Abstract

The World is moving towards invisible computers, Ubiquitous Computing (any information everywhere), Pervasive Computing (which combines current network technology with wireless computing), Ambient Intelligence (which refers to electronic environments that are sensitive and responsive to the presence of people), and Traditional Embedded System (which is a closed system, not only in the sense of closed physical locations or dedicated hardware, but also closed with respect to the boundaries, where CPS (Cyber Physical Systems) is an open system which integrate computing and communication with monitoring and/or control of entities in physical world. CPS is the integration of several Wireless Sensor Networks. CPS is used in several applications like Automotive electronics, Avionics, Medical systems, Forestry machines, Logistics, Autonomous Vehicles, and Smart Structures. These are all "Critical Systems", the failure of the system will harm the people who depend on it. Some challenges in CPS are low power, no standard interface of sensors, low cost and high accuracy terminal devices and security. A system without security is like bank without locks. "Trust Management" plays an important role in security of CPS, since it is an open system. Trust Management is a dynamic concept which changes depending on the application. Trust is related to the authentication, authorization which comes under the hard side of trust. And also competence, reliability, integrity, timeliness, accuracy which comes under soft side of trust.
Secured data or information can be trusted. This paper mainly focuses on the trustworthiness of a sensor and controller, where the trust depends on the reliability of the data sent by them. The Policy Based Trust Management is used to identify the false information sent from sensors/controllers by calculating the weight-age of the data integrity. This ensures the truthfulness of the sensor/controller in the CPS.

References

- Gunnar Peterson, September/October 2010, Don't Trust. And Verify, Co-published by the IEEE Computer and Reliability Societies.
- January 2012, Toward Continuous State–Space Regulation of Coupled Cyber–Physical Systems, Proceedings of the IEEE, Vol. 100, No. 1,

- Xu Li, Rongxing Lu, Xiaohui Liang, and Xuemin (Sherman) Shen Jiming Chen Xiaodong Lin, November 2011, Smart Community: An Internet of Things Application, IEEE Communications Magazine.
- Weiqi Dai, T. , Paul Parker, Hai Jin, and Shouhuai Xu, November/December 2012,

Index Terms

Computer Science
Security

Keywords
Cyber Physical Systems Security Trust Management Data Integrity