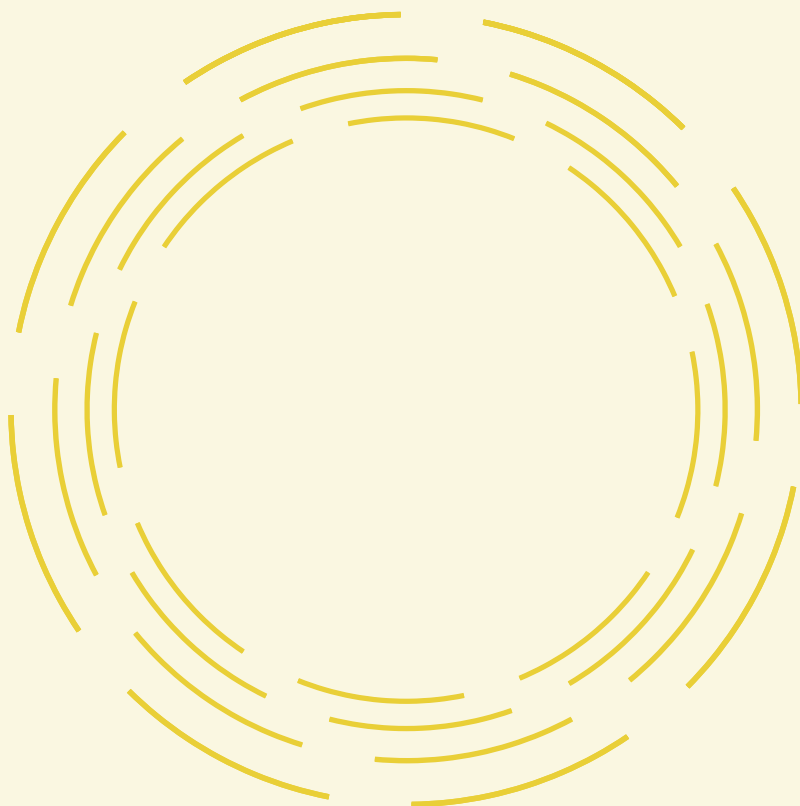


# aview:CAC

---

Automatic analysis solution for coronary artery calcification  
based on artificial intelligence



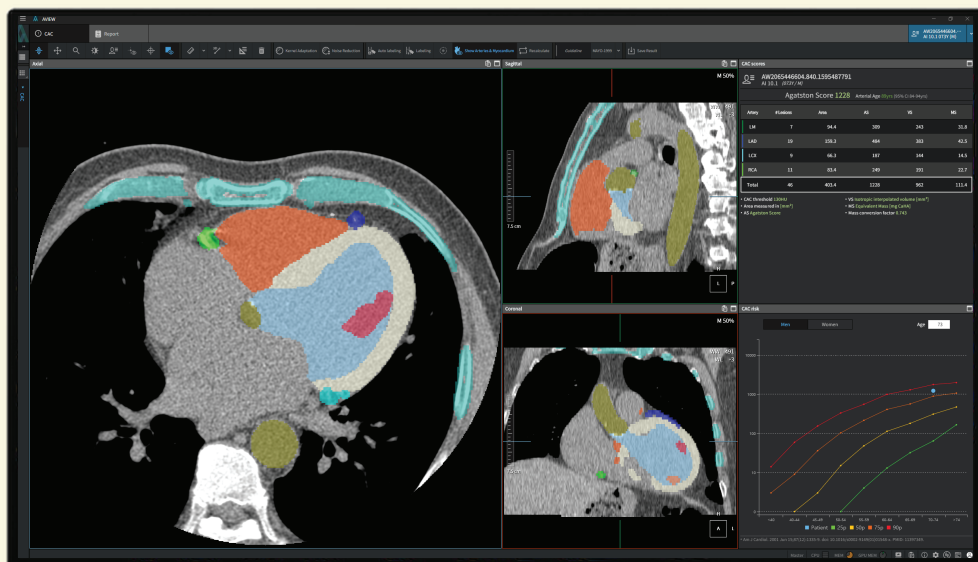
## Introduction

# Quantitatively analyze coronary artery calcification with AI technology.

Coreline's aview CAC is based on deep learning AI technology. Quantify coronary artery calcification and measure the risk of coronal arterial disease.

With CAC's automatic segmentation of the heart and surrounding structures, CAC can accurately analyze the calcified plaques in coronary arteries.

The quantitatively analyzed coronary artery calcification index is a major indicator for diagnosing coronary artery disease and helps patients' treatment and management.



# 99.2%

## AI diagnostic accuracy

### CAC detection and quantification performance evaluation

Robinsca clinical examination of 997 non-contrast ECG CT images Performance evaluation was performed through CAC detection and quantification.

87%

**Detection & classification concordance**

95%

**Agatston score concordance**

Marleen Vonder, Sunyi Zheng, Monique D.Dorrius, Carljin M.van der Aalst, Harry J.de Koning, Jaeyoun Yi, Donghoon Yu, Jan Willem C. Gratama, Dirkjan Kuijpers, Matthijs Oudkerk, "Deep learning for automatic calcium scoring in population based cardiovascular screening", JACC: Cardiovascular Imaging 15 (2021), pp.366-367, <https://doi.org/10.1016/j.jcmg.2021.07.012>

### High consistency in non-gated LDCT as well as ECG-gated CSCT

Fully automated CAC-scoring software with both CSCT and LDCT yielded excellent reliability and agreement with CSCT manual.

Diagnostic performance for detecting Agatston score  $\geq 400$  was also higher with LDCT 1.0-mm than with LDCT 2.5-mm (F1 score, 0.929 vs. 0.855).

#### Agatston score, ICC\*

1.000

(1.000,1.000)

**CSCT auto**

0.937

(0.917,0.952)

**LDCT 2.5mm**

0.955

(0.946,0.963)

**LDCT 1.5mm**

ICC: Intraclass Correlation Coefficient

Hyun Woo Kang, Woo Jin Ahn, Ju Hyun Jeong, Young Joo Suh, Dong Hyun Yang, Hangseok Choi, Sung Ho Hwang, Hwan Seok Yong, Yu-Wan Oh, Eun-Young Kang, Cherry Kim, "Evaluation of fully automated commercial software for Agatston calcium scoring on non-ECG-gated low-dose chest CT with different slice thickness" European Radiology(2022), <https://doi.org/10.1007/s00330-022-09143-1>

# Automatic workflow

## optimize work process and save time.

### CAC workflow

#### 1 CT scan & data transmission

Transfer DICOM data directly from medical equipment and PACS to aview CAC.



#### 2 Coronary artery calcification score

Automatically segment LM, LAD, LCX, RCA, and 4 coronary arteries, accurately analyzes calcified plaques in coronary arteries and derives quantitative results.



#### 3 Analysis report

After quantifying coronary artery calcification per blood vessel, generate reports automatically.



#### 4 PACS data transfer

Check analyzed results and reports conveniently in PACS.

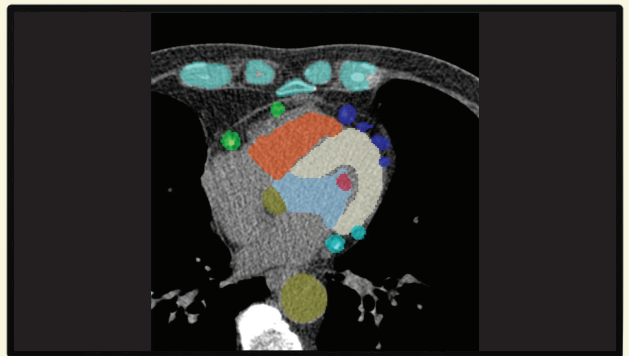




# Proprietary AI technology detects even the smallest lesions without missing a beat.

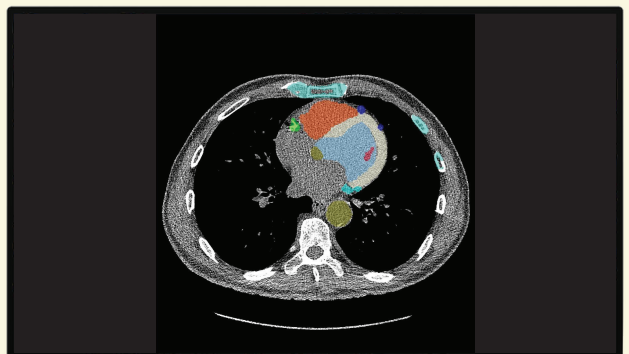
## Cardiovascular & surrounding structures segmentation

- PACS data transfer Analyzed results and reportsIt is convenient to check in PACS
- By segmenting the heart and surrounding structures except the coronary artery, the calcified plaque on the wall of the coronary artery is not missed and the accuracy of the analysis increases.



## Analysis with chest CT image

- Coronary artery calcification can be quantified not only on heart CT images but also on chest CT images, helping early detection.




## Key features

# Provides quantitative and rich results.

## Predicting risk with the latest classification method

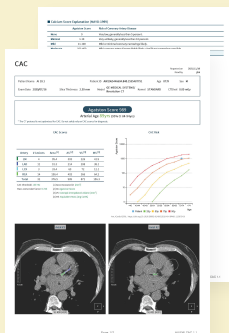
- Using **CAC-DRS\*** is better for predicting risk than just using Agatston scores on non-contrast and non-cardiac CT scans.
- Represents the total calcium score and the number of involved arteries.
- General recommendations are provided for further management

**CAC-DRS\***: Coronary Artery Calcium Data and Reporting System. An expert consensus document of the Society of Cardiovascular Computed Tomography 

\* 510(k) submission pending

## Automatic report generation

- Coronary artery calcification score is provided for each blood vessel, and risk distribution by age group according to clinical criteria and blood vessel age are provided to help patient understanding.



- Classification by blood vessel  
LM | LAD | LCX | RCA | Total
- Coronary artery calcification score
  - Agatston score
  - Volume score
  - Mass score
  - MESA score

\* 510(k) submission pending

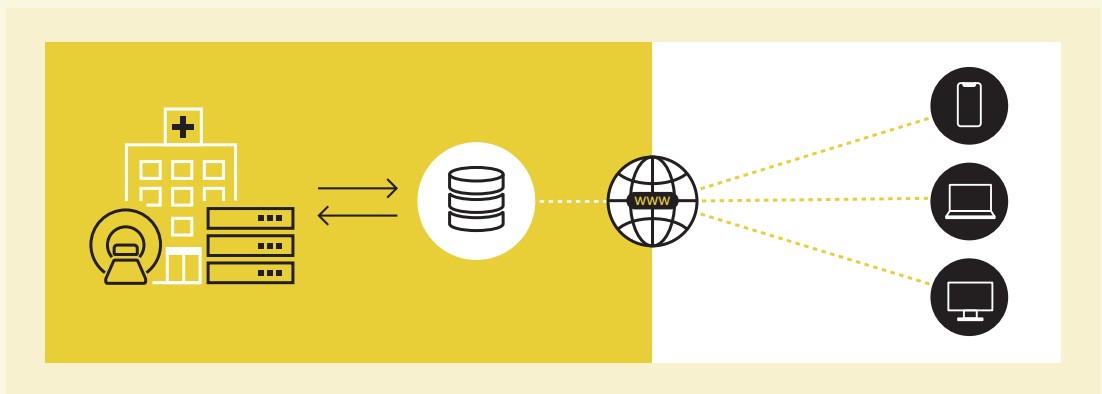
## Utilization of analysis results

- The analyzed results can be extracted as a csv file and used for research.  
The report is provided as a pdf file.

## Linking and managing data becomes easier.

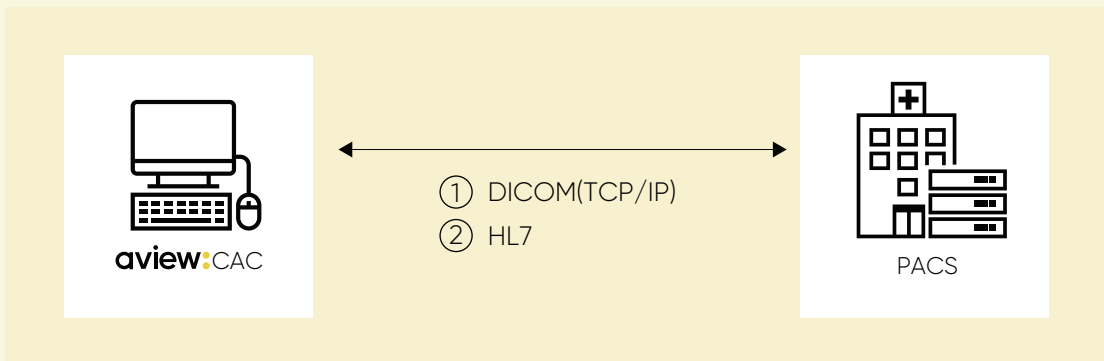
### Connecting PACS & imaging equipment

- Hospital PACS data can be easily exchanged with the DICOM transmission protocol, and data from imaging equipment is also freely interlocked.
- Through a web browser, you can simply check your data anytime, anywhere.



### Integration in all the standard reading environment

- Integration in all solutions comply with DICOM, TCP/IP (PACS & 3rd party solutions)



# aview: CAC

With 99.2% accurate and fully automatic analysis,  
CAC helps early diagnosis of coronary artery disease.

