ASPIRE League Research Grant 2014 (Type2) Project

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<tr><td rowspan="4">Principal Researcher</td><td>Name</td><td>Akinori NISHIHARA</td></tr>
<tr><td>Department and graduate school(institute)in Tokyo Tech</td><td>Department of Human System Science, Graduate School of Decision Science and Technology</td></tr>
<tr><td>Position</td><td>Professor</td></tr>
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	Department and graduate school(institute)in Tokyo Tech	Department of Human System Science, Graduate School of Decision Science and Technology
	Position	Professor
Co-researchers	HKUST	Oscar Au, Professor, Department of Electronic and Computer Engineering
	KAIST	—
	NTU	Woon-Seng Gang, Associate Professor, School of Electrical and Electronic Engineering, Information Engineering Division
	Tsinghua	—
Subject of the research project		**Multipoint Lecture Exchange with High Connectivity, Participation, and Engagement**
Summary of the research project		Multipoint lecture environment will be developed for high connectivity, high participation, and high engagement among three locations; Tokyo Institute of Technology, Hong Kong University of Science and Technology, and Nanyang Technological University. All students and lecturers should be able to clearly see and hear the other parties. High resolution video transmission, noise and echo cancelation are key technologies to be developed. Our group has been active in video processing, and will develop a high resolution video transmission system. Probably we will use HEVC/H.265 video compression standard to transmit such high data rate signals. We have also been doing research on speech processing, and noise and echo cancellation of speech in multi-connected environment which is a challenging task. In addition to research on signal processing, we are all educators. In particular, the principal researcher specializes in educational technology, such as distance education and flipped classrooms, and he oversees and manages the entire project. Based on the developed environment, highly interactive

Summary of the research project	lectures will be conducted. The developed environment will enable us to have high connectivity, high participation, and high engagement, as if all were sharing a common space. Lecture styles to achieve such features are also investigated based on our experiences as educators. We believe these activities will be useful not only as a research project in signal processing and educational technology but also as benefits to students of the member universities. We will conduct a questionnaire survey on students and evaluate the research achievement.