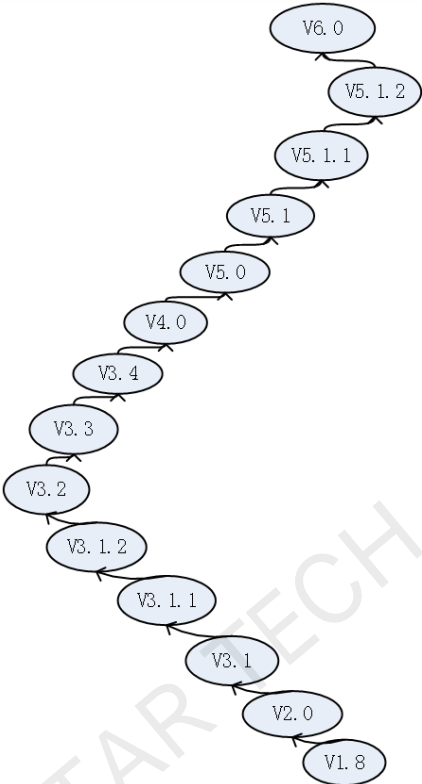# Update Description

NovaCLB-Screen

1 Roadmap

2 Main updates of versions (compared with previous version)

Version & Release Date	V6.0　2020-01-21	
Updates	New Features	1. Added support for the Canon EOS 90D camera. 2. Changed the software running environment to 64-bit operating systems. The software cannot be used on 32-bit operating systems.
	Bug Fixes	1. An error occurs during partition calibration. 2. The result of automatic saturation analysis is 270 under specific circumstances. 3. An error occurs during connection to NovaLCT in ultra-large screen calibration. 4. The screen cannot be selected during coefficient uploading when there are many screens. 5. The software gets stuck after the calibration process is paused and started again. 6. There are spiral patterns between modules on the display after calibration.
Written By	Yin Lei	
Version & Release Date	V5.1.2　2019-12-13	

Updates	New Features	1. Increased the module size limit to 1024. 2. Added the function of uploading calibration coefficients stably for combined screen.
	Bug Fixes	1. An unknown error occurs when users create a database if the sending card is connected through Ethernet cable. 2. The calibration software in Windows 10 cannot be opened occasionally after the .net framework is updated. 3. An error occurs occasionally during connecting to NovaLCT. 4. Connection to NovaLCT times out occasionally.
Written By	Fan Xingwang	
Version & Release Date	V5.1.1 2018-11-16	
Updates	New Features	1. Optimized the calibration solution for ultra-large screen (video splitter used). 2. Optimized the function of uploading coefficients via right-clicking on the topology. There is no need to select the sending card each time before uploading coefficients (video splitter used). 3. Optimized the saturation analysis function for the C1200. 4. Increased the resolution of the image that can be collected by the C1200 each time to 480×330.
	Bug Fixes	1. Fixed the problem that the software exits unexpectedly when it is eliminating boundaries. 2. Fixed the problem that the same dialog box appears several times when users click on the partition or the menu on the left after the partition settings are done and the camera is disconnected. 3. Fixed the problem that the user interface information under Screen Type is incorrect after switching from Single Screen mode to Combined Screen mode (vice versa) failed. 4. Fixed the problem that the software gets stuck when users switch frequently between the single and combined screen modes.
Written By	Li Yang	
Version & Release Date	V5.1 2018-03-09	
Updates	New Features	1. Supports calibration of the screen loaded by cascaded sending cards. 2. Supports online calibration with the 80D digital camera. 3. Supports calibration of irregular (non-rectangular) screens. 4. Cabinet position can be freely changed after the full-screen calibration is done. 5. The adjustable range of color temperature was changed to 1700–25000. 6. The positioning box for ambient light elimination can be moved with the keyboard. 7. The calibration priority of partitions was added to reduce their difference after calibration. 8. The saturation adjustment function was improved. 9. The Caliris preview function was improved. For example, the preview image can be zoomed in with one click and can be dragged with the mouse.
	Bug Fixes	
Written By	Hui Huahua	
Version &	V5.0 2017-11-07	

Release Date		
Updates	New Features	1. Supports bigger resolution module calibration, maximum to 384 * 256. 2. Simplified interface process, make the operation more simple. 3. Simplified the manual intervention point positioning process. 4. Supports calibration with scientific professional camera HS1000. 5. Supports evaluate the uniformity before and after calibration. 6. Screen to Cabinet Tool add multiple numbering type. 7. Screen Update Targets Tool add modify module information function. 8. Screen Data Merging Tool add detecting bright dark block function, Optimization algorithm, to better solve the split screen and boundary between the split screen.
	Bug Fixes	
Written By	Zheng Ruitao	
Version & Release Date	V4.0.1　2015-12-10	
Updates	New Features	1. Integrated "Cabinet To Screen" tool. 2. Modify the judgment target method. 3. Modify "Auto Partition" to "Recommend".
	Bug Fixes	1. Relocate abnormal when manual location. 2. Eliminate the boundary abnormal when using large partition sometimes. 3. Show number abnormal when trim coefficients in the process modify the dark or bright lines.
Written By	Zheng Ruitao	
Version & Release Date	V4.0　2015-09-15	
Updates	New Features	1. Supports smart partitioning, and set borders before correction. 2. Supports high-precision color correction. 3. Supports a correction for 2K area. 4. Supports change the target to regenerate correction coefficients. 5. Supports enlarge part of the area image when enabled background off. 6. Supports check the hardware can achieve proportional. 7. Supports use your camera to eliminate splicing of light and dark lines. 8. Supports select the path of the collection images. 9. Supports continue correction when the correct process was forced to interrupt (Low battery, etc.).
	Bug Fixes	
Written By	Zheng Ruitao	
Version & Release Date	V3.4　2015-05-10	
Updates	New Features	1. Supports NovaPro online calibration. 2. Supports Russian.
	Bug Fixes	1. Individual camera connection exception; 2. Cannot modify the terminated row or column number when there is just one partition. 3. If the whole left subarea modify the start column, hemp dots may appear on the left bottom of the screen after partition boundary elimination.

Written By	Zheng Ruitao	
Version & Release Date	V3.3 2014-12-08	
Updates	New Features	1. Added the menu bar. 2. Added authorization documents management. The authorization document can be added when software opening, if there exists no authorization document or the match authorization dog, and it is unable to connect with LCT. 3. Added database backup, which can effectively prevent file damage caused by software suddenly shut down. 4. Used sqlite instead of access, in order to improve the write/read speed. 5. Supports the calibration of the display has one or two LEDs. 6. Adjusted the targets advanced page, allow users input targets manually, and support three common temperature point. 7. Added ISO adjustment, limit the LED imaging area, to reduce the probability of Moore grain appear after calibration. 8. Adopted processing image while collecting, to improve efficiency. 9. Supports eliminate the boundaries even though all the partitions are not be calibrated. 11. Added the tool which can update targets and recalculate the coefficients. 12. Users can pause the calibration when large partition. 13. Users can modify the allowed dead ratio when calibration.
	Bug Fixes	1. Fixed the problem that if LCT disconnect when saving to database in eliminate the boundaries, reconnect to LCT and save again, the database cannot be loaded to LCT or other relevant software.
Written By	Zheng Ruitao	
Version & Release Date	V3.2 2014-07-08	
Updates	New Features	1. Separate of image acquisition and image analysis procedures, improve the calibration efficiency. 2. Integrated Tool of the screen to cabinet and screen data merging. 3. Modify the software icon.
	Bug Fixes	
Written By	Yin Lei	
Version & Release Date	V3.1.2 2014-06-20	
Updates	New Features	
	Bug Fixes	1. Fixed the problem that for regular partition wrapping correction, the whole partition tends to be darker. 2. Fixed the problem that after regular partition wrapping correction, the wrapping tends to be brighter. 3. Fixed the problem that in some countries, camera parameters in the operating system cannot be set. 4. Fixed the problem that for regular partition, the starting point of partition topology cannot be changed using the right-button.
Written By	Yin Lei	

Version & Release Date	V3.1.1 2014-04-10	
Updates	New Features	
	Bug Fixes	1. Fixed the problem that the captured image is black when camera exposure time is equal to 200 or less than 200. 2. Fixed the problem that an exception occurred when connecting camera failed. 4. Fixed the problem that the notification is wrong when software covered installation.
Written By	Yin Lei	
Version & Release Date	V3.1 2014-03-12	
Updates	New Features	1. Eliminates the seam between module and cabinet after calibration. 2. It can calibrate the new module, make its uniformity as same as the surroundings. 3. It can find out that the LED lights on the border are covered, then avoid these lights and continue calibration. 4. It can avoid the influence of interference light around a fixed partition (e.g. Street light). 5. It can detect the difference between control system and control computer, and give prompt. 6. When LED point positioning failed in complex environment or In a partition of complex shape, the user can adjust the LED location manually. 7. Supports Canon 70D camera. 8. Interface easier to use. 9. Reduced the time of single image acquisition in large partition mode.
	Bug Fixes	1. Fixed the problem that red changed soft red after calibration. 2. Fixed the problem that white change reddish white after calibration. 3. Fixed the problem that partition boundary cannot be eliminate when the size of partitions were different. 4. Fixed the problem that a memory error happened when having lots of partition. 6. Fixed the problem that camera do image acquisition before display show corresponding image. After calibration, the screen uniformity became worse. 7. Fixed the problem that some blue highlights appeared on the display after normal partition calibration. 8. Fixed the problem that a rainbow phenomenon appeared on the display after large partition calibration. 9. Fixed the problem that a caterpillar phenomenon appeared on the display after calibration.(eight or sixteen lights together are brighter than surroundings)
Written By	Yin Lei	
Version & Release Date	V2.0 2013-10	
Updates	New Features	1. Added large partition mode which size can be 224 plus 150. 2. Added partition boundary elimination function. 3. Added screen boundary elimination function. 4. Added the function for locating the screen position by artificial auxiliary way when there was more interference light source.

		5. Added the function that the software removed the background light interference before analyzing image data under large partition mode.
		6. New automatic analysis function of saturation.
	Bug Fixes	1. Fixed an occasional problem that the software may be no response during running.
		2. Fixed an occasional problem that the camera occasionally did not do image acquisition when clicking "Auto", "Analyze" or "Start" button.
		3. Fixed an occasional problem that the screen display white as green after screen modification.
		4. Fixed the problem that the partition information may be lost if the software exit abnormally.
Written By	Yin Lei	

3 Compatibility

		Supported version: V4.2.4 and above
Large Partition Mode	Synchronous control system–NovaLCT-Mars	V3.2.2 RT5.0
		V3.2.2 RT7.0
		Not supported version: others
	Asynchronous control system–NovaLCT-Pluto	Not supported