



## **Manual for creating audio files using the Client Music Synthesis (CMS) by Choralia**

### ***General information***

This manual provides information and instructions about creating audio files and CDs using the Client Music Synthesis (CMS) process conceived by Choralia.

CMS is a method that allows sending even many hours of music over internet in an extremely compact form. The music is sent to the destination PC (the “client”) as music score information, including each individual note to be played (pitch, duration and volume) and the type of sound to be used for each note. Short audio samples for each type of sound required, as well as a software sound synthesizer, are also sent. Everything is packed into a single executable file. When such an executable file is launched on the client PC, the whole music is synthesized by replicating, chaining, transposing and changing the volume of the basic audio samples according to the music score information. The typical size of the CMS executable file is 2 to 3 MB, and this is sufficient to create several gigabytes of audio data, i.e., the equivalent of many audio CDs. For example, the CMS executable file of Mozart’s Requiem creates some 100 audio files that may be recorded on 13 CDs.

The audio files created by CMS are automatically put in specific folders that are created on the client PC. Folders and audio files have conventional names that help to recognise their contents. The next paragraph explains the folder and file structure and names.

### ***File and folder names***

All the files and folder names are always in lower-case letters.

All the audio files are created by simply running an executable file provided by Choralia. The name of such an executable file is:

*<product code>.exe*

where *<product code>* is the code assigned by Choralia and that is shown in the Choralia’s catalogue. For example, the product code for Mozart’s Requiem is MZ01, thus the corresponding executable file name is *mz01.exe*.

When the executable file is run, it creates a main folder with the same name as the product code (*mz01*, if we consider the Mozart’s Requiem as an example). The main folder may contain one or more sub-folders, depending whether you are creating audio files for one voice only (e.g., soprano) or for multiple voices and/or accompaniment. If one voice

requires more than one CD for recording, separate folders are created for files that are supposed to be recorded on different CDs.

The format for the sub-folder names is as follows:

*<product code><voice><CD number>*

Where *<product code>* is the same as above, *<voice>* is *s* for soprano, *a* for alto, *t* for tenor, *b* for bass, *m* for accompaniment. If voices are split (e.g., soprano I and soprano II), the corresponding number is added to the letter (e.g., *s1* and *s2*).

The *<CD number>* is *-cd1*, *-cd2*, etc., and it is only used if the same voice requires more than one CD.

For example, Mozart's Requiem requires 3 CD for each choir voice, and 1 CD for accompaniment. Therefore, the following sub-directory names are created:

<i>mz01s-cd1</i>	(soprano, CD nr. 1)
<i>mz01s-cd2</i>	(soprano, CD nr. 2)
<i>mz01s-cd3</i>	(soprano, CD nr. 3)
<i>mz01a-cd1</i>	(alto, CD nr. 1)
<i>mz01a-cd2</i>	(alto, CD nr. 2)
<i>mz01a-cd3</i>	(alto, CD nr. 3)
<i>mz01t-cd1</i>	(tenor, CD nr. 1)
<i>mz01t-cd2</i>	(tenor, CD nr. 2)
<i>mz01t-cd3</i>	(tenor, CD nr. 3)
<i>mz01b-cd1</i>	(bass, CD nr. 1)
<i>mz01b-cd2</i>	(bass, CD nr. 2)
<i>mz01b-cd3</i>	(bass, CD nr. 3)
<i>mz01m</i>	(accompaniment)

Each sub-folder then contains all the audio files that may be recorded on one CD. The file names are as follows:

*<track number><product code><song number><voice practice level>*

The *<track number>* is a two digit number (e.g., *01-*, *02-*, etc.) that identifies the specific track on the CD. The track sequence on the CD should correspond with the file name list, if file names are sorted in increasing alphabetical order.

The *<product code>* is as above. The *<song number>* is a number (*-1*, *-2*, etc.) relevant to the song sequence. As the same song is processed at 3 different practice levels for each voice (only voice with metronome, all voices with one voice emphasized, all voices at the same level), each song results in 3 different audio files or tracks.

The *<voice practice level>* is *ss* for soprano solo (only voice and metronome – first practice level) and *se* for soprano emphasized (second practice level). For the other voices it's similar: *as* and *ae* for alto, *ts* and *te* for tenor, *bs* and *be* for bass. The *<voice practice level>* is omitted when all the voices are at the same level (third practice level) and for accompaniment tracks.

For example, the CD folder of CD nr. 1 of Mozart's Requiem for soprano, named *mz01s-cd1*, will contain the following files:

<i>01-mz01-1ss</i>	(Requiem, soprano voice plus metronome)
<i>02-mz01-1se</i>	(Requiem, all voices with soprano voice emphasized)
<i>03-mz01-1</i>	(Requiem, all voices at the same level)
<i>04-mz01-2ss</i>	(Dies Irae, soprano voice plus metronome)
<i>05-mz01-2se</i>	(Dies Irae, all voices with soprano voice emphasized)
<i>06-mz01-2</i>	(Dies Irae, all voices at the same level)
<i>07-mz01-3ss</i>	(Rex Tremendae, soprano voice plus metronome)
<i>08-mz01-3se</i>	(Rex Tremendae, all voices with soprano voice emphasized)
<i>09-mz01-3</i>	(Rex Tremendae, all voices at the same level)

Each sub-folder will also contain a file in pdf format, having the same name of the sub-folder followed by the .pdf extension. Such a file contains an example of CD cover, including the track list with track numbers and names that can be used on the CD. This helps to identify the file names for each track. The CD cover for the CD1 of Mozart's Requiem for soprano is shown hereinbelow. Please note that the track number is the key to identify the file name associated to each song.



**W.A. MOZART – REQUIEM KV626**  
**Soprano – CD nr. 1**

	Voice with metronome, organ	Emphasised voice and other voices	All voices
Requiem	1	2	3
Dies irae	4	5	6
Rex tremendae	7	8	9

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### **Creating the audio files**

The CMS process may create many audio files corresponding to several audio CDs (i.e., some gigabytes of data) starting from a small executable file. Therefore, prior to creating the audio files, you should first check that you have enough space on your hard disk. Use "My computer" and find the available space on each drive. The required disk space for the

audio files will be then provided to you during the installation process. You will have the possibility to stop the installation and clear some disk space if you need.

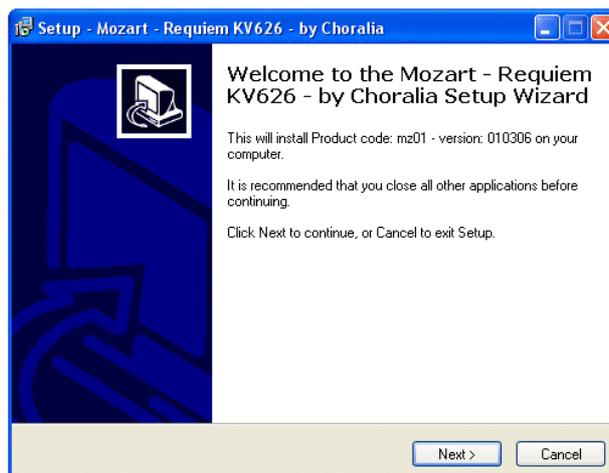
Place the CMS executable file on the desktop, or in any folder you like. In the following, we will assume that you have created an empty folder named “*choralia*”, and we consider the executable file for Mozart’s Requiem *mz01.exe* as an example. So, you should start with a situation similar to the following. The name of the executable file instead of the icon may be shown, depending on the display settings of your folder.



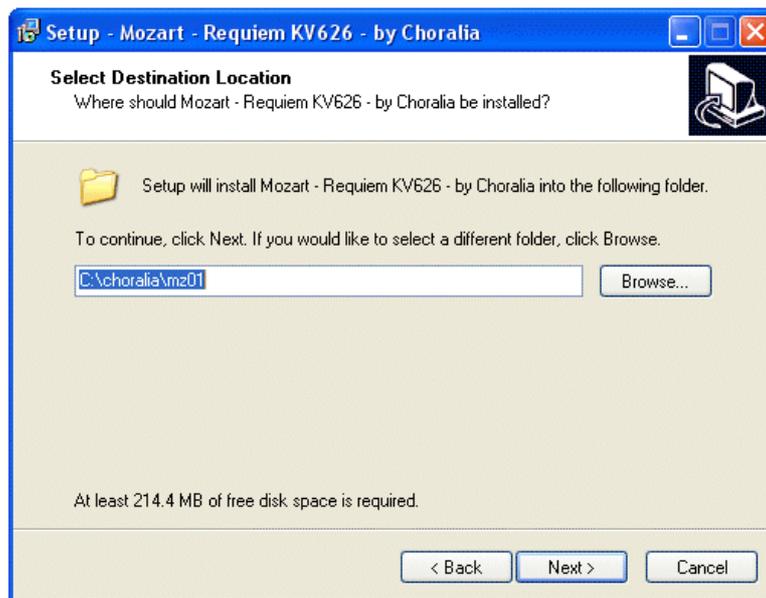
Double-click the icon (or name) of the executable file. An installation wizard will activate. If you get a security warning message from your PC, accept to continue the installation.



Choose the language for the installation wizard. Italian and English language is available. In the following, we assume that English language has been selected.

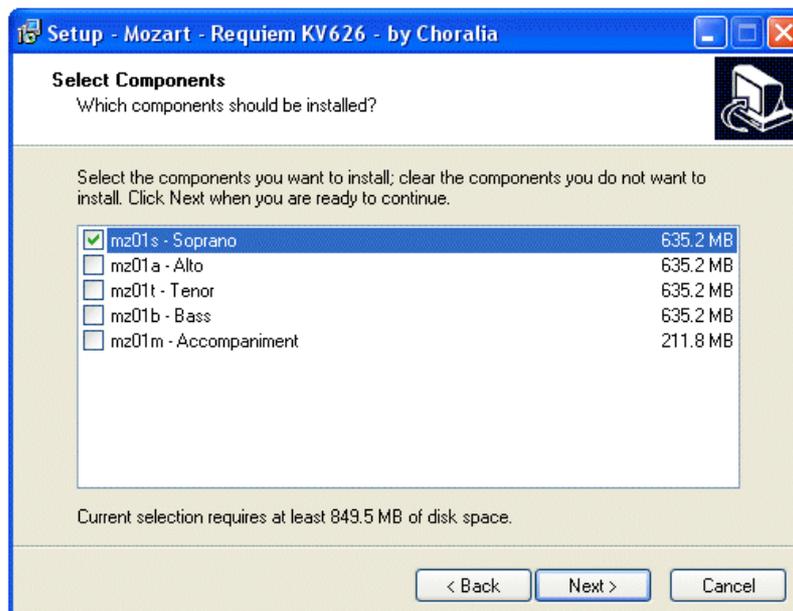


Press the “next” button. You will be prompted to choose a destination folder where the main folder and the sub-folders containing the audio files will be created.

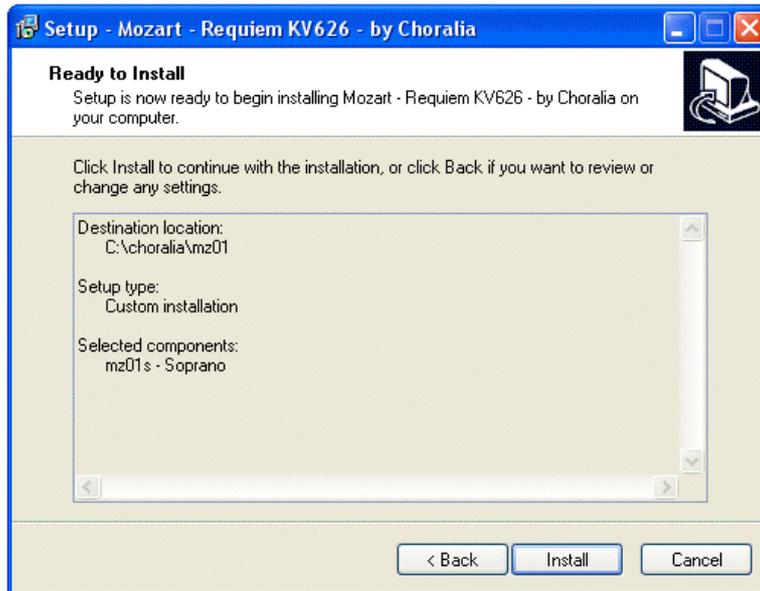


By default, the same folder of the executable file will be proposed (“*choralia*”, in our example). You may choose any other folder with the “browse” button. Let’s assume that you choose the default folder.

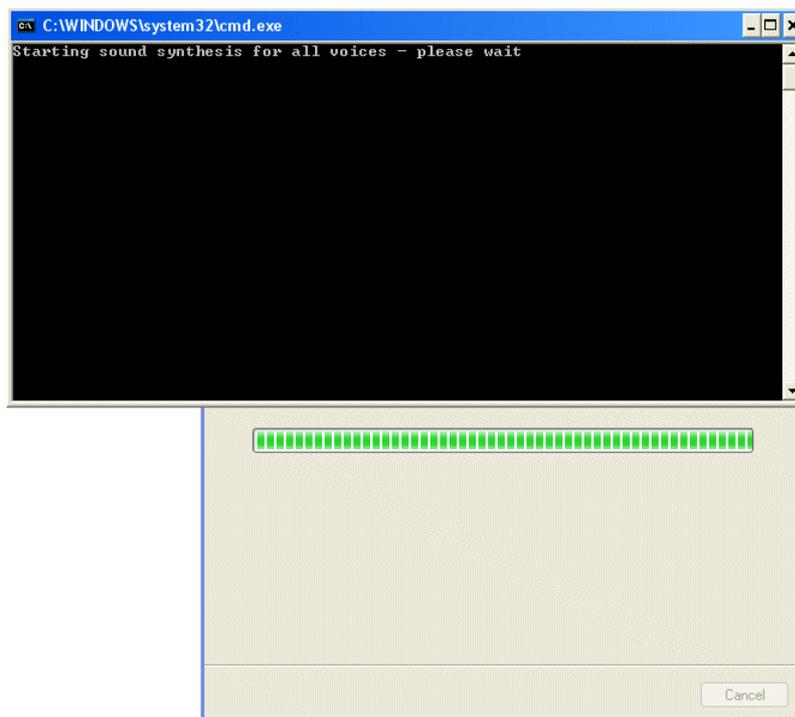
Please note the disk space requirements at the bottom of the panel. This is only the basic space required. Much more space may be needed depending on the options that are chosen at the next step.



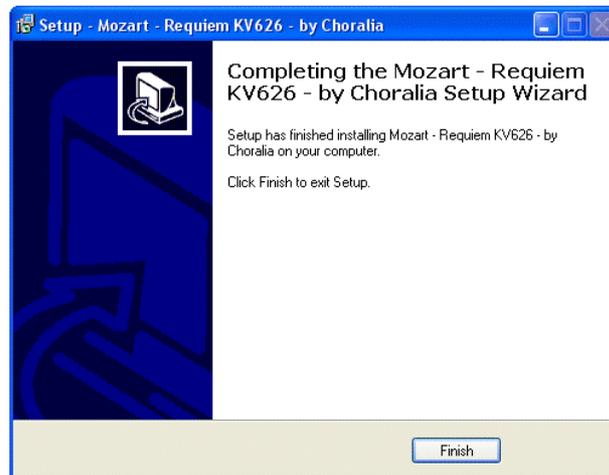
Now you can check the voice or voices that you want to be created. Each item selected will increase the disk space required, as well as the time that will be needed to complete the sound synthesis. In the following, we assume that you only check the “soprano” box, as shown above. Press the “next” button to continue.



Press the “install” button to start the sound synthesis.



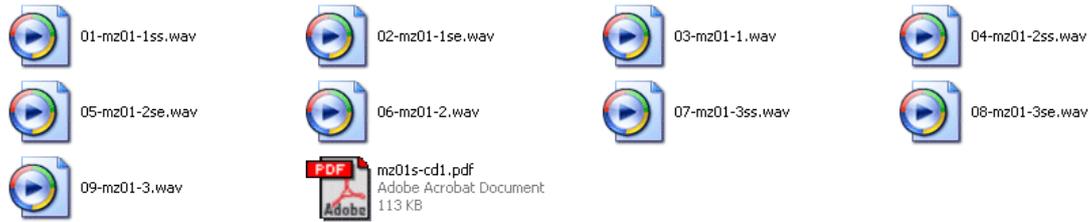
After few seconds, a second window, with a black background colour, will be displayed as shown above. Information about the progress of the sound synthesis process is shown in the window. One message is shown whenever an audio file is completed. Depending on your PC, each file may take some minutes. Depending on the music and voices chosen, many files may be created, so the whole sound synthesis process may take many minutes and even some hours. Be patient and leave the PC to work for you. Just check, from time to time, that further files are completed. The sound synthesis process is very CPU-intensive, so, if you want to do other activities on the same PC, it will slow down significantly.



When the sound synthesis is completed, the black background window will disappear. Press the “finish” button, and the installation is completed.



You will find a folder with the product code (in this example, m201) in the destination folder that you selected. If you open it, you will find the CD subfolders, and, inside each CD subfolder, the audio files and a .pdf file containing the CD cover with the track list.



If anything went wrong during the installation process, just delete any folder that has been created and start the installation from the beginning. Carefully check the availability of sufficient disk space as this is the most likely reason of any problems.

If you already created some voices and you want to add other voices, run again the executable file and select only the voices to add. Choose the same destination folder you selected when creating the other voices. You will be prompted to confirm that you want to use an existing folder. Choose “yes”. New CD sub-folders will be added for the additional voices you selected. Any CD sub-folder already created will not be deleted. If you select voices created already, the files in the corresponding sub-folders will be overwritten.

### ***Recording CDs***

If you want to record audio CDs with the audio files obtained, you need to use a CD burner and any audio CD recording software on your PC. You have just to pay attention to copy on the CD all of the audio files that are in each sub-folder in the correct order, otherwise there may be a mismatch between the track list shown on the CD cover and the actual CD contents. The track number that is part of all the file names (i.e., the two digits at the beginning) helps to easily identify the appropriate order.

You will find that, for choir voices, 700 MB CDs are never used for more than 75% of their actual capacity. At least 25% space is left available in the case you want to add a live recording of each song, so as to also include the fourth practice level. You may extract audio tracks of live recordings from commercial CDs, or obtain them from internet.