ALTA BASED KEY MANAGEMENT SCHEME FOR IMPLANTABLE MEDICAL DEVICES DEPLOYMENT

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In this artificial intelligence dependent world, advantages and disadvantages of the technologies have equal foot. The transmission of data in medical field has a major drawback in security and privacy. Security plays a vital role in medical field as there can be adverse events. Implantable Medical Devices (IMD) is a man-made implantable device that helps in monitoring and treats the physiological conditions of human (temperature sensor for body temperature and pacemaker for heart beat rate). In our proposed system, we use IMD to monitor the conditions of the patient. In case of any abrupt changes in the monitored values, it records and sends the information to the controller node. This node collects the information and sends to the doctor through an access point. We can even send the data to the friends, relatives and trusted authority of patient's choice. Now by knowing the condition of the patient, doctor can prescribe the patient at right time even from a remote distance. This communication is allowed only after the mutual authentication between the user and the nodes by providing a secret session key. The security verification is done using Automated Validation of Internet Security Protocols and Applications (AVISPA) tool. This scheme provides security to known attacks. We use Attack Localization Task Allocation (ALTA) providing hash key to increase the security. The practical demonstration is performed in NS2 simulation tool. Performance analysis of the proposed scheme with existing schemes is done using AWK graph.

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