An Internet mobile phone-based "HOME HELPER" support system

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INTRODUCTION

In Japan, Home Helpers provide home welfare and care services for the care-requiring clients , such as cooking, bathing, washing, cleaning, shopping, etc.

They are required to check their schedules and input their reports into the computer at the employment office before and after care visits, which requires a significant amount of time and extra travel.

We recently reported the development of the web-based Home Helper support system using wireless Internet mobile phone service.

THE WEB-BASED HOME HELPER SUPPORT SYSTEM

Home page access

I-mode internet

I-mode mobile phone

Display unit

Server computer

The message recording

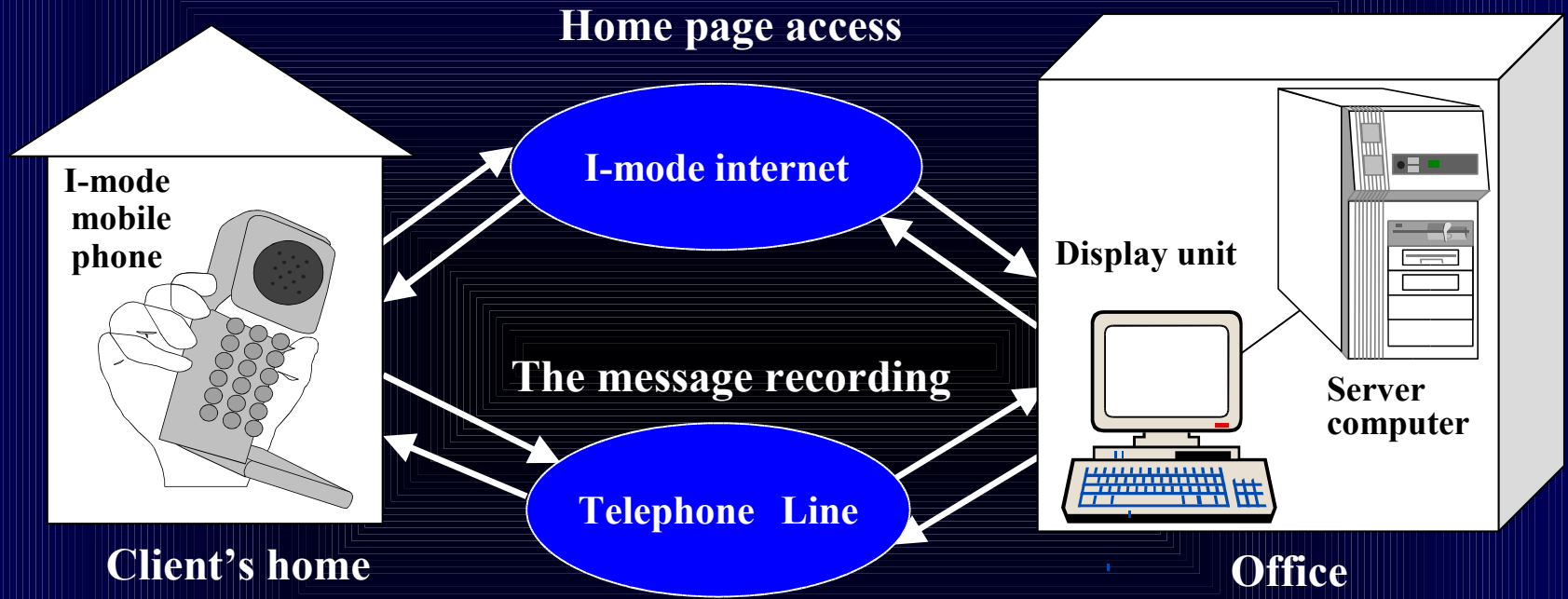**Telephone Line**

Client's home

Office

Figure 1. The overall web-based "Home Helper" support system. The system consists of a wireless internet mobile phone and a desktop computer. The desktop computer is used as a server computer, which contains home pages for entering care report by each Home Helper.

Large item

1.Care

Medium item

1.Meal	2.Excretion	3.Clothes detaching	4.Bathing	5.Body clean and shampoo	6.Transfer	7.Others (care)

Small item

1.Meal	2.Excretion	3.Clothes detaching	4.Bathing	5.Body clean and shampoo	6.Transfer	7.Others (care)
1.All support 2.Partial support 3.Helping drink water 4.Helping having snacks between meals	1.Helping excretion 2.Changing diapers 3.Leading to a bathroom 4.Using bedpan	1.Changing clothes (all support・partial support) 2.Changing bedclothes 3.Making bed	1.Bathing 2.Partial bathing	1.Cleaning body 2.Shampooing 3.Washing face 4.Cleansing 5.Haircut 6.Oral hygiene 7.Clipping nails 8.Hairdressing	1.Taking to the hospital 2.Changing of position 3.Wheelchair 4.Help on ride 5.Help shopping 6.Help walking 7.Help someone getting up 8.Taking somewhere	1.Poulticing 2.Health check 3.Vital Care 4.Mental support 5.Handling support 6.Operating a chair lift

Large item

2.Housekeeping   3.Consulting・advising   4.End

Medium item

1.Cooking food	2.Laundry	3.Cleaning	4.Shopping	5.Other (housekeeping)	1.Consultation (life)	2.Conference (nexus agency)

Small item

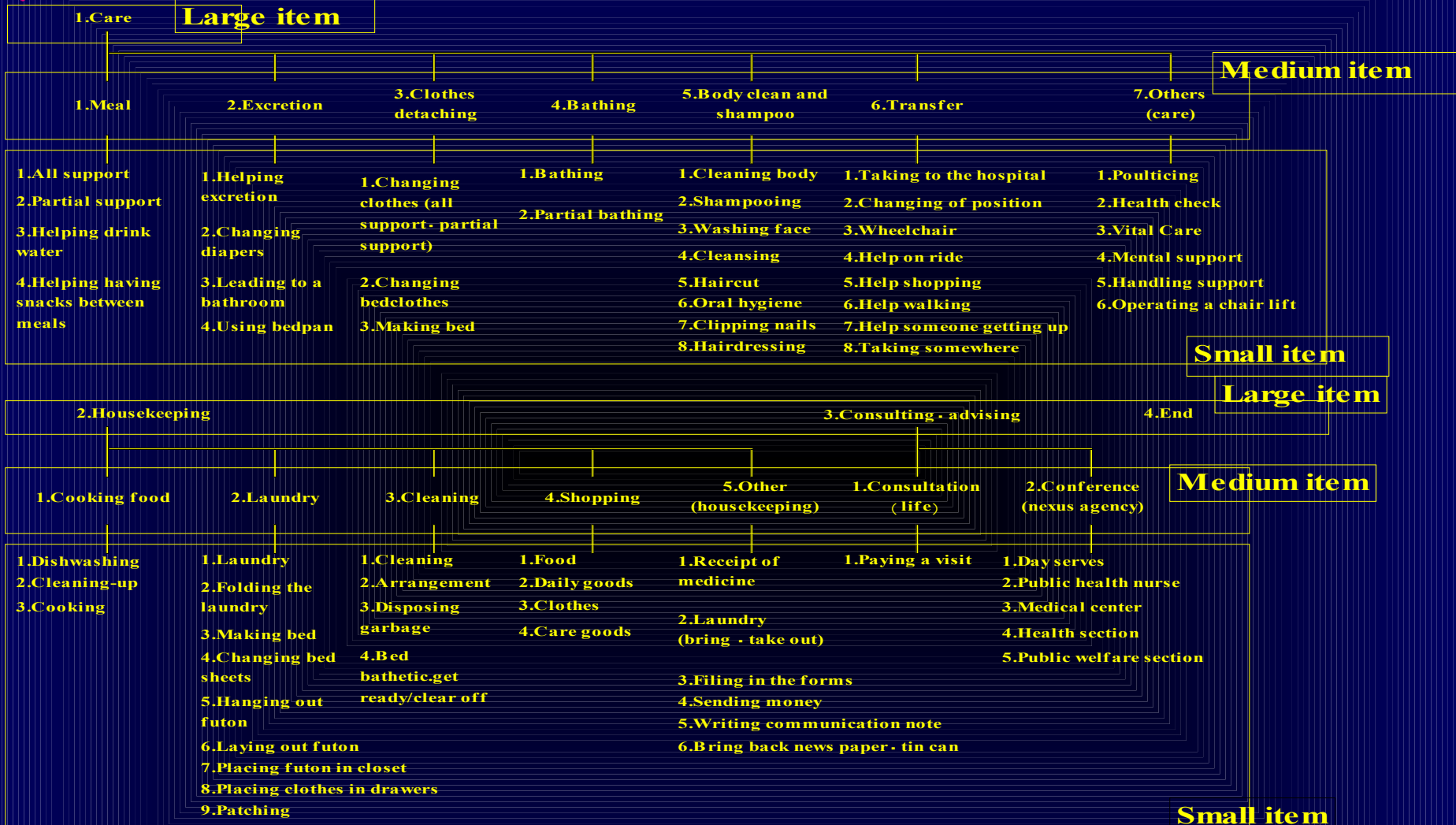| 1.Cooking food	2.Laundry	3.Cleaning	4.Shopping	5.Other (housekeeping)	1.Consultation (life)	2.Conference (nexus agency)
1.Dishwashing 2.Cleaning-up 3.Cooking	1.Laundry 2.Folding the laundry 3.Making bed 4.Changing bed sheets 5.Hanging out futon 6.Laying out futon 7.Placing futon in closet 8.Placing clothes in drawers 9.Patching	1.Cleaning 2.Arrangement 3.Disposing garbage 4.Bed bathetic.get ready/clear off	1.Food 2.Daily goods 3.Clothes 4.Care goods	1.Receipt of medicine 2.Laundry (bring・take out) 3.Filing in the forms 4.Sending money 5.Writing communication note 6.Bring back news paper・tin can	1.Paying a visit	1.Day serves 2.Public health nurse 3.Medical center 4.Health section 5.Public welfare section

Figure 2. The care task table. The table is comprised of large, medium, and small items. Each item is numbered. The Home helper can enter the care report to the home page by the number corresponding the care items.

1.Meal
2.Excretion
3.Clothes change
4.Bathing
5.Body and head shampoo
6.Hospital
7.Others(care)

Meal support
Excretion help
Arrangement

Figure 3. The homepage displayed on a small size LCD of the mobile phone. The Home Helper accesses the homepage by a registered access key on the mobile phone, and then the server computer sends a pass-word to the Home Helper's mobile phone.

The system could send care reports directly from the care-requiring client's homes to the office server computer and enables significant savings in time and unnecessary travel. However, the care parameters are often changed suddenly by request from the care-requiring clients, and the Home Helpers need to know these changes as soon as possible.

In this study, we developed an Internet mobile-based "home helper" support system, which enables faster communications between the care-requiring clients, care manager and the Home Helper for improvement of care efficiency.

SYSTEM DESCRIPTION

Telephone

Client's home

Java mobile phone

Home helper

Telephone carriers

Internet

Server computer

CT board

Office
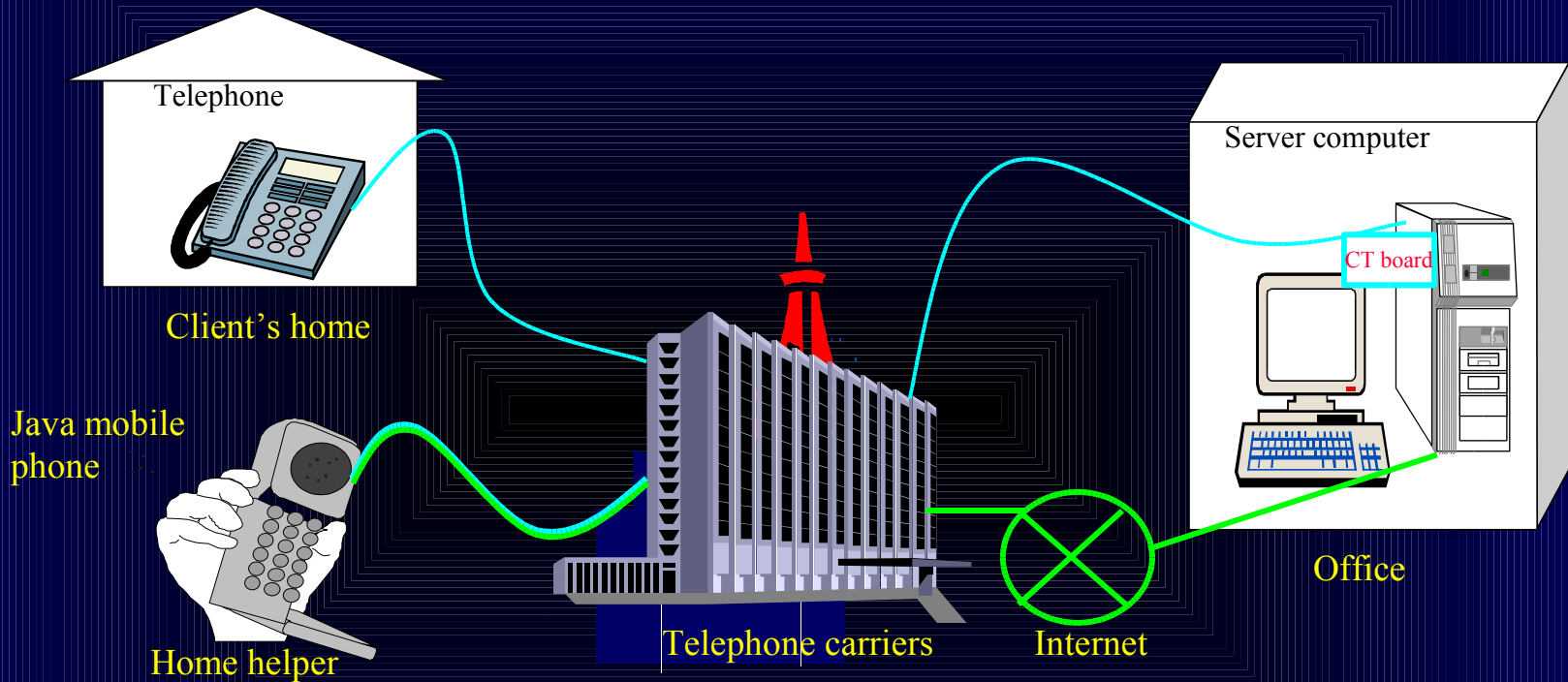
Figure 4. The overall Internet mobile phone-based "HOME HELPER" support system. The system consists of a conventional telephone, a server computer and a Java mobile phone. The care requests are sent from care-requiring clients to the server computer by voice via a conventional telephone.
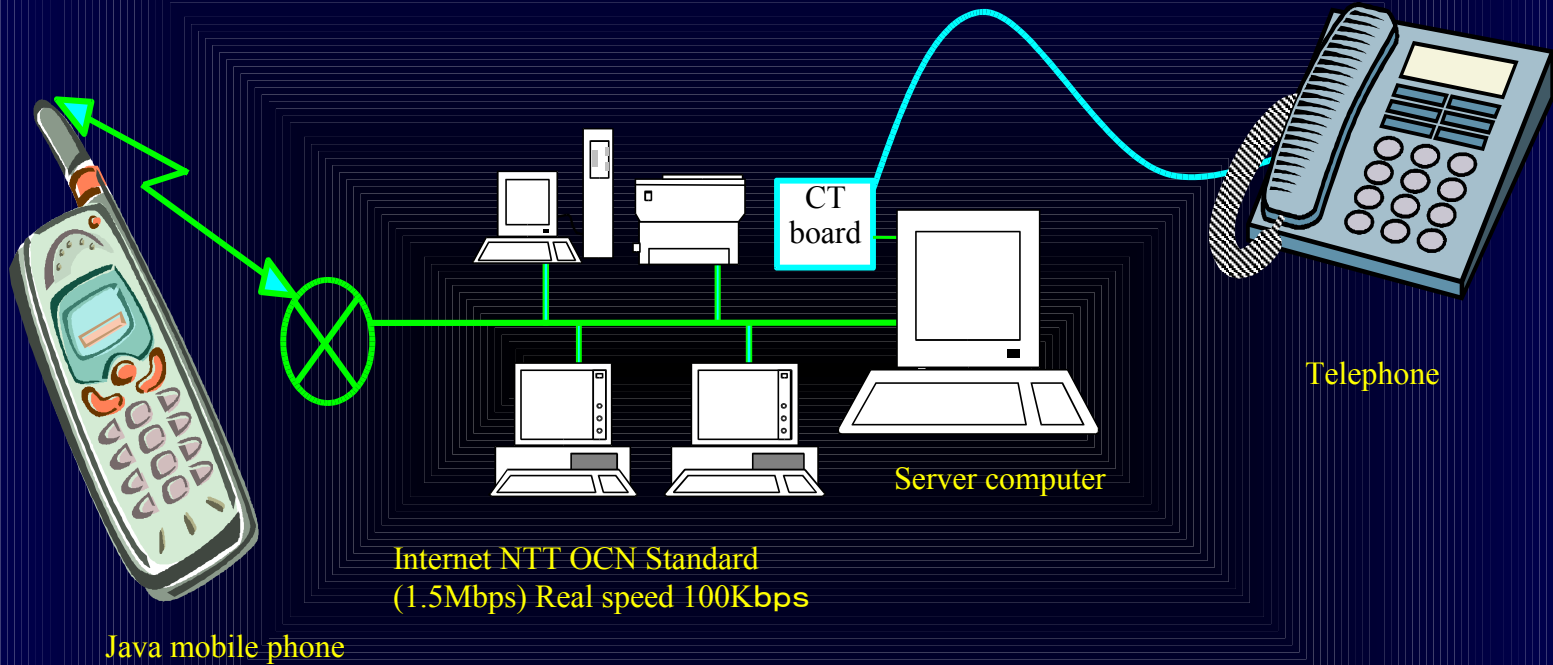
SYSTEM EXPERIMENTAL TRIAL

CT board

Telephone

Server computer

Internet NTT OCN Standard
(1.5Mbps) Real speed 100Kbps

Java mobile phone

Figure 5. The experimental trial system for measurement of communication time from conventional telephone at care-requiring client's home to the Home Helper's Java mobile phone.
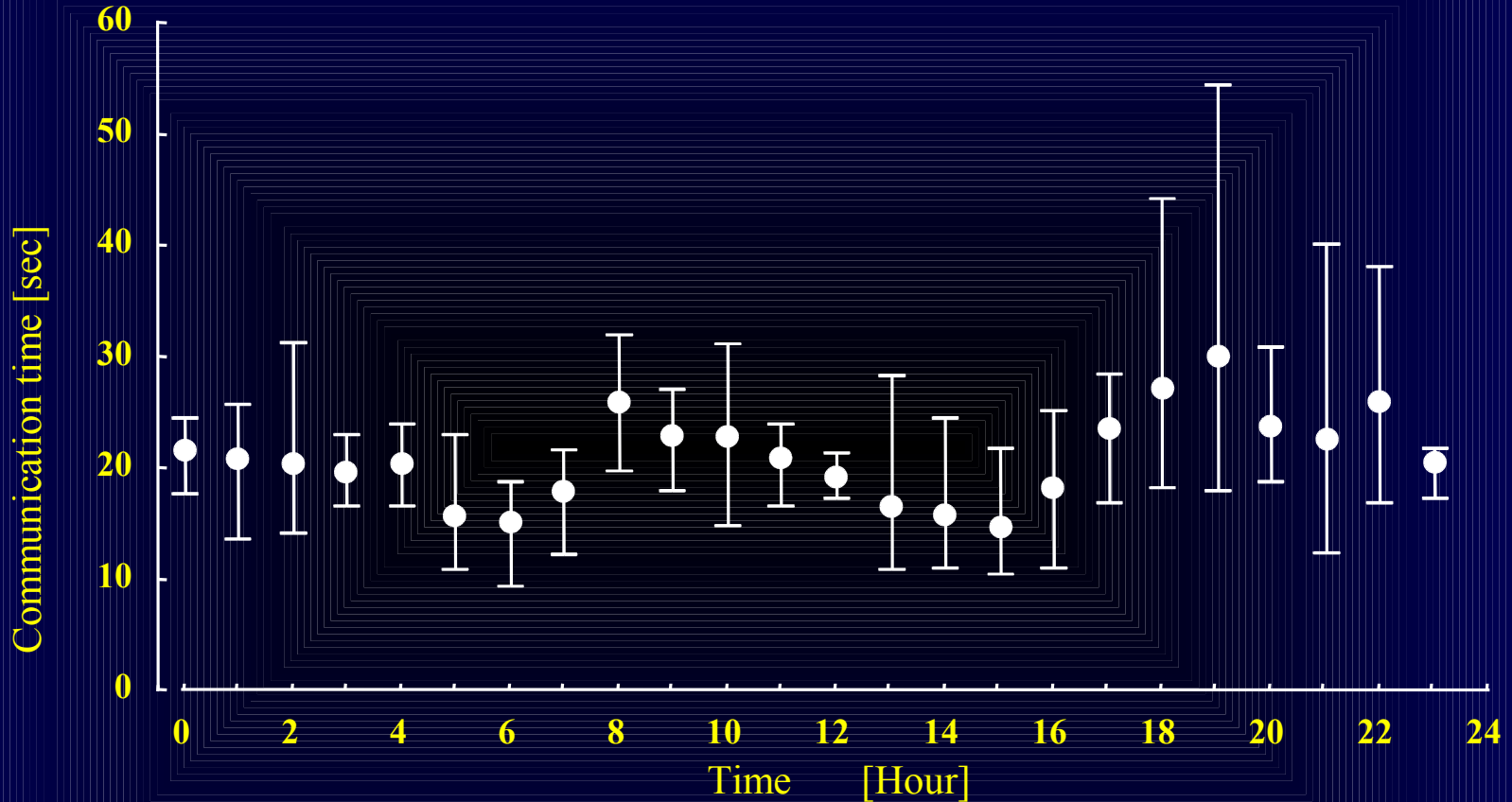
RESULT

Figure 6. The communication time, except for the 30 second voice recording period. The maximum and minimum communication times were 54.3 seconds and 9.3 seconds, respectively. The average communication time was 20.8 seconds.

CONCLUSION

- The developed system consists of standard telephones, Java mobile phones and a desktop computer.
- The system does not require any specialized equipment.
- The care-requiring clients can easily operate.
- The care-requiring clients can send their requests to the Home Helper and care manager via the server computer for 24 hours.