2021 NSF CYBER-PHYSICAL SYSTEMS PRINCIPAL INVESTIGATORS' MEETING

CPS: Medium: Secure Smart Machining

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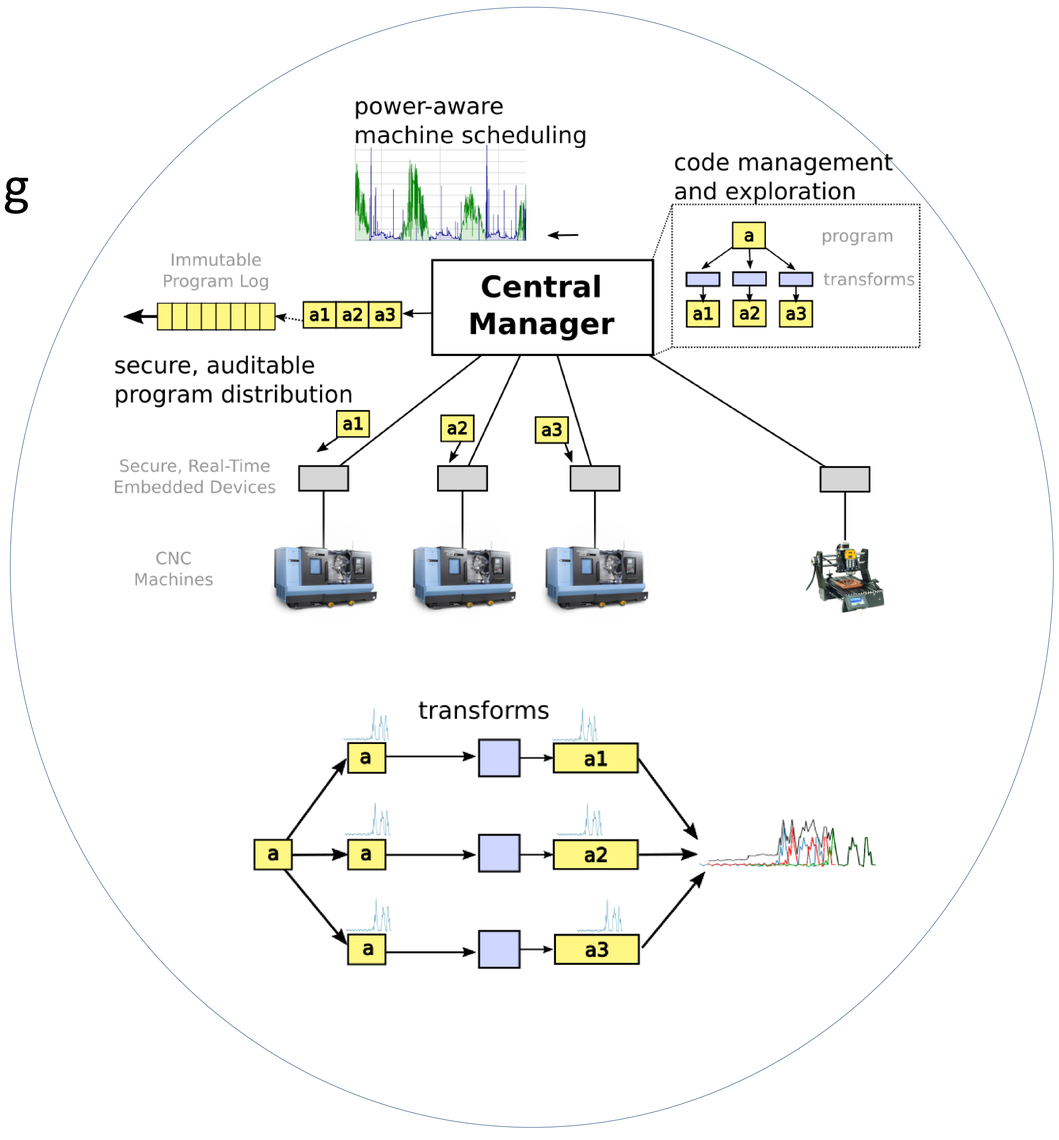
Challenge:

- Modernize software infrastructure for machining
- Automated analysis and integrity of existing Gcode

Solutions:

- End-to-end integrity and auditing of code
- Programmable safety mechanisms
- Discretization



Scientific Impact:

- Establish cryptographic techniques for securing legacy CNC systems
- Modern program analysis and bug-finding on Gcode
- Secure real-time systems

Broader Impact:

- Improve security and software integrity of CNC machining
- Development of new embedded systems/CPS course sequence
- Open source tools for free use and adoption

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