

CTB-00423 Rev 002

Date: October 10, 2017

Author: Service Engineering

Product: Selenia

Subsystem: System

Subject: Image Artifacts Due to Detector Impacts or Improper C-Arm Motion

Problem:

Customers have complained to Technical Support that they are seeing image artifacts on Selenia systems. The complaint is more prevalent at high volume sites.

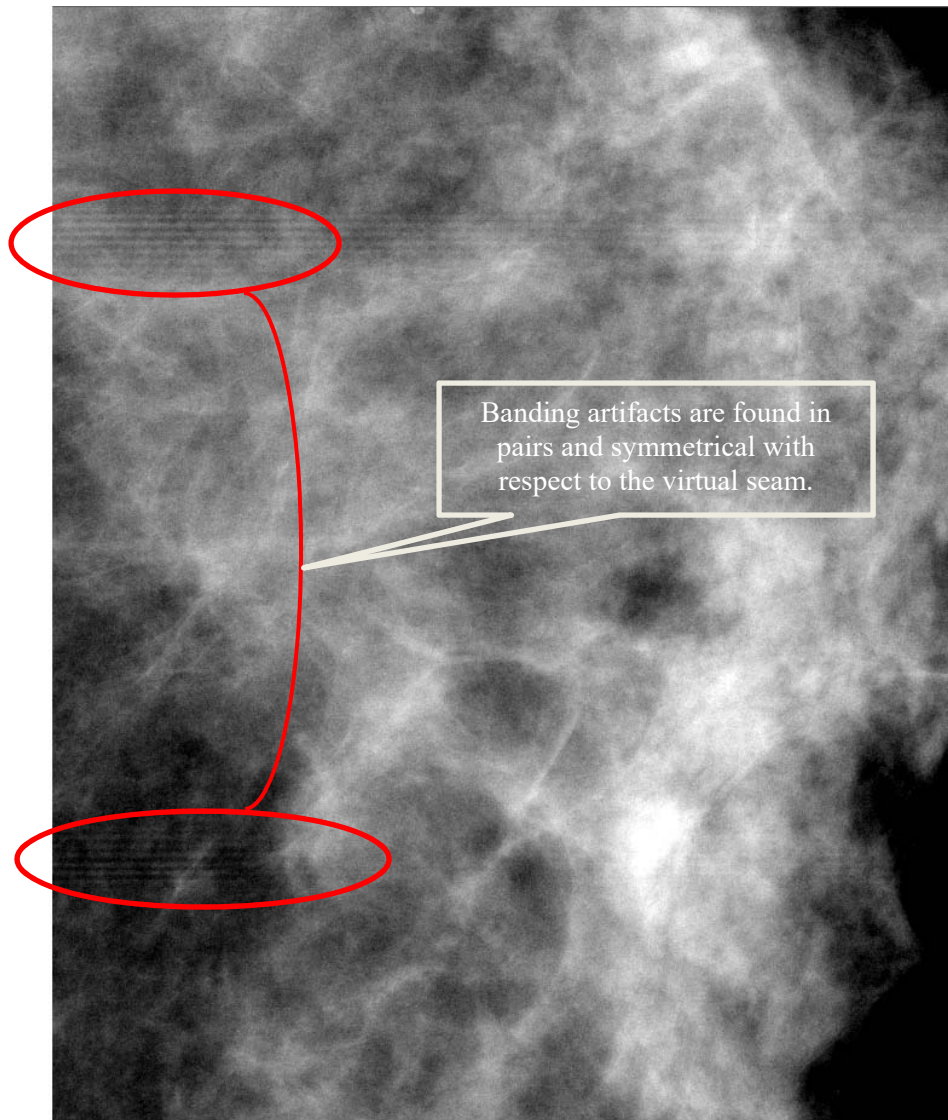
Discussion:

To better understand this issue it is important to review the operation of the image presentation mechanism of the Selenia system. When an image is acquired it is first presented on the Acquisition Workstation (AWS) as a low resolution image in order that the room technician can quickly see that an appropriate image was acquired. As this image is being displayed the remainder of the image data is still being transferred from the detector to the AWS. The detector circuitry is very sensitive to external vibration during the entire data transfer. The full resolution data transfer from the detector to the AWS can take as long as 15 seconds. Any impact or unexpected mechanical movement may introduce “noise” into the image resulting in image artifacts.

The easiest method to determine that the full resolution data transfer has completed is to observe the Full Zoom/Pan button (a.k.a. asterisk or snowflake button). When this button changes from greyed out to active, the full resolution image has finished transferring and is no longer sensitive to external impacts or vibrations.

Experience has shown us that normal wear and tear on equipment can cause noise and vibration when the C-Arm is rotated as the systems age.

Technical Bulletin (cont.)



Example of Gate Banding

Recommendation:

To avoid the possibility of external introduced image artifacts the following steps should be observed:

- Make sure the patient or technician does not strike the detector during the 15 second data transfer time. This can easily happen with loose fitting jewelry or clothing.

Technical Bulletin (cont.)

- Be sure not to rotate the C-Arm during the 15 second data transfer time.

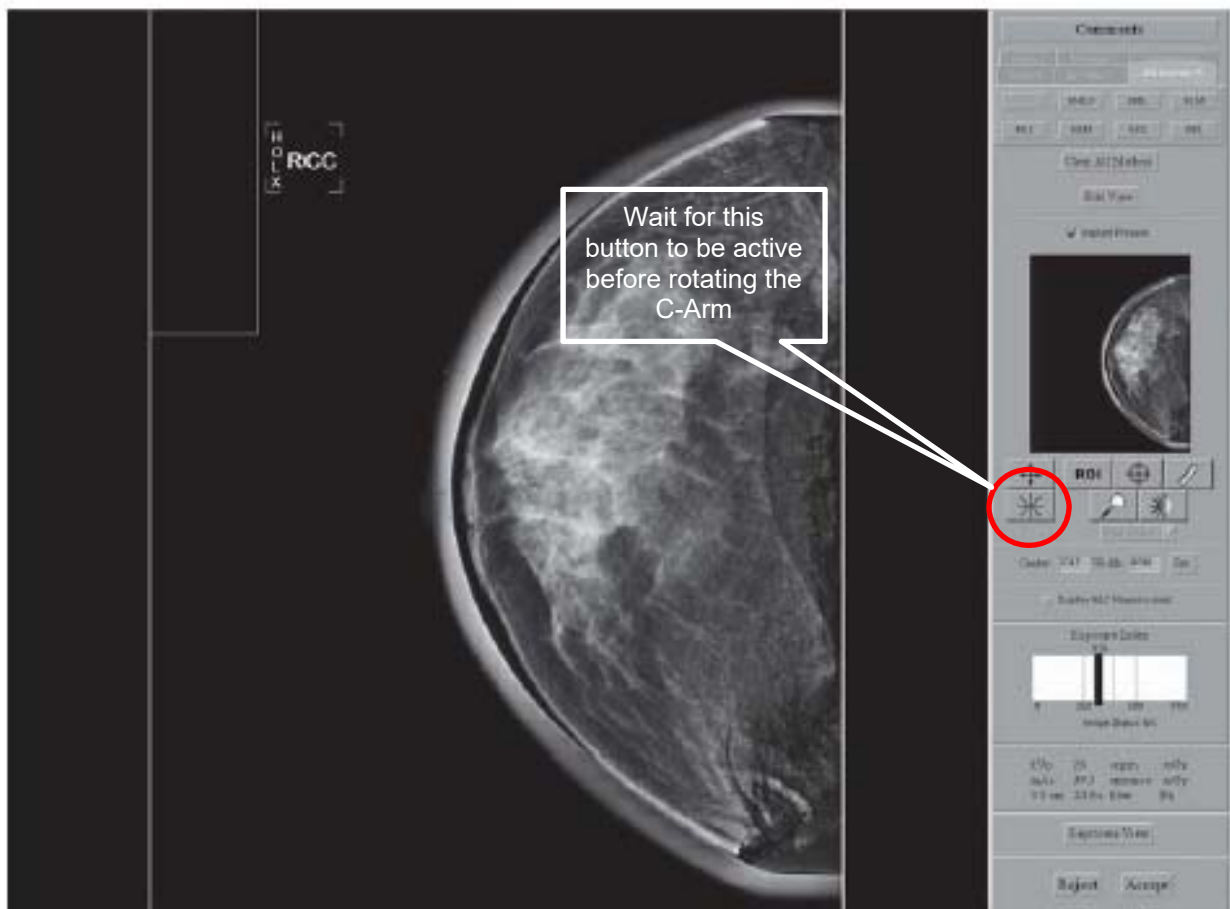
The following warning is from MAN-04095, Selenia User Companion.



Warning:

Do not move the C-arm while the system retrieves the image.

- Always be sure that paddles are in good working condition, i.e. not cracked or loose fitting.
- Do not remove or add paddles during the 15 second data transfer time.
- Wait for the Full Zoom/Pan button (a.k.a. asterisk or snowflake button) to become active to be sure that the data transfer has completed.



Technical Bulletin (cont.)

Notice:

It is also important to note that the recommendations and instructions outlined within this document have always been considered the appropriate method for the Selenia system's operation. This document is not intending to introduce any new instructions, but reiterate the proper use of the equipment as has always been stated in user manuals.

There may be some customers who've become accustomed to a workflow that did not necessarily fall into the guidelines provided, but have previously experienced minimal artifact as a result. The impact of operating the equipment outside of the stated guidelines and instructions may vary, depending on the detector model currently in use. It has been our experience that an older detector model (replaced in 2012) was less sensitive to this kind of use but experienced many other image quality issues. Its replacement has since provided a much more stable product in terms of image quality, but could be more susceptible to artifact caused by operating the system outside of the stated guidelines. This susceptibility can also vary slightly within individual detectors of the same model.