**How do engineers make cyber networks safer?**

The idea of engineering requires a one-step ahead plan in which the engineer can put themselves in the shoes of perpetrators. In terms of system security, large areas are protected in order to make hacking the systems challenging. Weak physical protection an be identified with power supply systems, water supply systems, transportation, agriculture, and etc. Weaker devices within industrial zones must have enough computational power in order to protect against spoofing, replay attacks, and a variety of denial of service attacks. On the other hand, some industrial devices might just be to old. Most devices are intended to last longer that ten-fifteen years as these devices are heavily designed for industrial usage.

Password security is important as it is the key to the infrastructure. Making the password simple and easy to share allows for quick access and control, yet it also makes it easy for hackers to secure. Passwords aren't changed daily, if at all as there tend to be many devices with different password, making it quite difficult to change the password and relay its control to other workers. Industrial password methods are typically simple static passwords, a two-factor authentication, digitally certified, or biometric.

Besides protecting industrial devices, it is important to understand all protocol and standards in terms of device capabilities. Limited communication ports can be disastrous as cases such as SCADA traffic travel on just one port. It is convenient to be able to manage and trace traffic and configure firewalls, however, it also makes it easier for hackers to discover the port and ultimately, have the convenience of managing traffic and configuring the firewalls. Unfortunately for engineering systems, they are five-ten years behind typical IT systems. In result, they are forced to access information in a top-down process which inhibit communication across an organization. Inevitably, hackers must follow somewhat of the same procedure as engineers must do.