

## Instructions for 4DCT simulation

It will create 10 plans for 1/10th of breathing period, linking each plan to the corresponding structure set.

It creates n\_synchro [1, 2, 4, 10] sets of 10 plans for interplay effect management, each set starting the delivery at a different phase:

n\_synchro=1 starts at phase 0%

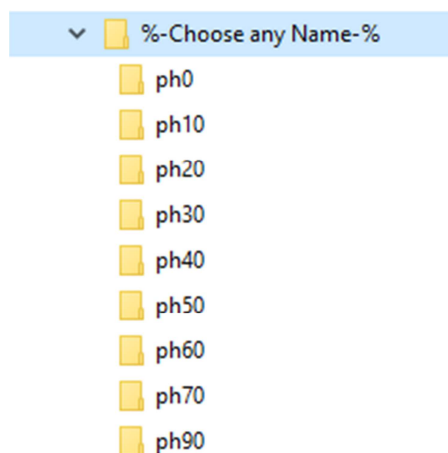
n\_synchro=2 starts at phase 0% and 50%

n\_synchro=4 starts at phase 0%, 30%, 60% and 90%

n\_synchro=10 starts at each phase [0% to 90%]

1.- DICOM export the (steady planned) VMAT plan **WITHOUT set-up fields** (only treatment fields with defined MUs, i.e. a calculated plan)

2.- Create a folder (**give any name**) with 10 sub-folder named as follow. The name of this root folder needs to be selected when prompted “Choose STRs [ THIS\_FOLDER ( \ph## )] folder”



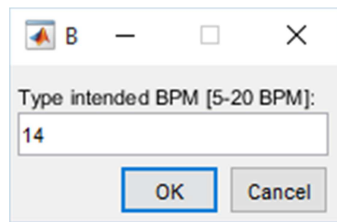
2.- DICOM export each structure set corresponding of each 4DCT phase (only works for 10 phases) to each of the 10 previously defined sub-folders.

ATTENTION!!: the names of the DICOM structure-set files **MUST** start with **RS**

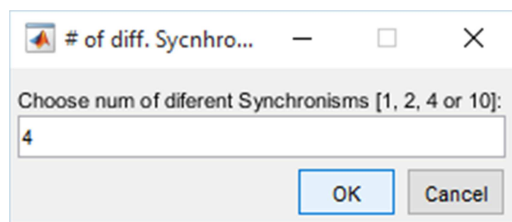
Name	Date modified	Type
ph0	4/8/2016 14:00	File folder
ph10	4/8/2016 14:00	File folder
ph20	4/8/2016 14:00	File folder
ph30	4/8/2016 14:01	File folder
ph40	4/8/2016 14:01	File folder
ph50	4/8/2016 14:01	File folder
ph60	4/8/2016 14:01	File folder
ph70	4/8/2016 14:01	File folder
ph90	4/8/2016 14:01	File folder

3.- Press button **4D-CT** and select the running parameters:

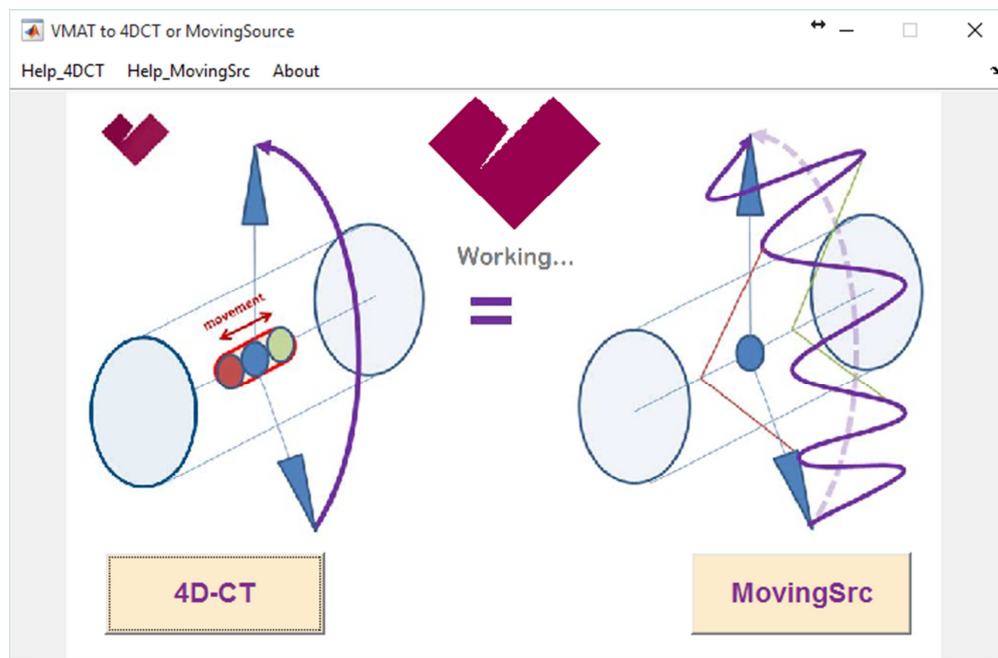
- Intended **BeatsPerMinute** (BPM): the software will approximate the intended BPM at <5% without distorting MLC trajectories.

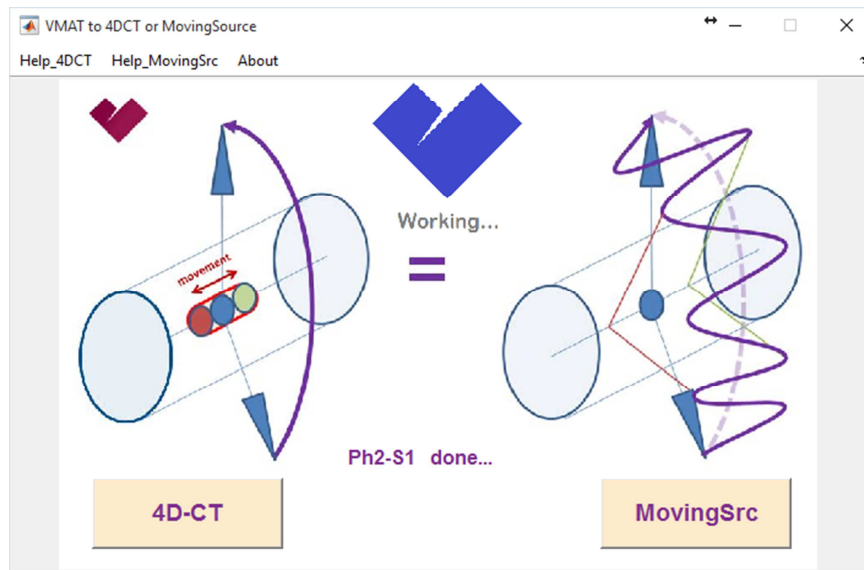


- Number of different synchronisms (different starting points evenly sampled on period), only choices are 1, 2, 4 or 10.

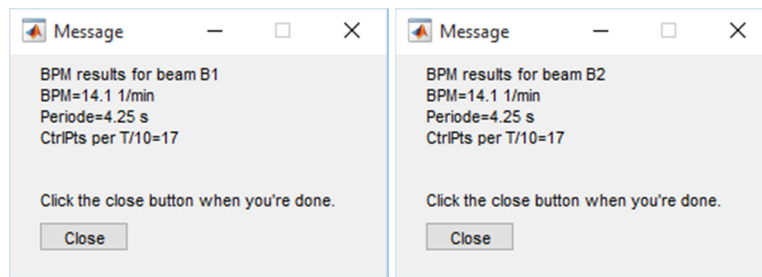


- After selecting the destination folder, the program start to build and save the different plans. The DICOM saving takes about 5minutes per plan, so be patient. The Barwon Health logo will change color after each plan saving indicating process progress.





- After first plan saving, messages windows will pop-up with information about the realized BPM for each arc on the plane and stating the number of control points which were used for on each fraction of period.



- At the end the Barwon Health logo will be changed into a green check mark. Plans will be on the selected output folder.

