

SECANT

Product integration



Overview

SECANT can be used as a stand alone workstation application or can be invoked in a variety of ways to add optimization functions to other software.

- **Command line** options are available for both Windows and Linux.
- The pattern optimization function is available as an entry point in a **Dynamic Linked Library (DLL)**.
- Jobs that have been created either by SECANT itself or by external software can be processed by an instance of SECANT running in **Automatic Mode**. In this mode a job queue folder is continuously scanned and any jobs found in that folder are processed according to a script file. On completion the job (along with its results) is copied to a user specific output folder.

See also the Technical Reference section of the SECANT help system.

Windows Command Line

A script of SECANT actions can be executed by adding the job location, the job name and the name of a script to the WSEC.EXE command line.
e.g.

wsec.exe script
c:\wsec\bin\commands.scp
c:\wsec\data\ sample

(processes the job named *sample* in the *data* folder for the actions given in *commands.scp*).

The script

The script language supports the following actions.

- Optimize (create a pattern set).
- Consolidate (merge identical cut items).
- Print a named report.
- Create a PDF file of a named report.
- Save details of the job to the job registry.
- Create an NC file for transmission to the saw.

The job can be created by SECANT or by external software.

Creating a job

A SECANT job is made up of four ASCII files.

- a **job file** <jobname>.job. The job file contains descriptive and status information about the job. The job file for an external job to be processed by a command line call may be empty.
- a **cutting list** <jobname>.cut. The cutting list contains one record for each cut piece. As a minimum the piece dimensions and the number of units required must be provided. A full list of the cutting list fields can be found in the SECANT help system.
- a **stock file** <jobname>.stk. The stock file contains one record for each stock item (including offcuts). As a minimum the stock dimensions and the number of units available must be provided. A full list of the stock list fields can be found in the SECANT help system.

- a **control file** <jobname>.ctl. The control file comprises records of the form

#<control number>=value

A default value is assumed for any control not in the control file. Hence the file need only contain any controls taking non-default values. A full list of control values and their defaults can be found in Appendix B of the SECANT help system.

Data fields are separated by commas. Numeric data can be entered to any precision. Text fields must be enclosed in double quotes.

Linux command line

Two separate executables are available for the LINUX operating system; the first offers pattern generation functionality, the second report production.

Pattern generating

Single jobs in SECANT may be run by appending the job path, job name and optionally the system path to the call to WOPT.EXE. The third argument is optional – if both the system files and job files are in the same directory, just the job path needs to be specified.

e.g. **wopt.exe ./data/ test ./**

would generate patterns for the job named “test” in the data directory, assuming that the system files were in the current directory. Jobs should be created in the same way as for Windows

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(see section Windows Command Line/Creating a job)

Running a report

Once the patterns have been generated for a job by the call to WOPT.EXE the user can generate reports in post script format by a call to WSEC.EXE. The format of the call is as follows:

```
wsec.exe {data dir} {job name}
{report name} {main ini file}
{user ini file} {system dir} {lang
dir}
```

The report name should be given including the extension .rep, and is a simple ascii file written in the standard SECANT report syntax (see the SECANT help file for more information).

The main ini file, user ini file, and the system and lang directories will usually be defaulted to wsec.ini, user.ini and the current directory

The SECANT DLL

A job is optimized by calling the exported **Optimize** function of the **WOPT32DLL.DLL** library. **Optimize** uses the standard C calling convention. Alternatively **Optimize** may be called by its ordinal number (1).

```
long __export
Optimize ( HWND hWnd, char
*pszDir, char *pszJob, char
*pszSystem long jFlags, long
lpfnCallBack)
```

- **hWnd** - the Windows handle of the calling application. This may be set to zero.
- **pszDir** - the full path name of the directory where the job to be optimised is found

(including the final backslash).

- **pszJob** - the job name.
- **pszSystem** - the name of the directory on which the files **lines.fed** and **wsec.typ** can be found. These files can be copied from the SYSTEM directory of the issued system.
- **jFlags** - a three digit flag. The first digit is for internal use and should be set to zero. The second digit is set to 1 if an incomplete set of patterns provided by the user in the pattern file are to be added to by this call so as to create a complete pattern set. The third digit is set to 1 if the in-built progress dialog is to be suppressed.
- **lpfnCallBack** - the address of a call back function that is supplied by the application programmer and is called periodically by the *Optimize* function to pass progress information back to the user and to speed up or cancel requests from the user. If this address is zero and a progress dialog has been requested (see *jFlags*) then the progress dialog built into the DLL will be used instead. See the SECANT Help system for a description of the arguments of the callback function.
- **Return Value** - Returns 0 if the procedure was aborted by the user. Returns 1 otherwise.

Automatic mode

When SECANT is placed in **Automatic Mode** or **Server Mode** it scans one or more folders (queues) for jobs. Once

detected each job is processed according to a script. Typically the

job is optimized and a printed report is produced

Creating a queue

A queue is defined by creating a <queuname>.QUE file in the SERVER sub folder. This file defines:

- The name of the folder to be scanned for jobs.
- The name of the network user whose jobs are to be processed by this queue.
- The name of a script file to be used when processing a job.
- The name of the default stock file to be used if no stock file is given for the job.
- The name of the default control file to be used if no stock file is given for the job.
- The name of the folder to receive the job after successful processing.
- The name of the folder to receive the job after unsuccessful processing.
- The lifetime of files in the output and failure folders.

From the main SECANT menus you may nominate the queues that are to be processed by this instance of SECANT. Several workstations may service the same queue and a single workstation may service several different queues.

Adding jobs to a queue

Jobs may be created either by SECANT itself or by external software. The external software must create at least the job file and the cutting list. If the stock and control files are not created then the default stock and control

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files specified for the queue will be used. The job file should be last of the four files created as it is the existence of this file that

triggers the processing of the job using the script. Successful jobs are copied (along with their pattern and material usage files) to the output folder. Unsuccessful jobs are copied to the designated failure folder.

The Queue Manager

The Queue manager (QMAN) is a utility supplied with SECANT that enables you to manage queues of jobs. You may,

- set up queues through simple dialogues,
- view the jobs that are in a queue,
- hold and release individual jobs
- and start and stop the processing of queues.

Contact information

If you have any further questions or would like to arrange for a demonstration then please contact us at the address given below, or visit our website at www.pslopt.co.uk.

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