510(k) Summary
21 CFR 807.92
Sapiens* Tip Confirmation System

General Provisions
Submitter Name: Bard Access Systems, Inc.
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Date of Preparation: 20 September 2011

Subject Device
Trade Name: Sapiens* Tip Confirmation System
Classification Name: 21 CFR 880.5970 - Class II
LJS - Accessory to percutaneous, implanted, long-term intravascular catheter

Predicate Device
Trade Name: Sapiens* Tip Confirmation System
Classification Name: 21 CFR 880.5970 - Class II
LJS - Accessory to percutaneous, implanted, long-term intravascular catheters
Premarket Notification: K093775, concurrence date 15 July 2010
Manufacturer: Bard Access Systems, Inc.

Device Description
The Sapiens* TCS consists of the following elements: PC netbook running Sapiens* TCS software, Sapiens* TCS ECG module, ECG leads connection, printer (optional), and remote control (optional). A stylet inserted into a central venous catheter can be connected to the Sapiens* TCS system via the Sapiens* TCS ECG leads connection, establishing a direct electrical connection to the catheter distal tip for ECG signal measurement. When the central venous catheter stylet is connected to Sapiens* TCS, the Sapiens* TCS PC netbook displays a cardiac electrical signal from the four ECG electrodes, including the catheter stylet (intravascular electrode) and three body electrodes, which provide ECG waveforms. The intravascular ECG waveforms provided by the Sapiens* TCS can be used for guiding and positioning of the central venous catheter. These ECG waveforms can be printed using an optional printer to document the procedural record for the patient's file.
### Indications for Use / Intended Use

The **Sapiens** TCS is indicated for guidance and positioning of Peripherally Inserted Central Catheters (PICCs). The Sapiens TCS provides real-time PICC tip location information by using the patient's cardiac electrical activity. **Sapiens** TCS is indicated for use as an alternative method to chest X-ray and fluoroscopy for PICC tip placement confirmation in adult patients.

Limiting but not contraindicated situations for this technique are in patients where alterations of cardiac rhythm change the presentation of the P wave as in atrial fibrillation, atrial flutter, severe tachycardia, and pacemaker driven rhythm. In such patients, who are easily identifiable prior to PICC insertion, the use of an additional method is required to confirm catheter tip location.

### Technological Characteristics

Technological characteristics of the subject **Sapiens** TCS are equivalent with respect to the basic system design and function to that of the predicate device. Differences do not raise any new questions regarding safety and effectiveness.

### Safety & Performance Tests

Verification and validation activities were designed and performed to demonstrate that the subject **Sapiens** TCS met predetermined performance specifications. The following standards in conjunction with in-house protocols were used to determine appropriate methods for evaluating the performance of the device:

  - Medical Electrical Equipment – Part 1: General Requirements for Safety

- **IEC 60601-1-2:2007**
  - Medical electrical equipment - Part 1-2: General requirements for basic safety and essential performance - Collateral standard: Electromagnetic compatibility - Requirements and tests

The subject device met all pre-determined acceptance criteria and demonstrated substantial equivalence as compared to the predicate device.

### Summary of Substantial Equivalence

Based on the indications for use, technological characteristics, and safety and performance testing, the subject **Sapiens** TCS, met the minimum requirements that are considered adequate for its intended use and is substantially equivalent in design, materials, principles of operation and indications for use to the predicate **Sapiens** TCS.

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*Sapiens is the trademark and/or registered trademark of C.R. Bard, Inc. or an affiliate.*
Mr. Henry Boland  
Regulatory Affairs Specialist  
C.R. Bard, Inc.  
Bard Access Systems  
605 North 5600 West  
Salt Lake City, Utah 84116

Re: K112744  
Trade/Device Name: Sapiens Tip Confirmation System  
Regulation Number: 21 CFR 880.5970  
Regulation Name: Percutaneous, Implanted, Long-Term Intravascular Catheter  
Regulatory Class: II  
Product Code: LJS  
Dated: September 20, 2011  
Received: September 21, 2011

Dear Mr. Boland:

We have reviewed your Section 510(k) premarket notification of intent to market the device referenced above and have determined the device is substantially equivalent (for the indications for use stated in the enclosure) to legally marketed predicate devices marketed in interstate commerce prior to May 28, 1976, the enactment date of the Medical Device Amendments, or to devices that have been reclassified in accordance with the provisions of the Federal Food, Drug, and Cosmetic Act (Act) that do not require approval of a premarket approval application (PMA). You may, therefore, market the device, subject to the general controls provisions of the Act. The general controls provisions of the Act include requirements for annual registration, listing of devices, good manufacturing practice, labeling, and prohibitions against misbranding and adulteration. Please note: CDRH does not evaluate information related to contract liability warranties. We remind you, however, that device labeling must be truthful and not misleading.

If your device is classified (see above) into either class II (Special Controls) or class III (PMA), it may be subject to additional controls. Existing major regulations affecting your device can be found in the Code of Federal Regulations, Title 21, Parts 800 to 898. In addition, FDA may publish further announcements concerning your device in the Federal Register.
Please be advised that FDA’s issuance of a substantial equivalence determination does not mean that FDA has made a determination that your device complies with other requirements of the Act or any Federal statutes and regulations administered by other Federal agencies. You must comply with all the Act’s requirements, including, but not limited to: registration and listing (21 CFR Part 807); labeling (21 CFR Part 801); medical device reporting (reporting of medical device-related adverse events) (21 CFR 803); good manufacturing practice requirements as set forth in the quality systems (QS) regulation (21 CFR Part 820); and if applicable, the electronic product radiation control provisions (Sections 531-542 of the Act); 21 CFR 1000-1050.

If you desire specific advice for your device on our labeling regulation (21 CFR Part 801), please go to http://www.fda.gov/AboutFDA/CentersOffices/CDRH/CDRHOFFices/ucm11809.htm for the Center for Devices and Radiological Health’s (CDRH’s) Office of Compliance. Also, please note the regulation entitled, “Misbranding by reference to premarket notification” (21CFR Part 807.97). For questions regarding the reporting of adverse events under the MDR regulation (21 CFR Part 803), please go to http://www.fda.gov/MedicalDevices/Safety/ReportaProblem/default.htm for the CDRH’s Office of Surveillance and Biometrics/Division of Postmarket Surveillance.

You may obtain other general information on your responsibilities under the Act from the Division of Small Manufacturers, International and Consumer Assistance at its toll-free number (800) 638-2041 or (301) 796-7100 or at its Internet address http://www.fda.gov/MedicalDevices/ResourcesforYou/Industry/default.htm.

Sincerely yours,

Anthony D. Watson, B.S., M.S., M.B.A.
Director
Division of Anesthesiology, General Hospital, Infection Control and Dental Devices
Office of Device Evaluation
Center for Devices and Radiological Health

Enclosure
Indications for Use Statement

510(k) Number (if known): K112744

Device Name: Sapiens™ Tip Confirmation System

Indications for Use:

The Sapiens™ Tip Confirmation System (TCS) is indicated for guidance and positioning of Peripherally Inserted Central Catheters (PICCs). The Sapiens™ TCS provides real-time PICC tip location information by using the patient’s cardiac electrical activity. Sapiens™ TCS is indicated for use as an alternative method to chest X-ray and fluoroscopy for PICC tip placement confirmation in adult patients.

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Prescription Use X AND/OR Over-The-Counter Use
(Part 21 CFR 801 Subpart D) (21 CFR 801 Subpart C)

(PLEASE DO NOT WRITE BELOW THIS LINE-CONTINUE ON ANOTHER PAGE IF NEEDED)

Concurrence of CDRH, Office of Device Evaluation (ODE)

Anthony W. Montalvo
(Division Sign-Off)
Division of Anesthesiology, General Hospital
Infection Control, Dental Devices

510(k) Number: K112744