1. Purpose
This document provides a brief overview of improvements made to Living Image 4.5. The improvements made include a number of bug fixes and minor features. The release notes for Living Image 4.5 cover new features and fixes in that release, and are installed separately with the software. This minor release serves as an update for Living Image 4.5 on all IVIS instruments and analysis workstations.

2. Improvements

Spectrum Surface Topography
The structured light measurement for surface topography on IVIS Spectrum systems is more stable and reliable. Conditions that could cause an incomplete structured light image have been resolved.

Enhanced Mouse Imaging Shuttle Support
When using the Mouse Imaging Shuttle (MIS) on IVIS Spectrum, use the check box in the Control Panel or in the Imaging Wizard to ensure that the surface topography produces a correct height measurement of the imaging target.

Quantum GX Support
This version includes improved support of DICOM files from the Quantum GX, with corrected recognition of the animal orientation, and improved co-registration when using the MIS for transporting animals between the Quantum GX and IVIS Spectrum.

3. Known Issues
Known issues are detailed in the Living Image 4.5 release notes, which are installed with the software. Please see that document for more information.

In addition, users on OS X may encounter problems when performing multiple DLIT or FLIT reconstructions in a row. Exiting Living Image and re-launching it will enable additional reconstructions to be performed.
4. System Requirements

**PC:**
Windows 7 32-bit
- 2GHz Core 2 Duo or higher processor recommended
- 4GB RAM

Windows 7/8* 64-bit
- 2GHz Quad Core (i5, i7) processor
- 8GB RAM recommended for IVIS Spectrum CT data analysis

**Mac:**
OS X* 10.8 to 10.10
- 2GHz Core 2 Duo or higher processor recommended
- 4GB RAM or higher recommended for IVIS Spectrum CT data analysis

*Note: Support for Mac OS X 10.7 and earlier has been discontinued in Living Image 4.5.*

* Windows 8.1 and OS X are supported for the analysis module only. A Mac computer equipped with an ATI Radeon video card or certain Intel Iris Graphics chipsets is required for 3D Multi-Modality support on OS X.

5. Video Card Requirements

3D Multi-Modality tools require that the graphics processing unit (GPU) meet the minimum specifications shown below. If the appropriate license is not installed or the GPU does not meet these specifications, the 3D Multi-Modality tools will not appear in the tool palette.

<table>
<thead>
<tr>
<th>Specification</th>
<th>Description</th>
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<tbody>
<tr>
<td>OpenGL Version Requirement*</td>
<td>OpenGL 2.0 and above</td>
</tr>
<tr>
<td>OpenGL Extension Requirement*</td>
<td>GL-EXT-Texture3D</td>
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<tr>
<td>Graphics Card Memory:</td>
<td>Recommended: 1GB (Dedicated)</td>
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</tbody>
</table>
| Consumer Graphics Cards (Desktop/ Mobile, Windows/Mac) | Supported:  
  - NVIDIA® GeForce® 8 Series and above (8, 9, 100, 200, 300 and 400 series)  
  - ATI Radeon™ HD 4000 Series and above (4000 and 5000 series)  
  - Intel HD 3000 and above and Intel Iris/Iris Pro Graphics (Mac)  
  Recommended:  
  - Desktop - NVIDIA GeForce GT 240 and above  
  - Mobile - NVIDIA GeForce GT 230M and above |
| Workstation Graphics Cards (Desktop/ Mobile, Windows/Mac) | Supported:  
  - NVIDIA® Quadro® NVS Series and Above (NVS & FX series)  
  - ATI FireGL™ V5600 and Above (FireGL, FirePro & CrossFire series)  
  Recommended:  
  - Desktop - Quadro FX 1800 and above  
  - Mobile - Quadro FX 880M and above |

*If these specifications are not met, the 3D Multi-Modality tools will not appear in the tool palette.*