

## C-DAC Thiruvanthapuram

Name of the Technology : Malayalam Text to Speech (TTS) System (SUBHASHINI™)

Nature of Technology : Human Machine Interface System

Level : Product

### Technical Description:

The Malayalam Text to Speech system SUBHASHINI™ is a Windows based software, which converts Malayalam Text files into fairly intelligible speech output. The software is integrated with a text editor having ISCII, ISFOC and UNICODE support. The editor supports INSCRIPT Key board layout.

The TTS is based on Speech synthesis by diaphonic concatenation and consists of the following three modules together with the user interface module.

- Diaphone Database
- Text Processing module
- Speech Synthesiser

Block Diagram of the system is given in figure 2

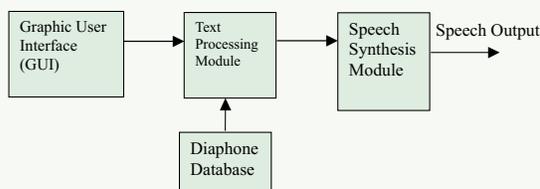


Figure 2.1 Block diagram of TTS

The Diaphone database consists of 2500 diaphones segmented from recorded words. All the commonly used allophones are also considered.

The text-processing module organizes the input sentences into manageable lists of words. It also identifies the punctuation symbols, abbreviation, acronyms and digits in the input data and tags the input data. These are then processed and converted to phonetic language - a language that the speech engine is able to recognise.

ISFOC Data (Input from file or User entered data)

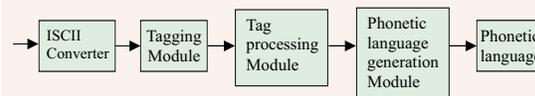


Figure 2.2 Block diagram for Text processing module

The concatenation of diaphones corresponding to the text is done in the Synthesis module and we get speech output. We are using the MBROLA speech engine for speech synthesis.

Developed on VB platform, Subhashini runs on Windows operating system.

Portability/Expandability/Scalability: The system can be expanded to handle intonation/prosody. Integration with website to readout web content is also possible.

Readiness of Transfer of Technology (ToT): Ready for ToT.

Availability of documentation: Available.

Testing of the Product/Technology: Third party testing to be done.

Potential beneficiaries: Speech and sight disabled, Telecommunication, Railways etc.

User-agency tie-up: Nil

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