Coronary calcium scoring

OsiriX Foundation

September 7, 2009

1 General Conditions

Please refer to `http://www.osirixfoundation.com/awards.html` for General Conditions.

2 Category

This document describes a **Category 1** Plugin Award Project.

3 Description

Calcifications of the coronary artery walls can be identified on ultra-fast images of the heart obtained with multi-detector CT scanners (MDCT). These images acne be automatically analyzed to identify all calcified plaques across all the images of the heart. These calcified plaques must be grouped in clusters corresponding to the three main coronary artery branches. A specific score calculation formula allows to assign a calcification index for each vessel

4 Requirements

The goal of this plugin is to provide a standard computation tool for automatic extraction and quantification of the amount of calcium in the coronary arteries from CT images of the heart. The user should be able to:

- Identify the region of the heart
- Apply an automatic segmentation tool that will highlight the calcified plaques (if any)
- Then manually assign each plaque to different coronary artery territories
- The program should then provide a summary report with a calcium score table or each individual vessel as well as a global score

Standards tools for calcium scores already exist on different commercial systems and the plugin should be able to match the results of these tools while providing a similar workflow for the different steps of the analysis hat is quite familiar to all the users in the field.

5 Deliverable

1. A fully functional plugin that can be perform automatic analysis of coronary calcification and calculation of the patient coronary score
2. Display the results in a synthetic result window that can be exported in PDF or in DICOM format

6 Contact

Contact the OsiriX Foundation using: osirix@osirixfoundation.com