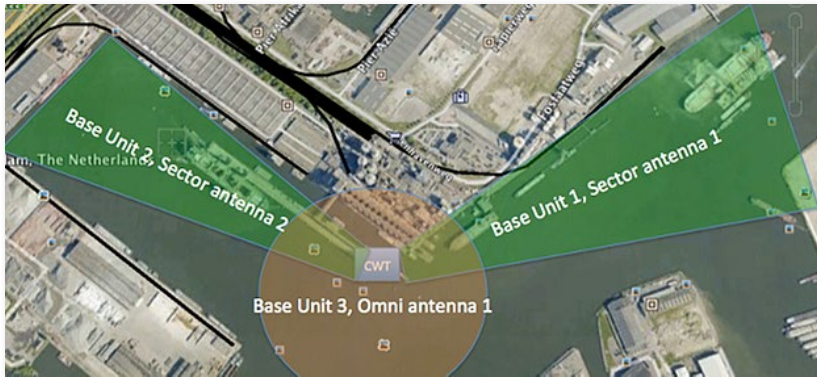
- The primary requirement for the port management was to ensure seamless network connectivity across all its shipping assets
- Tsunami[®] Base Stations are installed on central weighing station to ensure clear line of sight
- Tsunami[®] Subscriber Units are installed on top of towers and cranes
- The network performs seamlessly despite the distance over water and changing weather patterns

About Proxim Wireless

Proxim Wireless is a pioneer and global leader in advanced Wi-Fi, point to point, and point to multipoint outdoor wireless systems that deliver high performance and high availability communications.

With over 30 years of wireless experience, Proxim is recognized for its unparalleled reliability, superior performance and drive for innovation.

To cover the distance from the central weighing tower to both docks, two Tsunami® 8200 Base station units with 16.5dBi, 60 degree sector antennas were installed. This ensured coverage on the two docks (green area below), however an additional base station unit with an omni directional antenna was installed to cover the turning point area (orange area below) of both docks. At the other end of the connection, Tsunami® subscriber units on top of towers and cranes were installed.



“We were initially quite skeptical about using wireless based networks at the ports but Proxim Wireless changed our opinion. Before the Proxim installation, we had limited and slow coverage.” – said Peter Scheurwater, Maintenance Supervisor ETD, IGMA “The Tsunami® set of radios work great and deliver reliable, faster speeds. The network has never troubled us despite the distance and the changing weather patterns”

Why Proxim?

Every Tsunami® radio is powered by Proxim ClearConnect®, an advanced suite of dynamic and adaptive Radio Frequency technologies including Proxim’s WORP® and DDRS (Dynamic Data Rate Selection) that ensure reliable connection with minimal error rates even in constantly changing humidity and temperatures. Additionally, the radios are housed in IP 67 grade enclosures for complete ingress protection from dust and moisture.

“From a RF design point of view, one of the challenges was to reach the floating platforms operating at the edge of the docks as well the roaming of these floating platforms, we were not able to perform active tests or measurements due to the fact that moving the floating platforms for measuring or tests was a costly operation. Another challenge were the floating cranes, the upper part of the crane could move 360° which made it impossible to cable the Proxim subscriber unit installed on top of the crane to the network switch in the base part of the crane, we had to install a wireless bridge to counter this issue. From an installation standpoint, the best part of a Tsunami® is the breadth of features and tools it offers. Once the RF design was done, we completed the installation in quite fast and all in all without much efforts. After the evaluation period, we received only positive feedback towards user experience and throughput rates from the IGMA/Cargill team.”

– said Joeri De Winter, Skyline Networks.

Result:

“We are glad to learn the success of this project. When the Skyline Networks team approached us to suggest wireless equipments, we recommended Proxim Wireless and to no surprise Proxim has stood by its reputation of high, reliable performance.” - Glenn De Haes, Multicap.

Seamless connectivity is now provided between mobile weighing towers, cranes and operating center in the port. The IGMA management is able to communicate and monitor logistic details without any loss of information. Experiencing the Proxim performance, the IGMA management plans to extend the wireless network to isolated storage areas along the quay and also for Wi-Fi in the harbor.

“All thanks to the Proxim’s faster and reliable connectivity, the IGMA/Cargill team is able to work more efficiently and more importantly is able to save time.” - said Peter Scheurwater.