



**SLOVENSKI STANDARD**  
**SIST EN 61217:1998/A1:2002**  
**01-februar-2002**

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**Oprema za radioterapijo - Koordinate, gibanje in skale - Dopolnilo A1 (IEC 61217:1996/A1:2000)**

Radiotherapy equipment - Coordinates, movements and scales (IEC 61217:1996/A1:2000)

Strahlentherapie-Einrichtungen - Koordinaten, Bewegungen und Skalen (IEC 61217:1996/A1:2000)

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Appareils utilisés en radiothérapie - Coordonnées, mouvements et échelles (CEI 61217:1996/A1:2000)

[SIST EN 61217:1998/A1:2002](https://standards.iteh.ai/catalog/standards/sist/9a63ef9d-0a55-41d7-baa2-a102894a9c57/sist-en-61217-1998-a1-2002)

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**Ta slovenski standard je istoveten z: EN 61217:1996/A1:2001**

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**ICS:**

11.040.50	Radiografska oprema	Radiographic equipment
13.280	Varstvo pred sevanjem	Radiation protection

**SIST EN 61217:1998/A1:2002**

**en**

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EUROPEAN STANDARD

**EN 61217/A1**

NORME EUROPÉENNE

EUROPÄISCHE NORM

February 2001

ICS 11.040.50;13.280

English version

**Radiotherapy equipment -  
Coordinates, movements and scales  
(IEC 61217:1996/A1:2000)**

Appareils utilisés en radiothérapie -  
Coordonnées, mouvements et échelles  
(CEI 61217:1996/A1:2000)

Strahlentherapie-Einrichtungen -  
Koordinaten, Bewegungen und Skalen  
(IEC 61217:1996/A1:2000)

This amendment A1 modifies the European Standard EN 61217:1996, it was approved by CENELEC on 2000-12-01. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this amendment the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CENELEC member.

This amendment exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the Central Secretariat has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

**CENELEC**

European Committee for Electrotechnical Standardization  
Comité Européen de Normalisation Electrotechnique  
Europäisches Komitee für Elektrotechnische Normung

**Central Secretariat: rue de Stassart 35, B - 1050 Brussels**

## Foreword

The text of document 62C/279/FDIS, future amendment 1 to IEC 61217:1996, prepared by SC 62C, Equipment for radiotherapy, nuclear medicine and radiation dosimetry, of IEC TC 62, Electrical equipment in medical practice, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as amendment A1 to EN 61217:1996 on 2000-12-01.

The following dates were fixed:

- latest date by which the amendment has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2001-09-01
- latest date by which the national standards conflicting with the amendment have to be withdrawn (dow) 2003-12-01

Annexes designated "informative" are given for information only.  
In this standard, annex F is informative.

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## Endorsement notice

The text of amendment 1:2000 to the International Standard IEC 61217:1996 was approved by CENELEC as an amendment to the European Standard without any modification.

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NORME  
INTERNATIONALE  
INTERNATIONAL  
STANDARD

CEI  
IEC  
61217

1996

AMENDEMENT 1  
AMENDMENT 1  
2000-12

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Amendement 1

**Appareils utilisés en radiothérapie –  
Coordonnées, mouvements et échelles**

iTeh STANDARD PREVIEW

Amendment 1

(standards.iteh.ai)

**Radiotherapy equipment –  
Coordinates, movements and scales**

<https://standards.iteh.ai/catalog/standards/sist/9a63ef9d-0a55-41d7-baa2-a102894a9c57/sist-en-61217-1998-a1-2002>

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Commission Electrotechnique Internationale  
International Electrotechnical Commission  
Международная Электротехническая Комиссия

CODE PRIX  
PRICE CODE

G

*Pour prix, voir catalogue en vigueur  
For price, see current catalogue*

## FOREWORD

This amendment has been prepared by subcommittee 62C: Equipment for radiotherapy, nuclear medicine and radiation dosimetry, of IEC technical committee 62: Electrical equipment in medical practice.

The text of this amendment is based on the following documents:

FDIS	Report on voting
62C/279/FDIS	62C/287/RVD

Full information on the voting for the approval of this amendment can be found in the report on voting indicated in the above table.

The committee has decided that the contents of the base publication and its amendments will remain unchanged until 2005. At this date, the publication will be

- reconfirmed;
- withdrawn;
- replaced by a revised edition, or
- amended.

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### CONTENTS

*Add, on page 9, the title of annex F as follows:*

Annex F (informative) Coordinate transformations between IEC and DICOM PATIENT coordinates

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## 2 Coordinate systems

*Add, on page 21, after 2.1.6.5, the following subclause:*

**2.1.101** For rotational transformations involving more than one rotation the sequence of the rotations must be kept consistent. If the rotational sequence varies the resulting transformation matrix and the orientation of the axis will be different.

NOTE  $M_{ab}^{-1} = M_{ba}$  (see clause A.1).

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Add the following subclause:

### **2.101 PATIENT coordinate system ("p") (see figures 101a and 101b)**

The "p" coordinate system is stationary with respect to the PATIENT, and its mother system is the "t" system. Its origin  $I_p$  is at a suitably chosen point defined in relation to the PATIENT's anatomy.

NOTE Each PATIENT will have an individual origin  $I_p$  whose anatomical position will have been chosen as a suitable point in relation to the intended treatment site and technique. However, this point need not be in or on the PATIENT. For example, if a beam direction shell is used, it would be logical to use a point on the shell (or its base if attached to the table top).

With reference to figure 101a, the coordinate axis  $X_p$  is parallel to the intersection of a PATIENT coronal plane and a transverse plane. Coordinate axis  $Y_p$  is parallel to the intersection of a PATIENT's sagittal and coronal planes. The coordinate axis  $Z_p$  is parallel to the intersection of a PATIENT's sagittal plane and a transverse plane. The positive  $X_p$  axis is oriented to the PATIENT's left, the positive  $Y_p$  axis points superiorly within the PATIENT and the positive  $Z_p$  axis is directed anteriorly within the PATIENT.

In the zero angular position of the "p" system the axes  $X_p$ ,  $Y_p$ ,  $Z_p$  are parallel to the corresponding axes  $X_t$ ,  $Y_t$ ,  $Z_t$  of the "t" system.

Rotation of the "p" system about the axis  $X_p$  is defined as rotation angle  $\psi_p$   
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An increase in the value of  $\psi_p$  corresponds to clockwise rotation of the PATIENT as viewed from the PATIENT's right-hand side. [SIST EN 61217:1998/A1:2002](https://standards.iteh.ai/catalog/standards/sist/9a63ef9d-0a55-41d7-baa2-902751907181/iec-61217-1-1998-amendment-1)

<https://standards.iteh.ai/catalog/standards/sist/9a63ef9d-0a55-41d7-baa2-902751907181/iec-61217-1-1998-amendment-1>  
Rotation of the "p" system about axis  $Y_p$  is defined as rotation angle  $\phi_p$ .

An increase in the value of  $\phi_p$  corresponds to a clockwise rotation of the PATIENT as viewed in the direction from foot to head of the PATIENT.

Rotation of the "p" system about axis  $Z_p$  is defined as rotation angle  $\theta_p$ .

An increase in the value of  $\theta_p$  corresponds to a clockwise rotation of the PATIENT as viewed from behind the PATIENT.

The values of  $P_x$ ,  $P_y$  and  $P_z$  are the lateral, longitudinal and vertical displacements from  $I_t$  of the origin  $I_p$  of the PATIENT coordinate system along  $X_t$ ,  $Y_t$  and  $Z_t$  respectively.

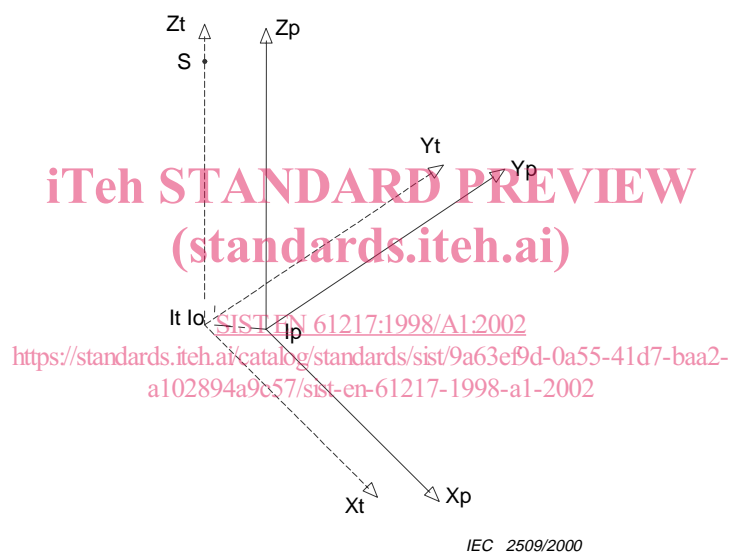
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In table 2, amend as follows:

System Designation	Mother System	System origin	Device rotation about axis by angle	Device linear displacement
p-PATIENT	t	$l_p$ Selected point in relation to PATIENT	PATIENT about $X_p$ by $\psi_p$ $Y_p$ by $\varphi_p$ and $Z_p$ by $\theta_p$	

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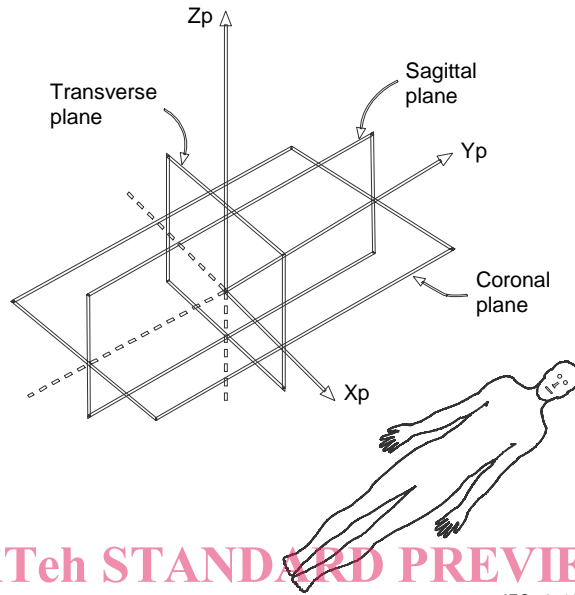
Add the following to figure 1a:



PATIENT coordinate system



Add, after figure 16k, the following new figures:



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 (standards.iteh.ai) IEC 2510/2000

SIST EN 61217:1998/A1:2002

Figure 101a – PATIENT coordinate system (PATIENT is supine)

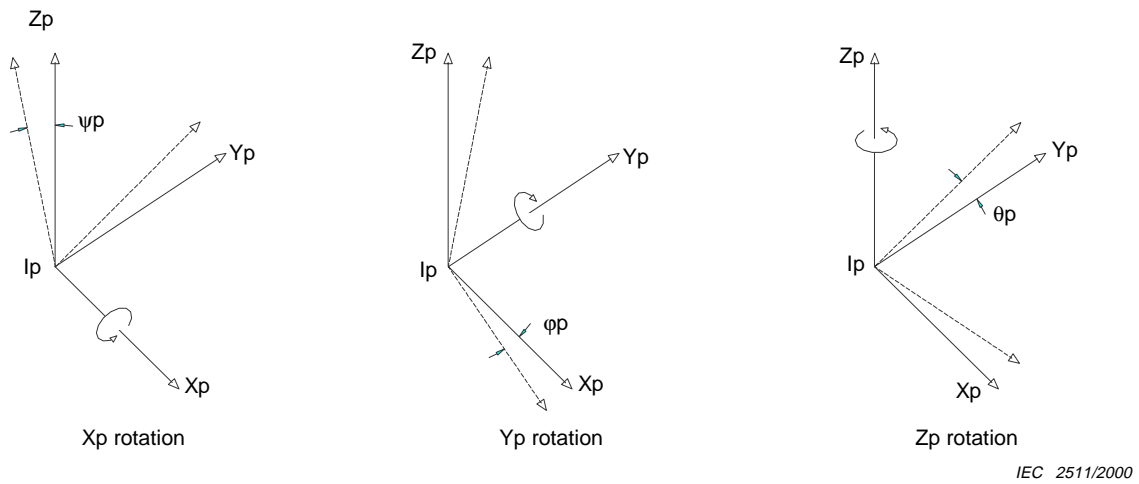


Figure 101b – Rotation of PATIENT coordinate system