Communication Security for Smart Grid Distribution Networks

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Motivation: The paper motivated by the communication security deals with the distribution component of the smart grid. Applicable communication mechanisms that could be adopted on smart grid distribution networks to tackle the cyber security of such infrastructures also pinpointed this security objectives and threats

Contribution : The research introduces smart grid distribution networks that could be applicable on communication mechanisms. Focus on the communication security aspect which deals with the distribution component of the smart grid.Also, target the network security of the advanced metering infrastructure coupled with the data communication towards the transmission infrastructure.

Methodology : The smart grid could be referred to as the modernization of the current electric grid for the purpose of enabling directional flows of information and electricity in order to achieve numerous goals. By providing significant, relevant ,and practical information on the communication mechanisms in both HANs and NANs, by focusing on their security, including their objectives and threats, in additional to their practical feasibility, requirements, and security issues when implemented on the smart grid.

Conclusion: The author investigated applicable communication mechanisms that could be adopted on smart grid distribution networks. The implementation of the smart grid will include the deployment of many new enabling technologies such as advanced sensors and metering and the integration of distributed generation resources. The correlated vulnerabilities in these systems could be remediated and associated risks may be mitigated for the purpose of enhancing the cyber security of the future electric grid.

Limitations

First limitation: Author concerned with the communication networks of that subpart of the grid the Home Area Network and the Neighbourhood Area Network . These networks are critical for data communications between the utility and end-users.

Second limitation: The research primarily focuses on the communication security aspect which deals with the distribution component of the smart grid. For these consept the addition and utilization of multiple communication mechanisms and infrastructures that may suffer from serious cyber vulnerabilities.

Synthesis: It is critical to continue discussing, designing, and implementing solutions for such mechanisms for the purpose of enhancing the cyber security of the future electric grid and hence accomplishing consumers utmost trust in such a major gird transformation.