Abstract

Total System Assurance (TSA) deals with assuring the security of all system components by considering all potential risks. This comprehensive approach to system assurance tackles security from multiple points of views, thus ensuring the highest possible level of assurance. In this paper we illustrate the TSA approach by considering a complex system running a mobile agent-based wireless sensor network (MA-WSN). Security in WSNs has been addressed extensively in the literature, however a comprehensive and integrative
system security and assurance has not been considered. Total assurance in MA-WSN applications relies on the security of the mobile agents, and the mobile agent platform, in addition to the security of the wireless sensors and the application servers. Total assurance is tackled in a generic and comprehensive manner by considering a mixture of three approaches to addressing security concerns in systems. These approaches are based on the elicitation of security requirements, the misuse case-based threat model, and the prevention-detection-response model.

Reference

- D. Lange and M. Oshima, Programming and Deploying Java Mobile Agents with Aglets, Addison-Wesley, 1998.

Index Terms

Computer Science Wireless

Key words

Assurance Security

requirements

Threat model