



DARUMATO-3

Daruma doll is a **talisman of good luck originating from Buddhism**. According to the tradition, painting one eye of Daruma while making a wish will make it come true and protect the owner.

Based on this tradition, **researchers from WASEDA University** have developed DarumaTO-3, a robot providing company and monitoring the health of their users. The robot can communicate through voice interaction and facial expressions. **DarumaTO-3 has been introduced to older adults in Japan in the context of the EU-JP funded project "eVITA, Virtual Coach for Smart Ageing" and has obtained favorable acceptance.**

HOW DOES IT WORKS ?

DarumaTO-3 is operated by a mini central computer connected with:

- **sensors:** heat sensor, touch sensor and microphone,
- a touch **screen to interact** with the older adults,
- two motors to control Yaw (right-left) and Pitch (up-down) **movements**,
- a **printer to print out Omikuji***, advices and reminders,
- an external **cabling to the Kamidana**** which input, read and transfer personal information with DarumaTO-3.

FIRST USER'S OPINIONS

Several older participants carried out the experiments in Tohoku, Japan.



ASPECT, SHAPE, REACTION

Older users feel more comfortable interacting with a **familiar and already known character to be shaped into a robot**. One of the requirements from the older testers is to be sure the robot **has a direct reaction to an action**, e.g. nodding, to be sure that the device understood the action.

SPEECH INTERACTION WITH DarumaTO-3

Participants suggested that the less physical manipulation is made, better it is. Instead, **using the voice as much as possible** for the interaction with the robot seems to be more appreciated.

The **speech, the volume, and the speed of talking should be adjusted** according to the users' preference. We should also **take into consideration the recognition of dialects**.



READABILITY AND OMIKUJI* PRINTING

Readability of the text on the screen should be adapted to the users and to the **optical needs of older adults**.

Regarding Omikuji, **the speed of printing and the ease of cutting papers should be improved**. Having printed information is preferred because **it can be taken away**.



CONTENT OF PRINTING

Particular emphasis should be placed on any kind of **content that may be prone to be easily forgotten**: cooking, management of health, fortune telling, simple games, listening to interesting stories, having personal conversation, get information about the weather and news, searching information, reminder of the schedule.

* Omikuji are random fortunes written on strips of paper at Shinto shrines and Buddhist temples in Japan.

** Kamidana are miniature household altars provided to enshrine a Shinto kami.

