

## Braille with SensusAccess

Updated May 12, 2015

SensusAccess can convert documents into Braille according to a number of national Braille systems and contraction levels. Furthermore, SensusAccess can format and paginate Braille, and deliver the resulting files as either portable Braille or Braille encoded for a particular Braille device or Braille character set.

## National Braille systems

SensusAccess supports the following national Braille systems and contraction levels:

- **American English Braille.** Grade 1 and Grade 2 Braille in 6-dot notation.
- **British English Braille.** Grade 1 and Grade 2 Braille in either 6-dot or 8-dot notation.
- **Bulgarian Braille.** Grade 1 in 6-dot notation.
- **Danish Braille.** Grade 1 (Fuldskrift), Intermediate (Lille forkortelse) and Grade 2 (Stor forkortelse) in either 6-dot or 8-dot notation. Furthermore decontraction of contracted Danish Braille into normal text.
- **French Braille.** Grade 1 in 6-dot notation.
- **German Braille.** Grade 1 (Vollschrift) and Grade 2 (Kurzschrift) in either 6-dot or 8-dot notation.
- **Greek Braille.** Grade 1 in 6-dot notation.
- **Hungarian Braille.** Grade 1 in 6-dot notation.
- **Icelandic Braille.** Grade 1 in either 6-dot or 8-dot notation.
- **Italian Braille.** Grade 1 in 6-dot notation.
- **Norwegian Braille.** Grade 1 (Fullskrift), Grade 2 (Kortskrift level 1) and Grade 3 (Kortskrift level 2) in 6-dot notation.
- **Polish Braille.** Grade 1 in 6-dot notation.
- **Portuguese Braille.** Grade 1 in 6-dot notation.
- **Romanian Braille.** Grade 1 in 6-dot notation.
- **Slovenian Braille.** Grade 1 in 6-dot notation.
- **Spanish Braille.** Grade 1 in 6-dot notation.

## Formatting and embossing

SensusAccess includes a number of facilities to convert character sets, format and emboss Braille documents. Internally, SensusAccess uses the OctoBraille character set, a Braille variant of the standard Windows 1252 character set also known as Latin 1.

## Exporting to your embosser or display

If your Braille embosser is capable of formatting, word-wrapping and paginating Braille documents or if you are reading on a refreshable Braille display or Braille note taker, then you may only want SensusAccess to return your document in the Braille character set of your device, and let the

embosser or display handle the rest. To do that, simply select the Braille character set of your Braille embosser when you submit your request to SensusAccess. In SensusAccess terminology, such a target Braille character set is called an export filter. The table below summarizes the export filters currently supported by SensusAccess:

| Export filter      | Function   |
|--------------------|--|
| braille-lite       | Braille Lite with US character set.  |
| braille-note       | Braillenote note taker.  |
| Brailelite         | Braille Lite with US character set.  |
| Braillenote        | Braillenote note taker.  |
| Computerbraille    | North American Computer Braille. This is the standard character set of many Braille embossers. |
| Dbs                | Interpoint Elekul at the Danish Association of the Blind.                                      |
| dbs_elekul         | Interpoint Elekul at the Danish Association of the Blind.                                      |
| Eurobraille        | EuroBraille.   |
| german_ascii       | German computer ASCII.   |
| Germanascii        | German computer ASCII.   |
| ibm850             | IBM code page 850.   |
| ibos_elekul6       | Interpoint Elekul at the Danish Institute for the Blind and Partially Sighted                  |
| italian_jaws       | Italian JAWS.  |
| Italianjaws        | Italian JAWS.  |
| Logtext            | Log-Text Braille notetaker with old character set.   |
| logtext5           | Log-Text Braille notetaker with old character set.   |
| NACB               | North American Computer Braille. This is the standard character set of many Braille embossers. |
| Unicode            | Unicode Braille (in the 2800-28FF range).  |
| us437              | IBM code page 437.   |
| uscomputerbraille2 | North American Computer Braille. This is the standard character set of many Braille embossers. |

If your Braille character set is not included in the list above, please send an email to [sensus@sensus.dk](mailto:sensus@sensus.dk) with a character-by-character specification of the character set. The character set will then be added to SensusAccess when the system is next updated.

Note that SensusAccess also supports export of Braille to Unicode. A certain section of the Unicode specification has been set aside for Braille, in hexadecimal notation the range from 0x2800 to 0x28FF. Exporting your Braille to Unicode will allow you to mix text and Braille in the same text document, and also to create visual Braille illustrations, e.g., for proofing and educational purposes.

## Formatting Braille documents

To format your Braille document to a particular paper format, you can apply special export filters prefixed *format*. In addition to the prefix format, you need to select the required page width, page length and whether you want your document paginated. The syntax is *formatXXYYp* where *XX* specifies the number of characters per line, *YY* the number of lines per page and *p* pagination. The use of *p* is optional.

The table below lists the formatting options currently supported by SensusAccess:

| Format filters | Function   |
|----------------|--|
| format2929     | 29 characters per line, 29 lines per page without pagination |
| format2929p    | 29 characters per line, 29 lines per page with pagination    |
| format3025     | 30 characters per line, 25 lines per page without pagination |
| format3025p    | 30 characters per line, 25 lines per page with pagination    |
| format3028     | 30 characters per line, 28 lines per page without pagination |
| format3028p    | 30 characters per line, 28 lines per page with pagination    |
| format3227     | 32 characters per line, 27 lines per page without pagination |
| format3227p    | 32 characters per line, 27 lines per page with pagination    |
| format3229     | 32 characters per line, 29 lines per page without pagination |
| format3229p    | 32 characters per line, 29 lines per page with pagination    |
| format3329     | 33 characters per line, 29 lines per page without pagination |
| format3329p    | 33 characters per line, 29 lines per page with pagination    |
| format4025     | 40 characters per line, 25 lines per page without pagination |
| format4025p    | 40 characters per line, 25 lines per page with pagination    |

If your paper format is not included in the list above, please send an email to [sensus@sensus.dk](mailto:sensus@sensus.dk) with a specification of format. The format will then be added to SensusAccess when the system is next updated.

## Using the Portable Embosser Format

The Portable Embosser Format – or PEF – is a standardized way of embossing Braille documents, and is the recommended format for Braille produced by SensusAccess. Based on XML and Unicode, PEF is a document type that represents Braille pages in digital form, accurately and unambiguously; regardless of language, location, embosser settings, braille code and computer environment. PEF can be used for Braille embossing and archiving anywhere in the world, irrespectively of how the Braille was produced.

SensusAccess uses special export filters (prefixed *pef*) to render Braille in PEF. Along with the prefix *pef*, you need to specify the requested page width, page length, whether you want your document paginated, and whether you want duplex printing. The syntax is *pefXXYYpd* where *XX* specifies the number of characters per line, *YY* the number of lines per page, *p* pagination and *d* duplex. The use of *p* and *d* are optional, and either one can be used irrespectively of the other.

The table below lists the PEF options currently supported by SensusAccess:

| PEF filters | Function  |
|-------------|---|
| pef2929     | 29 characters per line, 29 lines per page without pagination.         |
| pef2929d    | 29 characters per line, 29 lines per page with duplex.                |
| pef2929p    | 29 characters per line, 29 lines per page with pagination.            |
| pef2929pd   | 29 characters per line, 29 lines per page with pagination and duplex. |
| pef3025     | 30 characters per line, 25 lines per page without pagination.         |
| pef3025d    | 30 characters per line, 25 lines per page with duplex.                |
| pef3025p    | 30 characters per line, 25 lines per page with pagination.            |
| pef3025pd   | 30 characters per line, 25 lines per page with pagination and duplex. |
| pef3028     | 30 characters per line, 28 lines per page without pagination.         |
| pef3028d    | 30 characters per line, 28 lines per page with duplex.                |
| pef3028p    | 30 characters per line, 28 lines per page with pagination.            |
| pef3028pd   | 30 characters per line, 28 lines per page with pagination and duplex. |
| pef3227     | 32 characters per line, 27 lines per page without pagination.         |

| PEF filters | Function  |
|-------------|---|
| pef3227d    | 32 characters per line, 27 lines per page without duplex.             |
| pef3227p    | 32 characters per line, 27 lines per page with pagination.            |
| pef3227pd   | 32 characters per line, 27 lines per page with pagination and duplex. |
| pef3229     | 32 characters per line, 29 lines per page without pagination.         |
| pef3229d    | 32 characters per line, 29 lines per page without duplex.             |
| pef3229p    | 32 characters per line, 29 lines per page with pagination.            |
| pef3229pd   | 32 characters per line, 29 lines per page with pagination and duplex. |
| pef3329     | 33 characters per line, 29 lines per page without pagination.         |
| pef3329d    | 33 characters per line, 29 lines per page without duplex.             |
| pef3329p    | 33 characters per line, 29 lines per page with pagination.            |
| pef3329pd   | 33 characters per line, 29 lines per page with pagination and duplex. |
| pef4025     | 40 characters per line, 25 lines per page without pagination.         |
| pef4025d    | 40 characters per line, 25 lines per page without duplex.             |
| pef4025p    | 40 characters per line, 25 lines per page with pagination.            |
| pef4025pd   | 40 characters per line, 25 lines per page with pagination and duplex. |

If your paper format is not included in the list above, please send an email to [sensus@sensus.dk](mailto:sensus@sensus.dk) with a specification of the format. The format will then be added to SensusAccess when the system is next updated.

Following conversion into Braille in PEF, the result from SensusAccess is an XML file in Unicode with a .PEF extension. To send the PEF file to an embosser, an embossing utility is required. Sensus recommends the use of the free Easy Embossing Utility, developed by the inventors of the PEF format. The PEF Easy Embossing Utility supports most available Braille embossers and can be downloaded from the following link: [www.pef-format.org](http://www.pef-format.org). As an alternative, the Daisy Pipeline includes scripts for embossing PEF files.

Once installed, files with the .PEF extension are associated with the PEF Easy Embossing Utility and double-clicking a PEF file will open the interface to the utility. The first time the application is launched, you will need to specify the brand and model of your Braille embosser, the paper format and the Braille character set used by the embosser.

In addition to embossing, the PEF Easy Embossing Utility also features a preview option.