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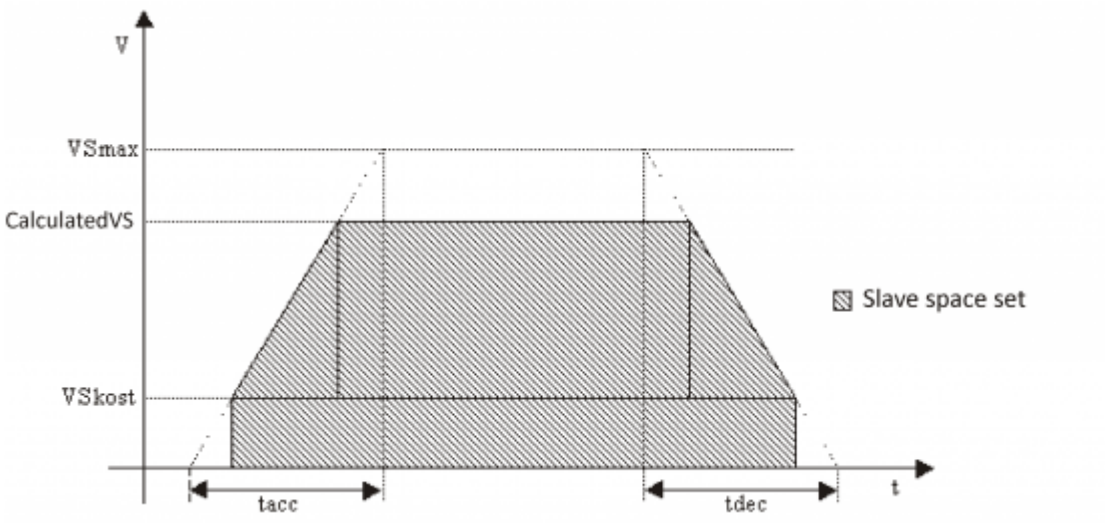
DC10VelCam

D = *Device(CAMMING2, CAMMING3)*

C = *Calculation functions*

The purpose of the DC10VelCam function is to calculate Master and Slave spaces in order to build the sectors of acceleration, deceleration and a constant speed for a device type electronic cam.
These fields are calculated so that the gradients of acceleration and deceleration ramps are respected by the acceleration and deceleration time set parameters.
The speed profile of the cam that you get with this function is as follows:



IMPLEMENTATION

DC10VelCam (aslParam, codeG, codeM, codeQm, codeQs, codeQma, codeQsa, Error)

Parameters:

IN/OUT	VARIABLE TYPE	EXAMPLE NAME	DIM	
IN	ARRSYS	aslParam [1]	L	Master space to cover (UM)
IN	ARRSYS	aslParam [2]	L	Slave space to cover (UM)
IN	ARRSYS	aslParam [3]	L	Reference Master speed (UM/sec)
IN	ARRSYS	aslParam [4]	L	Maximum Slave speed (UM/sec)
IN	ARRSYS	aslParam [5]	L	Acceleration Slave time to go from zero to max speed (s/100)
IN	ARRSYS	aslParam [6]	L	Deceleration Slave time to go from max spedd to zero (s/100)
IN	ARRSYS	aslParam [7]	L	Starting speed of the Slave (UM/sec) (opt.)
IN	ARRSYS	aslParam [8]	L	“Measure” parameter of used device
IN	ARRSYS	aslParam [9]	L	“Pulse” parameter of used device
OUT	ARRSYS	CodeG	L	Array containing calculated G Code (OUT)
OUT	ARRSYS	CodeM	L	Array containing calculated M code (OUT)
OUT	ARRSYS	CodeQm	L	Array containing calculated CodeQm (OUT)
OUT	ARRSYS	CodeQs	L	Array containing calculated CodeQs (OUT)
OUT	ARRSYS	CodeQma	L	Array containing CodeQma (auxiliary code) (OUT)
OUT	ARRSYS	CodeQsa	L	Array containing CodeQsa (auxiliary code) (OUT)
OUT	SYSTEM	Error	B	Error var in the cam writing (OUT)

Error

After calling the function the error variable assumes certain values, the meaning of these values is summarized below:
0: calculation executes without errors
1: Maximum Slave speed less than or equal to 0
2: Master speed less than or equal to 0
3: Acceleration time less than or equal to 0
4: Deceleration time less than or equal to 0
5: Cam not available (space too small)
6: Cam not available (sum of calculated exceeds the maximum time ramps)
7: Maximum speed greater than the speed calculated Slave Slave

Example

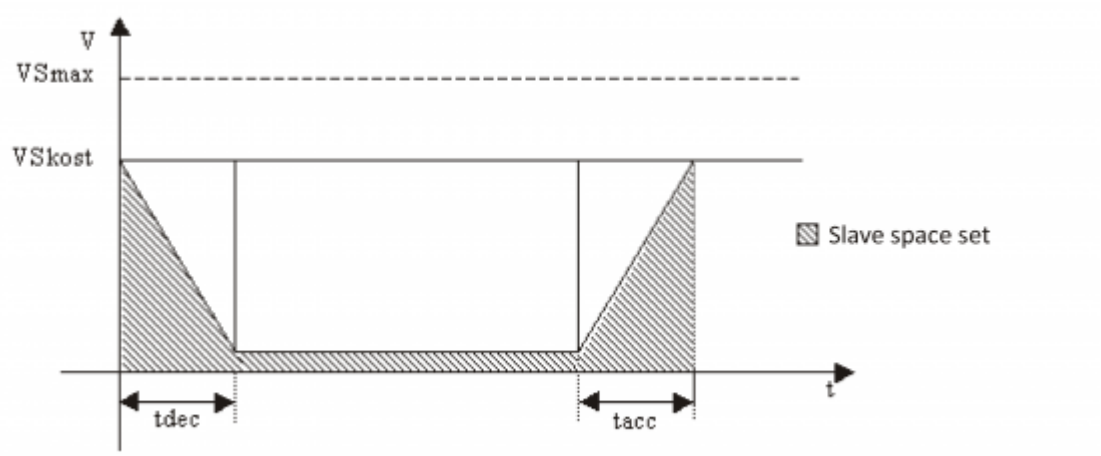
```
MAIN:
     IF gfCalcVel
          gfCalcVel = 0

          aslParam[1] = 10000  ;Master space
          aslParam[2] = 3000   ;Slave space
          aslParam[3] = 1500   ;Master speed
          aslParam[4] = 4000   ;Maximum Slave speed
          aslParam[5] = 50 ;Acceleration time
          aslParam[6] = 50 ;Deceleration time
          aslParam[7] = 0  ;Starting Slave speed
          aslParam[8] = 1000   ;"Measure" parameter of device
          aslParam[9] = 4000   ;"Pulse" parameter of device

          DC10VelCam (aslParam, codeG, codeM, codeQm, codeQs, codeQma, codeQsa, Error)
          IF NOT Error
             SettIniz = 1
             NumSet =  3
             DW20WrCam(cmCamma,CodeG,CodeM,CodeQm,CodeQs,CodeQma,CodeQsa,SettIniz,SettFine,NumSet,Error)
          ENDIF
     ENDIF
```

Operation notes

- The constant speed of the Slave is the speed that the Slave has the time to take the space set. This speed can be set to zero or less than zero.
- Space Slave to set can also be negative, in this case, the calculation will be executed in order to turn back the Slave to the space set
- The number of sectors used is always 3
- In case the space to make the Slave is less than what the Slave would do at a constant speed, the resulting velocity profile is represented in the chart below (the same is true for negative speed).



N.B.: In the graph represented the speed could become negative (and then push back the Slave) if the case of the Slave space set is lesser of the space covered for the acceleration and deceleration ramps.