PHILIPS

Advanced Visualization Workspace 15

Advanced Detection and Quantification of Calcified Lesions

CT Calcium Scoring

Cardiovascular disease (CVD), specifically ischemic heart disease, is the number one cause of death and healthy years of life lost in the United States. CVD is also the largest cause of death globally with developing countries accounting for more than 60% of the global burden of heart disease. Primary prevention of CVD through strategies to reduce risk factors, include healthy lifestyle choices and when necessary, use of targeted therapies, is essential. A device that can quantify the disease burden with minimal time and reliable high precision has become imperative. Coronary artery calcium (CAC) scanning is a reliable, noninvasive technique for estimating overall coronary plaque burden and for identifying risk for future cardiac events.

Highlights

Calcium Scoring application features a one-click 3D segmentation and quantification for coronary arteries calcifications including Mass, Agatston, and Volume Scores. Calcium scoring is achieved by performing automatic calculations on CT Hounsfield Units in user-defined ROIs.

The application supports ECG-gated and non-ECG-gated images in vendor agnostic DICOM; but mass score can only be calculated for images acquired from Philips CT scanners.

The application incorporates parameters from the Multi-Ethnic Stud of Atherosclerosis MESA database.

Features

- AVW includes CT Calcium Scoring application for the quantification of high-density structures such as calcified lesions in the cardio-thoracic region (e.g. coronaries, heart valves, aorta)
- One-click 3D segmentation and quantification for coronary arteries calcifications (CAC) include mass, Agatston, and volume scores
- Calcium scoring inside regions-of-Interest (ROIs), manually placed around selected areas within a sequence of images
- Support multi-vendor ECG-gated and non ECG-gated images in DICOM format
- Incorporates parameters from a large patient cohort with multi-slice CT calcium scores (MESA database)
- Supports creation of automated and customizable reports
- Discreate results sharing option allows for automatic transfer of structural results between the Workspace and reporting solutions, aimed to reduce reporting time and optimizing AV reporting workflow for improved results[1]

Overview

The CT Calcium Scoring application supports the user with the viewing, processing, analysis and quantification of high-density structures such as calcified lesions in the cardio-thoracic region (e.g. coronary arteries, heart valves, aorta). The CT Calcium Scoring application supports the user with the assessment of coronary artery calcium burden, that can be used as a prognostic indicator of the patient's risk of morbidity/mortality from atherosclerotic coronary heart disease.

CT Calcium Scoring application assist the user with interpreting the clinical image data thus realizing a positive impact on diagnosis or patient management.

System Level Features

- Worklist: The Worklist function allows designation of the patient studies to be listed in the Directory.
- Patient list / directory: Automatic display of studies from selected devices (from local or remote lists) in the Patient List within the Patient Directory.
- Reporting: Customized reports using preformatted templates.
- Smart Preprocessing: Automatic pre-processing based on prior usage of the server.
- Storing data
- Producing a CD
- Dicom printing ("filming")

Your Hospital Environment

PACS and 3rd Party Integration

Desktop integration with 3rd Party PACS vendors to enable the launch of AV client (and load data to selected application) directly via 3 types of integration:
- URL Integration (loose integration)
- AV API (tight integration)
- 3rd Party PACS API

Advantages

- Launching advanced clinical applications directly from PACS based on study selection (no need to launch patient directory for study selection) including load/save bookmarks
- Allow PACS users working with AVI to use Film application to send images to printers and organize key images sent from applications
- Default Storage Device for result saving
- Automatic storage DICOM images and series as an output of Preprocessing to PACS if configured

Report Application

Generating, editing, and printing reports, the application is accessed through the Report Workflow button. The report draft can be edited after images and information application have been stored in the Reporting database. The Report application includes information from the patient's scan into the report as well as additional content such as: analysis results, sample images, recommendations and comments.

Additional enhancements

- Usability improvements within report editor – within TEDIT tool bars, editor space.
- User-friendly Template Editor
- Support CT, MR and NM report templates
- Changing between JPEG and TIFF formats for summary images optional

Presentation States

Saving & loading Presentation States from/to clinical & viewing applications.
Film & Report applications support loading and applying presentation state on the images sent by applications to Film & Report.

Pre-Processing and Background Processing

Pre-Processing functionality by enabling pre-processing of data and automatic creation of results/processed data for applications.

Processing Mechanisms

1. Pre-Processing: Enabling processing data (run algorithms according to pre-defined conditions/parameters)
2. Background Processing: enabling applications to initiate processing tasks in the background
3. Supporting Preprocessing on multiple series
4. Pre-processing will be triggered/enabled to onsite configuration
5. Pre-processing and background processing will be able to run on both master and slave servers in the EX-configuration

System Requirements

Configuration Options:
The product can be operated in the following configurations:
1. Standalone workstation
2. Client-Server scenario (HX/EX) : Multiple concurrent users connected to the server using hospital LAN or home network connection via VPN.
3. Client – multi-server scenario (Concerto) for enterprise-sized hospitals: deployed as a multi-server system that is spread across the main hospital and satellite sites, connecting to a Global Worklist (GWL) and view each study across the system.

For system requirements please consult the Advanced Visualization Workspace Technical Datasheet available in Advanced Visualization Workspace webpage: www.philips.com/avw15.

Footnotes

1. The integration of the solution is via IBE services or via customer home-grown solutions. Please contact Philips representative for more details.

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How to reach us
Please visit www.philips.com/advanced-visualization