

Award #1932574 (09/18/2019) - CPS:DFG Joint: Medium: Collaborative Research: Data-**Driven Secure Holonic control and Optimization for the Networked CPS (aDaptioN)** A. K. Srivastava¹, D. Bakken¹, A. Hahn¹, Y. Wu¹, A. Annaswamy², A. Monti³, M. Josevski³ ¹Washington State University, WA, USA; ²Massachusetts Institute of Technology, MA, USA; ³RWTH Aachen, Aachen, Germany



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2021 NSF CYBER-PHYSICAL SYSTEMS PRINCIPAL INVESTIGATORS' MEETING

Distributed optimization/control and fault-tolerant computing for autonomous volt-var and frequency control with DERs

Scientific Impact:

Highly Dynamic Systems

(delay-aware control, Adaptive MPC, PAC-X) **CPS and the Data** management (consensus mechanism, deep knowledge learning)

Adaptive robust delayaware solution

CPS Security (threat-sharing, datadriven detection and mitigation)

Broader Impact:

- Will lead towards more autonomous distribution grid with better resource utilization
- Real time validation and ready to be used by the utilities
- 2 UGs as REU, 4 Female Students so far, with 4 graduate students
- Expected to engage 9 students with 5 underrepresented and transferring knowledge through 10 publications and project end workshop.





