# Application News

GE imagination at work

# Working with the

# TomTec

# 4D RV Volume

# Plug in for

# EchoPAC Bt09



Images are in property of TomTec

# Content

NOTE
This hand out is additional training material.


**With special thanks to TomTec ™**


**For more information please refer to the TomTec homepage
www.tomtec.de**

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# Availability

The option for the TomTec 4D RV- Volume software is available on EchoPAC Bt09 version. For detailed information please contact your GE sales representative.

# Intended use

4D RV-Volume software is intended for quantification of the right ventricle for 4D echocardiography data. Possible quantification results are EDV, ESV and EF with the global volume curve.

# Anatomy of the RV

- Complex Shape
    - o Crescentric and truncated ventricle
    - o Separate inflow and outflow portions
    - o Chamber poorly approximates to any convenient geometric model
- Heavy trabeculation
- Difficulties in endocard tracing
    - o Different pathologies can have huge cavities (anterior wall problem)

# Relevant pathologies and major diseases for RV

## Adult cardiology

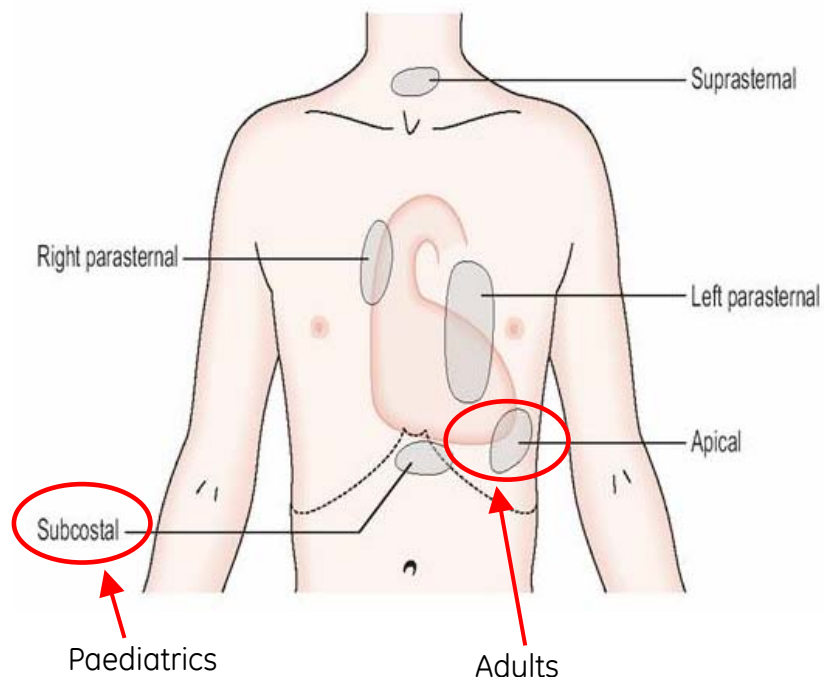- Pulmonary hypertension
- Congestive heart failure
- Congenital heart disease

## Paediatric cardiology

- Congenital heart disease
- Hypoplastic right heart
- VSD/ASD
- Pulmonary hypertension

# Workflow

## Acquisition window



Paediatrics

Adults

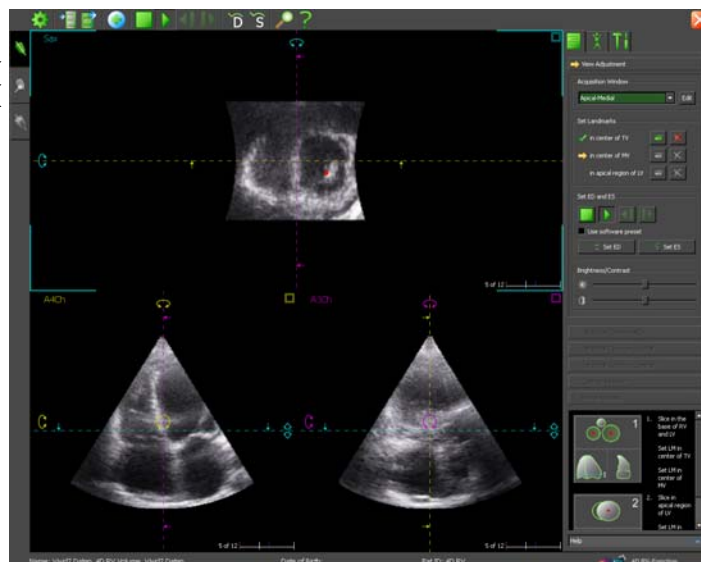Modified apical views to lateral or medial

## Entering RV-Volume software

Recall a 4D dataset with complete RV inside.
Access the measurements – Open the Folder for Volume measurements – Select 4D RV Volume.
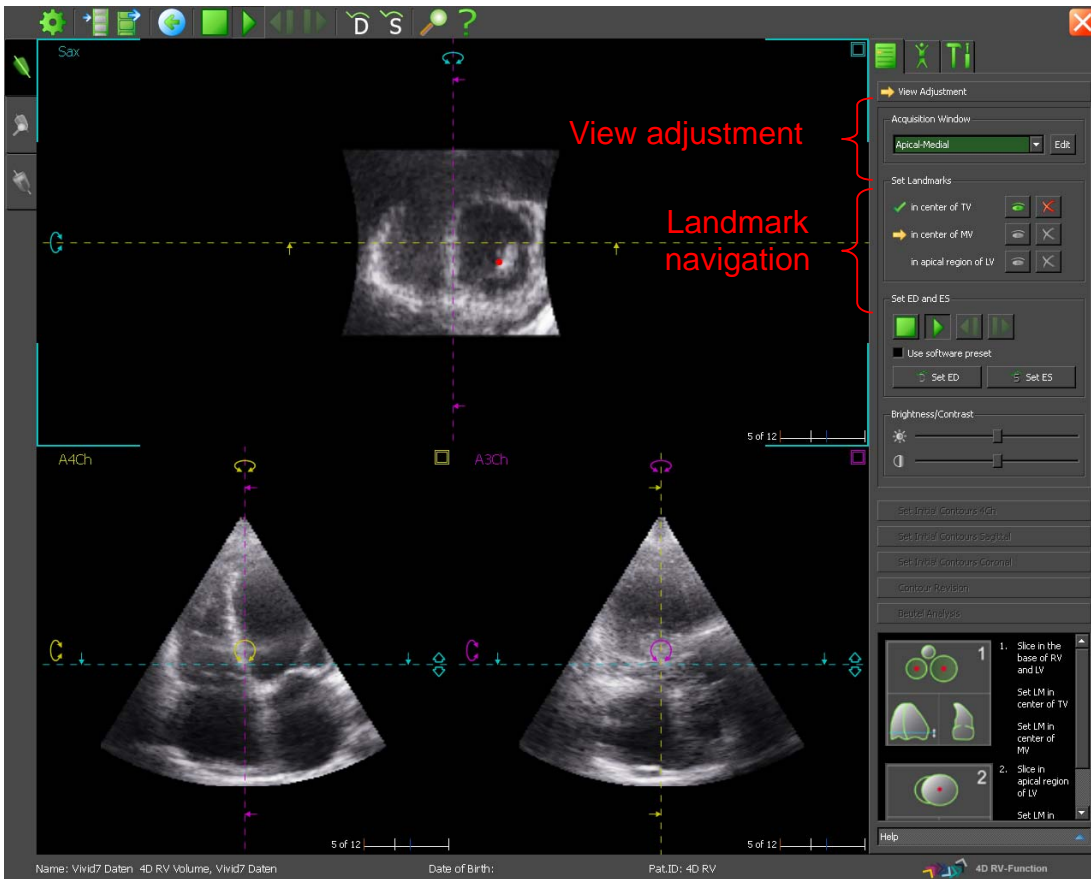
## Workflow steps

- Landmark settings
- Set initial contours (4CH, SAX, Coronal)
- Contour revision
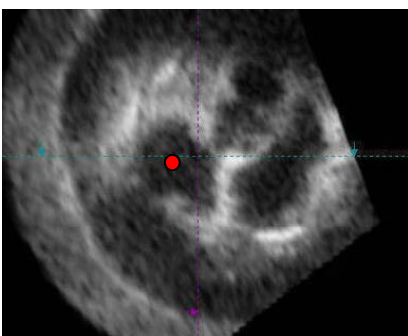- 4D RV Function Analysis

**Chapter bar for general workflow**

## Landmark settings


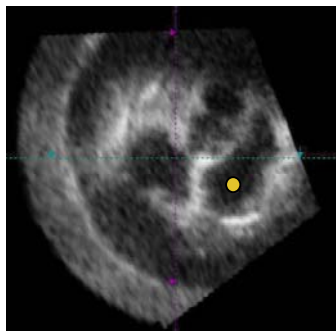
**Step 1**

Workflow

oriented

**Step 6**
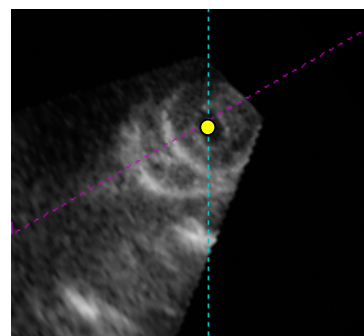
## Landmark supported view adjustment
User defines 3 landmarks (one optional)
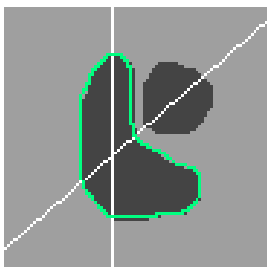


Mid of Tricuspid valve       Mid of Mitralvalve       Mid of left ventricle apex region
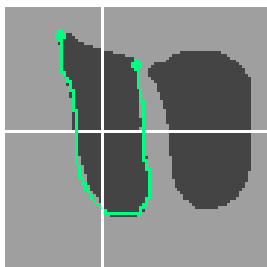
## Set initial contours
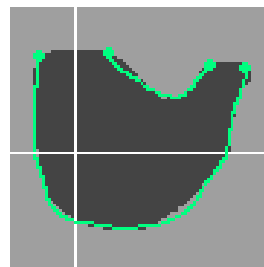
### Contour characteristics

Sagital view                    4- Chamber view                    Coronal view



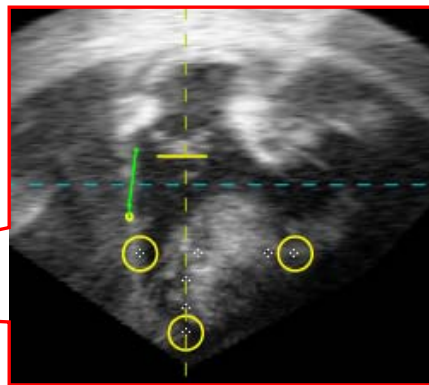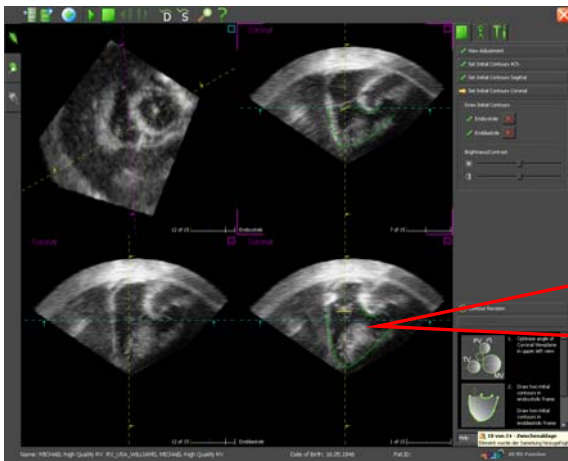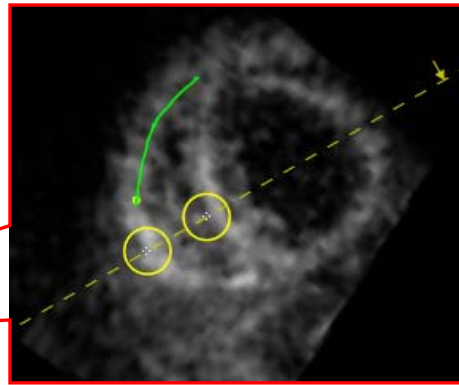1 closed contour                1 open contour                     2 open contours

All contours must be set.
Contours in 4- Chamber and coronal view must cross the cross-section SAX
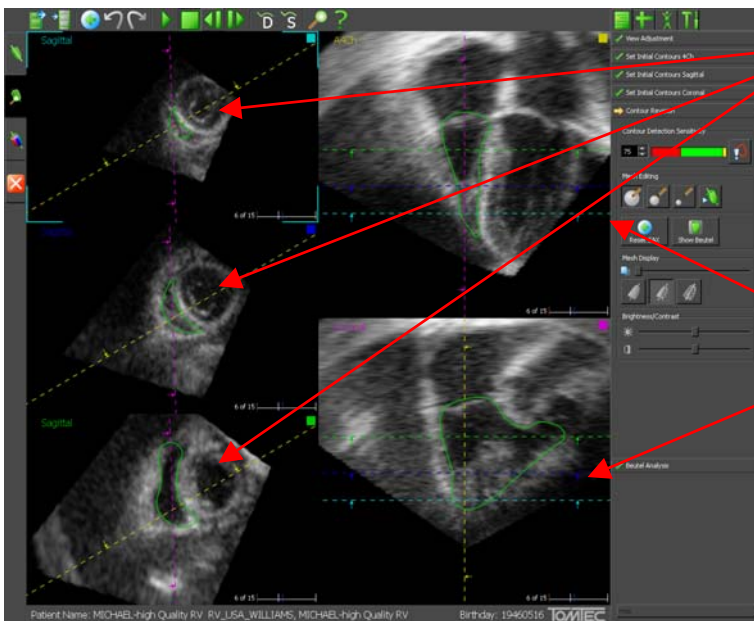
### Automatic plane adjust

1. Trace of initial contours in three views
2. Views are automatically generated
3. Confidence area guides the user input tracings
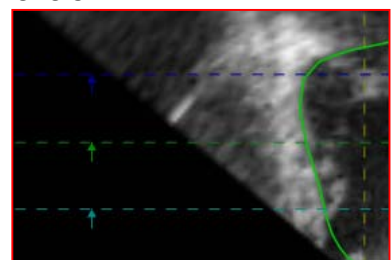4. Help menus in right lower corner display expected tracing

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## Contour revision



Display of 3 SAX levels

Contour detection

Correction Tool

Slicing of 3 independent SAX levels

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← **Switch to Beutel display**

## 4D RV Function Analysis

**Quantitative results**

- Dynamic surface model
- ED- Volume
- ES- Volume
- Stroke Volume
- Ejection fraction



Dynamic 3D dimensional volume object

| | | |
|---|---|---|
| ESV | 46.3293 | ml |
| EDV | 110.948 | ml |
| EF | 58.2415 | % |
| SV | 64.6164 | ml |

Display of the global volume findings