

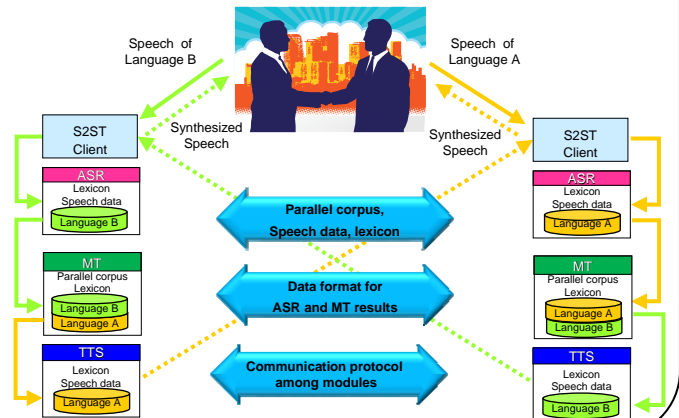
Chiori Hori and Satoshi Nakamura

National Institute of Information and Communications Technology (NICT), Japan

Goal of International Standardization

- ▶ Speech-to-Speech Translation (S2ST) technologies are a convincing means to **break the world's language barriers**.
- ▶ Through connecting automatic speech recognition (ASR), machine translation (MT), text-to-speech synthesis (TTS) systems distributed all over the world through the network, we can create S2ST systems which cover more language pairs and domains.
- ▶ To connect modules of different languages and functions reliably, it is necessary to standardize the communication protocol and data formats between modules

Network-based S2ST systems



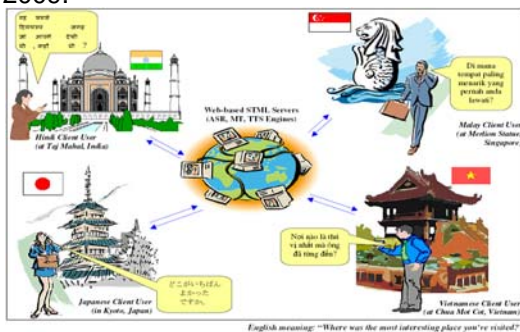
Standardization Activity in Asia

A-STAR Consortium

Japan: NICT
Korea: ETRI
China: CASIA
Thailand: NECTEC

Indonesia: BPPT
India: CDAC
Vietnam: IOIT
Singapore: I2R

- ▶ Asian Speech Translation Advanced Research Consortium (A-STAR) consortium started to research on Network-based S2ST since 2006
- ▶ "The first Asian network-based speech-to-speech translation system" that can perform real-time, location-free, multi-party communication between speakers of different Asian languages including Japanese, Chinese, Korean, Thai, Indonesian, Malay, Vietnamese, Hind and English was successfully achieved in 2009.



ASTAP

- ▶ Standardization on Network-based S2ST technologies initiated at Asia-Pacific Telecommunity Standardization Program (ASTAP) since 2007
- ▶ Transfer standardization activity from ASTAP to *International Telecommunication Union Telecommunication Standardization Sector (ITU-T)* in 2009

Standardization at ITU-T

- ▶ Study Group: SG 16: Multimedia coding, systems and applications
- ▶ Working Party: WP 2: Applications and systems
- ▶ Questions: Q 21: Multimedia architecture/ Q 22: Multimedia applications and services
- ▶ The following Recommendations were approved on Oct. 14th, 2010.

	Title and Scope
F.745	Functional Requirements for Network-based S2ST (Functions and service requirements of network-based S2ST)
H.625	Architectural Requirements for Network-based S2ST (Functional architectures, mechanisms and interface of network-based S2ST)

MCML and MCP

Modality Conversion Markup Language: XML schema



S2ST Network using ITU-T standardization

Universal Speech Translation Advanced Research (U-STAR) is being launched.

