Congenital heart disease is the leading organ-specific birth defect, and is also the leading cause of neonatal mortality attributable to birth defects. Yet, the screening and diagnosis of congenital heart disease remains an important challenge for sonographers and physicians. An adequate sonographic exam of the fetal heart is time-consuming and requires expertise and skill.

5D Heart Color allows interrogation of a STIC (spatiotemporal image correlation) volume dataset using “intelligent navigation” technology, which automatically generates nine standard fetal echocardiography views. The successful display of cardiac diagnostic planes occurs in the presence of anatomical variability, and also despite different gestational ages. This innovative method has the potential to improve efficiency and workflow of performing fetal cardiac examination by reducing the time necessary to obtain standard cardiac views.

Key Advantages
- **Diagnostic Value**: Automatically displays nine standard fetal echocardiography views simultaneously in a single template
- **Ease of Use**: Intuitive workflow that can simplify examination of the fetal heart and reduce operator dependency
- **Innovative**: Intelligent navigation technology
Proprietary Technologies

After marking seven anatomical structures of the fetal heart, 5D Heart Color will automatically generate nine standard fetal echocardiography views:

1) Four chamber
2) Five chamber
3) Left ventricular outflow tract
4) Short-axis view of great vessels/ right ventricular outflow tract
5) Three vessels and trachea
6) Abdomen/stomach
7) Ductal Arch
8) Aortic arch
9) Superior and inferior vena cava

STICLoop™: A two-dimensional cine loop that aids the user in determining the appropriateness of STIC volume datasets before implementation of the 5D Heart Color

Anatomic Box®: A tool used to mark anatomical structures within the STIC volume to allow the automatic display of standard fetal echocardiography views.

Intelligent Alerts: Captions notifying the operator about potential issues with the STIC volume dataset (e.g. location of the fetal spine at three o’clock)

Marking Alerts: Captions notifying the operator that fetal anatomical structures used for marking may be in different locations from what is expected

Automatic labeling: Fetal echocardiography views, anatomical structures, left and right side of fetus, and cranial and caudal ends

VIS-Assistance® (Virtual Intelligent Sonographer Assistance): An operator-independent tool that allows sonographic navigation and exploration of surrounding structures in each of the fetal cardiac diagnostic planes.

References