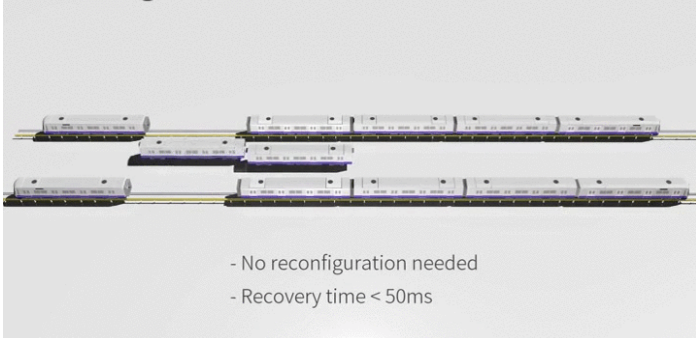


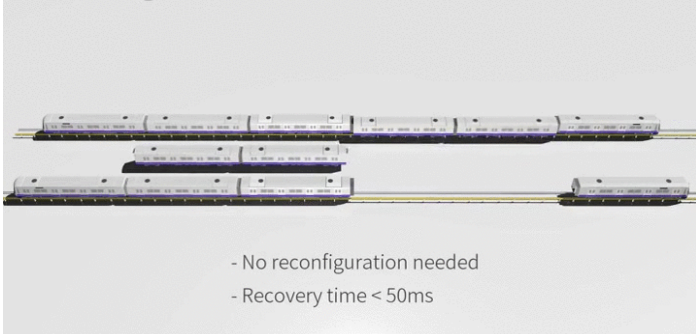


Switching 1 train car



▲ Switching one car without reconfiguration with Lantech "Train Ring".

Switching 2 train cars



▲ Lantech "Train Ring" is able to switch two cars without reconfiguration at the same time.

Reduce Cost with High Customer Satisfaction

During current train operation, train cars might need to be separated and reoriented due to more flexible operating requirement. Take MRT for example, it needs more cars during peak hours while only few cars are needed during off-peak hours. A long-distance train route may separate into two shorter trains and heading to different destinations at a junction point. When a train system has higher flexibility, it can utilize the resource and reduces operational costs.

When train cars are switched, re-configure network settings is normally required. Thus, railway operators need to have enough knowledge of Ethernet. This not only increases the cost of labor but also result in additional time. Also, train car switching will cause the interruption of networks, effecting passenger information system and in-train Wi-Fi service. Passenger's tolerance toward network interruption is limited and this is one of the important factors of customer satisfaction.

Train Ring vs. Existing Solutions

Common Rapid Spanning Tree Protocol (RSTP) and Coupling Ring can be applied to rail train network for redundancy of multiple train cars. However, each solution has its own drawbacks such as longer recovery time or non-automatic recovery. Lantech provides a new solution called "Train Ring", which can automatically recover the network within 50ms without reconfigure the settings!

Lantech Train Ring is evolved from traditional Coupling Ring. It eliminates the setting process, and will automatically identify the primary and backup path dynamically, without any configuration required. Lantech Train Ring allows train operators to rapidly change composition of trains with high efficiency and flexibility. Since all settings are done automatically, configuration errors and cost can be minimized. The recovery time of Train Ring is less than 50ms, so passengers can hardly recognize the interruption caused by topology change.

	Coupling Ring	Train Ring
Nodes	Unlimited	Unlimited
Inter-Consist Recovery	50 ms	50 ms
Intra-Consist Recovery	50 ms	50 ms
Automatic Configuration	No	Yes