

Cyber-Manufacturing System Testbed for Cyber-Physical Attack Investigations

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Abstract

Cyber-Manufacturing System (CMS) is a vision for future manufacturing systems where physical components are fully integrated with computational processes in a locally as well as globally connected environment. Although the high-level of connectivity enables the concept of CMS, it also opens a door for malicious cyber intrusions into the manufacturing system—securing CMS is a key for realizing the vision. Underlying technologies for CMS are available; however, the vision hasn't been fully implemented. Obtaining data from partially-implemented real CMS—for cyber-physical attack investigations—are possible; but it is not always practical since the factory production may need to be interrupted. This talk presents a CMS testbed primarily built for cyber-physical attack scenarios. Unique challenges of the cyber-physical security issues are explained. Research progresses made using the testbed are presented.