High Sequence Count (HSC) test application

The test application "iMSHighSeqCountExample" exercises all of the key features of the High Sequence Count (HSC) option.

Feature summary:

- Maximum 3million downloadable sequence entries shared by all sequences in queue.
- Maximum 10 sequences downloaded at a time.
- Maximum 2.5million image points shared across all images in the image table.
- Maximum single image size up to 500K image points.
- Maximum Image table size up to 32K.

The application first creates and downloads a group of images. The user can choose from 5 - 32768 images in the group. The images are a bank of Lissajous animations. Each animation has 32 lissajous phases and there are 64 animations - lissajous factor of 1-8 in both X and Y directions. These 2048 images are repeated 16 times at different frequency centres (X/Y locations) in a grid of 4x4. The easiest way to visualise the image animations is to use the synchronous ADC outputs and plot them on a scope in X/Y mode.

No matter how many images are chosen, the application will always create 2,500,000 image points and share them equally between the images.

Once the images are downloaded, an array of up to 10 sequences is created. 3,000,000 sequence entries are shared equally between the sequences. Each sequence randomly selects a lissajous animation and repeats it to fill all of the entries in that sequence.

After playing all of the sequences in the queue, the application gives the user the option to download and re-run all of the sequences again.

The user can change the two parameters at the top of the application source code **TEST_NUMBER_OF_SEQUENCES** and **TEST_NUMBER_OF_IMAGES** to experiment with different numbers of images/sequences.

NOTE: as with all iMS applications, the user must ensure that the application is allowed through the firewall to allow sequence downloads to work over Ethernet.

The test application will work with standard iMS4 Controllers except that the value of **max_seq_entries** should be reduced from 3,000,000 to 65,535 to work within the ordinary Controller's limitations. This will allow users with standard iMS controllers to trial the HSC option before receiving the dedicated hardware.

An updated iMSLibrary will be required to work the high sequence downloads.
The required DLL (64-bit debug, Windows 10) is included with the example application.
It will be included with SDK 1.8.6, planned release date 13th September 2022.