Central Monitoring System

User Manual

AGFA *Agfa*

Contents

Legal Notice

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Introduction to this manual

Topics:

Scope of this Manual

This manual contains information for the safe and effective operation of the MUSICA Acquisition Workstation software.

This manual applies to two versions of the software: NX 3.0 and NX 4.0. NX 4.0 is available only on DR systems that support dynamic imaging.

The software is further referred to as "NX" and the pc on which it runs the "NX workstation".

About the safety notices in this document

The following samples show how warnings, cautions, instructions and notes appear in this document. The text explains their intended use.

DANGER:
A danger safety notice indicates a hazardous situation of direct, immediate danger for a potential serious injury to a user, engineer, patient or any other person.

WARNING:
A warning safety notice indicates a hazardous situation which can lead to a potential serious injury to a user, engineer, patient or any other person.

CAUTION:
A caution safety notice indicates a hazardous situation which can lead to a potential minor injury to a user, engineer, patient or any other person.

An instruction is a direction which, if it is not followed, can cause damage to the equipment described in this manual or any other equipment or goods and can cause environmental pollution.

A prohibition is a direction which, if it is not followed, can cause damage to the equipment described in this manual or any other equipment or goods and can cause environmental pollution.

*Note***:** *Notes provide advice and highlight unusual points. A note is not intended as an instruction.*

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Note: *In the United States, Federal law restricts this device to sale by or on the order of a physician.*

Introduction to Central Monitoring System

Topics:

Intended Use

- NX Central Monitoring System is a CR/DR workstation for image processing and image transmission of digitized images created on NX Modality Workstations.
- The primary use of the NX Central Monitoring System is quality monitoring. With the additional diagnostic monitor, images are displayed with diagnostic quality. There is however no extensive toolset for softcopy reading available.
- NX Central Monitoring System is intended for preparing images for diagnostic use and sending them to a printer, an archive or a diagnostic station or burning them on CD/DVD.
- NX Central Monitoring System can be used to view and improve the images acquired and processed by NX Modality Workstations
- NX Central Monitoring System can be used to monitor CR/DR imaging from a central location.
- Study- and patient data can be edited.
- NX Central Monitoring System provides tools to improve image quality of the medical images and to predefine image processing settings.
- NX Central Monitoring System is not intended to be used as an archive.

Intended User

This manual is written for trained users of Agfa products and trained diagnostic X–Ray clinical personnel.

Users are considered as the persons who actually handle the equipment as well as the persons having authority over the equipment.
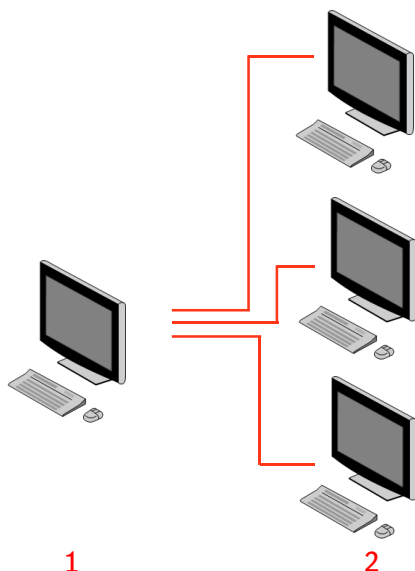
Before attempting to work with this equipment, the user must read, understand, note and strictly observe all warnings, cautions and safety markings on the equipment.

Specifically for Central Monitoring System, all users allowed to work with NX can use the Central Monitoring System, but especially the users with the following roles will be intended users:

- Users with a responsibility to train personnel or students.
- Users with a responsibility to discuss image quality aspects with personnel or students.
- Users carrying responsibility for administrative aspects concerning the workflow and quality control on several NX Workstations (managing and gathering statistics of different NX Workstations).
- Responsible users in a domain of imaging quality control (for example window/ level).
- Operators and radiographers can use Central Monitoring System in situations where they want to monitor more than one examination room.

Configuration

1. Central Monitoring System
2. NX in-room Workstations

Figure 1: Configuration of 1 Central Monitoring System with three NX in-room workstations

A typical configuration is shown in the figure above. One Central Monitoring System is connected with three NX-in room workstations.

This configuration can be extended. Contact your service representative to go through the possibilities.

*Note***:** Depending on the installation, your workstation will be configured in such a way that the dose monitoring will make use of LGM (Logarithmic Median) values or Exposure Index (EI) values. In a Central Monitoring System configuration, all systems must share the same dose monitoring configuration.

*Note***:** NX Workstations may need an upgrade before they can be connected to a Central Monitoring System. Contact your service representative.

System Documentation

This document describes tasks and provides reference information on Central Monitoring System.

For product safety directions, general information on the NX Workstation and an overview of the NX User Documentation, refer to the NX User Manual (document 4420).

The documentation shall be kept with the system for easy reference. Technical documentation is available in the product service documentation that is available from your local support organization.

Using the Central Monitoring System

Topics:

About the Central Monitoring System

The Central Monitoring System is developed to extend the NX workflow in the following scenarios:

- A user needs to look for an image in the Central Monitoring System if it is not found (or not found fast enough) on the PACS or hardcopy.
- A user needs to check the work of students at the Central Monitoring System.
- A user needs to check the "sent" status of examinations centrally.
- A user wants to use the Central Monitoring System as an additional station for quality control, for example while the in-room station is busy.
- A user wants to perform supervisory tasks centrally: managing repeat reject statistics, dose monitoring data, queues and image transfer

During configuration (refer to the NX Key User manual) you will define which rooms a Central Monitoring System will see.

*Note***:** There may be a short delay between making changes to an image/examination on the In-room NX workstation and seeing these changes on a Central Monitoring System and vice-versa.

Searching for an examination

Procedure:

1. In the Worklist window, enter the Search criteria in the Search pane:

Figure 2: Search pane

You can search using the following criteria:

- **Search BY:** patient name, patient ID, accession number, examination group, examination date, sent state, contains rejected images, locked.

  You can refine the search BY query by entering the first letters of a name in the Search By-field next to the drop down list.
- **Seach IN:** all rooms, examination room 1, examination room 2, ...
- **Search FOR:** open examinations, closed examinations or all examinations.

2. In the Search pane, click **Search**.

  Central Monitoring System will query the database and display the examinations matching the search criteria.

  If too many examinations are displayed, you can refine your search criteria.

3. The third step.

You can also search by typing in the selected list. Type a letter on the keyboard, the first entry starting with this letter will be highlighted in the selected column.

You can sort a list alphabetically or by number by clicking on the column header. A small arrow will appear. Click once to arrange the list, click twice to reverse the order. A third click will return to the default sort criteria.

Opening an examination on the Central Monitoring System

Procedure:

1. Search for an examination and select it.

   In a standard configuration, the following parameters are displayed for each exam in the list:

Parameter	Explanation
⚟	This icon is displayed when the exam is open in the Examination window.
⚟	This icon appears next to the examination in the worklist if the same examination is being displayed on the In-room NX Workstation. It could be changed by another user.
Patient Name	The name, unique ID, birth date and gender of the patient. When several exams are planned for the same patient at the same time, this is indicated by a '+' sign. Click the '+' sign to view all planned exams for that patient.

2. Click **Open Exam** at the bottom of the Image overview pane, double-click on the exam in the list or click a thumbnail in the Image Overview pane.
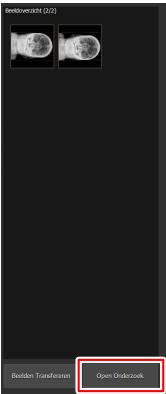

Figure 3: Opening an examination

The examination will be displayed in the NX Examination window. In the Central Monitoring System, all QC tasks possible on an NX Workstation are possible.
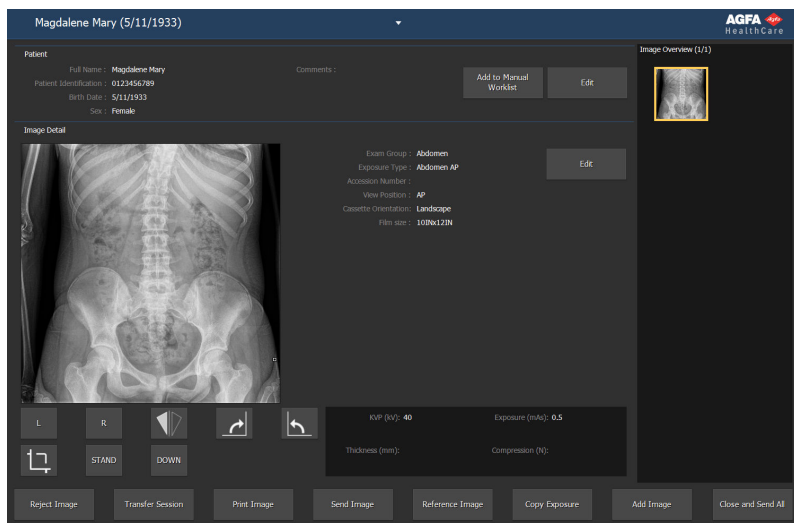
Note: You cannot identify cassettes on the Central Monitoring System, this must be done on an NX in-room workstation.

The drop-down list in the title bar of the window shows the name of the patient for which the exam is performed. If there is another exam open, you can select another name from the list to display the exam of the patient.

Note: Note: If the icon is displayed next to the patient name in the dropdown, the same examination is being displayed on the In-Room NX Workstation. If someone else is making changes to the same image or exam data, at the same time, some of your changes may be undone by the other user.

Figure 4: Examination window

3. Perform any QC task in the Examination window or in the Editing window.

   Examples can be adjusting window/level or recollimating an image.

   You can switch between the **Examination** window and **Editing** window by using the action buttons at the bottom of the screen.

4. After the work is completed and you want to close an examination, there are two possible choices:

- **Close and Send All** Closes the exam and sends all images to a printer or to a PACS archive.
- **Close** This closes the examination on the Central Monitoring System. It will not be sent to its destination. Continue the rest of the examination on the NX in-room workstation.

Transferring images from one exam to another

Procedure:

1. In the **Worklist** window, select the exam from which you want to transfer the images. The images are displayed in the **Image Overview** pane.

2. Click **Transfer Images**.

   The **Transfer Images** wizard opens:

   Figure 5: Transfer Images wizard view 1

3. In the **Image Overview** pane, select the image(s) that you want to transfer.
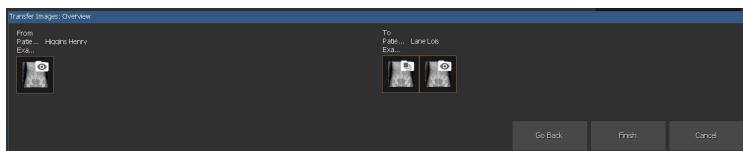
   The image is displayed in the wizard.

4. Click **Continue**.

5. In the **Worklist** pane, select the exam to which the image should be transferred.

   The patient data is displayed in the wizard.

6. Click **Continue**.

   A transfer overview is displayed to check if all information is correct.

   Figure 6: Transfer Images wizard view 2
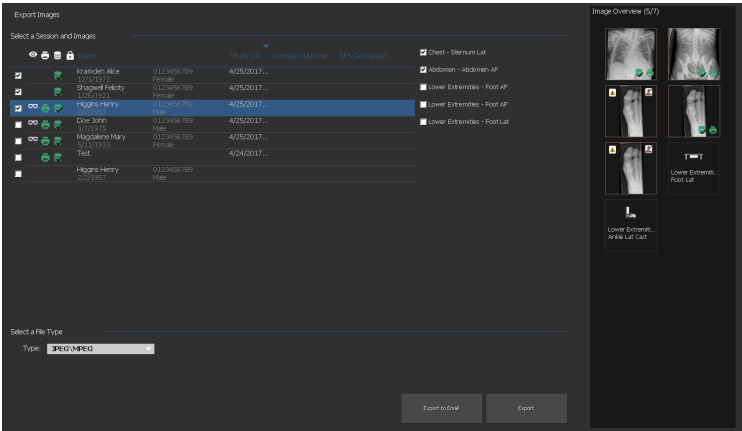
7. Click **Finish**.

   The image is transferred.

Exporting images

It is possible to export images from an examination to CD or DVD.
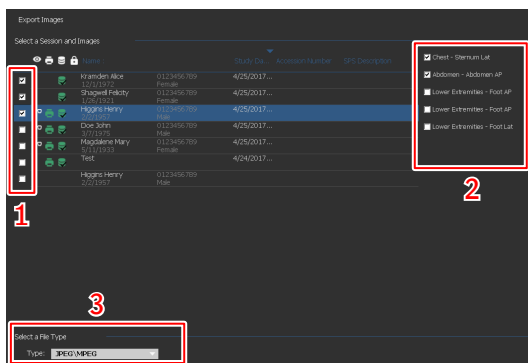
To export images

1. Go to the Main Menu.
2. Click Export images in the Functionality Overview pane of the Main Menu window.

   The Export Images pane is opened.

   Figure 7: Export Images pane

3. Perform one of the following actions:

   • Select the checkboxes of the examinations you want to export (1) in the first column of the Export Images pane.
   • Decide to include or exclude images by selecting or deselecting the checkbox of the image in the Image Selection pane (2).
   • Select a file type in the File Type drop down box (3).

Figure 8: Export Images actions

 Note: If you choose DICOM or Native as export format, you have the option to include patient demographics.

 Note: Multiple DICOM export profiles can be configured.

 Note: The DICOM export is IHE compliant only if the user or the RIS has provided a value for the Patient ID field.

4. Click **Export**.
5. Select a destination folder.
6. Click **Save**.
7. Alternatively, click **Export to Email** to send the images by email.

   The message including the images as attachments is composed and opened in the default email client that is configured on the PC.
8. Fill in the destination address and send the email.