

NetMotion Mobility® Improves Harbor Pilot Safety and Schedule Efficiency

The Dutch Pilots' Corporation (Nederlands Loodswezen) trains and furnishes skilled harbor pilots for guiding ships through busy waters, rivers and locks. Crews pilot and dock 100,000 ships every year in Dutch and Flemish harbors, working 24 hours a day regardless of weather conditions. The law requires that the ships carry an autonomous navigation system. However, since the satellite-based system could leave crews vulnerable to natural signal distortions, jamming and spoofing, Loodswezen selected NetMotion Mobility® to ensure a stable connection to land-based servers delivering mission-critical local position corrections. Mobility enhanced crew safety and scheduling efficiency while helping the organization meet government-mandated precision requirements.

Choppy Seas with Choppier Connections

Loodswezen is divided into four regional groups, including one that serves the largest seaport in Europe at Rotterdam. Deep-draught vessels bound for Rotterdam must negotiate channels dredged in the North Sea. And they must do so within the precise, government-required tolerance of five meters or less. Known weaknesses with satellite-based systems led the company to implement a land-based correction system.

In practice, however, the GPRS mobile service pilots used with their Panasonic Toughbooks was no match for the at-sea conditions. Local position corrections took longer than the allotted three seconds required for navigational precision. And applications or the entire Windows system would often freeze while on-board modems attempted to find signals or switch between networks. The only recourse for pilots was to completely reboot their systems, resulting in a complete loss of navigational information.

Loodswezen contacted local mobile solution provider NetBoss BV for help. The team recommended NetMotion Mobility from NetMotion Wireless.

Mobility's Maiden Voyage

A technical consultant from NetBoss conducted an on-board test: two Toughbooks running side-by-side; one with NetMotion Mobility and one with the existing solution. Within 30 minutes it became clear that the Toughbook with Mobility used 30 percent less bandwidth than the Toughbook without the software. While all applications ran smoothly on the Mobility-powered Toughbook, the Toughbook without NetMotion crashed twice during the trip.



INDUSTRY:

Transportation

OBJECTIVES:

- Fix longstanding connectivity issues that compromise safety
- Implement a reliable navigations positioning system

SOLUTIONS:

- NetMotion Mobility
- Panasonic Toughbook

RESULTS:

- Ensured reliable connection to critical applications
- Enhanced employee safety
- Improved shipping schedule efficiency

“After a long search for a proper solution for our data connectivity issues, the solution NetMotion provides was the missing piece in our connectivity puzzle.”

Wim van Buuren | Chairman of the Dutch Harbor Pilots, region Rotterdam-Rijnmond

Mobility solved the longstanding connectivity challenges that Loodswezen pilots had been facing. While Toughbooks are known for outstanding connectivity, the pilots had been experiencing crashes due to signal quality issues in the area. Connections were not surviving the regular switches between GPRS, 3G and 4G networks. The restarts and reboots multiple times a day not only wasted time and frustrated the pilots, but also resulted in possibly dangerous situations when navigating big ships through narrow spaces.

According to Sand van der Vlies, Regional System Administrator for Loodswezen, “Users had a lot of problems with needing to restart their applications or even their device due to the connectivity issues. During the proof-of-concept it became clear that these problems were gone. This was noticed immediately by the pilots, and after the testing was finished they didn’t want Mobility to be removed from their device.”

Mobility has since been deployed on more than 700 laptops across all of the ports and regions the organization serves. There are no more application freezes and the average time between updates is less than two seconds. Pilots have the navigation system and precision they require. The enhanced connectivity provided by Mobility has also improved the performance of essential navigation system features, including:

- Nautical charts with automated depth update for current tide conditions, and display of safe and unsafe waters based on the ship’s draught
- Route planning that handles complex routes with multiple waypoints, which is especially useful in complex ports such as Rotterdam
- Displays of surrounding vessel traffic and movements, and computation for the closest point-of-approach for making course and speed adjustments
- Special modes for delicate low-speed, close-proximity maneuvers used in lock-approach and docking

Mobility is the Calm Through the Storm

Mobility delivers the reliable connections crews need to receive critical local corrections data and access other important information. No longer preoccupied with technology problems, Loodswezen pilots can focus on guiding huge ships safely through the legendary storms of the North Sea and heavily trafficked ports. The pilots also credit the solution with reducing wait time at the Dutch and Flemish harbors and a providing a quicker, safer flow on the rivers.

“After a long search for a proper solution for our data connectivity issues, the solution NetMotion provides was the missing piece in our connectivity puzzle,” said Wim van Buuren, Chairman of the Dutch Harbor Pilots, region Rotterdam-Rijnmond.