A Design of Unidirectional Security Gateway for Enforcement Reliability and Security of Transmission Data in Industrial Control Systems

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Abstract—**Recently, targeted attacks are increased against industrial control system facilities. In order to protect these facilities from attacks, defence-in-depth strategy can be applied to industrial control systems. It separates control network and business network, and uses a one-way data transmission technology for data transfer between higher security area and lower security area. But most of the current unidirectional security gateway system is just only data transmission without considering the reliability and security. In this paper, to guarantee the reliability and security of transmitted data, we design a unidirectional security gateway system, UNIWAY, which provides forward error correction, session management, packet sequence number, IP/Port filter, content filter, and protocol break.**

Keyword— **Unidirectional Data Transfer, Forward Error Correction, Protocol Break, ICS Security**

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