**完全实现:ABC 部分实现:ABC 没有实现:ABC**

Functional requirements:

1. The software should illustrate the correctly usage method in help document.

2. The software should provide the function of selecting different algorithms.

3. The software should display the brief explanation of algorithms when user is selecting an algorithm.

4. The software should provide some existing sample data to users without other specific data.

5. The software needs prompt and check the format of the file when users import specific sample data.

6. The software should use the algorithm which is selected by user to deal with the import sample data and generate the outcome image.

7. The software should provide modifiable parameter list and brief explanations of each parameter.

8. The software should have the function of modifying parameters which are initially set as default value.

9. The software should implement the function of exporting images, data, or both of them according to the user’s decision.

10. The software should permit users to combine two images together to compare the differences between them.

11. The software should provide the function of clearing the current data and results if users want to import another sample data or select another algorithm.

12. The software should provide a function of putting the software window into the top.

13. A restart button should be provided to handle the situation of software crashing.

14. The software need to check version update automatically and submit bugs which are collected by users to software maintainer.

15. When the software is using algorithm to generate image, a progress bar or a waiting hint should be provided which is used to display the running state of software.

16. The range of permanents should be limited to avoid the situation that increasing running time of algorithm and software crashing.

Non-functional requirements

The non-functional requirements are given as follow which include the environment requirements, performance requirements and data requirements:

1. The window size of the software should be suitable for demonstration

2. The user interface should be convenient for user activity.

3. The running time of using the algorithm to deal with the sample data should be as quick as possible.

4. The system resources occupied by software should be limited.

5. The software needs to run on major platforms and operating systems.

6. The software should be convenient for update and extension.

7. The outcome image should have positive distributing accuracy when the value of several parameters is limited.

8. The software requires appropriate software capacity to be convenient for users download and use in a short period of time.

9. It should be convenient to passing parameter data between each component in different part of software.

10. The software is free, it is better that the development and maintenance costs should be properly reduced.