



Article:

The (surprising) Tesla-Scanreco connection

In busy work sites, there are often innumerable different control systems in use, which is not a problem when using a Scanreco system.

This article was first published, and is still available, on Scanreco Group's LinkedIn page.

Tesla. Today, commonly known as an electrical car brand developed by the entrepreneur and business magnate Elon Musk. But what does Tesla have to do with Scanreco? Quite a lot, in fact, and it has nothing to do with car models, but instead the renowned inventor Nikola Tesla, born in what is today Serbia, in 1856. One can say that Nikola Tesla was on the same tracks as a modern-day leading company developing and producing remote controls for professional usage, only about 100 years ahead.

Nikola Tesla, inventor, electrical engineer, mechanical engineer, and not least futurist was exceptionally smart. Among other things, he was obsessed with the thoughts of electromagnetic fields and his hypothetical motor powered by alternating current. Eventually, the invention of his dreams came true: an induction motor run on alternating current. This, and many other inventions, he sought and gained patent on. This paved way for his future inventions, and what would become of great use for Scanreco's customers today.

Wireless radio communication

Tesla emigrated to New York in the 1880s, where he performed a multitude of experiments with e.g. mechanical electrical oscillators, electrical discharge tubes and even X-ray imaging. In the late 1800s he gave short-range demonstrations of wireless radio communication with his devices. But before he could demonstrate his ideas further, he ran out of funding and was beaten to it by the Italian inventor Marconi. Tesla had discovered that when using his invention, that today is referred to as tesla-coils, radio signals could be transmitted over great distances too. Tesla even predicted that all of us would carry small, wireless devices to communicate with each other. (Marconi was awarded the Nobel Prize for the radio, but after Tesla's death in 1943, the U.S. Supreme Court did clarify Tesla's role in the invention of the radio).

Wireless control

It was in New York where he also invented the wireless control. To the joy and cheers of the wealthy, Nikola Tesla, promoted his invention in Madison Square Garden in 1898. In a pool set up for his purpose, he controlled a small boat with only radio waves. The boat had small metal antennas on top of it that could receive exactly one radio frequency. He controlled the movement of the boat from a box equipped with a lever and a telegraph key (the type designed to send Morse code signals). The signals sent from the box, was caught and interpreted by a mechanism inside the boat, that triggered a shift in electrical contacts aboard the boat, that in turn, changed the position of the rudder and propeller. He could control the boat's motion from a distance! He patented his invention in the USA as patent, No. 613,809, a "Method of and Apparatus for Controlling Mechanism of Moving Vessels or Vehicles".

Development has come a great way

In the 100+ years since, science has taken great leaps. What once originated in the mind and imagination of Nikola Tesla, have been developed into highly professional wireless radio control devices, widely used in many industries around the world. Today, we create control systems that not only control moving vehicles and powerful machines but are smart enough to make a machine stop if risk of hazard occurs. Radio frequency science has developed,



Verification Engineer prepares for radio frequency tests in one of Scanreco's laboratories and EMC chambers.

and studies of electromagnetic fields help us stay within unarmful limits, both to humans and to surrounding environment. Because radio controls co-exist together with other equipment, regardless of if put on a single machine in the woods or used in busy construction sites, or even in airfields, where many systems are being used at the same time.

The comparison of today's operator and Nikola Tesla showing his invention on a small boat indoors in Madison Square Garden couldn't be farther apart from each other. Operators of today mainly work outside and with far more advanced machinery, demanding more actuators and just the right amount of correct feedback from the machine. At the right time. Not too much. Not too little. Not in a confusing manner. All aspects need to be perfectly safe, to anyone in the near and far field of the operation and to everything in the surrounding areas.

At Scanreco, electrical and mechanical engineers, radio frequency specialists, verification engineers, and certainly a few futurists too, continue to develop Tesla's great idea of wirelessly controlling vehicles and machines.

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+46 8 556 32 800, info@scanreco.com,
www.scanreco.com