Abstract

Petri net is an interactive tool for complex systems modeling, analysis, and simulation. The Health At Home (HAH) is an alternative to the traditional hospital to promote early discharge and to help patients and elderly people to live autonomously. The Health at Home management problems consist of real-time monitoring of inhabitants and decision-making in case of possible troubles and accidents. The Integrated System is designed to monitor the daily living of the apartment inhabitant, detect possible troubles and accidents, communicate with family, doctors, and emergency services. The decision and detection are two main components of the Integrated System.Detection component have different numbers of modules and each module is used to detect a particular event or disease. Similarly decision component have different numbers of modules and each module is used to perform a particular emergency protocol in case of a detected event or disease.This thesis presents the updated Petri net model of decision component modules by adding emergency service with the Integrated System in order to handle the emergency protocol more effectively in case of detected events from detection component modules. The patient record is added with the Integrated System to a quick response and decision making from the doctor and emergency side in case of troubles and accidents as it helps the doctor and emergency side to access the most current patient health information. After this, the detection Petri net is synchronized with the Petri net modeling modules of the decision component in order to obtain the overall Petri net model of the Integrated System. The Qualitative and Quantitative analysis is performed on the overall Petri net model of Integrated System to check the efficiency of the system.