12 510(k) Summary

This summary of 510(k) safety and effectiveness information is being submitted in accordance with the requirements of Safe Medical Device Act 1990 and 21 CFR § 807.92.

I. General Information

Establishment
Siemens Medical Solutions. Inc.
51 Valley Stream Parkway
Malvern. PA 19355

Registration Number
2240869

Manufacturer
Siemens AG. Bereich Med
Henkestrasse 127
D-91052 Erlangen. Germany

Registration Number
8010024

Contact Person
Ms. Nealie Hartman
Technical Specialist. Regulatory Submissions
51 Valley Stream Parkway
Malvern. PA 19355
Phone: (610)448-1769
Fax: (610) 448-1787

Device Name
Trade Name: MAGNETOM Avanto System
Classification Name: Magnetic Resonance Diagnostic Device
CFR Code: 21 CFR § 892.1000
Classification: Class II

Performance Standards
None established under Section 514 the Food. Drug. and Cosmetic Act.
II. Safety and Effectiveness Information Supporting Substantial Equivalence.

Intended Use
The MAGNETOM Avanto is indicated for use as magnetic resonance diagnostic devices (MRDD) that produce transverse, sagittal, coronal and oblique cross sectional images, spectroscopic images and/or spectra, and that display the internal structure and/or function of the head, body, or extremities. These images and/or spectra when interpreted by a trained physician yield information that may assist in diagnosis.

The MAGNETOM Avanto may also be used for imaging during interventional procedures when performed with MR compatible devices such as, in room display and MR safe biopsy needles.

Device Description
The MAGNETOM Avanto System is a 1.5 T closed superconducting magnet designed scanner. It consists of the same types of hardware (with a modified gradient coil, RF body resonator and magnet) that are currently available with the MAGNETOM Sonata and Symphony systems.

Substantial Equivalence
The system is substantially equivalent to the following cleared medical devices:

<table>
<thead>
<tr>
<th>Predicate Device Name</th>
<th>FDA Clearance Number</th>
<th>FDA Clearance Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Siemens MAGNETOM 1.5 T Sonata</td>
<td>K993731</td>
<td>12/23/99</td>
</tr>
<tr>
<td>Siemens MAGNETOM 1.5 T Symphony</td>
<td>K971684</td>
<td>08/05/97</td>
</tr>
</tbody>
</table>

General Safety and Effectiveness Concerns:
Operation of the MAGNETOM Avanto System is substantially equivalent to the commercially available MAGNETOM 1.5 T Sonata System and 1.5 T Symphony System. Specified by the FDA guidance document for MR Diagnostic Devices that will be evaluated, below are the safety parameter with the following levels:

Action Levels
• Maximum Static Field
• Rate of Change of Magnetic Field
• RF Power Deposition
• Acoustic Noise Levels

Performance Levels
• Specification Volume
• Signal to Noise
• Image Uniformity
• Geometric Distortion
• Slice Profile, Thickness and Gap
• High Contrast Spatial Resolution

The MAGNETOM Avanto will conform to the FDA recognized NEMA Standards for the measurement of performance and safety parameters and the international IEC standard for safety issues with Magnetic Resonance Imaging Devices. This will assure that the performance of this device can be considered safe and effective with respect to the currently available MAGNETOM Sonata and Symphony systems.
Dear Ms. Hartman:

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, and prohibitions against misbranding and adulteration.

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); 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.
This letter will allow you to begin marketing your device as described in your Section 510(k)
premarket notification. The FDA finding of substantial equivalence of your device to a legally
marketed predicate device results in a classification for your device and thus, permits your device
to proceed to the market.

If you desire specific advice for your device on our labeling regulation (21 CFR Part 801), please
contact the Office of Compliance at one of the following numbers, based on the regulation
number at the top of the letter:

<table>
<thead>
<tr>
<th>Regulation Number</th>
<th>Phone Number</th>
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<tbody>
<tr>
<td>8xx.1xxx</td>
<td>(301) 594-4591</td>
</tr>
<tr>
<td>876.2xxx, 3xxx, 4xxx, 5xxx</td>
<td>(301) 594-4616</td>
</tr>
<tr>
<td>884.2xxx, 3xxx, 4xxx, 5xxx, 6xxx</td>
<td>(301) 594-4616</td>
</tr>
<tr>
<td>892.2xxx, 3xxx, 4xxx, 5xxx</td>
<td>(301) 594-4654</td>
</tr>
<tr>
<td>Other</td>
<td>(301) 594-4692</td>
</tr>
</tbody>
</table>

Additionally, for questions on the promotion and advertising of your device, please contact the
Office of Compliance at (301) 594-4639. Also, please note the regulation entitled, "Misbranding
by reference to premarket notification" (21CFR Part 807.97) you may obtain. Other general
information on your responsibilities under the Act may be obtained from the Division of Small
Manufacturers, International and Consumer Assistance at its toll-free number (800) 638-2041 or
(301) 443-6597 or at its Internet address http://www.fda.gov/cdrh/dsma/dsmamain.html.

Sincerely yours,

Nancy C. Brogdon
Director, Division of Reproductive,
Abdominal and Radiological Devices
Office of Device Evaluation
Center for Devices and Radiological Health

Enclosure
3 Indications for Use Statement

510(k) Number (if known)  K32428

Device Name: MAGNETOM Avanto

Indications for Use:

The MAGNETOM Avanto is indicated for use as magnetic resonance diagnostic devices (MRDD) that produce transverse, sagittal, coronal and oblique cross sectional images, spectroscopic images and/or spectra, and that display the internal structure and/or function of the head, body, or extremities. These images and/or spectra when interpreted by a trained physician yield information that may assist in diagnosis.

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(please do not write below this line - continue on another page if needed)

Concurrence of CDRH, Office of Device Evaluation

Prescription Use [ ] OR Over-The-Counter Use [ ]

(Nancy C. Brogdon)

Siemens 510(k) Premarket Notification
MAGNETOM Avanto

August 1, 2003
Page 13

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