Extreme environments require extremely reliable solutions for communication. This is especially true when the work in these environments demands ongoing high levels of awareness. Offshore wind farms fulfill every single condition listed above. They are a prime example of large, critical infrastructures in remote and dangerous areas. The efficient and safe installation and operation of offshore wind farms depends on the seamless interaction of many employees, no matter how far away they are from each other or from established communications networks.

That’s why one of the most important factors for secure and efficient offshore operations is a flexible, reliable, and safe communications platform that allows users to coordinate the required interplay of operations.

With its secured communications for offshore wind farms, Siemens’ product suite TETRA for Critical Infrastructure (TCI) makes an important contribution to keeping your offshore facilities safe and secure by enabling you to set up a reliable, streamlined network. Based on the mission-critical wireless-industry standard TETRA, it consists of a variety of high-capacity applications for voice and data communications and includes workflow and workforce management functions as well.

For offshore wind farm operators, the safety of their staff on-site is a top priority – and so “Zero Harm” is the key principle for these operations. TCI is ideal for offshore wind farms because it provides targeted radio coverage for the entire area of operation even inside the metal housing of the wind turbine. TCI gives you full control over all activities: It allows you to communicate with single users or specific user groups, and even tracks their movements on a geographical information system.

You are not only optimizing your workflow efficiency – first and foremost, you are ensuring the safety of your employees in hazardous areas.
Secure and reliable communication – wherever you need it

TCI provides you with a flexible and reliable connection between all the staff you need for an efficient operation. It links installation staff on-site, on vessels, and in harbors as well as service teams, marine and project coordinators, officials, and many more – no matter how far away they are from established communication networks. You can even reliably verify the location of every single team member in all your areas of operation, even inside turbine towers. During installation and maintenance phases, when classical fixed line monitoring and control systems are not available, TCI also permits remote monitoring and control functions.

Intelligent fleet management – boosting efficiency

Thanks to its remote managing capability, TCI significantly increases the overall efficiency of your crew. A GPS-based geographic information system (GIS) allows you to precisely localize employees, vessels, and equipment. Displayed on an intuitive graphical user interface (GUI) combined with an intelligent, touch screen based dispatching system and the effective voice and data communication we establish the base for an efficient fleet management. Hence, you always know where your employees are located and you can coordinate their activities quickly and efficiently. As a result, idle periods and operational costs are substantially reduced.

Efficient emergency planning – maximum safety at all times

Even more important than boosting the efficiency of your operation is the safety of all employees involved. TCI enables you to act rapidly and efficiently in case of an emergency. We help you to plan for the unplannable – with automated alarming and communications during emergency scenarios. We help you maintain an overview at all times with security measures ranging from an emergency button and priority calls, over Geofencing up to scenario based, predefined emergency dispatching and alarming. Via an emergency response gateway persons, groups or even complete organizations can be included via GSM, e-mail, etc. regardless of their actual location.

Connecting the mainland – optimized working conditions

In addition to maximum operational safety, TCI also facilitates the creation of a comfortable work and living environment. It provides you with full Internet and intranet access, linking your staff to the onshore office environment and ensuring a trouble-free and efficient workflow. At the same time, TCI helps you bridge the distance between the offshore crew and their families back home – an important factor, considering the duration and frame conditions of offshore employees’ assignments.

Furthermore, we offer an entire suite of infotainment solutions based on the streaming Over-the-Top (OTT) technology – providing your workers the same level of entertainment and information they are used to from home.

Siemens’ product suite TCI for offshore wind farms provides highly reliable and secured communications even in locations where standard terrestrial communication systems, such as GSM, are not available. Thanks to GIS, your offshore crew’s efficiency can be significantly increased, by an effective fleet management. Automated emergency scenarios provide maximum safety in hazardous environments, ensuring that there really is “Zero Harm” for all involved.