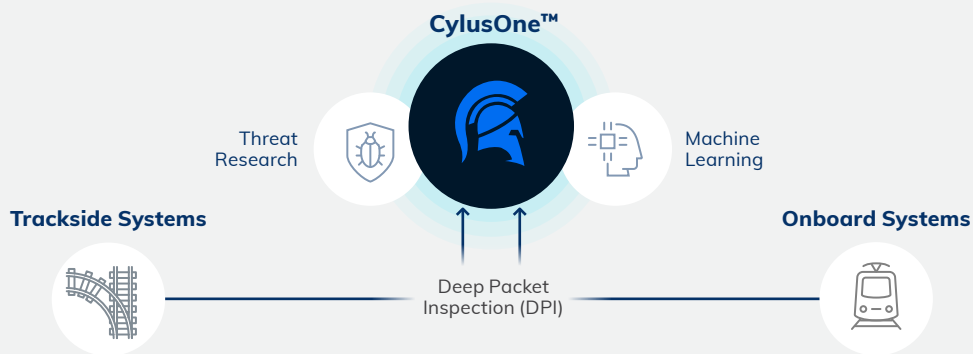# CYLUS
Cybersecurity on Track

CYLUSone™
for Signaling

Introducing a signaling security solution for rail

Rail signaling systems are becoming more digital, connected, and wireless-based. This gives rise to new cybersecurity threats that cannot be handled thoroughly by existing security measures, such as physical and electrical isolation.

As a result, the signaling and control networks are vulnerable to cyber-attacks, which can jeopardize passenger safety and service availability, causing severe economic damage and reputational harm.

To properly manage cybersecurity risks in rail systems and stop cyber-attacks from unfolding, it is critical to have in-depth knowledge about what is happening on the signaling and control networks at any given moment. This way, cybersecurity threats can be detected and controlled on time before any harm is caused.

CylusOne™

Threat Research

Machine Learning

Trackside Systems

Onboard Systems

Deep Packet Inspection (DPI)

CylusOne™ for Signaling enables to **KNOW:**

What
occurs on
the network

When
the network
is compromised

How
to respond effectively
to cyber-attacks

Get an accurate picture of the signaling network

To be able to secure the signaling and control networks against cyber-attacks, you first need to know what you are protecting. CylusOne provides a complete and real-time view of the entire network with detailed information that covers all levels; from the network's entire topology down to the granular level of each and every asset, including trackside devices, interlockings, management workstations and more.

CylusOne also reveals asset connections and classifies redundant ones. The network's real-time cybersecurity status is generated by analyzing data that is captured passively, using deep packet inspection techniques, without requiring prior information about the network.

This in-depth visibility into the network eliminates blind spots. It also reveals threats that may stem from malicious insiders or supply chain attacks that occur "behind the firewall", such as misconfigurations, existence of malicious code or hidden communications.

Identify when the network's security has been compromised

Railways are complex and interdependent systems. To proactively detect cyber-attacks that take place in the railway systems, CylusOne views the network as a whole to uncover cases where safety is breached and service availability is affected due to security issues. By leveraging the ongoing security monitoring of all the communications on the network, proprietary algorithms immediately detect anomalies on the network.

CylusOne is augmented with feeds on the latest findings from Cylus' rail cybersecurity research team. As a result, it can detect newly found rail signaling vulnerabilities and threats, providing the most accurate identification of cyber-attacks.

Carry out the optimal incident response

Real-time alerts on security events are supplemented with detailed information about the incident and its context, such as the root cause, affected assets and more.

These actionable insights enable quick contextual understanding and timely response to manage the threat, remediate the risk or contain the attack.

The captured data also enhances post-attack forensic investigations. The rail operations friendly platform bridges the gap between cybersecurity and rail signaling, further facilitating quick investigation and effective remediation.

Increase security without adding complexity

Non-intrusive data monitoring

Fully passive monitoring of all communications on the network, with zero latency and no impact on safety critical systems.

Intuitive interface

A graphic representation of the network, on all its levels, enables rail signaling professionals to clearly understand cybersecurity matters and respond efficiently when alerted about a cybersecurity threat or attack.

Straightforward Deployment

CylusOne is deployed as a virtual or physical appliance, running on customer premises. All communications carried out by the system are encrypted and secured. Integration with leading SIEM software is also available.

About Cylus

Cylus, the global leader in rail cybersecurity, helps mainline and urban railway companies avoid safety incidents and service disruptions caused by cyber-attacks. Led by veterans from the elite technological unit of the Israeli Military Intelligence Corps and top executives from the railway industry, Cylus combines deep expertise in cybersecurity and rail.

OPERATION CONTROL CENTER

End-user Workstation

HTTP

CLIENT

Cylus Appliance
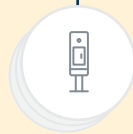
Uni-Directional Link

SIGNALING & CONTROL NETWORKS

Network Equipment

Train Control Equipment   **Interlocking**   **Field Elements**

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