Identity and Access Management for Medical Cyber-Physical Systems: New Technology and Security Solutions

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Abstract : In the context of the increasing use of Cyber-Physical Systems (CPS) across critical infrastructure sectors, this paper addresses a crucial and emerging topic: the integration of Identity and Access Management (IAM) with Internet of Things (IoT) devices in Medical Cyber-Physical Systems (MCPS). It underscores the significance of robust IAM solutions in the expanding interconnection of IoT devices in healthcare settings, leveraging AI, ML, DL, Zero Trust Architecture (ZTA), biometric authentication advancements, and blockchain technologies. The paper advocates for the potential benefits of transitioning from traditional, static IAM frameworks to dynamic, adaptive solutions that can effectively counter sophisticated cyber threats, ensure the integrity and reliability of CPS, and significantly bolster the overall security posture. The paper calls for strategic planning, collaboration, and continuous innovation to harness these benefits. By emphasizing the importance of securing CPS against evolving threats, this research contributes to the ongoing discourse on cybersecurity and advocates for a collaborative approach to foster innovation and enhance the resilience of critical infrastructure in the digital era.