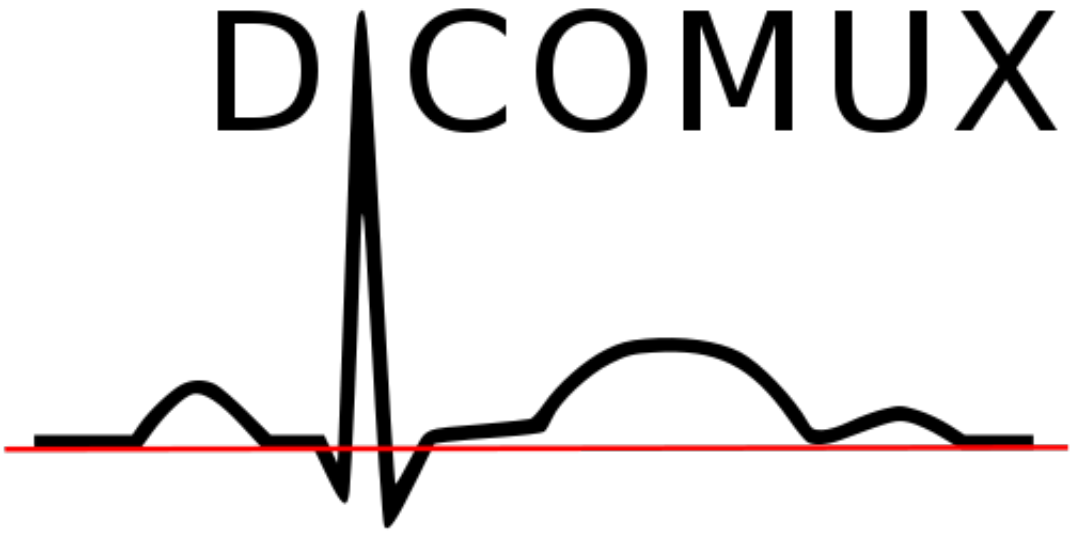

User Manual
for
Version 0.1

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June 26, 2010

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1 Introduction

Dicom is a standard for handling, storing, printing, and transmitting information in medical imaging. Dicom files can hold all kind of information.
DICOMUX is a software for visualization of Dicom file content. The main features are currently a viewer for encapsulated PDF and a waveform viewer for ecg data. It is also possible to view the raw data of a Dicom file. Furthermore it is possible to open a Dicom directory with all information about patient, studies, series and the resources.
This document describes how to use DICOMUX and gives some help about known problems.

1.1 Usage

DICOMUX must not be used for diagnostic purposes. It may only be used for testing whether it is able to open a certain Dicom file or directory.

1.2 License

2 User Guide

The next chapters will guide you through the concept and the functions of DICOMUX.

2.1 Workspace

The main concept of DICOMUX is based on the usage of workspaces. Each file or directory has its own workspace. If you open a Dicom file or a Dicom directory, DICOMUX will open a new workspace for you. The workspaces are represented as independent tabs. Modifications you do in one workspace won't effect any other workspace. The welcome workspace is the default one and will be shown to you if there are no other open workspaces.

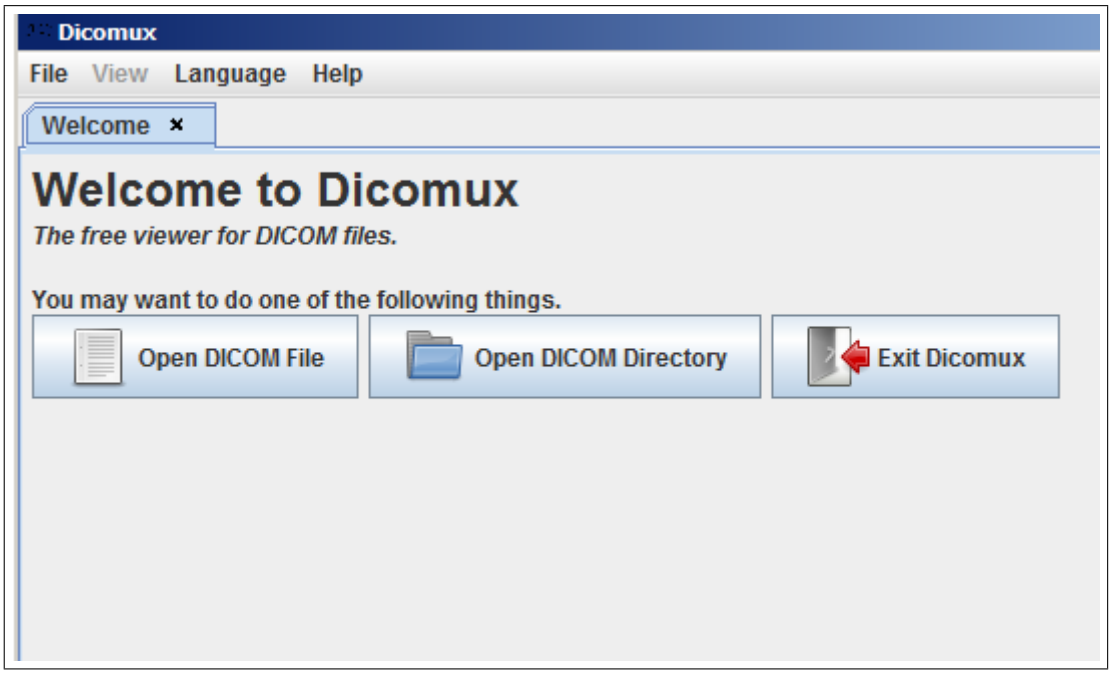

Figure 2.1: Default workspace

2.1.1 Views

Each workspace, which holds an opened Dicom file, has different views. A view shows different parts of a dicom file. The views currently supported by DICOMUX are Raw

Data, Encapsulated PDF, Waveform ECG and Patient Data. For example the Encapsulated PDF view shows the encapsualted pdf file of an opened Dicom file. If the Dicom file doesn't have an encapsulated pdf, the view Encapsulated PDF won't be available.

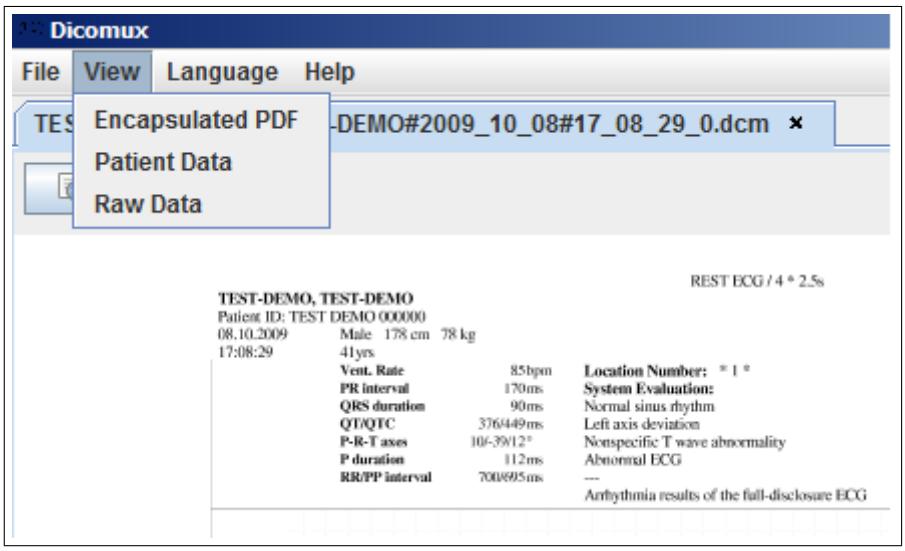

Figure 2.2: Switch views

2.2 Open Dicom file

For opening a Dicom file simply click at Open Dicom File. In the following dialog, you have to select a Dicom file and click Open. If the chosen file is a valid Dicom file, DICOMUX loads the file into a new workspace. After that, you can switch between the available views.

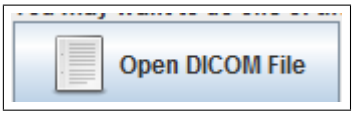

Figure 2.3: Open dicom file

2.2.1 Encapsulated PDF

The view Encapsulated PDF shows the PDF of the Dicom file. You are able to zoom into the PDF page by clicking the zoom button and dragging the mouse over the Pdf page. Click the zoom button again for resetting the zoom back to normal.

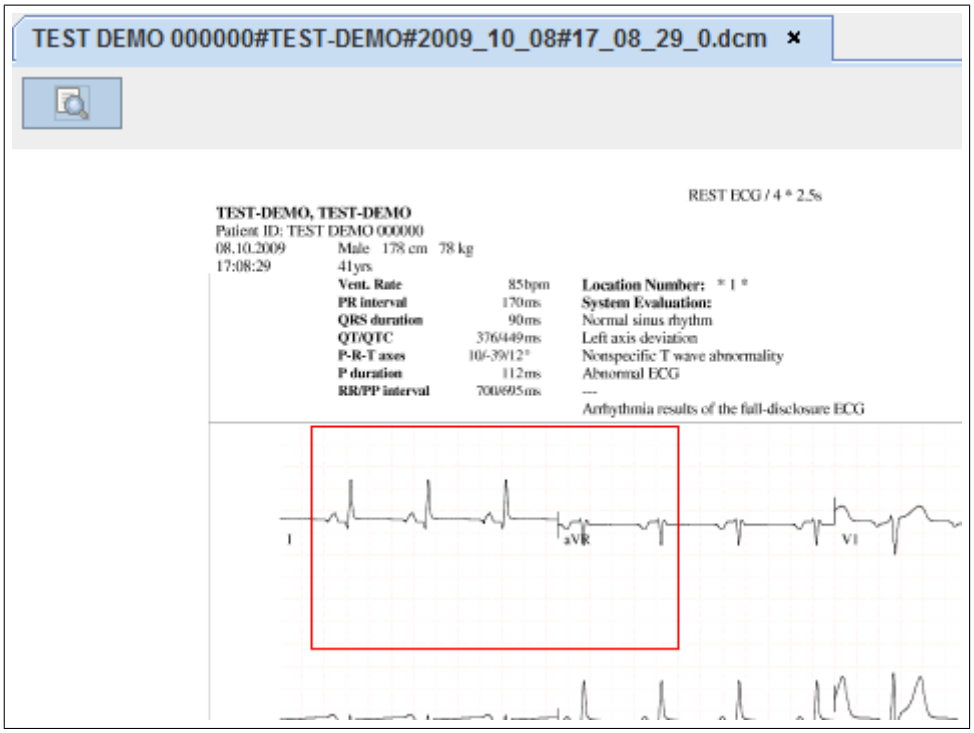

Figure 2.4: PDF view

2.2.2 Waveform ECG

The Waveform ECG view shows the ECG data of the Dicom file. You can zoom in with the plus button, zoom out with the minus button and fit to the workspace with the fit button. When you move the mouse over the waveforms, you can see the data of the current mouse position on the top panel.
You will be able to select different display formats, if you open a Dicom file containing 12 lead ECG data.

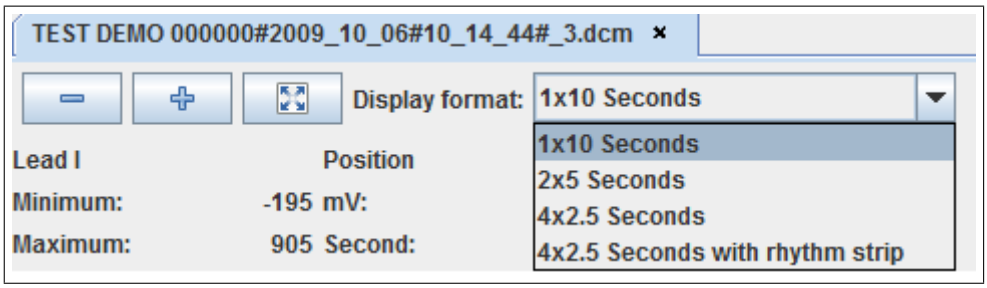

Figure 2.5: Waveform formats

1x10 Seconds

This display format is the default one. It shows ten seconds of each lead in one row. All leads are among each other.

2x5 Seconds

This display format shows five seconds of each lead. The leads are displayed in two columns. the first five leads are in the first column and the second five leads are in the second column.

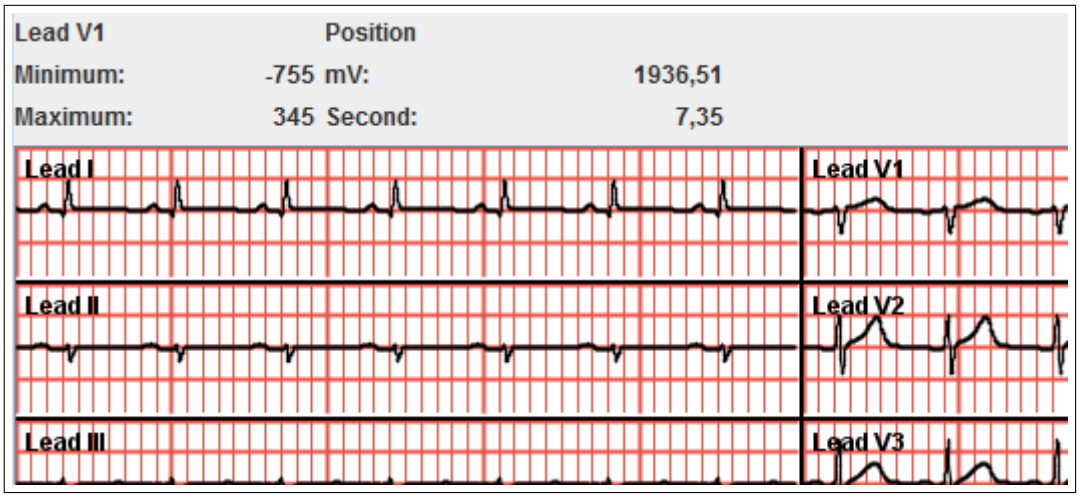

Figure 2.6: Display format 2x5

4x2.5 Seconds

This display format shows 2.5 seconds of each lead. The leads are displayed in four columns. The first three leads are in the first column, the second 3 leads are in the second column and so on.

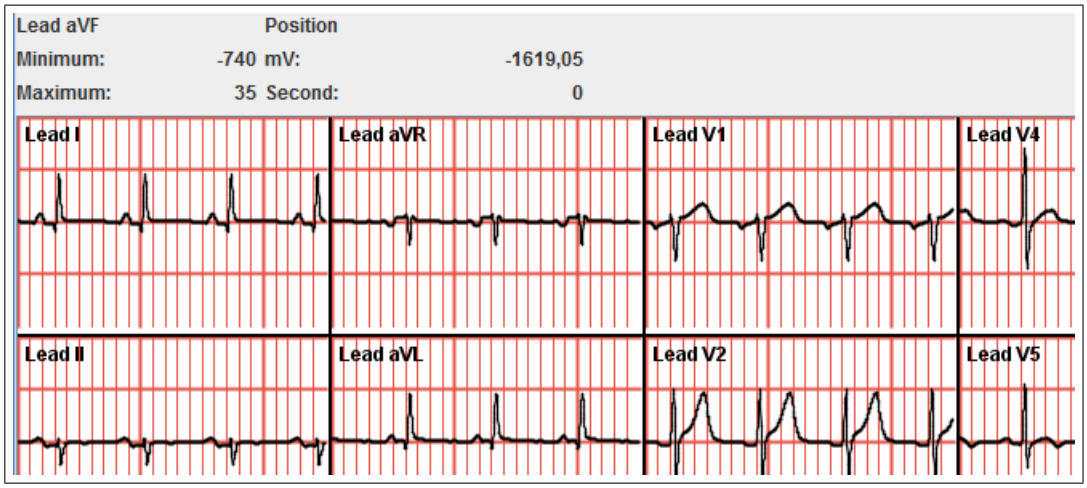

Figure 2.7: Display format 4x2.5

4x2.5 Seconds with rhythm strip

This display format shows 2.5 seconds of each lead. The leads are displayed in four columns. The first three leads are in the first column, the second 3 leads are in the second column and so on.
A rhythm strip is shown at the bottom of the workspace. All 10 seconds of the rhythm strip are displayed in one row. Lead II, which features the rhythm strip, can't be changed in this version of DICOMUX.

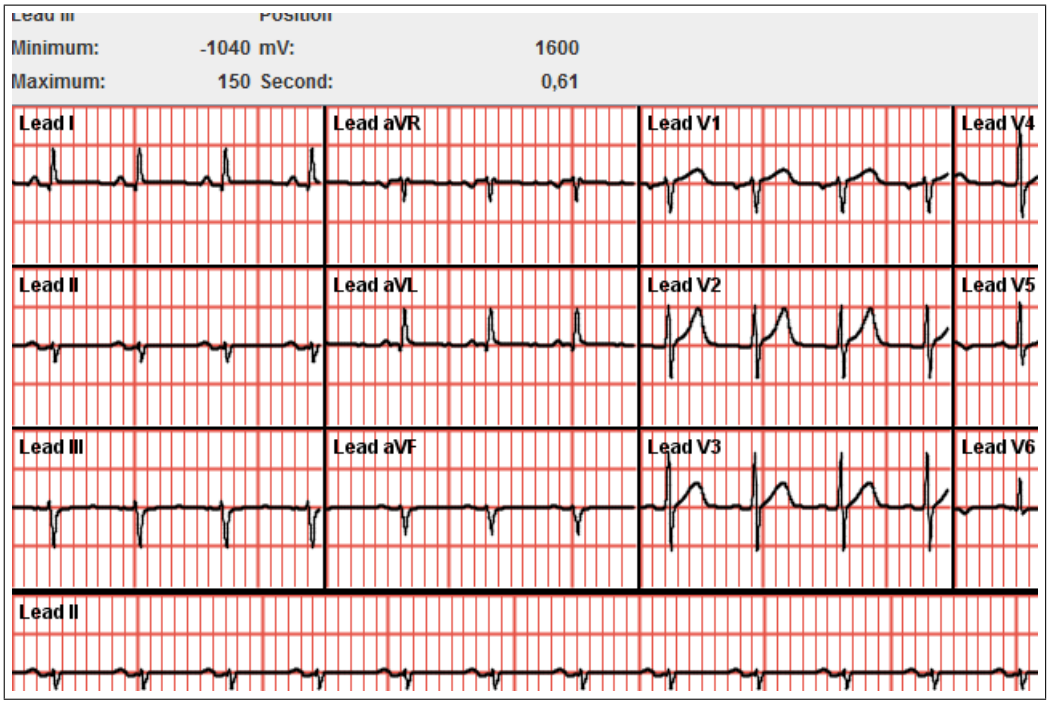

Figure 2.8: Display format 4x2.5 with rhythm strip

2.2.3 Raw Data

The Raw Data view shows all elements of the Dicom file in a tree with tag id, value representation, tag name, length and the first couple characters of the data. If an element contains more than one element, the view will show a folder icon next to the element containing the subordinated elements.
After you selected an element which contains data, you can look at the entire content of this element by clicking on the details button at the top. If the element doesn't contain any data, you won't be able to look at them.

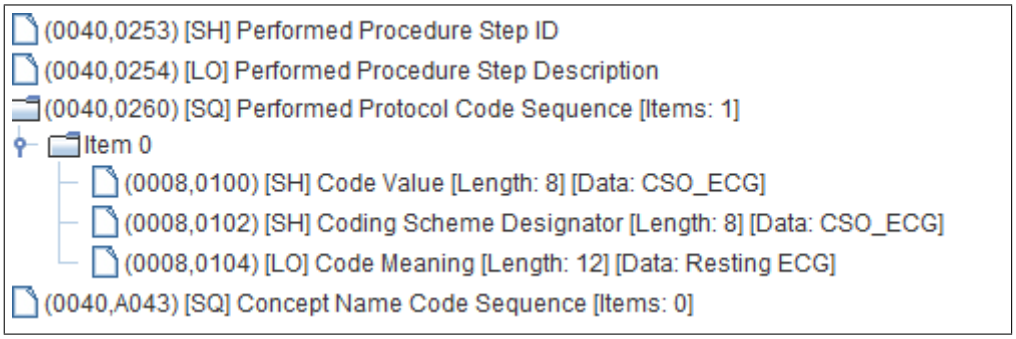

Figure 2.9: Raw data

Detail view

The detail view displays the complete content of the previously selected element. You have the option to save the entire content by clicking on the save button. This makes it possible to save an encapsulated pdf, a report and so on in a separate file. To return to the Raw Data tree view, click on the return button.

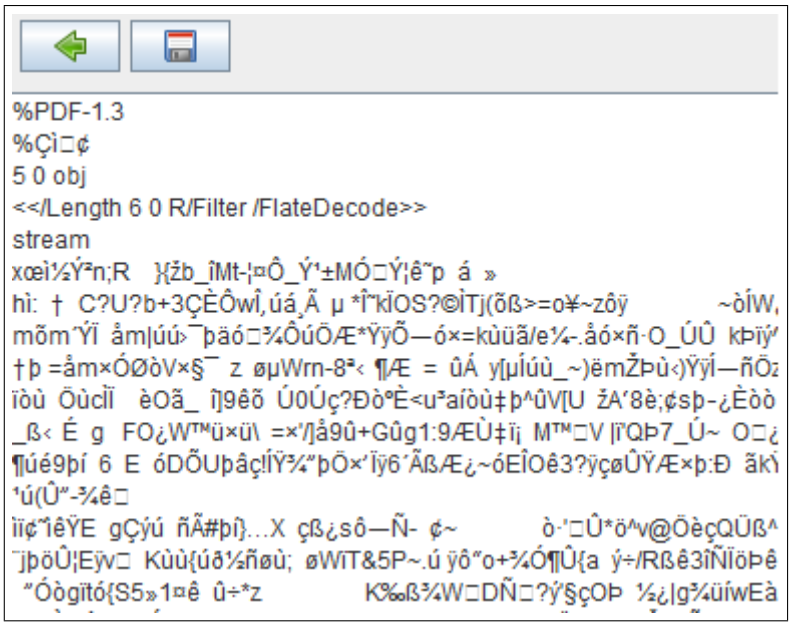

Figure 2.10: Raw data detail view

2.2.4 Patient Data

The Patient Data view displays some information about the patient. This data will be fetched from the opened Dicom file.

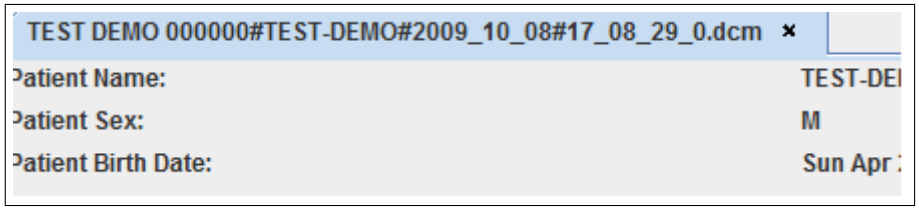

Figure 2.11: Patient details

2.3 Open Dicom directory (experimental feature)

In order to open a Dicom directory click on Open Dicom Directory and select the directory file. After you've selected a valid directory file, DICOMUX loads the directory

structure into the workspace.
There are four combo boxes showing patient, studies, series and images. By selecting an entry of a combobox you can navigate to the chosen entry.

Figure 2.12: Open dicom directory

Please note that opening a Dicom directory is currently an experimental feature of DICOMUX.

2.3.1 Patient

After selecting the entry from patient, you can see the information of the patient. If you choose a patient, the combo boxes series and images are not visible anymore. For these, you have to select a study first.

2.3.2 Studies

After selecting an entry from studies, you can see the information of the chosen study. The combo box images is not visible. To view the resources you have to select a series.

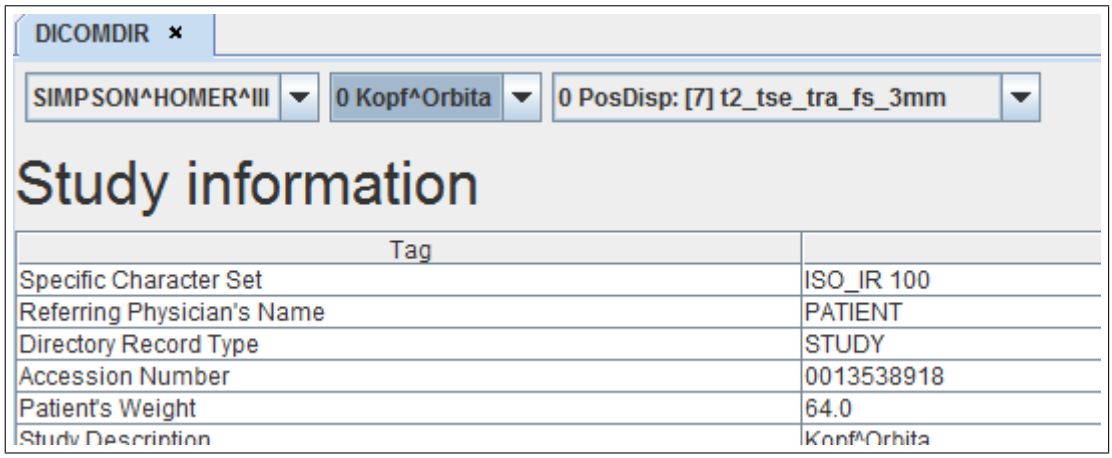

Figure 2.13: Study information

2.3.3 Series

After selecting an entry from series, you can see the information of the chosen series. To view a resource you have to select an entry of the combo box images.

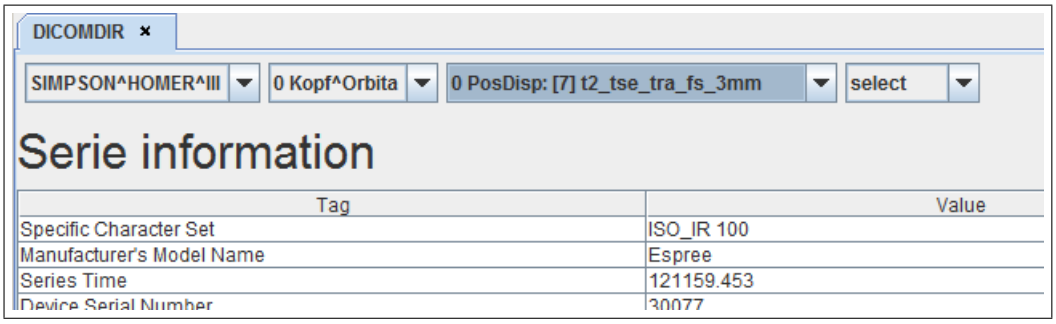

Figure 2.14: Series information

2.3.4 Images

After selecting an entry from images the chosen resource will be shown to you.

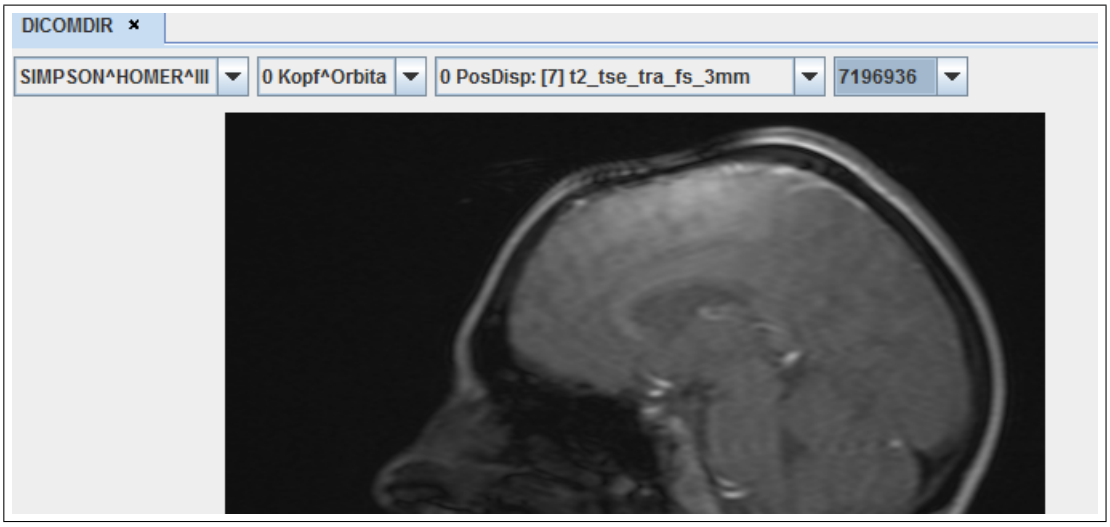

Figure 2.15: Directory Image

2.4 Language

DICOMUX provides multilingualism. For changing the language, goto the menu entry Language and select a language. After you've chosen a language, DICOMUX changes the language of the menu and the workspaces.

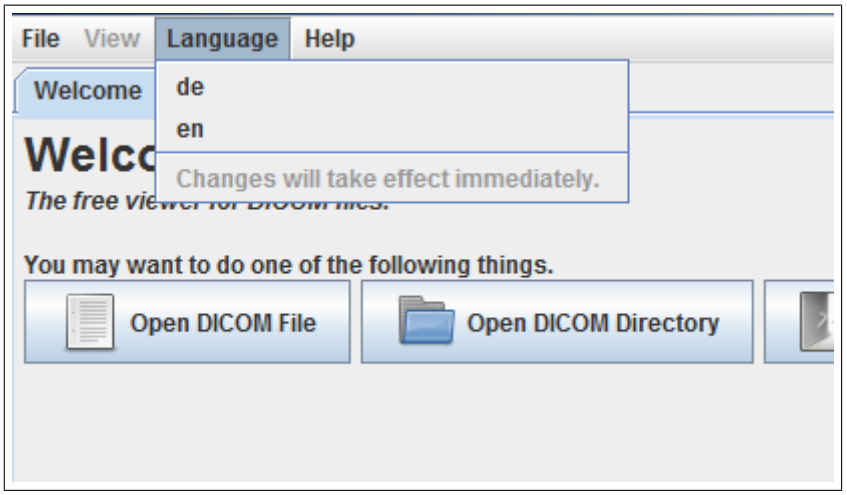

Figure 2.16: Change language