

# Special Terms for MR Systems

(Version: 06.05.2024)

These Special Terms for MR Systems govern the provision and, if agreed in the Commercial Form, also the installation of MR Systems in addition to (i) the Commercial Form and (ii) the General Terms, Supplemental General Terms, Software License Terms, and Hardware Installation Terms ("together Terms"). These Special Terms for MR Systems shall be read as complementary to the Terms and prevail in case of conflict.

## 0. Delivery and Prices

- 0.1. The magnet shall be delivered cooled to helium temperature; dryCool technology magnets can either be shipped warm (to be cooled onsite) or cold (cooled to helium temperatures).
- 0.2. Siemens Healthineers prices do not include the cost of determining the magnet room shielding required and measuring and checking interference levels at the installation site.

## 1. Cooperation

An MR System only produces good clinical results when all conditions necessary for implementation of this specialized technology are met. To ensure compliance with these conditions, particularly close cooperation is necessary between Customer and Siemens Healthineers.

## 2. Site of the System

- 2.1. The rooms designated by Customer for the installation must comply with minimum requirements to be notified to Customer at the beginning of the planning stage
  - (i) with regard to weights and dimensions for structural analysis and
  - (ii) external factors influencing the homogeneity and stability of the magnetic field in the scan volume. The following external factors can influence homogeneity and stability over time:
    - (iii) steel reinforcement in the building
    - (iv) moving ferromagnetic objects
    - (v) equipment using switched DC currents
    - (vi) alternating fields with power line frequency
    - (vii) alternating fields with a higher frequency
    - (viii) electromagnetic fields generated by transmitters.
- 2.2. In order to check the site designated by Customer with regard to the factors listed in Section 3.1, Customer shall provide Siemens Healthineers with the following documents, checked for accuracy by experts:
  - (i) Ground plan of the building with adjacent plots and explanation of their use (e.g. road or rail transport, industrial use, residential area, etc).
  - (ii) Floor plan of the entire floor on which the MR System is to be installed with exact details of rooms intended for installation and details of the use of other rooms
  - (iii) Floor plan of floors within a radius of 20 m above and below the intended installation site for the MR System with details of the use of these rooms, sectional drawings of the building section intended for installation of the MR System
  - (iv) Lists indicating the steel reinforcement of the building skeleton, expressed in kg of steel per linear meter (e.g. for girders and supports) and in kg steel per m<sup>2</sup> (e.g. for ceilings, floors and walls) within a radius of 5 m of the center of the magnet.
  - (v) Exact details of the installation site and types of interfering objects along with their levels of interference in accordance with Section 3.1 within a radius of 20 m – for technical equipment using switched DC currents (e.g. streetcars, cyclotron) within a radius of 50 m – of the installation site intended for the MR System
  - (vi) Details of radio and television transmitters in the vicinity, as well as wireless CB units (frequency, power level, location)

(vii) Exact description of how to transport the MR System (routes and access) to the intended installation site for the MR System

- 2.3. At the beginning of the planning phase, Customer is given a document showing the stray field distribution in air for the supplied magnetic field strength. Using this information, Customer can determine whether the stray field will interfere with other equipment in the vicinity. Siemens Healthineers should point out that the stray field can be subject to considerable distortion in buildings with a steel skeleton and steel-reinforced concrete structures. If Siemens Healthineers receives appropriate documents from Customer, Siemens Healthineers is prepared to support these checks, but shall not be liable for interference with equipment from other manufacturers.
- 2.4. If Customer requests a reduction in the magnetic stray field distribution referred to in Section 3.3, or if it transpires during planning that a reduction in stray field distribution is necessary due to external factors, Customer shall supply Siemens Healthineers with the following additional information:
  - (i) specification of the required contour of the cardiac pacemaker boundary in the plans requested in Section 3.2
  - (ii) specification of the maximum permissible magnetic flux density at the site of instruments which are sensitive to magnetic fields by marking these sites on the plans requested in Section 3.2
  - (iii) If the stray field is reduced by magnetic room shielding, the magnetization characteristic curve  $B = f(H)$  for the material to be used for the shielding, along with an indication of whether the position of the magnet in the room can also be changed

If Siemens Healthineers needs to perform further calculations as a result of this information, Customer shall reimburse Siemens Healthineers separately for the resulting costs at Siemens Healthineers' standard prices.

Unless otherwise agreed in writing with Siemens Healthineers, all services to be carried out by Siemens Healthineers in order to reduce the magnetic stray field must be ordered separately.

- 2.5. Using the minimum requirements for external interference specified in Section 3.1, Siemens Healthineers shall check the documents supplied by Customer as per Section 3.2 to ensure they comply with the magnetic field boundary conditions and the room dimensions.
- 2.6. Siemens Healthineers is not liable for errors resulting from incomplete or inaccurate documents.
- 2.7. If the checks performed in accordance with Section 3.5 show that the magnetic field boundary conditions and the room dimensions are fulfilled, Siemens Healthineers shall then start preparing the project drawings required for installation of the MR System and – if required by Customer according to Section 3.4 – Siemens Healthineers shall begin preparing the documents for magnetic shielding.
- 2.8. If the checks performed in accordance with Section 3.5 show that the magnetic field boundary conditions and the room dimensions are not entirely or only partially fulfilled, Siemens Healthineers shall notify Customer in writing of the type and extent of necessary structural and/or organizational changes which Customer needs to arrange. Customer will then ensure that the necessary structural changes are implemented in good time. The type and extent of these measures shall be subject to

Siemens Healthineers' agreement in order to observe the necessary homogeneity and stability over time of the magnetic field within the scan volume.

### **3. High-Frequency Shielding, Interference Measurements**

3.1. The MR magnet room requires high frequency shielding in accordance with the requirements specified by Siemens Healthineers. It is the responsibility of Customer to install high frequency shielding and to demonstrate that the requirements of Siemens Healthineers are met in full prior to start of installation.

3.2. Customer is responsible for obtaining any necessary operating license for the MR System from the competent authority in good time.

### **4. Infrastructure Facilities (Air Conditioning, Power Supply, Cooling Water)**

In order to comply with the required specification for climatic conditions, power supply and cooling water specified for the operation of the MR System and MR-specific special features, Customer must arrange for the installation of an air-conditioning system, power supply and cooling water system which must be fully operational prior to the start of installation. The power supply and cooling water supply shall be available 24/7 for the magnet cooling system.

### **5. Magnet Cooling System (Refrigerator) for Superconducting Magnets**

In order to reduce the installation time, the magnet cooling system must commence operation on delivery, without delay. Before the magnet is delivered, Customer shall check that the necessary connection to the electrical power supply, air-conditioning system and cooling water system is guaranteed. Additional costs for liquid helium, helium gas and filling the magnet, if any, shall be charged to Customer if the necessary connections are supplied late.

### **6. Checking Installation Conditions**

Before delivery of the MR System and prior to installation, Siemens Healthineers will check the rooms intended for installation of the MR System for compliance with the conditions specified in Siemens Healthineers' plans. The rooms shall be provided by Customer in a swept and vacant state. This inspection shall not correspond to a general acceptance of the construction work.

### **7. Network Connection**

Customer's permanent approval for Siemens Healthineers remote connection and a network connection with IP address must be provided when installation commences.

### **8. Gas Supply**

8.1. Customer shall arrange the supply of liquefied gas as required for operation of the MR System.

8.2. If handling and/or storage of liquefied gas(es) require/s a license or must be notified, Customer shall obtain the license or arrange for notification in good time prior to Siemens Healthineers' installation work commencing. It is the responsibility of Customer to carry out the structural measures required for handling and storage in plenty of time.

### **9. Safety Zones, Room Magnetization**

9.1. Customer shall be responsible for ensuring that individuals fitted with cardiac pacemakers and/or other implanted metal components are not put at risk as a result of the magnetic field of the MR magnet. Customer shall take the necessary protective measures to identify safety zones in accordance with the applicable official recommendations and ensure controlled access to the facility.

9.2. Customer shall be informed that ferromagnetic materials (e.g., structural steel, iron constructions) located in the magnet room and in its immediate vicinity will remain permanently magnetized during operation of the MR magnet. If the rooms are subsequently used for another purpose, this may cause interference with operation of technical equipment.

### **10. Quench Line (if required)**

10.1. If a quench line is required by the MR System Customer will be informed during the "site planning" phase. If required, the quench line must conform to Siemens Healthineers' requirements. The proper installation of the quench line according to Siemens Healthineers' requirements is the responsibility of the Customer and belongs to the preparations for installation which Customer must undertake at the installation site.

10.2. It is the responsibility of Customer to maintain the quench line in compliance with Siemens Healthineers' requirements at all times and to ensure that changes to the building, the quench line etc. after proper installation do not violate those requirements. Such subsequent changes must in no event compromise the safety of the MR System or, in the case of a quench, of people.