



Making the difference where it really matters

Philips Allura 3D-RA, interventional 3D imaging

Philips Allura 3D-RA provides extensive 3D visualization of vascular and cardiac pathologies from a single rotational angiographic X-ray acquisition. Combined with the unique whole body coverage of the Allura FD systems, which are specifically designed for 3D imaging, Allura 3D-RA can cover any anatomy including cerebral, cardiac, abdominal and peripheral vasculature.

Key advantages

- 3D imaging in the interventional lab
- Provides a volumetric view of any vascular anatomy for full 3D guidance during treatment
- Assists with decision making for interventional treatment planning

PHILIPS

3D angiography in your interventional lab

Image acquisition

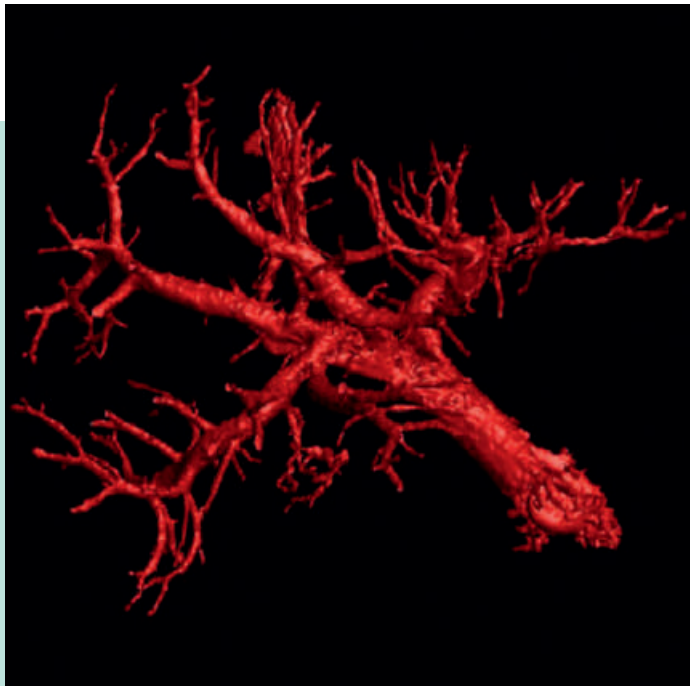
As a first step, 120 images are acquired using the rotational angiography solution of any Allura FD system. The rotational angiography run can be performed from either the head or the side position for full body coverage.

If the C-arm is in the head position, the run is performed with a propeller movement over a scan range up to 240° and at a rotational speed of 55° per second. A complete scan takes just 4 seconds.

If the C-arm is in the side position, the run is performed with a roll movement over a scan range of 180° and at a rotational speed of 30° per second.

3D vessel reconstruction

Initial reconstructions are available in as little as 4 seconds after the completion of the rotational angiography run (using the optional Real Time Digital Link).



Additional reconstructions can be performed using the Reconstructive Zoom Technique. Rather than just digitally enlarging images of vessels, this reconstructs the region of interest from raw 2D data to give sharper images with higher resolution.

Intuitive control and functionality

Allura 3D-RA's intuitive user interface includes a menu wizard for quick and easy navigation.

The 3D images produced can be viewed and manipulated in a number of ways.

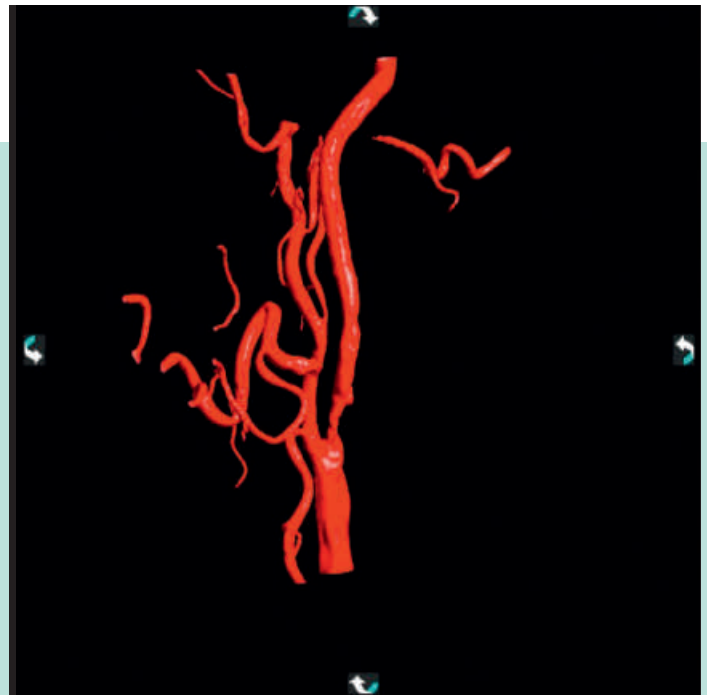
- **Visualization of the 2D rotation run images**
to check the contrast filling in the region of interest throughout the entire run
- **3D anatomy viewing in any orientation**
- **Image rendering**
including volume/surface rendering, MIP and Sum (pseudo X-Ray)
- **Cutting tools**
provide insight into anatomic shape of the 3D volume
- **Multi-planar reformatting (MPR)**
to visualize the volume in all three standard projections (coronal, sagittal and axial)
- **Orthoviewer**
provides multi-planar visualization of objects using the various image rendering techniques
- **SpineView**
special acquisition protocol for optimal visualization of the spine, particularly osteoporotic vertebrae
- **Reconstruction volume subtraction**
allows vessels to be visualized without embolization devices (such as stents, coils or clips) or assess treatment outcomes
- **Volume cloning**
Overlay the same volume using different window settings
- **Annotation function**
Add text to a volume to capture comments

Excellent image quality

Allura 3D-RA's advanced reconstruction techniques provide superb image quality. The unique Reconstructive Zoom Technique allows high-resolution 3D images to be created for smaller fields of view. In addition, the automatic voxel shift compensates for any patient movement when rendering superimposed or subtracted 3D-RA volumes, while the Contrast Resolution Management (CRM) technology offers higher contrast resolution for all applications.



3D-RA: Automatic vessel analysis including automatic aneurysm detection



3D-RA: carotid stenosis

Clinical analysis

Clinical analysis tools provide even more information out of 3D-RA images

- **Automatic vessel analysis (AVA)**

Provides a graphical representation of vessels to help assessment. This includes endoscopic views of vessel segments and cross-section views.

- **Virtual stenting**

Simulates stent placement in a vessel segment

- **Aneurysm analysis assistance in the 3D vessel tree**

- **Catheter tip shaping simulation**

- **CalciView**

Visualizes hyper-dense plaques in 2D, either separately or in relation to the lumen

Maximum 3D functionality with Allura systems

Allura 3D-RA is fully integrated into the Allura system. A graphical display of stand position (including angulation/rotation for any projection) is always available. User-defined positions can be stored and recalled. 3D views can be linked to the C-arm position through:

- **3D Automatic Position Control**

allows the gantry to automatically move to the best interventional working position as shown on the 3D monitor

- **3D Follow C-arc**

keeps the 3D image in sync with the 2D projection, automatically adjusting the view as the gantry is repositioned

Physicians have tableside access to all the 3D functionality they need through the wireless mouse and optional 3D XperModule. So there is no need to leave the examination room. Functionality such as rotate, pan, zoom, AVA, virtual stenting, 3D-APC and 3D Follow C-arc can be performed via the Xper touch-screen module.

Archiving

Allura 3D-RA images can be sent to:

- any DICOM-compatible workstation as DICOM CT-compatible data
- any PC via a web server and in standard PC formats (JPEG for images, AVI for movies)

They can be stored/archived:

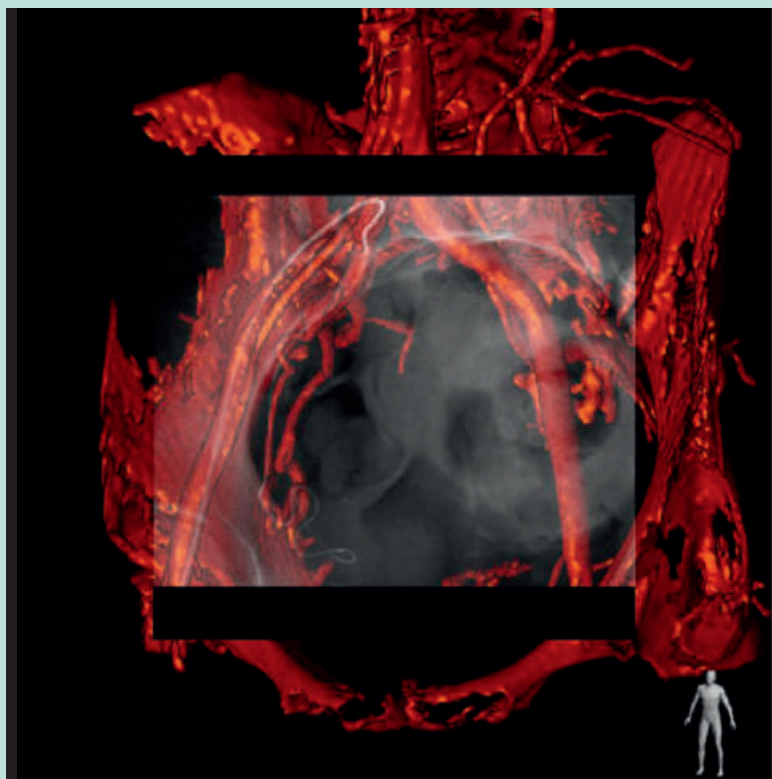
- on a PACS system as DICOM 3D-compatible data and/or DICOM Secondary Capture images or movies
- on a CD, DVD or USB flash drive
- as hard copy via the DICOM Print protocol

Allura 3D-RA with XperCT and Dynamic 3D Roadmap

Allura 3D-RA can be combined with optional XperCT to view soft tissue structures and 3D vessel information in a single image. This allows correlation of pathology between soft tissue and vessels. The new volumes can be viewed:

- with automatic or manual registration of two volumes from the same patient
- using the complete 3D-RA viewing functionality
- with the XperCT slice overlaid onto the 3D vessel *for better assessment of the region of interest*
- with three different contrast rendering options *improves visualization of the 3D vessel in the soft tissue structure*

Similarly, Allura 3D-RA can be combined with the Dynamic 3D Roadmap option. This enables real-time registration of live 2D fluoroscopy images with a 3D-RA angiography volume (3D roadmap) or a previously acquired CT/MR data set (CT/MR roadmap). These roadmaps give clinicians a better understanding of the anatomy they are working with, to assist with procedure planning and risk assessment.



3D Roadmap: live fluoro overlay on 3D-RA

Please visit www.philips.com/3DRA



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Printed in The Netherlands
4522 962 93921 * MAY 2013