Signal Processing for Virtualization Technology Environments

Project Leader

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1. Objective

Development of the Future Internet is progressing and research on its effective application is attracting attention. We have studied a distributed information processing system using the new generation network test bed JGN. The purpose of this research is to develop a completely new distributed signal processing system which can effectively utilize the capabilities of the Future Internet. It is anticipated that the new system will offer improved efficiency by making use of network virtualization and parallel processing.

2. Project Outline

The project will consist of the following phases:

(a) The creation of a signal processing algorithm suitable for a virtualized network

(b) The development of an information distribution method for a virtualized network

(c) A demonstration experiment over the test bed network JGN

3. Expected Performance

In this project, the successful candidate would be expected to:

(a) Work independently to develop the signal processing system.

(b) Assist senior lab members with the development of the application system of the new generation network.

4. Required Skills and Knowledge

The successful candidate for this project will have the following knowledge and skills:

(a) Algebra, Linear algebra

(b) Information theory

(c) Programming (C language, etc.)

(d) IP network

References

[1] Ligang LIU, Masahiro FUKUMOTO, Sachio SAIKI and Shiyong ZHANG, "A Variable Step-Size Proportionate NLMS Algorithm for Identification of Sparse Impulse Response," IEICE TRANSACTIONS on Fundamentals of Electronics, Communications and Computer Sciences, Vol.E93-A, No.1, pp.233-242, Jan. 2010.

[2] Masahiro FUKUMOTO, Hajime KUBOTA and Shigeo TSUJII, "Simplification of stochastic fastest NLMS algorithm," IEEE International Symposium on Circuits and Systems (ISCAS'99), Vol.3, pp.158-161, ISBN:0-7803-5471-0.

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