Cyber-Physical Approaches to Advanced Manufacturing Security

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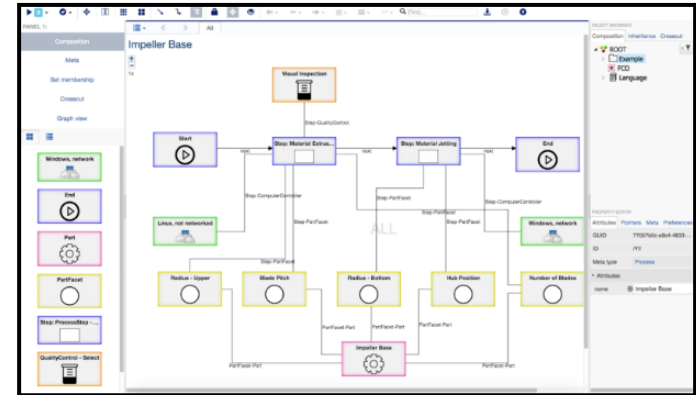Virginia Tech | Vanderbilt University | Western Michigan University

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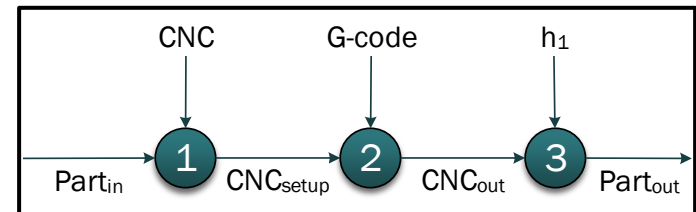NSF #1446804

Assess and Identify Attacks to MFG Systems

Modeling

- Manufacturing tool to create a virtual copy of their production environment
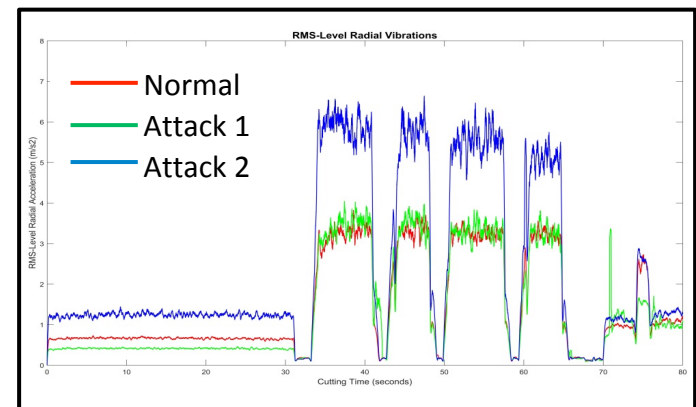- Vulnerability analysis without disturbing production

Assessment

- Creation of attack taxonomy to understand attack space
- Intersection framework to identify cyber-physical vulnerabilities

Attack Detection

- Development of real-time side-channel detection techniques
- Additive manufacturing and machining

Detection of Attacks to MFG Systems

Cyber-physical attacks can be detected in production environments through real-time side-channel monitoring