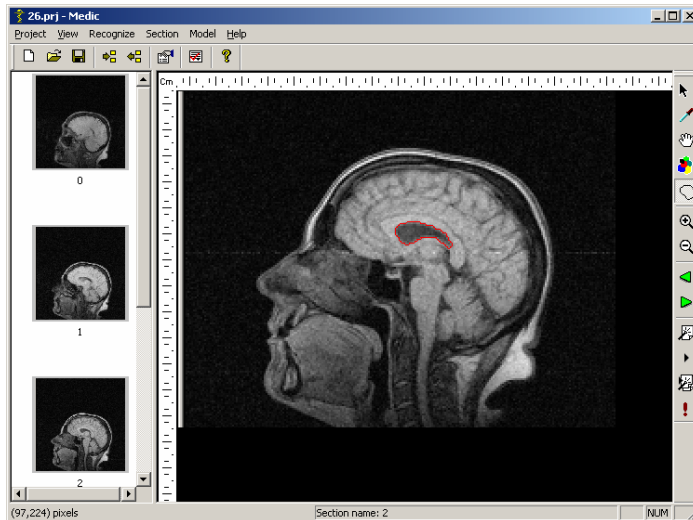


Medic case study

Summary

Medic application allows for 3D models building based on tomogram slices for diagnostics of patients.



Service

- R & D

Industry

- Medicine
- Image processing
- 3D modeling

Project Size

- Team size:
 - 2 researchers
 - 2 software engineers
 - 1 QA engineer
- Duration:
 - 6 months

Technology

- MS Visual C++
- Own coded UI components
- Own coded image processing module
- Own coded component for NURBS models building

Challenge

Final user requirements provided for a user to:

- manage a list of tomogram slices presented in different raster image formats
- tune both a group of slices and an individual slice options for border recognition
- make an allowance for possible user mistakes during image preparation stage (positioning in a list, scale, etc.)
- build smooth (sphere) and sharp (cub) NURBS models on recognized slices
- edit raster images
- view a built model in external viewer **3DmViewer**

Solution

In order to ensure the end product meeting Client's expectations NRJETIX has developed a detailed software requirements specifications (SRS).

The application consists of the following main parts: a user interface based on GDI, OpenNURBS library, OpenNURBS wrapper, and a raster image border recognition component. This architecture allows for a decrease in development charges and simplifies further support. The final product has a compact and fast 3D model building module with a friendly user interface.

The application architecture design and UI design were both developed by NRJETIX.

Demo version was provided to the Client at each milestone. Change requests delivered by Client were carefully evaluated and implemented.

Specification

Medic is a Windows application, developed using MS Visual C++. From the engineering point view, it is a standalone Windows application that uses a strictly specialized statically linked OpenNURBS library. The basis of the main application is made of the following parts: border recognition, image processing, and NURBS model building algorithms. These algorithms are offered by NRJETIX research lab researchers. The built models may be viewed by external application **3DmViewer** or other applications that recognize the 3Dm format.