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■Creation of a more practical approach to barrier-free-ization and inbound support for announcements through a collaboration of Japanese state-of-the-art technologies

# Cooperative research between Yamaha and the National Institute of Information and Communications Technology for 'Omotenashi Guide' real-time announcement support

## - Detection of live Japanese announcements and automatic conversion to foreign-language announcements, with text content delivered to users' smartphones in various languages

Yamaha Corporation and National Institute of Information and Communications Technology

Yamaha Corporation (Headquarters: Shizuoka Prefecture, Hamamatsu City; President: Takuya Nakata; hereafter "Yamaha") and the National Institute of Information and Communications Technology (Headquarters: Tokyo Municipality, Koganei City; President: Masao Sakauchi; hereafter "NICT") have begun joint research efforts from July, combining NICT's high-precision speech recognition and automatic translation technologies with Yamaha's Sound Universal Design support system 'Omotenashi Guide' to ultimately create an improved system for automatic conversion of real-time voice announcements and narration to various languages.

In recent years, the need for convenience for the increased numbers of foreign visitors to Japan and for aged and hearing-impaired persons has become an important goal for Japanese society. However, finding the most effective method for communicating announcements and other Japanese-language information has become a sizeable challenge. Simply playing announcements in numerous languages or displaying audio content on LCD screens and signboards not only raises costs, but there are also limitations with time and display space. This can ultimately result in the inefficient communication of information.

At Yamaha, we have developed a solution to this problem in the form of a system called 'Omotenashi Guide' which provides the contents of Japanese language announcements in various languages, through text and audio, to users' smartphones. The 'Sound UD Project' has been created through collaboration with many commercial establishments, government bodies and makers in order to spread this technology. We have already filed various patents in this and related fields and will work together with medical institutions to ensure that this latest technology is reliable and safe.

Meanwhile, NICT aims to improve automatic speech translation technology to overcome the world's language barriers, resulting in a 'Global Communication Society' in which valuable information can be transmitted anytime, anywhere, to anyone. NICT's high-precision speech recognition technology is currently used by multi-lingual applications such as 'NariTra' as a commercial system.

Through this research, we plan to practically apply both parties' Japan-developed technologies to rapidly improve audio recognition and translation quality by specializing in announcements and narration, thereby improving the functionality of Omotenashi Guide. We will develop a function which will allow you to simply face a microphone and make an announcement in Japanese, with which the content will be automatically detected and the most suitable foreign language text and audio will be retrieved from an 'announcement book'. From this, the correct foreign language announcement can automatically be played following the Japanese language announcement, and the correct information can be displayed in text on users' smartphones in real time.

Through the Sound UD Project, Yamaha will work on development together with each company and plans to start carrying out tests related to this research from September. Additionally, there is consideration for joint-functionality between NICT's mainly person-to-person conversation-based 'VoiceTra' series and Yamaha's crowd-focused announcement and guidance application Omotenashi Guide.

There are no examples of the use of NICT's high-precision speech recognition and automatic translation technology for voice announcements or narration currently found in the world. Research and testing is planned to commence this year.