

Economic and Social Commission for Western Asia

**Al-Hadi Institution for the Deaf
and Blind**

**Arab Gulf Programme for United Nations
Development Organizations**

TRAINING MANUAL ON VISIOBRAILLE FOR BLIND PERSONS

United Nations

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New York, 2002

Preface

Published as part of the field project entitled Braille Computer Training for Blind Arab Boys and Girls, this Visiobrainle manual was prepared pursuant to the work programme for the 2002-2003 biennium of the Economic and Social Commission for Western Asia (ESCWA). The field project is being jointly implemented by ESCWA and Al-Hadi Institution for the Deaf and Blind in Lebanon. The latter is a Lebanese non-governmental organization serving as the training site for the project. One objective of the project is to coordinate activities and strengthen links between ESCWA and civil society with regard to improving attitudes towards disability-related issues.

The manual, which is technical in nature, has been prepared in Arabic and English. It should be noted that while both texts include the same material, that material is differently presented. The Arabic version is fuller than the English version, which provides only basic information. The manual is addressed to instructors, students and professional people involved in adapting new technology to serve disabled persons. The manual is also to be published in Braille format.

The aim of the manual is to facilitate the Braille training programme at the Al-Hadi Institution training centre and reflect the operational input of the training process itself. The scope of the manual has been standardized and expanded in order to maximize its use by other Arab trainers and trainees on Braille computers using the Visiobrainle system. It provides technical know-how that can be replicated and widely used in the region, thereby enhancing the quality of life of blind persons in the ESCWA region.

The latest Visiobrainle system works with a set of electronic Braille displays and input devices. Its tactile keyboard enables blind users to read, in Braille, information that is on the computer screen. It operates in Windows and gives access to Internet-based information.

Upon completion of training, students will have access to the Internet, e-mail, e-commerce, virtual education and related means of earning a livelihood.

This manual is the second such document produced by ESCWA in its continuing drive to improve the lives of disabled persons in the region. It was preceded, in 1998, by the document entitled Braille Computer Training Manual and Information Access Guidelines for the Blind in the ESCWA Region (E/ESCWA/SD/1998/9). Whereas the latter served as a computer-training manual using Braille applications, this manual is a training manual for Visiobrainle.

The manual may be obtained upon application to the following address:

Social Development Division
ESCWA
P.O. Box 11-8575
Riadh El-Solh Square
Beirut, Lebanon

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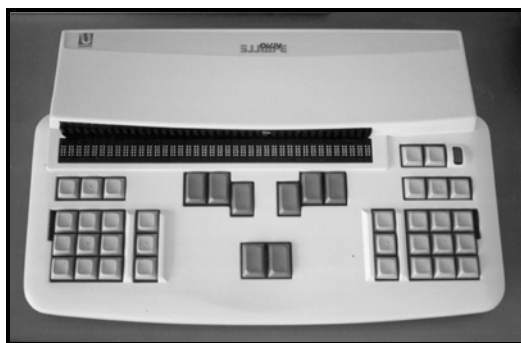
INTRODUCTION

The main objective of this manual is to provide a training tool for non-sighted and sighted people who intend to use a computer and the Visiobraille terminal. The help of all those who contributed to the publication of the manual and, in particular, the Economic and Social Commission for Western Asia (ESCWA), is gratefully acknowledged. The manual covers the most common computer processing applications, including word processing, spreadsheets, Internet browsing, chatting and e-mail management. It also covers the functions of the Visiobraille system in local and connected modes. In local mode, Visiobraille can be used as a lightweight note-taker, database tool and scientific calculator. When connected to a computer, in connected mode, Visiobraille provides easy access to various applications that run in the Microsoft Windows environment.

TABLE. ESTIMATED TIME NECESSARY FOR EACH TRAINING SECTION

Training section	Time (hours)
Introduction to Visiobraille	4-6
Introduction to local mode	4-6
Agenda	12-15
Text	10-15
Calculator	3-5
Local mode functions	4-6
Introduction to Visiobraille	4-6
Folder and files management	28-35
Internet browsing	25-30
MSN chatting	10-15
E-mail	10-15

Visiobraille terminals



Maxi Visiobraille
TVB2040



Mini Visiobraille
MiniTVB

I. TECHNICAL FEATURES

A. DEFINITION OF THE VISIOBRAILLE TERMINAL

The Braille terminals of the Visiobraille series include the TVB2040 model and the compact Mini-Visiobraille (MiniTVB) terminals. In this manual, “TVB” is used to refer to both models.

Visiobraille terminals consist of a tactile Braille line, a Braille keyboard and an auxiliary keyboard, and provide numerous local functions, including personal data management, a calculator, file transfer, a text processor and online grade two translation. When not connected to a personal computer (PC), they may be used as a notebook. The programmes of the standalone functions are stored in a programmable read-only memory (PROM), which can be replaced in order to permit the installation of new versions of the programmes.

The terminals may run on batteries, which on average provide some 10 hours of use. The MiniTVB battery can be replaced, and a backup battery allows the main one to be changed with no loss of data. The terminals may also be connected to the mains through the battery charger supplied.

B. FEATURES COMMON TO THE TVB2040 AND MINITVB MODELS

- (a) An eight-key Braille keyboard incorporating Braille dots, space and backspace keys;
- (b) Two user memories, namely, 512 KB of RAM and 2M of “local disk” flash memory;
- (c) A high-speed communication interface (56 Kbs) to communicate with the computer which can transfer a text file at a speed of 9,600 bps (eight information bits, no parity, two stop bits);
- (d) A machine run of 10 to 15 hours. With fully loaded batteries, data can be preserved for up to one month before batteries need to be reloaded. Data in RAM is kept for up to three days with batteries unloaded;
- (e) Located on the rear panel of the terminal are the socket to plug in the AC adapter and the nine-pin asynchronous communication connector.

C. FEATURES SPECIFIC TO THE TVB2040 MODEL

- (a) A tactile line of 20 (TVB2020 or TVB2020Jr) or 40 (TVB2040) Braille cells of eight dots;
- (b) Optional cursor routing: a small switch in front of every Braille cell enabling, *inter alia*, the cursor to be brought to the cell currently being read;
- (c) Optional liquid crystal display;
- (d) A 32 key auxiliary keyboard, where keys are set in four rows of eight keys. Each row is designated by a letter (from A to D) and within each row, each key is designated by the number of the column (from 1 to 8). The A4 and A5 keys have been displaced to the beginning of the tactile line. In version 4.0 and later models the auxiliary keyboard of TVB2040 can be used as normal (one function, one key), or like a MiniTVB (one function relates to a combination of several keys on the right-hand keyboard). In this document, it is assumed that the TVB is configured for a right-handed user;
- (e) Power button on the upper left-hand side of the terminal (to the left of the A4 key).

D. FEATURES SPECIFIC TO THE MINITVB MODEL

- (a) A tactile line of 20 Braille cells of eight dots;
- (b) Optional cursor routing;
- (c) Optional liquid crystal display;

(d) An 11 key auxiliary keyboard on which two keys are set on the right side of the tactile line, while nine keys are set in a three-row, three-column pad. The first two keys are equivalent to the A4 and A5 keys of the TVB2040 model, and permit the contents of the tactile line to be moved forwards and backwards. In this manual, they are referred to as A4 and A5. The nine key pad is equivalent to the right-hand pad of the TVB2040 model. On this keyboard it is possible to issue various commands by depressing several keys simultaneously. In this manual, the different combinations are shown as sequences of numbers side <> signs. The numbers are set out in the same sequence as on a telephone pad. Thus, the upper line consists of the <1>, <2> and <3> keys, the second line, of the <4>, <5> and <6> keys, and the bottom line, of the <7>, <8> and <9> keys;

(e) Power on button on the upper right-hand side of the terminal;

(f) Housing for main battery and backup (lithium 6V) on the left side of the terminal.

E. EQUIVALENCE OF TVB2040 AND MINITVB KEYS

In Visiobracile documents, the auxiliary keyboard keys are generally named with a letter and a number. On the MiniTVB, and in the 4.0 and later versions of the PROM on the TVB2040 model, every command can be typed using combinations of the auxiliary keyboard keys. The various TVB2040 keys are simulated with the following combinations:

A1=14	A2=25	A3=36	A4=147	A5=369	A6=47	A7=58	A8=69
B1=15	B2=13	B3=35	B4=12	B5=23	B6=1	B7=2	B8=3
C1=17	C2=46	C3=39	C4=45	C5=56	C6=4	C7=5	C8=6
D1=57	D2=79	D3=59	D4=78	D5=89	D6=7	D7=8	D8=9

Important notice:

Because TVB is an electronic device the user should always observe the following rules:

- (a) Run the device within normal conditions of temperature and humidity;
- (b) Keep the device away from water and heat;
- (c) Avoid the potential damage caused by using an AC adapter other than the one supplied;
- (d) Avoid allowing the batteries to completely run down: in so far as it is possible, it is recommended to work with the battery charger connected to the mains;
- (e) Make back-up copies of data on a regular basis;
- (f) Save data stored on RAM before leaving the TVB unused for several days.

F. PHYSICAL CONNECTION

1. *Main connection*

The AC adapter supplied with the TVB has two differently-shaped sockets. The small plug connects to the TVB back panel and the other plug connects to the mains. In order to switch off the power supply, unplug the battery charger from the outlet.

2. *Personal computer connection*

The cable supplied with the TVB is perfectly symmetrical, therefore, provided that the PC has a nine-pin plug, there are no special instructions for plugging it in.

If the PC has a 25-pin plug, an adapter is supplied.

One of the nine-pin sockets is to be connected to the terminal and the other to the serial output of the PC (COM1, COM2, COM3 or COM4).

Note: If the PC has more than two serial ports (COM), the additional ports must be configured with interruption levels that are different from the other two, in order to avoid any conflict.

G. HOW TO USE A TVB

1. *Starting a TVB*

In order to turn on a TVB, press the switch located on the upper left-hand corner (TVB2040) or upper right-hand corner (MiniTVB) of the device's keyboard. The following message should appear:

TVB-tx y.zz nn%

This welcome message indicates that the machine is ready to receive further commands, and gives the following information: t is worth W if the PROM can be connected to Windows, N if not; x is worth R if the TVB is equipped with a cursor routing device, H if not; y is the version numbers of the PROM and zz the release number (4.0g for example); nn% means that the user memory is used at nn%. The version number of the programme in the PROM is y.zz.

2. *Failure to start*

The message shown when TVB is turned on (TVB vers X.x...) shows that the system has passed the self-test. However, two types of misfunction may occur, as set forth below:

(a) *Complete destruction of data*

The following message appears:

MEMORY TO BE REINIT

indicates that data on the TVB have been deleted.

This can be caused by prolonged use of the machine with insufficiently charged batteries, or when no initialization has occurred after the above message, or when the machine is switched on for the first time.

This type of incident can only be dealt with by completely reinitializing the terminal, which will erase all stored data.

(b) *Partial destruction of data*

When the following message appears:

INVALID DATA BUFFERS

it is not clear which data files are in the memory. Save data to the PC before proceeding to a manual reinitialization. The data saved must be checked before being restored to the TVB.

H. INITIALIZATION

1. *Switching on for the first time*

When switching on the TVB for the first time, or whenever both batteries have been removed and then replaced, a memory test is run. During this test, the letters “TVB” are displayed on the tactile line, followed by a progressive memory check tested in blocks of 64k up to the maximum memory size.

At the end of the test, the following message will appear:

INVALID MEMORY

This indicates that the programme has deleted all data in the RAM memory.

2. *Manual reinitialization*

In order to reinitialize the TVB manually, do as follows:

- (a) Press down simultaneously on the A1-A2-A3 (TVB2040), or the <123> keys (MiniTVB), and keep them held down;
- (b) Briefly press, then release the “reset” button;
- (c) Release the A1-A2-A3 or <123> keys.

The TVB then runs a complete test of the remaining memory. The progress of the test is shown on the tactile line, which indicates the amount of memory already read.

The following message will then be displayed:

VOLUNTARY INIT

3. *Memory initialization*

After the different warning messages (VOLUNTARY INIT, INVALID MEMORY, INVALID BUFFERS), the following question will appear:

INITIALIZATION Y-N

Answer N to keep the data in memory. When the message “INVALID DATA BUFFERS” was the cause of the reinitialization, you can generally go on working without any risk. However, it is recommended to restart from backup data.

Answer Y to reinitialize totally, especially if the message “MEMORY TO BE REINIT” had appeared previously.

Warning: All data saved in the user memory will be deleted.

The following question appears:

Programs: 1...8

Give a number from 1 to 8. This will reserve between one and eight blocks of 16k in the RAM to be used later by a local programme. Once this programme has been loaded in the RAM, press D6-C7-D8 or <123> in order to run it.

If the initialization process was successful, the TVB welcome message will appear:

TVB-tx y.zz INIT.

where t x y and zz are the characteristics of the PROM which have already been described.

Because all parameters are set to their default values, it is necessary to reload the grade two rules table and the Braille codes tables.

If initialization was not successful, the following message will appear:

**** INVALID BUFFER ADR**

In that case, begin a manual initialization.

I. SWITCHING BETWEEN THE TWO RUNNING MODES

The TVB operates in two main modes:

(a) *Connected mode*. Each symbol typed with the Braille keyboard or the command keyboard is sent directly to the PC and each tactile line transferred from the PC is displayed immediately.

This mode has three local applications, namely, parameters management; visiobases (local files) management; and “in flight” grade-2 to grade-1 translation;

(b) *Local mode*. Each symbol typed on the terminal is translated by a local application which answers to the operator by sending messages on the tactile line and by sounding signals.

When turned on, the TVB normally sets itself to connected mode, provided it is connected to a PC on which Visiobraille can run.

1. *The local mode*

When the PC is turned off or not connected to the terminal, or when Visiobraille has not been initialized, the TVB switches automatically to local mode when any key is pressed.

It is also possible to switch manually from connected mode to the various applications of local mode by typing on the auxiliary keyboard the following sequences:

Parameters management:

<159>

Visiobases management:

<123>

“In flight” translation:

<789>

In local mode, utility functions may also be invoked (see corresponding paragraph).

2. *Connected mode*

To switch from local to connected mode, just press the A1 or <14> key from the main menu of local mode (see below).

A1 or <14>

Exiting a local application with the same code as was used to activate it (<123> for Visiobases management, for example) generally switches to connected mode.

Connected mode can only be run if the version of the PROM is compatible with the operating system of the PC, namely, MS-DOS, MS-DOS and WINDOWS, OS/2/PM and WIN-OS/2.

II. LOCAL MODE

A. APPLICATION

Even when not connected to a computer, Visiobrace is a powerful tool, offering the following features:

(a) The ability to create structured agenda files in which you can store and access data. The agenda will arrange your entries in alphabetical order;

(b) The ability to create structured text files for your writing, dividing them into paragraphs and sub-paragraphs, and giving them a book-like format;

(c) The ability to manipulate numerical formulas with the calculator, which carries out the most common calculating functions, including, root, exponential, pie, power and percentage. It also allows parameters to be assigned to values, helping the user to easily and efficiently re-use several results in different formulas.

B. CREATING AN AGENDA

Here are the steps needed to create an agenda. Please read them carefully. You will practise them in the exercise that follows below.

1. Make sure that you are in local mode.
2. Press [36]. The message {AGD or TXT a-t} will appear.
3. Type the letter (a). The following will appear: {name>_}
4. Type a name for your agenda file, e.g. agd1.
5. Press enter. A star with a cursor under it will appear: {*-}. This means that you are now inside a cell.
6. Type any content inside this cell.
7. Press [36]. The message {cell same level y} appears. Type (y) to create a same level cell.
8. Type any content inside this cell.
9. Press [25]. The message {dependent cell y-p} appears. Type (y) to create a dependent or sub-cell one level under the current cell. If you type (p) a sub-cell will be pushed under the current cell, also pushing the cells under it one level down. By typing (p) you will create a cell in the middle. If there is no cell under the current one, the effect will be as if you had typed (y).
10. After creating several cells and their corresponding dependent cells you can copy the content of one cell and paste it under or next to another one. Go to the cell you want to copy and then press [58]. The following message {Move or Copy m-c} will appear. "Move" will clean the content of the actual cell and put it in the memory, while "Copy" will take a copy of the content of the actual cell and put it in the memory.
11. Go to another cell and press [69]. The message {paste ins./dep. i-d} will appear. This command is needed to move the part of the memory that was created using the {Move or Copy m-c} command. Here, (i) stands for "Insert" and (d) stands for "Dependent". If you choose (i), the content of the memory will be pasted into another cell on the same level as the current one. If you press (d), then it will be pasted into a dependent cell under the current one.

Please note that [4] and [6] are used to move across the same level while [2] and [8] are used to move from one level to another inside an agenda.

Exercise 1. Creating your first agenda

In this exercise you will practise the features described above in order to create agenda files.

Scenario:

You would like to use the agenda utility in Visiobrain in order to store the phone numbers of your acquaintances.

Solution:

The names of the people should be on the first level of the agenda. Under each name, you will create a dependent cell in which you insert the phone number. If someone has more than one phone number you must create another dependent cell under the name or, if you are already under the name that you created, in the cell for the first phone number, you must create a same-level cell. Visualize the tree in your mind: a top-level cell that includes the name of the person, and two branches under it, each containing a phone number.

Follow these practical steps:

1. Turn on your Visiobrain terminal.
2. Make sure that you are in local mode.
3. Press [36]. The message {AGD or TXT a-t} will appear.
4. Type the letter (a). The following will appear {name>_}
5. Type the name for your agenda file, namely, "phone".
6. Press enter. A star with a cursor under it will appear: {*-}. This means that you are now inside a cell.
7. Type the name of the first person, Bob, for example.
8. Press [25]. The message {dependent cell y-p} will appear. Type (y) to create a dependent cell one level under "Bob". A star with a cursor under it will appear again: {*-}.
9. Type the phone number of "Bob", 123, for example.
10. Press [2] to go up to "Bob". If you press [2] again, you will see ^^agd, and if you press [2] again, you will be taken to the root of this file and you will see {>phone 0K 0%}.
11. Press [8] to go down to ^^agd, then [8] down to "Bob" and [8] again to go to 123.
12. As you will notice, [2] will take you up one level and [8] will take you down one level inside an agenda.
13. Go up to "Bob".
14. Press [36]. The message {cell same level y} will appear. Type (y) to create a same-level cell. A star with a cursor under it will appear again: {*-}.
15. Type "Tina".

16. Press [25]. The message {dependent cell y-p} will appear. Type (y) to create a dependent cell one level under “Tina”.
17. Type the phone number of “Tina”, 789, for example.
18. Because “Tina” has two phone numbers, you must create another cell on the same level as 789. Press [36]. The message {cell same level y} will appear. Type (y) to create a same-level cell.
19. Type Tina’s second phone number, 987 for example.
20. If you had thought about going up to “Tina” and creating a dependent cell from there, that is also correct and will produce the same result.
21. Use [2] and [8] to move up and down, and [4] and [6] to move on the same level.
22. You want to delete Tina’s (987) phone number. Go to the cell containing “987” under “Tina”. Press [57]. The message {erase arbo/cell a-c} will appear. Here, (a) stands for arbor and (c) for cell. If you press (a) the cell and everything under it will be deleted. If you press (c) only the current cell will be deleted and the cells under it will be pushed a level up in order to replace it.
23. If you want to modify the content of a cell, go to it then press [5]. The cursor will appear, allowing you to do so. Let’s modify the remaining phone number of “Tina”, namely, “789”. Go to “789” and then press [5]. The cursor will appear. You can also press on the cursor-routing buttons located each above every Braille cell on the tactile line.
24. Press on the cursor-routing button above the number 8 of “789”. You will find that the cursor is under the number 8. You can delete the number 7 by pressing “backspace” on the Braille typing pad, and you can delete number 9 by pressing [57]. As you will see, “backspace” deletes the character before and [57] deletes the character after. Delete the number 8 with [57] as well and enter the number 777. Cool phone number!
25. Go to “777” then press [58]. The following message {move or copy m-c} will appear. “Move” will delete the actual cell and put “777” in the memory, while “Copy” will make a copy of “777” and put it in the memory. Select (m). Notice that “Tina” appears and that there are no more cells under that one.
26. Go to “Bob” and press [69]. The message {paste ins./dep. i-d} will appear. This command is needed to take the content of the memory that was provided using the {move or copy m-c} command. Here, (i) stands for “Insert” and (d) stands for “Dependent”. If you choose (i), “777” will be pasted into another cell on the same level as “Bob” and “Tina”. If you press (d), it will be pasted into a dependent cell under “Bob”.
27. Logically, you will choose to press (d), because “777” is a phone number that you want to put under “Bob”. If you press (d), you will get the following message: {move or copy m-c}. This question refers to the content of the memory. If you want to keep the content of the memory, in order to paste it into another cell, choose (c) for “copy”, if not, choose (m) to move the content of the memory to the cell. For now, press (c).
28. The following message will appear: {insert impossible}. Why? Good question! Because there is a dependent cell already under “Bob”. Press [8] to go under “Bob” to 123, and then press [69] to paste again. Choose (i) for “insert” in order to have “777” on the same level as “123”. After that, press (c) to keep “777” in the memory. As you will notice, “777” has been pasted on the same level as “123”, under “Bob”.
29. Let’s go to “Tina” now. Press [8], then [6] and here is “Tina”. Now press [69] in order to paste. Choose (d) to put “777” under “Tina”. Then choose (m) to clear “777” from the memory. This time it works, because there is no dependent cell under “Tina”.
30. We have been through the most common functions of the agenda. Go through the steps of this exercise again in order to proceed with this exercise and fill in your phonebook.

Exercise 2. Simulating connected mode with agenda

Let's see how much you've learned about the agenda from exercise 1. This exercise will focus on the logic of creating and navigating through an agenda, and understanding the concept of levels. This exercise is of great importance, because it simulates real work with applications on the computer in the connected mode that you will work with later.

Scenario:

The U-Tech company wants to create a simplified application model. You heard about this and offered to create such a model using the levels concept of the agenda. The U-Tech board of directors liked your proposal and engaged you as Information Technology Consultant in order to perform this task.

Here is the application model:

On the first level there are two units: "Menu" and "Standard Functions".

On the second level, under "Standard Functions", there are three units: "Close", "Maximize", and "Minimize". Under "Menu" there are two units: "File" and "Edit".

There is no third level for "Close", "Maximize" or "Minimize".

On the third level, under "File" there are "New", "Open", "Save As", "Print" and "Close".

On the third level, under "Edit", there are "Undo", "Cut", "Copy", "Paste" and "Select All".

The only unit that has a fourth level is "New", under "File." It contains "Folder" and "Document".

Solution:

You can create this agenda either by proceeding with each level independently or you can look at its two main trees, namely, the "Menu" tree, containing its sub-trees, and the "Standard Functions" tree, containing one sub-level. Using the following steps you can create the agenda by creating each tree individually.

Follow these steps:

1. Turn on your Visiobrain terminal.
2. Make sure you are in local mode.
3. Press [36]. The message {AGD or TXT a-t} will appear.
4. Type the letter (a). The following will appear: {name>_}.
5. Type the name for your agenda file, e.g. "project".
6. Press enter. A star with a cursor under it will appear: {*-}. This means that you are now inside a cell.
7. Type the name of the first entry: "Standard Functions".
8. Press [36]. The message {cell same-level y} will appear. Type (y) to create a same-level cell for "Standard Functions". Again, a star with a cursor under it will appear: {*-}. Type "Standard Functions".

9. Press [25]. The message {dependent cell y-p} will appear. Type (y) to create a dependent cell one level under “Standard Functions”. A star with a cursor under it will again appear: {*-}.
10. Type “Close”.
11. Press [36]. The message {cell same-level y} will appear. Type (y) to create a same-level cell with “Close”, namely, “Maximize”.
12. Repeat step 11 and enter “Minimize”.
13. Press [2] to go up to “Standard Functions”.
14. Press [36]. The message {cell same-level y} will appear. Type (y) to create a same-level cell “Menu” next to “Standard Functions”. Again, a star with a cursor under it will appear: {*-}. Type “Menu”.
15. Press [25]. The message {dependent cell y-p} will appear. Type (y) to create a dependent cell one level under “Menu”.
16. Type “File”.
17. Press [36]. The message {cell same-level y} will appear. Type (y) to create a same-level cell for “Edit” next to “File”. Type “Edit”.
18. Remember that we use [2] and [8] to move up and down and [4] and [6] to go left and right through the same-level. Note that “Edit” is to the left of “File”, even though we created “File” first. That is because agenda puts entries on the same-level in alphabetical order.
19. Go to “File” and press [25]. The message {dependent cell y-p} will appear. Type (y) to create a dependent cell one level under “File”, namely, at the third level.
20. Type “New”.
21. Press [36]. The message {cell same-level y} will appear. Type (y) to create a same-level cell for “Open” next to “New”.
22. Repeat step 21 for “Save As”, then repeat it again for “Print” and “Close”.
23. Go to “New”, then press [25]. The message {dependent cell y-p} will appear. Type (y) to create a dependent cell one level under “New”, namely, at the fourth level. Type “Folder”.
24. Press [36]. The message {cell same-level y} will appear. Type (y) to create a same-level cell for “Document” next to “Folder”.
25. After creating all the entries we require under “File”, let’s go to “Edit” and create the entries that we want under it.
26. When you reach “Edit” press [25]. The message {dependent cell y-p} will appear. Type (y) to create a dependent cell one level under “Edit”, namely, at the third level.
27. Type “Undo”.
28. Press [36]. The message {cell same-level y} will appear. Type (y) to create a same-level cell for “Cut” next to “Undo”.
29. Repeat step 21 for “Copy”, “Paste” and “Select All”.
30. The project is complete. Imagine it in your mind and then verify that every entry is where you expect it to be.

C. CREATING TEXT

Here are the steps needed to create a text. Please read only the following steps carefully at this stage. You will practise them in the exercise that follows below.

The following steps should be taken in order to create a text:

1. Make sure you are in local mode.
2. Press [36]. The message {AGD or TXT a-t} will appear.
3. Type the letter (t). The following will appear: {name>_}.
4. Type a name for your text file, e.g. "text1".
5. Press enter. A star with a cursor under it will appear: {*-}. This means that you are now inside a paragraph.
6. Type any content inside this paragraph.
7. Press [25]. The message {paragr. same-level y} will appear. Type (y) to create a same-level paragraph.
8. Type any content inside this paragraph.
9. Press [36]. The message {sub-paragraphl y-p} will appear. Type (y) to create a sub-paragraph one level under the current paragraph. If you type (p), a sub-paragraph will be pushed under the current paragraph and push the paragraphs under it one level down as well. By typing (p), you will create a paragraph in the middle. If there is no paragraph under the current one, then the effect is the same as if you had typed (y).
10. After creating several paragraphs and the corresponding sub-paragraphs, you can copy the content of one paragraph and paste it under or next to another one. Go to the paragraph you want to copy, then press [58]. The following message {move or copy m-c} will appear. "Move" will remove the contents of the actual paragraph and place it in the memory, while "Copy" will make a copy of the content of the actual paragraph and put it in the memory.
11. Go to another paragraph and press [69]. The message {paste ins./dep. i-d} will appear. This command is needed in order to move the part of the memory that was created using the {move or copy m-c} command. Here, (i) stands for "Insert" and (d) stands for "Dependent". If you choose (i), the content of the memory will be pasted into another paragraph on the same-level of the current one. If you press (d), it will be pasted into a sub-paragraph under the current one.

Please note that [2] and [8] are used in order to move across the same-level, while [4] and [6] are used to move from one level to another inside a text.

Exercise 3. Creating your first text

In this exercise you will practise the text features described above.

Scenario:

You would like to write your curriculum vitae (CV) to submit with your job application to U-Tech. You would like to use the "Text" function in Visiobrace in order to do so. The title of each section of your CV should be on the first level. We move up and down within the same level inside a text. Next to each title you will write a sub-paragraph in which you insert the description. If a title has more than one description

you must create another sub-paragraph. Visualize the text in your mind, a top-level cell that includes the different section titles one under another and next to each title the corresponding descriptions also one under another.

Solution:

Your CV will be divided into four sections. Each section will have a title and the sub-level of each title will contain one or more corresponding descriptions. This is how your CV should look:

(a) First level: contains four titles, namely, “Personal Data”, “Objective”, “Education” and “Professional Experience”;

(b) Second level (next to “Personal Data”): contains the following sub-paragraphs: Date of birth, Marital status, Gender; and Contact information;

(c) Second level (next to “Objective”): contains the following paragraph: “To manage projects efficiently and deliver high quality on time”;

(d) Second level (next to “Education”): contains the following paragraph: “BA (subject), (name of university), (name of country)”;

(e) Second level (next to “Professional Experience”): contains the following sub-paragraphs:

(example)

1995- 2000: Managing space mission to Venus - NASA.

1990- 1995: Dean of Science - University.

Now build your own CV using same-level and sub-level paragraphs and other text-making techniques.

The steps needed to create a text:

1. Make sure you are in local mode.
2. Press [36]. The message {AGD or TXT a-t} will appear.
3. Type the letter (t). The message {name>} will appear.
4. Type a name for your text file, e.g. “text1”.
5. Press enter. A star with a cursor under it will appear: {*-}. This means that you are now inside a paragraph.
6. Type “Personal Data” inside this paragraph.
7. Press [25]. The message {paragr. same-level y} will appear. Type (y) to create a same-level paragraph.
8. Type “Objective” inside this paragraph.
9. Repeat steps 7 and 8 to type “Education”, and repeat for “Professional Experience”.
10. Press [2] and [8] to move across the same level to return to “Personal Data”.
11. Press [36]. The message {sub-paragraphl y-p} will appear. Type (y) to create a sub-paragraph one level under the current paragraph. If you type (p), a sub-paragraph will be pushed under the current paragraph, pushing the paragraphs underneath it one level down as well. By typing (p) you will be creating a

paragraph in the middle. If there is no paragraph under the current one, the effect is the same as if you had typed (y). In this case, choose (y). Then type: "Date of Birth, e.g. 31 February 2000".

12. Press [25]. The message {paragr. same-level y} will appear. Type (y) to create a same-level paragraph.

13. Type "Marital Status (as appropriate)" inside this paragraph.

14. Repeat steps 12 and 13 to type "Gender (m/f)", and repeat for "Contact Information, e.g. myname@hotmail.com".

15. Press [4] and [6] to move from one level to another inside your text file and to return to personal data.

16. Proceed with this exercise by yourself and enter sub-paragraphs for other sections.

D. FACILITIES COMMON TO AGENDA AND TEXT

(a) In order to rename a file go to it in local mode, but do not enter it. Press [5], and the cursor will appear: you may now modify the name. You can also use the cursor routing for the same purpose.

(b) In order to save a file in the flash memory, press [47]. The message {save Filename y-n} will appear. Type (y) to save.

(c) To delete a file, press [57].

E. CALCULATOR

Here are the steps needed to create a calculator. Please read the following steps carefully. You will practice them in the exercise that follows:

1. Make sure you are in local mode.
2. Press [36]. The message {AGD or TXT a-t} will appear.
3. Type the letter (a). The following will appear: {name>_}.
4. Type a name for your calculator file, e.g. "calcul".
5. Press enter. A star with a cursor under it will appear: {*-}. This means that you are now inside a cell.
6. Type the label of this cell preceded and followed by a colon, thus: "a:".
7. Enter the calculation you would like to make, e.g. 2+3.
8. You will have now the following: :a: 2+3.
9. Type {Ploc Ploc C}. Note that "Ploc" is the dot number five in Braille.
10. The result (5) will then appear as a dependent cell under your first entry.
11. Return to your calculation. Press [36]. The message {cell same-level y} will appear. Type (y) in order to create a same-level cell.
12. Type another label for this cell preceded and followed by a column, thus: "b:".
13. Enter the calculation you would like to make, e.g. 2+7.

14. You will have now the following: :b: 2+7.
15. Type {Ploc Ploc C}.
16. The result (9) will then appear as a dependent cell under your first entry.
17. Go up to your first entry again using [2]. Press [36]. The message {cell same-level y} will appear. Type (y) in order to create a same-level cell.
18. Type another label for this cell preceded and followed by a column, thus: :c:.
19. Now use those labels to create the following entry.
20. Enter the calculation you would like to make, e.g. "a+b".
21. You will have now the following: :c: a+b.
22. Type {Ploc Ploc C}.
23. The result (14) will then appear as a dependent cell under your first entry.
24. You got this result because a=5 and b=9 so a+b=14.
25. If you enter, for example, "a+b+10" the result will be 24".

F. RAM AND FLASH MEMORY

Local mode is divided into two physical addresses, RAM and flash memory.

RAM is a volatile location, because when a Visiobrain battery dies (but not when you turn off Visiobrain) all files there are lost. Agenda or text files that we call "Visiobases" can be created in this location. Each file name will begin with the symbol (>).

Flash memory is not a volatile location, because even when the Visiobrain battery dies, files located there will not be lost. However, first each file created in RAM must be saved. Only two things may be done with files in flash memory. File images from there may be saved and used in RAM, and files saved there may be deleted. Each file name begins with the symbol (:).

Files created in RAM are saved into flash memory using "Save".

File images may be taken from flash memory to RAM using "Load".

You will learn more about those procedures later in the manual.

G. WORKING IN RAM

This is where Visiobrain files, which we call "Visiobases", are created and manipulated. In RAM we can create agenda, text, and calculator files. In the following sections you will learn about each of these types of Visibase.

H. SAVE AND LOAD USING RAM AND FLASH MEMORY

In order to load a file from flash memory into RAM, follow these steps:

1. Start Visiobrain and make sure you are in local mode.

2. Press [25]. You will see a colon followed by a file name, e.g. “:agd1”.
3. The colon at the beginning of each word signifies that you are in flash memory.
4. You can perform two operations in flash memory, namely, delete a file by pressing [57], and load an image file into RAM. We say “image” because if the file is modified after being loaded into RAM, the modification will be saved in the file in the flash memory. The file must be reloaded into RAM and modified again in order to overwrite its original image in the flash memory.

I. MANAGING VISIOBASES

1. *General information*

This application is activated by striking the following keys simultaneously on the right hand pad:

<123>

or, as in the preceding versions, by typing on the Braille keyboard the sequence <PLOC><PLOC><RET> (where <RET> means space and backspace keys together).

If the TVB does not contain any local files, the following message will be displayed:

no file

If the opposite is the case, as is likely given that many cells are stored and available in the TVB as Visiobases, the following message will be displayed:

> XXXXXXXX nnK p%

Here, XXXXXXXX is the name of the Visiobase, nn its approximate size in Kbytes and p is the position of the current cell in the file.

Using the auxiliary keyboard in order to move within this horizontal menu is very easy and natural:

C6 or <4>	left-hand Visiobase
C8 or <6>	right-hand Visiobase
D7 or <8>	enter the displayed Visiobase
B6 or <1>	far left Visiobase
D6 or <3>	far right Visiobase

2. *Printing a Visiobase*

It is possible to print out a Visiobase using a Braille or normal printer connected to the serial port of the TVB.

A7 (or <58>) may be typed in the cell containing the name of a Visiobase, or <PLOC><PLOC>P can be issued from any cell of a Visiobase (see Visiobases management manual).

The programme will ask whether the device to which the TVB is connected is a printer (normal or Braille) or a PC:

printer or computer p-c

Answer p for a printer, and c for sending characters to a PC (keyboard entry simulation).

If the grade 2 rules table is loaded, the programme will then ask:

Trans gr1/gr2 n-1-2
--

If you answer 2 the text will be translated into grade 2 Braille form and will be reserved for a Braille print-out under the user's responsibility. No check is made on the text to be abbreviated or on the printer type.

If you answer 1 the text will be translated into grade 1 Braille. No check is made on the text to be expanded.

When the command is issued from a cell of the Visiobase, the programme asks whether the current cell or the whole tree it leads should be printed:

PRINT arbo/cell a-c

Answer c or a to print the current cell or the whole arborescence respectively.

This command begins the emission of all or part of the Visiobase in a printable format towards the communication interface.

If the connected device is a PC, the characters are sent to the PC just as if they had been typed on the Braille keyboard.

If the connected device is a printer, the characters are sent out through ASCII code at the speed of 9,600 bps. The text emitted is formatted in accordance with the parameters described in the relevant chapter. If the text contains special formatting or printer-driving sequences, these are interpreted and executed (see instructions in the Visiobases management manual).

3. *Utility commands*

(a) *Messages exchange with the PC*

When the TVB terminal is connected to a PC on which Visiobrain can be run, the two machines exchange character chains which can be entered on both using the following command:

<PLOC><PLOC>%

It is therefore possible to enter a character chain using <PLOC><PLOC>% when the TVB is running in local mode and to restore this chain with the command:

<PLOC>%

in an application run by the PC and vice versa.

(b) *Time display*

Press the following keys simultaneously:

<456>

The date and time is displayed in the format described in the clock setup paragraph.

(c) *How to stop the TVB*

Press the following keys simultaneously:

<357>

The TVB is then turned off.

III. CONNECTED MODE

A. FEATURES

Visiobraille is a powerful tool when connected to a computer, offering the following features:

- (a) The ability to create folders in which you can store and access files;
- (b) The ability to create formatted text files using such word processing programmes as Microsoft Word;
- (c) The ability to copy text files created on the Visiobraille into a computer word processing application while keeping the book-like format;
- (d) The ability to transfer files from Visiobraille to a computer and vice versa, using the WAGD utility;
- (e) The ability to connect and use the various features of the Internet, including e-mails, search engines and chatting.

B. VIEWING THE DESKTOP MENU

Whenever you turn on the Visiobraille in connected mode and press enter, the message { S:#Desktop } will appear. Press [2]=[B7], and the message {0:Start Button} will appear. Here you have a list of the standard Windows options available on any computer running Microsoft Windows. You can compare this list to a menu similar in its “architecture” to an agenda created in local mode. “Architecture” means here the ability to view the sub-menu of an item by pressing [8]=[D7] and of another item on the same level by using [4]=[C6] or [6]=[C8]. Here are the items that always appear on the start button menu (assuming that you pressed [6]=[C8] several times after you got the {0:Start Button} message):

1. Programs
2. Documents
3. Settings
4. Find
5. Help
6. Run
7. Shut Down

1. *Programs*

If you press [8]=[D7] after you reach {0:Programs}, the message {1:Menu1} will appear and you will have the programs sub-menu. You may use [4]=[C6] or [6]=[C8] to browse those items. The items in the Programs menu are shortcuts to the programmes installed on your computer, and include Microsoft Word, Microsoft Excel and Internet Explorer.

If you want to enter any of those programmes, you just click on the relevant shortcut or press enter, as we shall see in due course.

2. *Documents*

In the Documents sub-menu you find shortcuts to recently-opened files. However, this facility is not frequently used.

3. *Settings*

In “Settings” you will find “Control Panel”. Control Panel is where you can change the configuration of your computer, change the properties of your modem, or install a new network card. Also in “Settings” is “Printers”. This facility is useful for connecting your computer to a local or network printer. The final option

in “Settings” is “Taskbar”, which contains options for changing your programmes list. Normally, however, such tasks will be performed by computer technicians.

4. *Find*

This is a very useful tool for locating files or folders if you forget where you have saved them. It is common to forget where you saved a file, so keep in mind this facility. The other items in the “Find” sub-menu are rarely used.

5. *Help*

“Help” contains information about Microsoft Windows. You can use it to learn about a certain topic. However, it is quicker and easier to seek help from an experienced person.

6. *Run*

This is where almost all your work will begin. In “Run” you can type the location and name of your file and Windows will open it for you. You can also request an application to be run by entering its name here. For example, in order to run Microsoft Word, you can either go to “Programs”, look for the Microsoft Word shortcut then press enter, or you can go to “Run” and type “Winword”, then “Enter”.

7. *Shut down*

“Shut Down” is used to turn off or restart your computer, and to log in to Windows again. This facility is frequently used, and we will learn more about it later.

C. LEVELS CONCEPT

Before beginning any practical work, the concept of “level”, which is very important in connected mode, should be well understood.

There are three levels:

(a) Level 1 is the window level. You can get to this level by pressing [23]=[B7B8] simultaneously. You will get the name of the active window on which you are currently positioned. If you have opened several applications you can switch from one to another using Level 1.

(b) Level 2 is the “Command Menu” level or simply the “Menu level”. You can give a command, such as to save, print or close a file, to the window you are working in from this level. To access Level 2, press [56]=[C7C8] simultaneously. The message {#menu} will appear.

(c) Level 3 is called the document level or the body level, and is your work area inside a window. You write your text in a Word document in Level 3. You can also read the contents of a page from this level. To access Level 3 press [89]=[D7D8] simultaneously.

Visiobrain relies heavily on the level concept in order to manipulate the window environment. With practice, you will soon master this concept.

Exercise 4. Creating your first folder

A folder is a container or a box in which you can place any number of files and/or folders. Folders are the main elements in file management. It is highly recommended that you place your files in a folder. This will enable you to locate them quickly in the future, and to organize your work environment. You may, for example, put files related to work in a folder that you create and name “mywork”, and files related to your personal writing into another such folder named “personal”. Finally you can put both those folders in a folder

that you can create and name. This will protect your files if you share a computer, as is common in many workplaces.

Follow the steps below in order to create a folder:

1. Make sure that you are in connected mode and that the message {S:#Desktop} will appear.
2. Press [2]=[B7]. The message {0:Start Button} will appear.
3. You can go to “Run” by pressing [4]=[C6] twice, then pressing enter to open “Run”. Or, as a shortcut, you can type in Braille the letter R that will automatically open “Run”.
4. You can now read {A:Run}. Here, A stands for Active. Go to Level 2 then to Level 3.
5. Press backspace. The following will appear {Open: _}.
6. Type C:.
7. The C: window will open and you will read {A:C:\}. Press Level 2. The message {#menu} will appear.
8. Press [8]=[D7]. The message {-File} will appear.
9. Press [8]=[D7]. The message {-New} will appear.
10. Press [8]=[D7]. The message {:Folder} will appear.
11. Press enter.
12. Now go to Level 3, then press backspace and type the name of the folder you have just created, for example “Folder1” and press enter.

You have now created a folder on your hard disk (C) named “Folder1”. From now on you can store your files in this folder.

In order to enter this folder, go to “Run”, press Level 2, press Level 3, press backspace and type c:\folder1 before pressing enter.

Exercise 5. Creating and saving a text file in a folder

Now that you have created a folder, let's save a file inside it.

1. Go to “Run”.
2. Go to Level 2, then Level 3, then strike the backspace key.
3. Type “Notepad” in order to open a text document, then press enter.
4. You will read the following message: {A:Untitled Notepad}.
5. Go to Level 3 and type a few lines.
6. To save the file, go to Level 2. The message {#menu} will appear. Press [8]=[D7], and the message {-File} will appear.
7. Press [8]=[D7]. The message {-File} will appear.

8. Press [8]=[D7]. The message {-New} will appear. Press [6]=[C8] twice to reach the item {-Save}.
9. Press enter. A window called {A: Save As} activates.
10. Press Level 3, then the backspace key. The message {File name: _} will appear.
11. Type C:\folder1\text1, then press enter. Note that you first typed the location where you would like to put the file, then the name of the file, e.g. text1.txt

In the same manner you can create and save a Microsoft Word file. However, you can open the Microsoft Word application by typing “Winword” in “Run”.

Exercise 6. Setting the Arabic display in Microsoft Word

Here are the steps to set up the Arabic display in MS Word:

1. Open MS Word and make sure that the Simplified Arabic font is set (you can set it as the default font by going to Format/Font) from the menu bar.
2. Switch languages in the following order: English-Arabic-English-Arabic.
3. Type, and check that the characters are correctly displayed on the Visiobracille terminal.
4. If the problem persists you will need to transfer the Brail_fr.brl file located in the winvbrl folder in the system root folder.
5. After the file transfer is completed, go to local mode on the Visiobracille. Access the local disk (flash memory), browse to get to the “Braille_fr” file and then load it by pressing enter then “y”.

D. USING THE WAGD FACILITY

The WAGD utility is used in order to transfer files from a PC to Visiobracille.

Set forth below is the procedure to be followed in order to transfer a file from PC to TVB:

1. Make sure you are in connected mode.
2. Press “Ploc Ploc” then backspace and use the <4>=<C6> or <6>=<C8> keys to get to the (WAGD:Visiobases) utility. Press enter.
3. Press <2>=<B7> several times until you reach the highest level in the facility.
4. Using <4>=<C6> or <6>=<C8>, browse to reach 1-TVB<->PC transfers. Press enter.
5. Using <4>=<C6> or <6>=<C8>, browse to reach “Select Load TVB”. Press enter.
6. Using <4>=<C6> or <6>=<C8>, browse to reach “Select from any File”. Press enter.
7. Enter the full path of the folder, e.g. C:\winnt\winvbrl. Press enter.
8. Enter the file name, e.g. “c:\winnt\winvbrl\brail_fr.brl”. Press enter.
9. If a transmit error appears, either the path or the file name are incorrect. Repeat from step 6.
10. To exit the WAGD utility press “Ploc Ploc” then backspace, browse to find “Visiobracille”, then press enter.

IV. THE INTERNET

A. USING A WEB BROWSER TO SURF WEBPAGES ON THE INTERNET

The system developed only concerns hyperlinks recognition using HTML. Hyperlinks are run in Braille.

B. HYPERLINKS RECOGNITION

You can find this function on the client zone D5/<89> of the Web browser window. It can be activated using the A1/<14> key on the Visiobraille terminal. Activation should be confirmed by an audio signal (unless the audio indicator is retained in the parameters area).

When reading the client zone, links can be recognized by assigning a special character to each character in the link. Special characters correspond to dots 1 2 3 4 5 6.

Activating the A1/<14> (return to normal cursor) key, again exposes the link and shows it clearly.

C. ACTIVATING A LINK

You can activate a link by clicking (cursor routing) on any of its characters. The link is either exposed or hidden. Clicking on it displays on your tactile pad the URL address called.

That address is identical to the one displayed on the status bar of the Web browser window.

If the user wants to continue to explore the link, he/she may confirm that by re-activating the relevant cursor routing.

You come return to the client zone by activating the D5/<89> key.

D. GENERAL PRINCIPLES FOR USING THE INTERNET

In order to process hyperlinks contained in the client zone of a window, which are to be activated by the Visiobraille, you must personalize the window using the “Visio-Adapt” facility of Visiobraille.

This can be done using the “Parameters” function of “Visio-Adapt”.

Select the window and click on “Parameters”. On this window, choose the hypertext parameters according to the following format:

HTEXT x,y subwin.

HTEXT is the keyword identifying hypertext parameters;

x,y are colour codes for links;

x is the code for the link’s primary colour (when the link has not yet been exposed);

y is the code for the link’s secondary colour (when the link has been exposed).

Here is the colour code table to use:

Code	Colour
0	Black
1	Red
2	Green
3	Yellow
4	Blue
5	Purple
6	Cyan
7	White
8	Grey

Subwin refers to an object “under window” of the window to personalize. Such an object should have been defined according to the process planned in the “ Visio-Adapt” utility.

The “under window” traces the limit between the status line of the main Web browsers windows and is designed to display the link’s destination (URL).

x,y and subwin parameters have to be used for hyperlink recognition to be successful.

Here is an example of a definition: “HTEXT 4,5 status”.

Remark:

It is recommended to fix hyperlink colours in the Web browser (if the option is available) so that you can recognize them whatever webpage you are exploring.

The colours given above as examples are those that are automatically chosen for the constitution of HTML pages.

E. CHATTING

MSN has been selected because it is widely used and is easy to use with Visiobraille.

Here are the steps:

1. Open MSN.
2. Go to Level 3, where you will see the message “{Click here to sign in}”. Click on this message using the cursor routing.
3. Type “Ploc Ploc S”. The message {S>} will appear. Type user name, then press enter.
4. Start typing your Hotmail e-mail address.
5. Type “Ploc Ploc S”. The message {S>} will appear. Type password.
6. Then click on the space after the word “Password”.
7. The cursor will appear. Type your password.
8. Use [2]=[B7] and [8]=[D7] to move through the chatting.
9. Whenever you want to say something, just type it.
10. If you lose the cursor, press [5]=[C7] to bring it back.

Note: For further information and technical assistance contact the author of this manual at the following address:

MeDialog - Hobeika Center - 1st Floor - Hazmieh, Lebanon
* <http://www.medialog.ws/> * E-mail: medialog@medialog.ws
* P.O. Box 398 Hazmieh, Lebanon * Tel. and fax: 961 (0)5 950646 *Tel.: 961 (0)3 278230