HERDING CATS

A Roundup of **C**omputer-**A**ssisted **T**actile**s**

The capabilities of hardware and software to produce computer- assisted tactiles are growing exponentially. A national focus on better access to content in the subject areas of Science, Technology, Engineering and Mathematics (STEM) has served to support that growth.

Digital textbooks provide students with availability of educational material in a timely manner. With that availability, less hard copy braille is being provided to students. Although standards for descriptions of images in digital texts have been established, descriptions may not always be what students need to fully understand the concept, and do not support experience in decoding graphically-presented information and therefore being able to produce graphically-presented data when required. In a role that supports educational needs of students and clients, you will probably be required to produce support materials in the form of tactile graphics.

# From Print to Digital Image

Finding images

Most images you will need to produce will be specific content, e.g. come from the reader’s textbook, educational material or work documents. When the image provided is too complex to be rendered “as is”, finding an image that can be edited to meet the reader’s needs will speed up the process of production.

Sources for print images include National Geographic, Google maps, a state’s website, publisher’s website, NASA--just google it! Free images are readily available.

Sources for braille graphics include View International, APH Tactile Graphic Image Library, ViewPlus website, <http://www.tactilelibrary.com> (ZyChem’s site in UK). Other braille image collections are beginning to build.

Start a library of images that you produce or acquire and edit. Plan to share with your colleagues.

Getting the images into digital format is the next step.

Scanning and resolution

The software that came with your scanner will probably produce the best results for scanned images. Take the time to get to know your scanner and software. Try the same image at different resolutions (dpi).

File formats for graphics

Each software program that produces braille graphics has its own set of parameters. As this workshop explores programs, take note of the formats that will work with each one. If using a scanned image, your scanning software may have the options you need. If downloading an image for editing, the format may need to be converted. There are a number of free file conversion programs available. If you have access to more powerful programs such as Adobe Acrobat Pro, Illustrator, Photoshop, CorelDraw, learn to use the converter in that program.

Braille fonts

The size of readable braille used in the US is equivalent to 28 pt. font in print. You need to have a braille font in the fonts folder on your computer if you will be adding labels to a graphic using a basic drawing program such as MSDraw or Paint, and printing on microcapsule paper (swell paper). Graphics embossers automatically install braille fonts, as do braille translation programs. Check your computer to see if there are already fonts installed. If not, you can get them at

 Duxbury Systems <http://duxburysystems.com/products.asp>

 Scroll down to Freeware, select TrueType Fonts Download

Note that there are three types of fonts:

 Braille brl (just makes dots)

 Simbraille simbrl (includes shadow dots for the dots in the cell that aren’t used)

 Swell braille especially designed for capsule paper

Several programs natively produce uncontracted braille for labels, but will allow you to type in the ASCII character equivalent to input braille contractions, punctuation and composition signs, producing contracted braille, or Nemeth symbols. Download a handy ASCII keyboard chart from National Braille Association <http://nationalbraille.org/NBAResources/ASCIIKeyboard/>

Producing your own drawings-

**MSDraw** is included in all versions of Microsoft Office Word. To access it:

 In Word 2003, go to View|Toolbars|Drawing. You will see the drawing tool bar at the bottom of the screen. You can click and drag to the location that works best for you.

 In Word 2007, the drawing tools are accessed through the ribbon by clicking Insert|Shapes. Once a tool is selected and a shape is inserted in a document (docx), the drawing tool bar appears.

Files created in Draw are saved as .doc or .docx and can be sent straight to a ViewPlus embosser, or converted to another format.

**Paint**  is native in Windows. To access it, go to All Programs|Accessories|Paint.

Files can be saved as bmp, jpeg, gif, tiff, png formats for import into other programs.

**Wacom tablets** work as an extended mouse and allow you to draw an original, import a copy and trace with stylus on a tablet connected to your computer.

**QuickTac** is a free program from Duxbury in which you can produce low resolution graphics for a standard braille embosser. A graphic file can be embedded in a text file and embossed all at one time. Download the most recent version 4.0 (Beta 1) from

<http://www.duxburysystems.com/product2.asp?product=QuickTac&level=free&action=pur>

Editing existing braille graphics

 a. [www.apg.org/tgil/](http://www.apg.org/tgil/) Tactile Graphic Image Library- Inkscape

 b. <http://downloads.viewplus.com/examples/> Tiger graphics

 c. [www.viewinternational.org](http://www.viewinternational.org) former Purdue project- TAEVIS

## Design of Tactile Graphics, Including CATS

Incorporating careful design into your work will insure that the graphics are readable. After a significant amount of research and literature review, a new ‘braille code” for tactile graphics has been adopted and is now the standard for North America. You can view an html, searchable copy of the *BANA/CBA Guidelines and Standards for Tactile Graphics* at [www.brailleauthority.org/tg](http://www.brailleauthority.org/tg)

Print and braille versions will be available from APH "soon". In addition to the copy of the manual, a supplement volume including hard copy graphics in a range of production media will be available.

This publication sets the standard for production of tactile graphics. It overrides all other guidelines- APH , TAEVIS, Guidelines for Mathematical Drawings (1983), current Braille Formats.

Enabling Technologies—Phoenix and Firebird

The Phoenix is the latest embosser on the market, with its software Firebird. It is unique in that it has two embossing heads. The braille is standard size and shape (ala Romeo, Juliet) and it produces high resolution (25 dpi) graphics with the other head. Firebird includes its own braille translation program, Firebird Transcriber and Firebird Graphics, a powerful graphics design program.

ViewPlus Embossers and Tiger Software Suite

Commonly called “Tiger embosser” the ViewPlus line of embossers produce both text and graphics. All models use the same graphics software- Tiger Software Suite (TSS). Some embossers also add color to graphics, interline braille text, or do both. We will be focusing just on graphics production in this workshop.

Tiger embossers will produce any file that can be sent to a print printer. They appear as printers in your computer’s printer folder. If you are planning to use the software on a computer that is not directly connected to an embosser or a networked embosser, you must still install the printer driver on your computer for the software to work correctly.

Saving a graphic in a .prn format allows you to open it in Tiger Designer and modify the braille graphic and add braille labels.

IVEO is a touch pad and companion product for Tiger embossers. Once a graphic is produced, it can be placed on the IVEO and audio tags can be added to the tactile with the authoring portion of the software. Audio-tactile presentations can be much richer than either media, separately.

graphics using this combination during the workshop.

**Other Access to Graphics**

Touch Graphics [www.touchgraphics.com](http://www.touchgraphics.com) produces several audio-tactile products that provide graphics as well as speech. They also offer authoring programs so you can produce your own audio-tactile graphics.

The Talking Tactile Tablet (TTT) is a touch tablet and is sold with several starter sets of templates, software, and authoring tool. Also available is a world atlas produced in conjunction with National Geographic. It is also used for the SAL Braille Programs from .

The latest developments include STEM graphics combined with a Talking Tactile Pen (TTP), a Livescribe Pulse pen that has been programmed to provide multiple levels of information . The pen touches the tactile graphic of a periodic Table of elements and speaks the name of the element, abbreviation, atomic weight, etc. There are other STEM graphics, with the collection rapidly growing.

Touch Graphics also worked with Smith Kettlewell Research Institute to develop TMaps. A braille map of a specific area or neighborhood is requested and is produced in hard copy and mailed to you. They developed the software that allows very quick production from a Google map.

**Summary**

There are currently a number of choices for production of tactile graphics. Expect that the availability of options will continue to increase. The resources you have available to you will determine how you produce graphics. The most important thing is to produce GOOD graphics for your readers.

Thank you for your commitment to providing quality graphics to readers! Lucia Hasty

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