All your advanced analysis needs
One integrated solution
As many as 62% of Cath lab patients have been shown NOT to have obstructive coronary artery disease.\(^{[1]}\)

With thorough, correct diagnosis, over 200 patients a day could have been spared catheterization in the U.S. In addition, studies have shown that advanced visualization tools can shorten the reading times of vascular anomalies by three to five times.\(^{[2]}\)

Multi-modality cardiac imaging is becoming increasingly essential to provide accurate patient selection and in monitoring the interventional procedures in order to optimize the success rate and minimize the frequency of complications.\(^{[3]}\)

Do you have the tools needed to provide confident diagnoses quickly and effectively?

The IntelliSpace Portal 7.0 offers a rich, comprehensive suite of cardiovascular applications allowing you to diagnose and monitor cardiovascular diseases with confidence all in a single solution.

From diagnosis to treatment planning and follow-up, the Intellipace Portal 7.0 has the tools to help you obtain results faster, all from a single workspace.

---

**Streamlined patient management, from one chair**

**Diagnosis**

- Multi-modality – Patient diagnosis often takes into account multiple scans. The IntelliSpace Portal 7.0 includes viewing and advanced analysis of CT, MR, MI, US, DXR, and iXR images, from multiple vendors on one platform.\(^{[4]}\)

- Speed time to results – A unified user interface across all clinical applications with faster throughput features like task guidance, zero-click processing, and pre-fetching for consistent and efficient workflows

- 3D and 4D image analysis to turn data into quantitative information for rich volumetrical and dynamic assessment

**Treatment planning**

- The information you need – Automatic measurements such as calculations of cath lab angles, and quickly discernable perfusion maps are a few of the time-saving tools which provide the information you need for treatment planning.

- Mobile access – Share bookmarks and results, and transfer studies hassle-free. Enjoy access to your studies virtually anywhere with Web Collaboration. It turns any mobile device into a true multi-modality viewer.\(^{[5]}\)

- Bring advanced diagnostic imaging closer to the interventional suite by integrating your Allura Interventional Suite with the IntelliSpace Portal 7.0

**Follow-up**

- Robust quantification and visualization tools to measure and track disease states, providing greater insight into your patient’s condition.
<table>
<thead>
<tr>
<th>Coronal Artery Disease</th>
<th>Peripheral Artery Disease</th>
</tr>
</thead>
<tbody>
<tr>
<td>Detailed analysis of vessel fitness to help assess patient risk</td>
<td>Quantification and visualization tools to measure and track disease states</td>
</tr>
<tr>
<td>• Multi Modality Advanced Vessel Analysis (AVA)</td>
<td>• Multi Modality Advanced Vessel Analysis (AVA)</td>
</tr>
<tr>
<td>• CT Comprehensive Cardiac Analysis (CCA)</td>
<td>• CT Brain Perfusion</td>
</tr>
<tr>
<td>• CT Cardiac Plaque Assessment</td>
<td>• CT Body Perfusion</td>
</tr>
<tr>
<td>• CT Calcium Scoring</td>
<td>• CT Calcium Scoring</td>
</tr>
<tr>
<td>• CT Dynamic Myocardial Perfusion (DMP)</td>
<td>• MR T2* (Neur) Perfusion</td>
</tr>
<tr>
<td>• MR QFlow</td>
<td>• MR Diffusion</td>
</tr>
<tr>
<td>• NM Viewer</td>
<td>• Ultrasound Q-App Vascular Plaque Quantification</td>
</tr>
<tr>
<td>• NM Astonish Reconstruction</td>
<td>• Ultrasound Q-App Intima Media Thickness</td>
</tr>
<tr>
<td>• Corridor 4DM 2013l</td>
<td>• Ultrasound Q-App Microvascular Imaging</td>
</tr>
<tr>
<td>• Cedars Sinai Cardiac Suite 2013</td>
<td>• Ultrasound Q-App General Imaging 3D Quantification</td>
</tr>
<tr>
<td>• Emory Cardiac Toolbox (ECTb) 2013l</td>
<td></td>
</tr>
<tr>
<td>• Corridor 4DM 2013l</td>
<td></td>
</tr>
<tr>
<td>• Cedars Sinai Cardiac Suite 2013</td>
<td></td>
</tr>
</tbody>
</table>
Leverage the strengths of multiple modalities throughout the continuum of care on one imaging platform.

**Patient-centric workflow**

- **Viewing**
  - Review: Angiography and Fluoroscopy as well as 3D volumes created by 3D rotational angiography and cone-beam CT

- **Post-processing**
  - Perform measurements, ROI, and annotation to describe findings within a region

- **Workflow efficiency**
  - Accelerate time from image acquisition to diagnosis with confidence, data connectivity, and workflow efficiency tools like pre-fetching and guided workflows

- **Reporting**
  - Include interventional annotation in your patient report — throughout the process and whenever it’s convenient to you

**Cardiac MR and CT together (on the IntelliSpace Portal) have lowered overall analysis time by 20%-30%.”

Dr. Gaby Weissman, M.D.
MedStar Washington Hospital Center, Washington, D.C., USA

The integration between the IntelliSpace Portal 7.0 and Allura Interventional Suite allows you to automatically launch the relevant advanced analysis from IntelliSpace Portal 7.0, providing rich diagnostic information as the starting point of the procedure.
A full suite of cardiovascular applications

Multi Modality Advanced Vessel Analysis (AVA)

Reduce comprehensive vascular analysis planning to five minutes\[9\]
Take advantage of multiple presets and user-defined options to reduce comprehensive vascular analysis planning to five minutes. The robust bone removal algorithm on Multi Modality Advanced Vessel Analysis (AVA) provides 3D visualization of the vessels. Additional automatic tools, such as bone removal and centerlines and vessel labeling as well as inner and outer lumen contours, contribute to fast, consistent results.

Easily navigate through multiple findings and when you’re finished, export rich, customizable reports to your RIS or PACS without hassle.

Clinical area

Vascular analysis

Benefits
• Examine and quantify vascular lesions from CTA and MRA studies
• Accommodate different modes of inspection and label different vascular lesions
• Reduce the time to produce end results with automatic creation of cMPR, cross-sectional, MPR, extracted centerlines, and volume images created even before you open your study
• Get exceptional visualization of vascular structures with simplified zero-click bone removal and visualize the carotid siphon with skull removal
• Enhance workflows for specific findings creation, like stenosis, aneurysm, and diameter measurements with customizable views

Speed up workflows by 77%
Multi Modality Advanced Vessel Analysis (AVA) reduces the manual time-to-results by 77% for neuro (head/neck) and body CT angiography (CTA) exams\[b,c\].

Manual procedures

MM Advanced Vessel Analysis (AVA) with ASC

77% time savings

\[b\] Compared to the Philips EBW v4.x workstation
Quick cardiac visualization
CT Cardiac Viewer provides a comprehensive set of tools that allows quick visualization of one or multiple cardiac phases, synchronization of multiple cardiac phases with interactive slab-MIP tools for review purposes, cine mode for cardiac axes views, and a simple ‘Ansys-Length’ calculation of end systolic volume (ESV), end diastolic volume (EDV), cardiac output (CO) and ejection fraction (EF) for basic ventricular functional assessment.

Fast cardiac analysis
CT Comprehensive Cardiac Analysis (CCA) incorporates support for myocardial perfusion imaging (MPI). CCA with the CT-MI Fusion option allows loading both gated and ungated rest, and gated and un-gated stress MI datasets simultaneously with the CT. The MI images are displayed in the short axis and the two long axis planes in one single view. The axes definition is derived from the CT study. This application supports axial, ECG-gated CT images, consisting of multiple time shots of the same myocardial region over time. CT DMP displays the results as a composite image (single image that is calculated from a set of time course images at a single location).

Quickly plan endovascular stent placement
CT Advanced Vessel Analysis (AVA) Stent Planning includes multiple preset and user-defined options to gain detailed information for use in stent planning, reducing overall planning time to five minutes compared to 30–45 minutes without the application. The application includes an option that allows results to be printed on a customized report.

CT imaging in TAVI to advance patient care
CT TAVI Planning is a non-invasive post-processing application that provides semi-automatic measurements of the aorta and aortic valve that are useful for pre-TAVI planning. The application provides model-based segmentation of the aortic valve, ascending aorta and left ventricle, semi-automated detection of the coronary ostia, semi-automated planes detection and dimensions measurements of the aortic annulus, left ventricular outflow tract, sinotubular junction, sinus of valsalva, ascending aorta and distance to coronary ostia for TAVI-device sizing. The CT TAVI Planning application also provides a reasonable starting angle of the C-arm for device deployment, which allows for less time used for the TAVI procedure itself performed in the catheterization laboratory or hybrid operating room. Recently added automatic measurements include left and right coronary sinus height, Non-coronary sinus height, and aortic annulation.

Fast planning for EP procedures
CT EP Planning provides fast, overall assessment of pulmonary vein, left atrial, and appendage anatomy, enabling the electrophysiologist to quickly identify anatomy that may complicate the EP procedure.

Assessing myocardial defects
CT Myocardial Defect Assessment provides visual and quantitative assessment of segmented, low-attenuation defect areas within the myocardium from a single, gated cardiac CTA scan. The ability to derive this information from a single cardiac CTA scan reduces the need for multiple scans. The application itself is based on the robust, automatic, model-based, whole heart segmentation from the Comprehensive Cardiac Analysis application. Myocardial Defect Assessment provides visual assessment of low-attenuation defects within the left-ventricular myocardium via the following:

- Color maps shown in short-axis views
- Segmentation maps shown on short-axis and polar plots, displayed along with long-axis reference images
- Volumetric visualization of coronary arteries along with segmentation maps displayed as an overlay on top of a 3D myocardial surface

Dynamic color maps provide an assessment of myocardial risk
CT Dynamic Myocardial Perfusion (DMP) is intended for visualization, diagnostic assessment, and quantification of cardiac images focusing on the left ventricular myocardium specifically providing quantitative myocardial blood flow measurements for CT images, including the ability to identify areas of decreased perfusion within the myocardium that may represent ischemia. The application supports axial, ECG-gated CT images, consisting of multiple time shots of the same myocardial region over time. CT DMP displays the results as a composite image (single image that is calculated from a set of time course images at a single location).

Evaluate plaque risk
CT Cardiac Plaque Assessment includes robust capabilities allowing quantification and characterization of coronary plaque from multidetector computed tomography (MDCT) data. This application gives the clinician the capability to assess plaque sites.

One-click 3D calcium segmentation
CT Calcium Scoring rapidly quantifies coronary artery calcifications (CAC) and includes mass, Agatston score, and volume scores. It enables paper or electronic results distribution of automated, customized reports.

CT TAVI Planning is outstanding – it delivers good segmentation and it’s easy to edit the automatic results for fine landmark positioning.

Professor Philippe Douek
Hospices Civils de Lyon, France
**Enterprise-wide NM review**

NM Viewer provides a powerful yet simple to use MI and multi-modality image review and analysis environment for clinical evaluation of MI planar, SPECT, SPECT/CT, PET/CT, and PET/MR examinations. The application offers:

- The ability to add studies to the review list and batch viewing
- MPR, MIP and fused 3D volume display
- Slab Viewer to view oblique slices
- 2D and 3D SUV measurements: SUV Body Weight, SUV Lean Body Mass, SUV Body Surface Area, and SUV Body Mass Index
- Automated 3D segmentation of lesions based on SUV value or percentage of SUV max, and the ability to export 3D contours in DICOM-RT Structure Set format to radiation therapy planning systems
- A layout editor for personalized display

**SPECT and PET cardiovascular quantification, review and reporting**

Corridor4DM v2013 is designed for advanced cardiovascular quantification and image display and includes intelligent workflow and quality assurance measures for increased confidence. Quantify myocardial perfusion, function, and viability using multiple review screens, with integrated reporting through customizable templates. Corridor4DM v2013 also includes CT coronary calcium scoring to enhance diagnostic confidence. Now includes coronary flow reserve measurements.

**Advanced cardiac quantification**

Developed at Cedars-Sinai Medical Center in Los Angeles, California, Cedars-Sinai Cardiac Suite 2013 provides comprehensive cardiac quantification tools for gated, perfusion, and blood pool SPECT, and quantitative PET. Widely accepted by clinicians worldwide, the Cedars-Sinai Cardiac Suite 2013 application provides efficient workflow for study interpretation with exclusive integration of perfusion and function.

- Quantitative gated SPECT (QGS)
- Quantitative perfusion SPECT (QPS)
- Quantitative blood pool SPECT (QBIS)
- Quantitative PET (QPET)
- CT Fusion
- DICOM Multiframe Secondary Capture (MFSC)

**Visualizing and quantifying blood flow dynamics**

MR QFlow enables review of QFlow data. The tooling creates 2D color flow overlay maps on anatomical references, e.g. to be used to calculate stroke volumes. The package includes automatic vessel contour detection for large vessels to quickly analyze vessel flow. Background correction allows for offset correction required for QFlow data of certain MR vendors.

**Detailed 3D visualization of the segmented heart**

MR Whole Heart performs automated segmentation of the heart into individual segments such as left-ventricle, right-ventricle, atria, and coronary arteries. Results can be presented in a high-quality 3D rendering.

**Assessing temporal enhancements of the myocardium**

MR Cardiac Temporal Enhancement facilitates myocardial analysis of dynamically resolved cardiac data (multi-slice, dynamics) and enables comparison of rest and stress studies. Results are presented using either the AHA standardized or adapted bull’s eye views. The package includes a correction algorithm and manual tools to correct frame-to-frame heart displacements caused by breathing.

**Detailed quantification of cardiac function**

MR Cardiac facilitates easy visual scoring in various examination contexts. The package enables comprehensive functional volumetric analysis for the ventricles, e.g. w/o papillary muscle corrections, segmentations for generation of global functional parameters such as wall motion, thickness and thickening. Furthermore, identification of spatial enhancement based on intensity signal changes is included while bookmark functionality ‘frames’ any view on the data that is relevant for saving or communicating to other physicians.

**The IntelliSpace Portal MR Cardiac package is used on all our MR cardiac cases, and we feel it supports us in delivering analyses of consistently high quality.**

Dr. Vimal Raj
Nammyana Hrudyalayaa Hospitals, India

**Cardiac analysis**

The Emory Cardiac Toolbox (ECTb) v4.0 provides advanced tools for cardiac SPECT and PET analysis including comparison of perfusion to viability data, display of 3D images with coronary overlays and gated 3D cine, normal limits for agent match/mismatch, and optional phase analysis for wall motion and evaluation of thickening.

- Normal limits for rubidium, ammonia, and FDG protocols
- Ability to display endocardial and epicardial edges on gated images
- Ability to add user-defined normal files to the toolbox
A novel measurement of atherosclerotic plaque volume
Ultrasound Q-App Vascular Plaque Quantification (VPG) helps you perform comprehensive volume analysis for carotid plaque analysis, a significant indicator in cardiovascular disease. Automatically measure plaque composition throughout a captured volume, percent area vessel reduction and other characteristics using 3D technology. Results may be posted to patient exams.

Help determine cardiovascular disease risk
Ultrasound Q-App Intima Media Thickness (IMT) provides easy and consistent measurement of intima media thickness in carotids and other superficial vessels. Report IMT values and appended to patient reports.

Enhanced vessel conspicuity
Ultrasound Q-App Microvascular Imaging (MVI) allows you to map contrast agent progression with contrast enhanced ultrasound (CEUS) for tumor assessment and monitoring.

Perform advanced visualization and quantification of ultrasound volume
US Q-App GI 3DQ is designed to provide advanced viewing, manipulation, and quantification of 3D data sets. Users can perform advanced functions such as MPR interrogation, 3D cine tomographic imaging, and volume rendering. Clinicians can also perform volumetric measurements using multiple methods including semi-automated tools. Results generated from this tool can be appended to the patient’s exam for complete documentation.

Contact your local representative for more information on how the IntelliSpace Portal 7.0 works or to request a demo.
References

[4] Please contact your local Philips representative for details on multi-vendor coverage
[6] Corridor4DM is a registered trademark of Invia, LLC.
[7] Emory Cardiac Toolbox (ECTb), HeartFusion, and SyncTool are registered trademarks of Emory University
[8] CAD functionality is not for sale in the US