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READ HOW PORT OF KARLSHAMN HAS EXPANDED COMMUNICATIONS DURING A PERIOD OF GROWTH.

When the Port of Karlshamn was searching for a modern, functional and reliable two-way radio system that could expand with their organisation Mototrbo checked all boxes.

The Port of Karlshamn is the largest and deepest port in the south-east of Sweden and among the top ten in the country in tonnage. Besides their three main areas lumber, petroleum products and bulk goods they also have a growing container terminal specialising in vehicle parts. Karlshamn is also the base for DFDS Ropax-line (Roll-on/Roll-off passenger vessel) to Klaipeda in Lithuania which is the busiest route for rolling goods between Sweden and the Baltics-Russia. Since about a year the port also serves as a temporary storage for the NordStream 2 pipeline that, when done, will transport gas from Russia to Germany.

The port has seen an intense period of growth. In less than two years the number of employees has increased from around 100 to 240 and that has introduced a lot of new challenges. Internal communications being one.



THE CHALLENGE

– Safety is everything, says Rikard Mattsson, who is head of the sea terminal at Port of Karlshamn.

That is understandable in a port where virtually everything is big and heavy as Rikard puts it. Loading and unloading is usually carried out by teams of eight to ten people and they operate in an environment characterised by large containers and heavy lifts. With oversized trucks, cranes and trains in constant movement. If safety is to be guaranteed communications need to be at one hundred percent.

Until 2015 they used an analogue VHF system of the same type as used at sea. The audio was not great and they frequently experienced interference, especially during bad weather.

At the time they only had two available channels and when the organisation, and number of employees, quickly increased they realised they could not wait anymore. So they turned to Celab and asked us to present a fitting solution.

THE SOLUTION

A Mototrbo system from Motorola Solutions was our answer. A modern, digital two-way radio system based on DMR. The portfolio offers great performance, high reliability and a wide range of applications. The users devices are robust and waterproof, which is pre-requisite in a port running 24/7 regardless of weather. Mototrbo is not quite as advanced as some other digital two-way radio technologies (TETRA) but still offers a range of features that easily covers the ports needs. With a considerably lower price tag the system is in fact the most affordable for a lot of businesses.

An important advantage is that the system is scalable. There is no need to account for potential future expansions since you can start small and instead expand as the need arises. This was handy in this case; in 2015 when we installed the first base station, the year after we added another and when the Nord Stream project began we deployed a third one.

Today the port has three base stations with two time slots (communication paths) each, connected over IP. The six time slots in total correspond to the number of calls that can be placed simultaneously in the system. The port has a total of three kilometres of dock and covers an area of a million square meters divided in six different port areas. The system is also supplemented with a cross-band repeater to bridge calls to marine VHF.

In addition, we have delivered over one hundred radios. About a quarter of these are mounted in trucks and cranes while the rest are handheld devices. The fixed devices are also equipped with different hands-free solutions like push-to-talk buttons on the joystick or pedals on the floor. All devices are also Bluetooth ready and a hearing impaired worker has received a personal Bluetooth headset.



THE RESULT

Motorola Mototrbo uses advanced digital noise reduction to identify human speech and efficiently eliminates ambient sounds. That's the main reason Port of Karlshamn now have audibility even in storms.

The users are divided in different talk groups which, for instance, allows a team that works with loading and unloading to not have to listen to irrelevant calls that can interfere with concentration and cause misunderstandings. Supervisors on the other hand have access to all talk groups and can easily scan all of them to place broadcasts, group calls or individual calls.

Only a single radio at a time can transmit in each talk group but the system has a functionality activated that allows everyone to interrupt on-going calls. This allows emergency communications and other important to always be executed without delay.

The Port of Karlshamn now have a system that offers a capacity enough for the foreseeable future. Besides having more "communications paths" available than before the system is also equipped with the Capacity Plus feature that enables trunking. This means that all inactive devices are normally placed in a common rest channel (cue). When a call is triggered the talk group it is automatically assigned an available time slot. Such dynamic allocation of available resources increases capacity exponentially compared to a conventional system, resulting in a system that "never" is busy.

All of this contributes to making the port a safer workplace. That it also increases efficiency is a positive side effect not to be underestimated. The entire project has run smooth virtually from start to finish. – It works really well, Rikard summarises.