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Joy Iong Zong Chen
Da-Yeh University, Taiwan

Application of MRC/SC schemes and belief propagation algorithm to TM in the deployment of IoT system

To govern the interaction and the development of applications over the IoT (internet of things) environment without considering the security is still a concerned issue nowadays. The study on huge of security issues relevant to the application layer of IoT is becoming urgently. On the other hand, it is important for addressing the development of security algorithm to protect the IoT system from malicious attack. In this article, a fusion diversity scheme adopts both MRC (maximum ratio combining) and SC (selection combining) schemes with BF (belief propagation) algorithm are proposed. In MRC stage, specified parameters first extracted and before combined with the control information they weighed by one estimation value. The fused information results from MRC forward to the SC to generate the final trust value for making the decision. However, there is a final stage of BF adopted as the role provides with a guaranteed QoS over IoT architecture. The simulation results from experiments deployed with physical assessment show that the security has more reliability after the fusion of MRC/SC schemes and BP (belief propagation) algorithm for the TM procedure. In fact, there are many existing traditional solutions developed to count different attacks for the computer network or for each layer of the internet. For example, the encryption of information used for confidentiality and there are many other most popular cipher algorithms, such as RSA (Rivest Shamir Adleman), ECC (error correlation code), AES (advanced encryption standard), 3DES (triple data encryption algorithm). Based on the aforementioned points that motivates the paper propose an algorithm to fuse the scheme of TM with a famous linear diversity method, MRC (maximum ratio combining), for IoT security. The proposed fusion diversity scheme is more reliable in terms of security validated by the simulation. Alternatively, the reducing QoS degree for the requester is the penalty.

Biography

Joy Iong Zong Chen has received his BS Degree in Electronic Engineering from National Taiwan Technical University, Taipei, Taiwan and MS Degree in Electrical Engineering from Da-Yeh University, Chang Hua, Taiwan. He has obtained his PhD Degree in Electrical Engineering from National Defense University, Tao-Yuan, Taiwan. He is currently a distinguished Professor in the Department of Electrical Engineering at Da-Yeh University, Chang-Hua Taiwan R.O.C. Prior to joining the Da-Yeh University faculty; he worked at the Control Data Company (Taiwan) as a Technical Manger from September 1985 to September 1996. His research interests include wireless communications, communication theory, communication statistics, and technical spread spectrum.

jchen@mail.dyu.edu.tw

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