

## **Systems Information/MiPACS (Medicor) Software**

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### **Back-Up System(s) (12/07)**

There have been few network/server failures or down time of the deployed DDRS system for Phase 1 clinics. However, if the network for digital radiography goes "down", the clinic's entire operation is compromised, the worst scenario being cessation of all activity until the system is restored. It is very important that a "back-up" system be established before any potential network/server failure. This system should be designed to be able to switch radiographic operations and image storage from the network/server system to "local storage" on one or several computer work stations within the clinic. These "locally stored" images can then be transferred to the network/server upon the system reactivation. Back-up systems may differ per individual Air Force Command and base security requirements. Clinic and Force3 personnel should discuss and plan for this requirement during the Pre-Deployment site survey.

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### **Previous Digital Radiography Database Transfer into MiPACS (12/07)**

Many Air Force clinics have been using digital sensors before DDRS deployment; most frequently these have been used for endodontics. Clinics may have a large pre-existing digital radiography database of images stored with related patient identification information. Ideally, these files need to be transferred into the MiPACS software/network/server system upon deployment of the DDRS. This may be difficult, depending on the previous format of patient identification parameters used to identify the radiographic images. The format previously used may not be compatible with an easy transfer into the MiPACS network storage system. Force3 requests that they be forewarned of the need to transfer your clinic's previous database of images into MiPACS.

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### **AF Enterprise Site Licenses for Medicor MiPACS (4/07)**

Recently, a dental treatment facility (DTF) submitted an Unfunded Requirement (UFR) for extra software licenses for the AF Digital Dental Radiology Solution (DDRS). The software solution is called MiPACS and is from a company named Medicor. The integration company, Force 3, has included individual software licenses in every DDRS proposal as per our instructions, at \$410 per copy.

In these initial Force 3 proposals, the MiPACS software was licensed per user. Every user of the software ranging from the person exposing the image and then loading/saving it to the dentist or the dental provider reviewing/using the image would need a separate user license.

Simultaneously, with the initial Force 3 proposals, the Air Force was working a separate proposal in which every dental facility would have their own "site license" for the MiPACS software. This site license would not be based on individual users, but would rather be a blanket license to use the software on as many computers and by as many users as needed at that particular DTF.

The Air Force was successful in getting the contract completed for [AF-wide site licenses](#) before the end of the fiscal year. Our AF and AFMS contracting folks will be removing the individual user licenses from every Force 3 proposal and a separate MiPACS software site license will be provided upon installation of the digital radiology software. Thus, there is no need for the individual DTFs to be concerned about the number of licenses for the Medicor MiPACS software in their Force 3 proposals.

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### Importing Patient Information into MiPACS (4/07)

A method to allow a one-time import of patient information into MiPACS has been developed. With this method, your current active duty AF base population will be imported into the MiPACS database at each facility. This will preclude you from having to manually input the patient information into the software for every patient who has digital images taken.

As stated above, this is a one-time import. After this import, when new patients arrive at your clinic due to PCS (and for non-AF or non-active duty patients), you will still have to manually enter their information into the software before taking digital images.

For bases with a high patient turnover, we may have a method to perform a periodic import of patient data. Contact the Technology Integration Consultant for more information at DSN 731-7411.

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### The Proper Way to Enter Patient Data into MiPACS (4/07)

Since the software will eventually be linked to a global server, it's important that we use a standard method to enter the patients' data into MiPACS. The standard method that all DTFs must adhere to is:

- All text information is to be entered in UPPER CASE LETTERS.
- The patient ID field must only contain the patient's social security number (SSN), and it must be entered without dashes. For example: 123456789.
- We will be using the patient's actual SSN, not just the sponsor's. No FMP codes are to be used.

**At this time, once you create a patient in the MiPACS database, their information CANNOT BE CHANGED.** Therefore, it's very important that the entered data be carefully checked for accuracy before proceeding. We have had several instances where the patient's information was entered incorrectly (e.g., wrong SSN or misspelled name.). Medicor plans to release a utility to correct mistakes, but it is not currently available. **Lesson to be learned: Don't make mistakes when entering MiPACS patient data.**

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### MiPACS Software "Bug" May Delete Captured Digital Images (4/07)

The engineers at Medicor Imaging have discovered a significant "bug" with the MiPACS software. Considering our normal workflow patterns within many clinics, this bug has the potential to delete digital radiographic images just after they are captured and prior to being saved/approved.

**Full details are below, but the bottom line is: The same patient should not be opened in MiPACS on two different computers at the same time, especially if unapproved images are present in the patient's MiPACS record. Medicor is working to resolve the issue and a fix will be available in a MiPACS update.**

The following scenario results in the loss of the images:

1. Two people who do not have the "delete right" for images are logged into the local database on separate computers; they have opened a file on the same patient.
2. The first person is in the Exam/Pro room and has opened the patient's file which has pre-existing images.
3. The second person in Radiology captures new images for the same patient but has not yet "Saved" these images.
4. The first person in Exam/Pro closes the patient's file prior to the images being "Saved" in Radiology.

5. The entire patient record on the computer in Radiology is deleted. The images are still on the screen in Radiology, but if you right-click and choose "Show Image Info," you get a "file not found error." It is also impossible to save and store to the server at this point.

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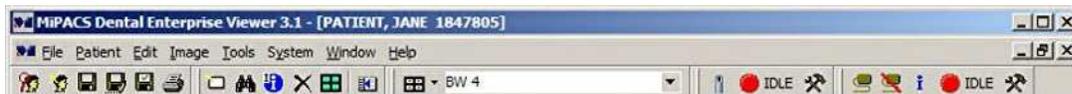
## Image Saving and Image Approval (4/07)

In MiPACS, the term "save" basically means that the image is temporarily stored to the shared database; it doesn't permanently store it on the DICOM server.

When you "approve" an image or series, MiPACS locks that image/series from any further changes; it can't be modified, deleted, etc. That's why it is very important to absolutely ensure that the image or series is what the provider wants, is on the correct patient in MiPACS, and is "mounted/aligned" correctly. Once "approved," you cannot change it even if you accidentally stored it on the wrong patient.

To help minimize the chance of errors, it is strongly recommended that technicians not be granted "approve" permissions and that you restrict approval permissions to dentists and hygienists. Expect an official AF Dental Service policy to be made on this shortly.

On the MiPACS toolbar, there are three icons on the left side that look like floppy disks (the 3rd–5th icons from the left). The function of these icons, starting from the left are:



1. **Save:** When our technicians take an image or series and they are finished and satisfied with the images, they use this button to save the images to the shared local database (Note: This action does not approve them or store them on the DICOM server). Once they use this save icon, the images are immediately visible throughout our clinics at any workstation with MiPACS loaded.

2. **Save As:** This is used when you want to store a local copy of the images to make changes, print, etc.

3. **Save and Approve:** This button is used only after a provider reviews the images/series and is confident that the images are diagnostic and mounted correctly for the correct patient. This icon will bring up a separate dialog box which presents options to save the images and also to store them on the DICOM server. Only users with approval permission have this functionality. With most DTF MiPACS' configurations, once this icon is used, the images are approved and stored on the DICOM server.

One problem here: If you restrict approval permissions and don't grant them to your technicians, then when a provider comes into a prophy room, for example, and the technician is logged into the PC and MiPACS, the provider cannot approve the images on that workstation because the prophy technician is logged on. The solution is to change the method of logging on to MiPACS. With the direct logon method implemented in MiPACS (like CDA) you'll have an additional feature. If you use the Save and Approve icon, a new dialog box will pop up in which a user with approval permission can enter their user name and password to approve the images. This will work even when a user without approval permission is logged onto the MiPACS software. Most DTFs are or will be configured with this logon method. If your clinic is not, please contact the Technology Integration Consultant at DSN 731-7411 for instructions on how to make this change.

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## Standard Desktop Configuration/CDA and DDRS Compatibility (1/07)

All computer software must be compatible with the Air Force's new Standard Desktop Configuration (SDC). Any software not officially "approved" or "waived" may be automatically deleted, placing CDA and DDRS at risk of being taken offline. At least one MAJCOM (AETC) met its deadline for this compatibility, and subsequent use of DDRS and the SDC at multiple locations has revealed no compatibility problems.

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## Optimizing the Radiographic Image on the Monitor (1/07)

Clinics have tried to use existing computer monitors integrated with the new digital imaging MIPACS software. At one location, the existing 15-inch monitors supported a maximum resolution of 1024 x 768. MiPACS has a minimum system configuration of XVGA 1024 x 768 at 24-bit color but has a recommended configuration of SXGA 1280 x 1024 at 24-bit color. When a new 17-inch monitor was connected and the resolution was changed to 1280 x 1024, the quality of the image improved significantly. Monitors with higher resolution have more pixels, but another measurement called "Dot Pitch" also affects the clarity of the image. Dot pitch, measured in fractions of a millimeter, is the distance between a red (or green or blue) dot and the closest red (or green or blue) dot on a color monitor. Common dot pitch measurements for flat screen monitors range from 0.26 mm to 0.30 mm. The smaller the number, the crisper the image. Radiographic images need a resolution of 0.27 mm or lower. We usually think that a larger monitor will provide a better image, but if one compares a 17-inch monitor with a 19-inch monitor with the same resolution (SXGA 1280 x 1024), the 17-inch monitor will usually have the better image because its dot pitch is lower (approximately 0.26 mm compared to 0.29 mm). Fifteen-inch monitors often have a maximum resolution of 1024 x 768 and a dot pitch of greater than 0.29 mm. Bottom Line: Generally the best dot pitch measurement and radiographic image is achieved with 17-inch monitors.

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## Screen Saver Time-Out Security Feature Problem (1/07)

Most Air Force clinics/facilities are bound by IT security standards requiring that the computer screen automatically change to screen saver mode if no activity is detected on the keyboard or mouse for a specific period of time. The time allowed for no activity can vary, but can be as short as three minutes. This obviously creates a problem for the continuous display of digital images during a dental examination, restorative treatment, or surgical procedure. Several clinics (Wright Patterson AFB, Sheppard AFB) have discovered/established local solutions to this problem. These procedures may not be acceptable as adequate security practices at all bases. An Air Force-wide solution to this problem has yet to be determined.

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## Port 1000 Firewall (1/07)

Port 1000 (a specific "channel" for network communications) must be open on each CPU work station using the MiPACS software. This has to be done for the digital system to work. This requirement has been repeatedly stressed and briefed to clinics and IT personnel. Even with this emphasis and repeated urgings, several facilities have not been successful in achieving this, and thus the digital deployment process has been delayed during the installation phase. It is a **must** to constantly check with Medical Group IT personnel and also the appropriate authorities at the base level communication squadron to ensure that everyone is aware of this requirement and that it be executed before or during the digital hardware/software deployment. Please note that two exceptions need to be added to the Windows Firewall: one for the port 1000 and one for the file "C:\Program files\Midentview\Midentview.exe".

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## CPU Terminal User Rights (1/07)

Some of the software applications default to a requirement for "Administrative" privileges to run the programs. Local IT personnel will need to ensure that routine radiographic DDRS applications are available to all clinic personnel who need access to operate these systems.

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