Functions in CDP Packages and Groups
~ Release 7 ~

The CDP suite consists of over 400 functions. Most of these are grouped into separate programs; for example, the program BLUR has ten functions: BLUR AVRG, BLUR BLUR, BLUR CHORUS, etc. For reference purposes, many Function Groups also have separate (standalone) programs assigned to them; their names are shown here within square brackets. The Groups have also been organised into Component Packages, as shown in the table below.

This document lists all CDP functions, with a brief description of each. In the HTML version, the function name is linked to its reference documentation. Many CDP programs also have several MODES, which are described in the reference documentation. In some cases the modes are as different as separate functions.

CDP Component Packages

CDP PACKAGES	GROUPS/CATEGORIES ([TD] = Time Domain, [SD] = Spectral Domain)			
CDP-FOCUS	BLUR [SD]	FILTER [TD]	FOCUS [SD]	HILITE [SD]
CDP-MORPH	COMBINE [SD]	FORMANTS [SD]	MORPH [SD]	ONEFORM [SD]
CDP-PITCH	MODIFY [TD]	PITCH [SD]	PSOW [TD]	REPITCH [SD]
	STRETCH [SD]			
CDP-TEXTURE	TEXTURE [TD]			
CDP-X	DISTORT [TD]	EXTEND [TD]	GRAIN [TD]	STRANGE [SD]
CDP-UTILS-1	ENVEL [TD]	ENVNU [TD]	HOUSEKEEP [TD]	MULTICHANNEL [TD]
	TANGENT [TD]	TRANSIT [TD]	SFEDIT [TD]	SNDINFO [TD]
	SUBMIX [TD]	SYNTH [TD]		
CDP-UTILS-2	PVOC [SD]	PITCHINFO [SD]	SPEC [SD]	SPECINFO [SD]
	SPECNU [SD]			
CDP-EXTRAS	MC-TOOLKIT [TD]	REVERB [TD]	SYS_UTILS [TD]	
CDP-OPTIONS	ALGORITHMIC	GRAPHIC		

List of Functions in Groups and Packages

Function names in square brackets are separate programs. The others are sub-modules of a Group program.

CDP-FOCUS – focusing and blurring

| BLUR | FILTER | FOCUS | HILITE |

CDP Processing Functions to BLUR sonic material (BLUR)

AVRG	Average spectral energy over *N* adjacent channels
BLUR	Blur spectral data over time
CHORUS	Add random variation to amplitude or frequency in analysis channels
DRUNK	Modify sound by a drunken walk along analysis windows
NOISE	Add noise to spectrum
SCATTER	Randomly thin out the spectrum
[SELFSIM]	Replaces spectral windows with the most similar, louder window(s)
SHUFFLE	Shuffle analysis windows according to a specific scheme
SPREAD	Spread spectral peaks
SUPPRESS	Suppress the most prominent channel data
WEAVE	Weave amongst the analysis windows in a specified pattern

CDP Processing Functions to FILTER sonic material (FILTER)

BANK	Bank of filters, with time-variable Q
BANKFRQS	Generate a list of frequencies for use in a filter bank (add amps for use with FILTER USERBANK)
[FILTRAGE]	Generate randomised VARIBANK filterbank files
FIXED	Cut or boost, above, below or around a given frequency
ITERATED	Iterate sound, with cumulative filtering by a filterbank
LOHI	Fixed low-pass or high-pass filter
PHASING	Phase shift a sound, or produce a 'phasing' effect
SWEEPING	Filter whose focus-frequency sweeps over a range of frequencies
USERBANK	User-defined filterbank, with time-variable *Q*
VARIABLE	Lo-pass, high-pass, band-pass or notch filter, with variable frequency
VARIBANK	User-define time-varying filterbank, with time-variable *Q*
VFILTERS	Make (text) datafiles for fixed-pitch FILTER VARIBANK filters

CDP Processing Functions to FOCUS on sonic material (FOCUS)

ACCU	sustain each spectral band, until louder data appears in that band
EXAG	exaggerate the spectral contour
FOCUS	Focus spectral energy onto the peaks in the spectrum
FOLD	Octave-transpose spectral components into a specified frequency range
FREEZE	Freeze the spectral characteristics in a sound, at given times, for specified duration
HOLD	Hold sound spectrum steady for given durations, at certain times
STEP	Step-frame through a sound by freezing the spectrum at regular time intervals
[SUPERACCU]	Sustain each spectral band until louder data appears in that band

CDP Processing Functions to HIGHLIGHT sonic material (HILITE)

ARPEG	Arpeggiate the spectrum
BAND	Split spectrum into bands and process these individually
BLTR	Time-average and TRACE the spectrum
FILTER	Hipass, lopass, bandpass and notch filters, on spectral dat
[GLISTEN]	Randomly partition the spectrum into bins and play back in order
GREQ	Graphic EQ type filter on the spectrum
PLUCK	Emphasise spectral changes (use e.g. with HILITE ARPEG)
TRACE	Highlight *N* loudest partials, at each moment (window) in time
VOWELS	Impose vowels on a sound

CDP-MORPH – combinations, morphing and transitions of spectra

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COMBINE | FORMANTS | MORPH | ONEFORM

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CDP Processing Functions to COMBINE spectra (COMBINE)

CROSS	Replace spectral amplitudes of 1st file with those of 2nd
DIFF	Find (and retain) the difference between two spectra
INTERLEAVE	Interleave (groups of) windows of several spectra
MAKE	Generate a spectrum from only & formant data
MAKE2	Generate a spectrum from only pitch, formant & envelope data
MAX	Retain loudest channel components per window amongst several spectra
MEAN	Generate the mean of two spectra
[SPECROSS]	Interpolate partials of pitched *inanalfile1* towards those of pitched *inanalfile2*
[SPECSPHINX]	Impose the channel amplitudes of *inanalfile2* onto the channel frequencies of *inanalfile1*
[SPECTWIN]	Combine the formant and/or total spectral envelopes of 2 spectra
SUM	Add one spectrum to another

CDP Processing Functions to manipulate FORMANTS (FORMANTS)

GET	Extract evolving formant envelope from an analysis file
GETSEE	Get formant data from an analysis file and write as a pseudo-soundfile for viewing
PUT	Impose formants in a formant data file on the spectrum in a PVOC analysis file
SEE	Convert formant data in binary formant data file to a pseudo soundfile for viewing
VOCODE	Impose spectral envelope of one 2nd sound onto 1st sound

CDP Processing Functions to MORPH spectra (MORPH)

MORPH BRIDGE	Make a bridging interpolation between two sound spectra by interpolating between 2 time-specified windows in the 2 infiles
MORPH GLIDE	Interpolate linearly between any 2 single analysis windows extracted with SPEC GRAB
MORPH MORPH	Morph between one spectrum and another, where spectra may be time-varying
NEWMORPH NEWMORPH	Morph between dissimilar spectra
NEWMORPH NEWMORPH2	Output a textfile of prominent peaks OR Morph between dissimilar spectra using the textfile

CDP Operations with Single Formants (ONEFORM)

GET	Extract formant-envelope at a specific time in an existing CDP formant file
PUT	Impose the formant-envelope in a single-moment-formants datafile onto the sound in an analysis file
COMBINE	Generate a new sound from pitch information and a single-moment-formant

CDP-PITCH – transposition, pitch-warping, harmony, tuning, loudness, echo &pan

MODIFY	PITCH	PSOW	REPITCH	STRETCH

CDP Processing Functions to MODIFY sounds (MODIFY)

BRASSAGE	Granular reconstitution of a soundfile
CONVOLVE	Convolve the first sound with the second
[DSHIFT]	Add Doppler effect to panning
FINDPAN	Find stereo pan-position of a sound in a stereo file
LOUDNESS	Adjust loudness of a soundfile
[NEWDELAY]	Adjust loudness of a soundfile
[PHASE]	Invert phase or enhance stereo separation of a sound
RADICAL	Radical changes to the sound
REVECHO	Create reverb. echo or resonance around a sound
SAUSAGE	Granular reconstitution of several soundfiles scrambled together
SCALEDPAN	Distribute sound in stereo space, scaling pan data to soundfile duration
SHUDDER	Shudder a soundfile
SPACE	Create or alter distribution of sound in stereo space
SPACEFORM	Create a sinusoidal spatial distribution data file
SPEED	Change the speed and pitch of the source sound
STACK	Create a mix that stacks transposed versions of source on top of one another

CDP Processing Functions to work with PITCH & harmony (PITCH)

ALTHARMS	Delete alternate harmonics
CHORD	Transposed versions of a sound are superimposed on the original
CHORDF	Transposed versions of the spectrum are superimposed within the existing spectral envelope
OCTMOVE	Octave transpose without a formant shift
PICK	Only retain channels which might hold specified partials
TRANSP	Shift pitch of (part of) the spectrum
TUNE	Replace spectral frequencies by harmonics of specified pitch(es)
[TUNEVARY]	Replace spectral frequencies with the harmonics of specified pitch(es)

CDP PSOW: Processing Functions to manipulate pitch-synchronised grains (FOFs)

CHOP	Chop sound into sections between specified FOF-grain (chunks) OR: Chop away sections of soundfile that you DON'T want to manipulate with PSOW functions
CUTATGRAIN	Cut at exact grain time
DELETE	Time shrink sound by deleting a proportion of the pitch-synchronised grains
DUPL	Timestretch/transpose a sound by duplicating the pitch-synchronised grains
FEATURES	Impose new features on a vocal-type sound, preserving or modifying FOF-grains
GRAB	Grab a pitch-synchronised grain from a file, and use it to create a new sound
IMPOSE	Attempts to impose vocal FOFs in 1st sound onto a 2nd sound
INTERLEAVE	Interleave FOFs from two different files
INTERP	Interpolate between 2 pitch-synchronised grains, to produce a new sound. Grains acquired by PSOW GRAB, with duration 0.0
LOCATE	Locate exact start time of nearest FOF-grain
[PTOBRK]	Convert pitch trace from binary .frq to text breakpoint file (.txt or .brk) for PSOW functions
REINFORCE	Reinforce harmonics in a vocal-type FOF-grain file
SPACE	Distribute the alternate FOFs in the sound over a stereo space
SPLIT	Split vocal FOFs into subharmonic and upwardly transposed pitch regions
STRETCH	Timestretch/transpose a sound by repositioning the pitch-synchronised grains. The grains themselves are not time-stretched.
STRTRANS	Timestretch/transpose a sound by repositioning the pitch-synchronised grains, and overlapping them
SUSTAIN	Freeze and sustain a sound on a specified pitch-synchronised grain
SUSTAIN2	Freeze and sustain a sound on an explicitly specified grain (start-end)
SYNTH	Impose vocal FOFs on a stream of synthesised sound

CDP Processing Functions to REPITCH (further modify) pitch data (REPITCH)

ANALENV	Extract the window-loudness envelope of an analysis file
APPROX	Make an approximate copy of a pitchfile
BRKTOPI	Convert a breakpoint pitch data file to a binary pitch data file
COMBINE	Generate transposition data from 2 sets of pitch data, or transpose pitch data with transposition data, or combine 2 sets of transposition data to form new transposition data, producing a binary pitch data file output
COMBINEB	Generate transposition data from 2 sets of pitch data, or transpose pitch data with transposition data, or combine 2 sets of transposition data to form new transposition data, producing a *time value* breakpoint file output
CUT	Cut out and keep a segment of a binary pitch data file
EXAG	Exaggerate pitch contour
FIX	Massage pitch data in a binary pitchfile
GENERATE	Create binary pitch data from a textfile of *time midi* value pairs
GETPITCH	Extract pitch from spectrum to a pitch data file
INSERTSIL	Mark areas as silent in a pitch data file
INSERTZEROS	Mark areas as unpitched in a pitch data file
INTERP	Replace noise or silence by pitch interpolated from existing pitches
INVERT	Invert pitch contour of a pitch data file
NOISETOSIL	Replace unpitched windows by silence
PCHSHIFT	Move pitches in a pitch data file by a constant number of semitones
PCHTOTEXT	Convert binary pitch data to textfile
PITCHTOSIL	Replace pitched windows by silence
QUANTISE	Quantise pitches in a pitch data file
RANDOMISE	Randomise pitch line
SMOOTH	Smooth pitch contour in a pitch data file
SYNTH	Create spectrum by following the pitch contour in a pitch data file
TRANSPOSE	Transpose spectrum (spectral envelope also moves)
TRANSPOSEF	Transpose spectrum: but retain original spectral envelope
VIBRATO	Add vibrato to pitch in a pitch data file
VOWELS	Create a spectrum of vowel sounds, following the pitch contour in a pitch data file

CDP Processing Functions to STRETCH a sound in time or spectrum (STRETCH)

SPECTRUM	Stretch/compress the frequencies in the spectrum
TIME	Stretch/compress a sound in time without changing the pitch
[STRETCHA]	Utility to calculate *timestretch* factor for use with STRETCH TIME

CDP-TEXTURE – texture-builder with harmonic/set options

TEXTURE

CDP Processing Functions to build complex and supple TEXTURES, often on harmonic lattices (TEXTURE)

SIMPLE	Create textures from single events (Also see TEXMCHAN and NEWTEX)
GROUPED	Create textures from groups of events
DECORATED	Create a texture with decorations
MOTIFS	Create a texture with motifs
MOTIFSIN	Create a texture with motifs forced onto a harmonic field
ORNATE	Create a texture with ornaments
POSTDECOR	Create a texture with decorations following events
POSTORNATE	Create a texture with ornaments following events
PREDECOR	Create a texture with decorations preceding events
PREORNATE	Create a texture with ornaments preceding events
TIMED	Create a texture with timed single events
TGROUPED	Create a texture with timed event groups
TMOTIFS	Create a texture with timed motifs
TMOTIFSIN	Create a texture with timed motifs forced onto a harmonic field

CDP-X – more extreme forms of distortion, extension & scrambling

| DISTORT | EXTEND | GRAIN | STRANGE |

CDP Processing Functions to apply wavecycle DISTORTION to sounds (DISTORT)

AVERAGE	Average the waveshape over *N* 'wavecycles
CYCLECNT	Count 'wavecycles' in soundfile
DELETE	Timecontract file by deleting 'wavecycles'
DIVIDE	Distortion by dividing 'wavecycle' frequency
ENVEL	Impose envelope over each group of *cyclecnt* 'wavecycles'
FILTER	Timecontract sound by filtering out 'wavecycles'
FRACTAL	Superimpose miniature copies of source 'wavecycles'onto themselves
HARMONIC	Harmonic distortion by superimposing 'harmonics' onto 'wavecycles
INTERACT	Time-domain interaction of sounds
INTERPOLATE	Timestretch file by repeating 'wavecycles' and interpolating between them
MULTIPLY	Distortion by multiplying 'wavecycle' frequency
OMIT	Omit A out of every B 'wavecycles', replacing them by silence
OVERLOAD	Clip a signal with noise or with a time-varying waveform
PITCH	Pitchwarp 'wavecycles' of sound
PULSED	Impose regular pulsations on a sound
REFORM	Modify shape of 'wavecycles'
REPEAT	Timestretch file by repeating 'wavecycles'
REPLACE	Strongest 'wavecycle' in each *cyclecnt* replaces others
REPLIM	Timestretch by repeating 'wavecycles' (below a specified frequency
REVERSE	Cycle-reversal distortion, 'wavecycles' reversed in groups
SHUFFLE	Distortion by shuffling 'wavecycles'
TELESCOPE	Time-contract by telescoping *cyclecnt* 'wavecycles to 1

CDP Processing Functions to EXTEND sounds by various means of repetition (EXTEND)

BAKTOBAK	Join backwards copy to forwards original, in that order
[CERACU]	Repeat the source sound in several cycles that synchronise after specified counts
DOUBLETS	Divide a sound into segments that repeat, and splice them together
DRUNK	'Drunken walk' through segments of a soundfile
[ECHO]	Repeat a sound with timing and level adjustments between repeats
FREEZE	Freeze a segment of a sound by iteration in a fluid manner
HOVER	Move through a file, zig-zag reading it at a given frequency
ITERATE	Iterate an input sound in a fluid manner

[ITERLINE]	Iterate an input sound, following a transposition line
[ITERLINEF]	Iterate an input sound **set**, following a transposition line
LOOP	Loop inside a soundfile, altering segment length, step & searchfield
[MADRID]	Syncopate repetitions of the source soundfile(s) by randomly deleting items from the spatially-separated repetitions streams
SCRAMBLE	Cut random chunks from soundfile, splice or rearrange
SEQUENCE	Produce a sequence from one sound, with timed transpositions
SEQUENCE2	Produce a sequence from several sounds, with timed transpositions
[SHIFTER]	Generate simultaneous repetition cycles, shifting focus from one to another
[SHRINK]	Repeat a sound, shortening it on each repetition
ZIGZAG	Read back and forth inside a soundfile

CDP Processing Functions to alter the disposition of GRAINS of sounds (GRAIN)

ALIGN	Synchronise grain onsets in 2nd grainy sound with those in the 1st
ASSESS	Estimate best gate value for grain extraction
COUNT	Count grains found in a sound (at given *gate* and *minhole* values)
DUPLICATE	Duplicate grains in a grainy sound
FIND	Locate timings of grain onsets in a grainy sound
GREV	Find and manipulate 'grains', using envelope troughs and zero-crossings
[GREXTEND]	Find grains in a sound and extend the area that contains them
[NEWTEX]	Generate a texture of grains made from a source sound or sounds
NOISE_EXTEND	Find and timestretch noise component in a sound
OMIT	Omit a proportion of grains from a grainy sound
REMOTIF	Change pitch and rhythm of grains in a grainy sound
REORDER	Reorder grains in a grainy sound
REPITCH	Repitch grains in a grainy sound
REPOSITION	Reposition grain onsets in a grainy sound
RERHYTHM	Change rhythm of grains in a grainy sound
REVERSE	Reverse order of grains in a grainy sound, without reversing the grains themselves
R_EXTEND	Extend sounds that are iterative
TIMEWARP	Stretch (or shrink) the duration of a grainy sound, without stretching the grains themselves
[WRAPPAGE]	Granular reconstitution of one or more soundfiles over multi-channel space

CDP Processing Functions to create STRANGE sound transformations (STRANGE)

GLIS	Create glissandi inside the (changing) spectral envelope of the original sound
INVERT	Invert the spectrum
SHIFT	Linear frequency shift of (part of) the spectrum
WAVER	Oscillate between harmonic and inharmonic state

CDP-UTILS-1 – CDP Time-Domain Editing Functions

ENVEL	ENVNU	HOUSEKEEP	MULTI-CHANNEL
SFEDIT	SNDINFO	SUBMIX	SYNTH

CDP Utilities to manipulate amplitude ENVELOPES (ENVEL)

ATTACK	Emphasize the attack of a sound
BRKTOENV	Convert (text) breakpoint envelope file to binary envelope file
CREATE	Create an envelope
CURTAIL	Curtail a soundfile by fading to zero at some time within it
CYCLIC	Create a sequence of repeated envelopes, in a binary envelope file
DBTOENV	Convert a (text) breakpoint file with values in dB to an envelope file
DBTOGAIN	Convert a (text) breakpoint file with values in dB to gain values (0-1)
DOVETAIL	Dovetail soundfile by enveloping the start and end of it
ENVTOBRK	Convert a binary envelope file to a (text) breakpoint envelope
ENVTODB	Convert a binary envelope file to a (text) breakpoint envelope with dB values
EXTRACT	Extract envelope from an input soundfile
GAINTODB	Convert a (text) breakpoint envelope with gain values (0-1) to dB values
IMPOSE	Impose an envelope on an input soundfile
PLUCK	Pluck start of sound (mono files only)
REPLACE	Replace the existing envelope of an input soundfile with a different envelope
REPLOT	Warp the envelope in a (text) breakpoint envelope file
RESHAPE	Warp the envelope in a binary envelope file
SCALED	Impose envelope, scaling envelope times to soundfile duration
SWELL	Cause sound to fade in and out from a peak moment
TIMEGRID	Partition a soundfile into a sequence of 'windows' separated by silence
[TOPANTAIL2]	Gated sound extraction with end trims and backtracking
TREMOLO	Tremolo a sound
[TREMOLO]	Apply width-controlled tremolo to a soundfile
WARP	Warp the envelope of a soundfile

CDP Utilities for specialised operations on amplitude ENVELOPES (ENVNU)

EXPDECAY	Produce a true exponential decay to zero on a sound
PEAKCHOP	Isolate peaks and either play back at a specified tempo or output a peak-isolating envelope

CDP Utilities for general soundfile HOUSEKEEPING (HOUSEKEEP)

BAKUP	Concatenate soundfiles in one backup file, with silences between
BATCHEXPAND	Expand an existing batchfile
BUNDLE	List filenames in textfile for sorting, backup or creating a dummy mixfile
CHANS	Extract or convert channels of a soundfile
[CHANPHASE]	Invert one channel of an input sound
COPYSFX	Produce or delete copies of the infile
DEGLITCH	Attempt to deglitch a soundfile
DISK	display available space on disk
ENDCLICKS	Remove clicks from start or end of file
EXTRACT	Extract significant data from recorded soundfiles
GATE	Cut file at zero amplitude points
REMOVE	Remove existing (numbered) copies of a soundfile
RESPEC	Alter the specification of a soundfile
SORT	Sort files listed in a textfile

CDP Multi-channel Programs (MULTICHANNEL)

[FLUTTER]	Add multi-channel-distributed tremolo to a multi-channel file
[FRACTURE]	Disperese a mono signal into fragments spread over *N*-channel space
[FRAME SHIFT]	Reorient or rotate a multi-channel file
[MCHANPAN]	Pan sounds around a multi-channel space
[MCHANREV]	Create multi-channel Echoes or Reverb
[MCHITER]	Iterate the input sound in a fluid manner, scattering around a multi-channel space
[MCHSHRED]	Sound is cut into random segments which are then reassembled in random order within the original duration
[MCHSTEREO]	Combine stereo files in a multi-channel output
[MCHZIG ZAG]	Extend by reading back and forth in the soundfile, while panning to a new channel at each 'zig' or 'zag'
[MTON]	Create a multi-channel equivalent of a mono soundfile
[MULTIMIX CREATE]	Create a multi-channel mixfile
[NEWMIX]	Mix from a multi-channel mixfile to give a multi-channel soundfile output
[PANORAMA]	Distribute *N* source files in a panorama across a specified angle of a sound-surround loudspeaker array
[STRANS MULTI]	Change the speed or pitch of a multi-channel sound, or add vibrato

[TANGENT]:

ONEFILE	Play repeats of a mono soundfile along a tangent path
TWOFILES	Play repeats of two synchronised mono soundfiles along a tangent path
SEQUENCE	Play a sequence of mono soundfiles along a tangent path
LIST	Play a sequence of mono soundfiles as listed in a textfile along a tangent path

[TEXMCHAN] Create textures over a multi-channel frame

[TRANSIT]:

SIMPLE	Place repetitions of a mono soundfile on a path *into* and *across* an 8-channel array
FILTERED	Place filtered repetitions of a mono soundfile on a path *into* and *across* an 8-channel array
DOPPLER	Place pitch-shifted repetitions of a mono soundfile on a path *into* and *across* an 8-channel array, suggesting a doppler shift
DOPLFILT	Doppler effect on a path *into* and *across* an 8-channel array with filtering, to suggest greater distance
SEQUENCE	Position a sequence of mono sounds (at least 3) on a path *into* and *across* an 8-channel array
LIST	Position a sequence of mono sounds (at least 3), as listed in a textfile, on a path *into* and *across* an 8-channel array

CDP Utilities to EDIT soundfiles (SFEDIT)

[CANTOR]	Cut holes in a sound in the manner of a cantor set (holes within holes within holes)
[CONSTRICT]	Shorten the durations of any zero-level sections in a sound
CUT	Cut and keep a segment of a sound
CUTEND	Cut and keep the end portion of a sound
CUTMANY	Cut and keep several segments of a sound
EXCISE	Discard specified chunk of sound, closing up the gap
EXCISES	Discard specified chunks of sound, closing up the gaps
INSERT	Insert a 2nd sound into first, overwriting or spreading 1st sound
INSIL	Insert silence into an existing sound
[ISOLATE]	Disjunct portions of soundfile are specified by textfile or dB loudness and saved to separate files
JOIN	Join files together, one after another
JOINDYN	Join soundfiles in loudness-patterned sequence
JOINSEQ	Join soundfiles in patterned sequence
[MANYSIL]	Insert many silences into a soundfile
MASKS	Mask specified chunks of a sound, overlaying them with silence
NOISECUT	Suppress noise in a (mono) soundfile, replacing with silence
[PACKET]	Isolate or generate a sound packet
[PARTITION]	Partition a mono soundfile into disjunct files in blocks defined by groups of wavesets
[PREFIX SILENCE]	Add silence to the beginning of a soundfile
RANDCHUNKS	Cut chunks from a soundfile, randomly
RANDCUTS	Cut soundfile into pieces with cuts at random times
REPLACE	Insert a 2nd sound into an existing sound, replacing part of original
[RETIME]	Rearrange and retime events within a soundfile
[SILEND]	Add silence to the end of a soundfile
SPHINX	Switch between several files, with different switch times, to make a new sound
[SUBTRACT]	Subtract one file from another
SYLLABLES	Separate out vocal syllables
TWIXT	Switch between several files, to make a new sound
ZCUT	Cut and keep a segment of a MONO sound, cutting at zero crossings (no splices)
ZCUTS	Cut and keep segments of a MONO sound, cutting at zero crossings (no splices)

CDP Utilities for gathering INFORMATION about SOUNDfiles (SNDINFO)

CHANDIFF	Compare channels in a stereo soundfile
DIFF	Compare two sound, analysis, pitch, transposition, envelope or formant files
FINDHOLE	Find largest low level hole in a soundfile
LEN	Display duration of a soundfiling-system file
LENS	List durations of several soundfiling-system files
LOUDCHAN	Find loudest channel in a stereo soundfile
MAXI	List the levels of several soundfiles
MAXSAMP	Find maximum sample in soundfile or binary data file
MAXSAMP2	Find maximum sample within a specified time range in a soundfile
[PEAKFIND]	Find the times of the loudness peaks in a sound
PRNTSND	Print sound sample data to a textfile
PROPS	Display properties of a soundfiling-system file
SMPTIME	Convert sample count to time in soundfile
SUMLEN	Sum durations of several soundfiling-system files
TIMEDIFF	Find difference in duration of two sound files
TIMESMP	Convert time to sample count in soundfile
UNITS	Convert between different units
ZCROSS	Display fraction of zero-crossings in a soundfile

CDP Utilities to prepare for and MIX soundfiles (SUBMIX)

ADDTOMIX	Add soundfiles to an existing mixfile
ATSTEP	Convert a list of soundfiles to a mixfile
ATTENUATE	Alter the overall level of a mixfile
BALANCE	Mix between 2 soundfiles, using a balance function
CROSSFADE	Quick crossfade between soundfiles (with same number of channels)
DUMMY	Convert a list of soundfiles into a basic mixfile (for editing)
FADERS	Mix several soundfiles using a time-changing level-balance function
FILEFORMAT	Returns information about mixfile fileformats
GETLEVEL	Test the maximum level of a mix, defined in a mixfile and suggest a gain factor to avoid overload, if necessary
INBETWEEN	Generate a set of sounds inbetween the 2 input sounds through weighted mixes of the input sounds, from mostly sound 1 to mostly sound 2
INBETWEEN2	Generate a set of sounds inbetween two input sounds (same number of channels), through interpolation pegged to zero-crossings
INTERLEAVE	Interleave mono *infiles* to make a multi-channel *outfile*
MERGE	Quick mix of 2 soundfiles (with same number of channels)
MERGEMANY	Quick mix of several soundfiles (with the same number of channels)
MIX	Mix sounds as instructed in a mixfile
MODEL	Replace soundfiles in an existing mixfile
ONGRID	Convert listed soundfiles to abasic mixfile on timed grid (for editing)
PAN	Pan a mixfile
SHUFFLE	Shuffle the data in a mixfile

SPACEWARP	Alter the spatial distribution of a mixfile
SYNC	Synchronise soundfiles in a mixfile, or generate such a mixfile from a list of soundfiles
SYNCATTACK	Synchronise attacks of soundfiles in a mixfile, or generate such a mixfile from a list of soundfiles
TEST	Test the syntax of a mixfile
TIMEWARP	Timewarp the data in a mixfile

CDP Utilities to SYNTHESISE test signals (SYNTH)

CHORD	Generate a chord from a simple waveform
CLICKS	Create a click track from tempo, meter & barring data
[NEWSYNTH]	Generate complex spectra from fundamental and partial balance information in one or more textfiles
NOISE	Generate noise
SILENCE	Make a silent soundfile
SPECTRA	Generate both channels of a stereo spectral band
WAVE	Generate simple waveforms

CDP-UTILS-2 – CDP Spectral-Domain Utilities

Spectral (FFT) Analysis & Resynthesis (PVOC)

ANAL	Convert soundfile to spectral file
EXTRACT	Analyse, then resynthesise sound with various options
SYNTH	Convert spectral file to soundfile

CDP Utilities to gather spectral pitch information (PITCHINFO)

CONVERT	Convert a binary pitch data file to a *time frequency* breakpoint text file
HEAR	Convert binary pitchfile to analysis test tone file (resynthesise to hear pitch)
INFO	Display information about pitch data in pitchfile
SEE	Convert binary pitchfile or transposition file to a pseudo-soundfile, for viewing
ZEROS	Shows whether a pitch file contains uninterpolated zeros (unpitched windows)

CDP Utilities to handle spectral gain and editing (SPEC)

BARE	Zero the data in channels which do not contain harmonics
CLEAN	Remove noise from PVOC analysis file
CUT	Cut a section out of an analysis file, between *starttime* and *endtime* (seconds)
GAIN	Amplify or attenuate the spectrum
GATE	Eliminate channel data below a threshold amplitude
GRAB	Grab a single analysis window at time point specified
MAGNIFY	Expand (in duration) a single analysis window at time *time* to duration *dur*

CDP Utilities clean up analysis files (SPECNU)

CLEAN	Eliminate from the source file any persisting signal that falls below a threshold (defined by the noise file)
RAND	Randomise the order of spectral windows
REMOVE	Remove a pitched component from the spectrum of a sound
SLICE	Divide an analysis file into individual frequency bands, saving each as a separate analysis file
[SPECGRIDS]	Partition a spectrum into parts, over a grid
SQUEEZE	Squeeze the spectrum into a frequency range, around a specified frequency
SUBTRACT	Eliminate from the source file any persisting signal that falls below a threshold (defined by the *noisfile*) AND subtract the amplitude of the noise in the *noisfile* from any source file signal that is passed

CDP Utilities to gather information about the spectrum (SPECINFO)

CHANNEL	Returns PVOC channel number corresponding to frequency given
FREQUENCY	Returns centre frequency of PVOC channel specified
[GET_PARTIALS]	Extract relative amplitudes of partials in a pitched source
LEVEL	Convert (varying) level of analysis file to a pseudo-soundfile, for viewing (1 window -> 1 sample)
OCTVU	Text display of time varying amplitude of spectrum, within octave bands
PEAK	Locate time varying energy centre of spectrum (text display)
[PEAK EXTRACT]	Extract spectral peaks from an analysis file and write to a text file
PRINT	Print data in an analysis file as text to file
REPORT	Text report on location of frequency peaks in the evolving spectrum
WINDOWCNT	Returns the number of analysis windows in *infile*

CDP-EXTRAS – Core System (Play, Record) and other useful additions

M-C TOOLKIT | REVERB | SYS_UTILS | For CSOUND

MULTI-CHANNEL TOOLKIT: programs to handle multi-channel files, e.g., for surround sound (R Dobson)

[ABFPAN]	Apply a fixed or orbiting Ambisonic path to a soundfile
[ABFPAN2]	Apply a fixed or orbiting 2nd order B-Format pan to mono soundfile
[CHANNELX]	Extract all or selected channels from a multi-channel soundfile
[CHORDER]	Reorder soundfile channels in multi-channel soundfile
[CHXFORMAT]	Modify WAVE_EX header to change GUID and/or speaker positions
[COPYSFX]	Copy/convert (multi-channel) soundfiles
[FMDCODE]	Decode 1st or 2nd order B-Format soundfile to a choice of speaker layouts
[INTERLX]	Interleave mono or stereo files into a multi-channel file
[NJOIN]	Concatenate multiple soundfiles, with optional CUE list for CD burning
[NMIX]	Mix two multi-channel files
[PAPLAY]	Play a mono, stereo or multi-channel soundfile
[RMSINFO]	Scan file and report RMS and average power level statistics
[SFPROPS]	Display soundfile details, with WAVE-EX speaker positions

REVERB: programs for reverberation effects (by R Dobson)

[FASTCONV] Find (and retain) the difference between two spectra
[REVERB] Multi-channel reverb (classic Schroeder)
[ROOMRESP] Create early reflections data file for REVERB, RMVERB and TAPDELAY
[ROOMVERB] Multi-channel reverb with room simulation
[TAPDELAY] Stereo multi-tapped delay line with feedback

SYS_UTILS: CDP core system programs

[ALIAS] Create a shortcut to a soundfile (PC only)
[COLUMNS] Manipulate or generate columns of numbers
[COPYSFX] Copy/convert a (multi-channel) soundfile
[DIRSF] Soundfile directory listing
[PAPLAY] Play (audition) a (multi-channel) soundfile
[PVPLAY] Play back (audition) a CDP soundfile or analysis file
[RECSF] Record, creating a soundfile

CDP-OPTIONS – Algorithmic and Graphic Options

ALGORITHMIC Facilities

TABULA VIGILANS Algorithmic score generation and real-time MIDI performance instrument (R Orton)

AL / ERWIN AL: Algorithmic compositional environment; Erwin is a plug-in applying the solutions of Schroedinger's equation to the creation of granular clouds. (R Fischman) [PC only]

GRAPHIC programs

BRKEDIT Breakpoint editor, with trace audition, file comparison, exponential & logarithmic curve facilities (R Dobson)

GRAINMILL Comprehensive granular processing of soundfiles, with built-in breakpoint editor (T Wishart/R Dobson)

PROCESSPACK GUI-based sound processing functions complementary to CDP (R Orton & A Endrich) [PC only]. This program suite is an additional purchase.

SOUND LOOM GUI Graphic 'Intelligent' Composing Environment by, and emulating the working methods of, Trevor Wishart [PC & MAC]

SOUNDSHAPER GUI Practical, menu-driven interface to the CDP System, with breakpoint editor (R Fraser) [PC only]

VIEWSF Simple soundfile viewer, with zoom accurate to the sample – no manual (Dobson)