

## TECHNOLOGY OPPORTUNITY BULLETIN

### **DETECTS – Software for Quantifying Circulatory Emboli** Tech ID: 2006-009

Researchers at Queen's University have developed **DETECTS** (**D**etection of **E**mboli using **T**rans-esophageal **E**chocardiography for **C**ounting, **T**otal volume, and **S**ize estimation) **DETECTS** easily retrofits to existing hardware, **contributes to reduced post-operative mortality and neurological dysfunction**, and provides a **quantitative** tool for the development of surgical standards for emboli measurement during open heart surgery.

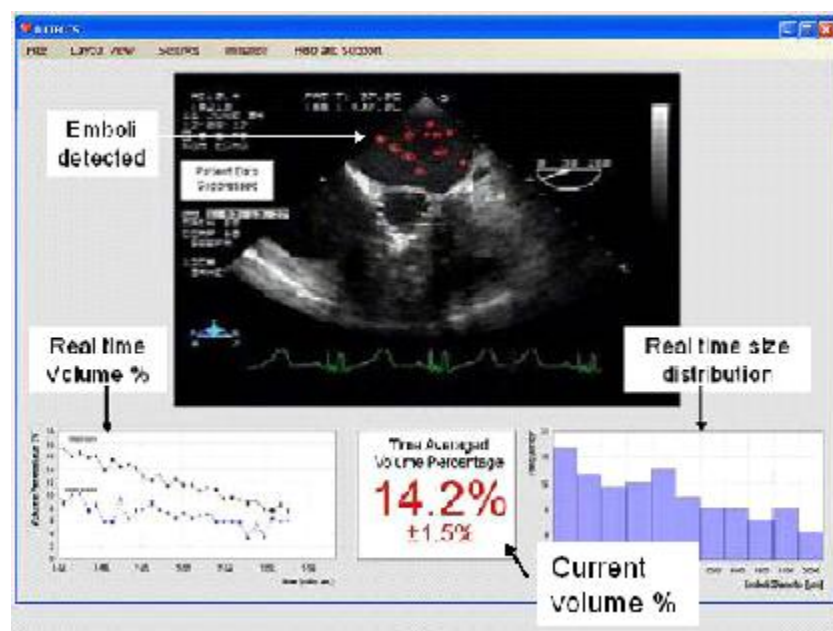
#### **Description:**

**DETECTS** extends the functionality of existing ultrasound systems to influence and improve the patient outcome of open-heart surgery. The software accurately measures flow rates of emboli in the ascending aorta while simultaneously providing quantitative data on size, volume and count.

Interfacing with existing trans-esophageal echocardiography (TEE) hardware, **DETECTS** employs a unique algorithm to detect and quantify emboli in the ascending aorta. This on-line, real-time information gives physicians the ability to objectively gauge emboli-content status of a patient's circulatory system as it is being weaned from the pulmonary bypass system. This permits, for the first time, specification of standards for air and solid emboli removal in the closing stages of cardiac surgery.

#### *How does it work?*

**DETECTS** interprets the two-dimensional images obtained from the TEE and analyses them for the presence and quantities of emboli. **DETECTS** is designed as an easy add-on to existing ultrasound hardware, sensing all emboli passing through the plane of the TEE image – data describing the count, volume total, and size distribution. As the software utilizes two-dimensional TEE



data, **DETECTS** is vastly superior to existing trans-cranial Doppler (TCD) emboli quantification methods. An additional benefit is that **DETECTS** cannot be overloaded by large quantities of emboli, a typical issue with existing TCD technology.

**Status of Commercialization:**

PARTEQ Innovations, the technology transfer arm of Queen's University, is seeking industrial partners who are willing to support on-going development of the product and/or who are interested in licensing the intellectual property.

**Contact:**

Randall North  
Associate Director, Commercial Development  
Phone: (613) 533-2342 FAX: (613) 533-6853  
E-mail: [rnorth@parteqinnovations.com](mailto:rnorth@parteqinnovations.com)  
Ref Tech ID 2006-009