Abstract

With the ease of deployment of Computer-based healthcare medical devices, the major challenges of patient safety, reliability and security have increased.The current COVID-19 outbreak scale's, severity, speed created serious health threats worldwide and the common complication in patients were acute respiratory failure, requiring oxygen and ventilation therapies. The Critical nature of Ventilators are required to provide adequate evidence tp assure system's safety and effectiveness. By considering the current situation, the proposed work will devote its contribution in the Safety Assessment of Non-Invasive Mechanical Ventilator with the use of Model based Safety Analysis Networks of Timed Automata in the formal modelling of its modes and the safety properties of monitoring system will be verified through UPPAAL real-time model Checker.The Inspiratory and Expiratory time ratio (I:E) is obtained clearly through Timed Invariant in order to predict Breath insufficiency during ventilation.