CXDI Control
Software NE

Steady and efficient workflow
**CXDI Control Software NE**

CXDI Control Software NE is made exclusively for use with Canon Digital Radiography systems. This software helps to optimise workflow and reduce the steps needed to complete exams. It provides quick image confirmation and timely network distribution, supports multiple study acquisition, can easily be tailored to individual clinical preferences and helps provide the delivery of consistent, high-resolution images with the Canon CXDI Digital Radiography systems. In addition, this proprietary software solution is Integrating the Healthcare Enterprise (IHE) compliant and has features that can help practitioners with their HIPAA compliance efforts.

**Main features:**
- Real-time viewing of high quality images
- Large high-resolution monitor for comfortable viewing
- Optimised workflow with less operation steps
- Interactive GUI for intuitive operation
- Supports various workflows to match local requirements
- Single and Prepacked Protocols
- Emergency study capability
- Suspend Exam
- Reject Analysis
- Automatic forwarding rejected images to a designated analysis workstation
- Automatic Image stitching
- Scatter Correction Software (optional)

**Optimises your workflow**
Protocol planning with the right sequence of the positions in the study. Instant display of the image taken in high resolution within one second. Comfortable viewing on large screen with overview and less operation steps.

**Designed to enhance image quality**
Provides wide range of the algorithm and dynamic formatting before saving. Enables significant dose reductions through optimising image processing parameters.

**Adaptive to your local standards**
Is giving you the tailored preset that you require, is adaptable to any local language needs, preference or taste of imaging, accommodating standard or unique protocols such as trauma protocol and protocols for paediatric imaging.

**Flexible and Secure**
The Canon NE software is outstanding in communication with X-ray generator and brilliant in the non-synchronised mode.

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**Intuitive interface**
Canon’s intuitive ‘CXDI-NE’ Graphical User Interface (GUI) can be used for all types of digital radiography modality and this commonality of GUI across the entire DR product range is a major advantage when it comes to speed of operator training, user confidence, convenience and familiarity. Canon CXDI-NE software configuration options ensure a GUI that is always right for you. Comprehensive image processing including ‘Scatter Correction’ and ‘One Shot Long-Length’ imaging options guarantee optimised image quality with the lowest possible dose; the industry standard DICOM 3.0 interface ensures multi-vendor and cross-platform connectivity in any situation.

**Enabling significant dose reductions**
Canon’s NE Control Software enables significant dose reductions. Through a wide range of algorithms for dynamic formatting before saving, it optimises the images with intelligent image processing parameters, as confirmed by various clinical evaluation studies conducted in Europe. CONRAD Radiographic Research Center in Denmark, proved that by optimising image processing parameters and adapting the image quality depending on the requested pathology, a significant dose reduction has been achieved while still maintaining sufficient diagnostic image quality. Read the conclusions of the specific reports on the last page of this document.

**Scatter Correction (optional)**
Canon’s Scatter Correction reduces the effect of scattered radiation for non-grid bedside examinations, allowing you to obtain images with outstanding contrast while avoiding the grid handling and improve your workflow

**Benefits:**
- Significantly lower X-ray dose compared to imaging with a grid*
- Superior image contrast without the need for a grid
- Improved workflow: no need to carry, fit, position and remove a grid
- Enhanced efficiency: no repeat exposures due to grid misalignments and resulting artefacts
- Potential to improve patient comfort in bed examinations as the imaging receptor is thinner without a grid fitted

*Confirmed result after testing Canon Scatter Correction at Linköping University Hospital, Sweden

**One Shot Long-Length (optional)**
One Shot Long-Length exams enhance efficiency compared to conventional stitch exams; shorter examination time, lower risk on patient movement, reduced dose and increased image quality.

**Expected benefits:**
- Patient positioning stand with motorised height adjustment
- Fixed installation or mobile for convenient relocation
- Large, ergonomic grip rails for confident patient positioning
- Optional grid
- Ability to use 3 existing detectors for cost-effective one shot Long-Length imaging
- Versatile configuration; use either 3 x 43x42cm or 3 x 35x43cm wireless detectors
Research studies on Canon Flat Panel Detectors

CONRAD Radiographic Research Centre

**Study 1.** Optimization of image quality and dose using multi-frequency software

**Purpose:** Examine whether the use of multi-frequency software (MLT[S]) may allow dose reduction without significant loss of image quality. The processing parameters explored include brightness, contrast, edge enhancement, frequency band, noise reduction and dynamic range (dark/bright region).

**Conclusion:** By optimizing image processing parameters, a significant dose reduction of 61% is possible without significant loss of image quality on anthropomorphic phantoms.


**Study 2.** Large dose reduction by optimization of Multi Frequency Processing Software in DR within follow-up examinations in pediatric femur

![Figure 2: Experimental images taken of the anthropomorphic lamb femur phantom.](image)

- (A) - (C) optimized image taken at (A) 8 mAs [244 REX], (B) 3.2 mAs [107 REX], (C) 0.5 mAs approved for diagnosis [18 REX], (D) MLT(M) optimized image (previous non-frequency software version) taken at 8 mAs [241 REX]. The femur fraction is indicated by an arrow.

**Purpose:** Examine whether the use of MFP processing could allow for a dose reduction based on differentiated image quality while still maintaining an acceptable diagnostic image quality in pediatric femur follow-up DR examinations.

**Conclusion:** By optimizing image processing parameters and to adapt the image quality depending on the requested pathology a significant dose reduction of 92% was shown possible while still maintaining sufficient diagnostic image quality.


**Study 3.** New Developed DR Detector Performs Radiographs of Hand, Pelvic and Premature Chest Anatomies at a Lower Radiation Dose and/or a Higher Image Quality

**Purpose:** Examine whether the new detector design could increase image quality and/or reduce dose in hand, pelvic and premature chest examinations.

**Conclusion:** Optimal image quality can be maintained at a lower dose and/or image quality, and could be improved using the CXDI-70C detector for both hand, pelvic and premature chest examinations, based on the technical and anthropomorphic phantom results. The performance of the CXDI-70C detector in terms of IQFInv values was on average 45 % better than the CXDI-55C detector, depending on anatomy, kVp and mA levels. According to the VQA results, depending on anatomy and kVp levels, optimal image quality was maintained for the CXDI-70C detector at an estimated dose reduction of 30 % on average.


**Study 4.** Software optimization in Pediatric Pelvic DR examinations - ongoing

**Purpose:** To investigate potential image quality optimization or dose savings associated with using the new multi frequency software together with a newly developed DR detector at pediatric pelvic examinations.

**Conclusion:** By using a new DR detector and optimizing image processing parameters, a significant dose reduction is possible without significant loss of image quality in a pediatric pelvis examinations. Statistical significance was found for processing combinations with the biggest impact from the noise reduction parameter.

**Reference:** June 2014: Poster and oral presentation at “European Society for Pediatric Radiology”, Amsterdam Scientific article will be published during 2015

For further information about the Canon Medical Imaging Group and details of local distributors please visit: [www.canon-europe.com/medical](http://www.canon-europe.com/medical)

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