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**Radiation protection instrumentation – Data format for radiation instruments  
used in the detection of illicit trafficking of radioactive materials**

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# REDLINE VERSION



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**Radiation protection instrumentation – Data format for radiation instruments  
used in the detection of illicit trafficking of radioactive materials**

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

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### **RADIATION PROTECTION INSTRUMENTATION – DATA FORMAT FOR RADIATION INSTRUMENTS USED IN THE DETECTION OF ILLICIT TRAFFICKING OF RADIOACTIVE MATERIALS**

#### FOREWORD

- 1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
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**IEC 62755 edition 1.1 contains the first edition (2012-10) [documents 45B/739/FDIS and 45B/748/RVD] and its amendment 1 (2020-07) [documents 45B/953/CDV and 45B/964/RVC].**

**In this Redline version, a vertical line in the margin shows where the technical content is modified by amendment 1. Additions are in green text, deletions are in strikethrough red text. A separate Final version with all changes accepted is available in this publication.**

International Standard IEC 62755 has been prepared by subcommittee 45B: Radiation protection instrumentation, of IEC technical committee 45: Nuclear instrumentation.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

This standard contains attached files in the form of a zip file. These files are intended to be used as a complement and do not form an integral part of the standard.

The committee has decided that the contents of the base publication and its amendment will remain unchanged until the stability date indicated on the IEC web site under "<http://webstore.iec.ch>" in the data related to the specific publication. At this date, the publication will be

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

**IMPORTANT – The 'colour inside' logo on the cover page of this publication indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.**

## **RADIATION PROTECTION INSTRUMENTATION – DATA FORMAT FOR RADIATION INSTRUMENTS USED IN THE DETECTION OF ILLICIT TRAFFICKING OF RADIOACTIVE MATERIALS**

### **1 Scope and object**

The purpose of this International Standard is to provide a uniform format for data to be output from radiation measurement instruments for use in detection of illicit trafficking of radioactive materials. This enables interpretation of data without reference to manufacturer's documentation.

This standard specifies the data format used for both required and optional data available at the output of radiation measurement instruments that are used for the detection of illicit trafficking of radioactive materials. The performance requirements for these types of radiation measurement instruments are described in other standards such as IEC 62401, IEC 62533, IEC 62694, IEC 62244, IEC 62327, IEC 62484, and IEC 62618 [26]<sup>1</sup>.

The output consists of measurement data and results of any analysis performed by the radiation measurement instrument.

This standard does not address instrument control, data transmission protocols, or the physical media used for communications.

To ensure the largest interoperability of radiation instruments and worldwide operations, the technical content (e.g. data elements and attributes, document structure) of this standard matches the ANSI/IEEE N42.42 standard [28].

### **2 Normative references**

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60050-393:2003, *International Electrotechnical Vocabulary – Part 393: Nuclear instrumentation – Physical phenomena and basic concepts*

IEC 60050-394:2007, *International Electrotechnical Vocabulary – Part 394: Nuclear instrumentation – Instruments, systems, equipment and detectors*

ISO/IEC 10646-1, *Information technology – Universal Multiple-Octet Coded Character Set (UCS) – Part 1: Architecture and Basic Multilingual Plane*<sup>2</sup>

ISO/IEC 11578, *Information technology – Open Systems Interconnect – Remote Procedure Call (RPC)*<sup>3</sup>

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<sup>1</sup> Numbers in square brackets refer to the Bibliography.

<sup>2</sup> The Unicode Consortium's Unicode Standard 4.0 is equivalent to the ISO document.

<sup>3</sup> The Universally Unique Identifier (UUID) URN Namespace from W3C RFC 4122 is an equivalent standard covering the format of the UUID. Available at <http://www.ietf.org/rfc/rfc4122.txt>

ISO 8601, *Data elements and interchange formats – Information interchange – Representation of dates and times*

## FINAL VERSION

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**Radiation protection instrumentation – Data format for radiation instruments  
used in the detection of illicit trafficking of radioactive materials**

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

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### **RADIATION PROTECTION INSTRUMENTATION – DATA FORMAT FOR RADIATION INSTRUMENTS USED IN THE DETECTION OF ILLICIT TRAFFICKING OF RADIOACTIVE MATERIALS**

#### FOREWORD

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**IEC 62755 edition 1.1 contains the first edition (2012-10) [documents 45B/739/FDIS and 45B/748/RVD] and its amendment 1 (2020-07) [documents 45B/953/CDV and 45B/964/RVC].**

**This Final version does not show where the technical content is modified by amendment 1. A separate Redline version with all changes highlighted is available in this publication.**

International Standard IEC 62755 has been prepared by subcommittee 45B: Radiation protection instrumentation, of IEC technical committee 45: Nuclear instrumentation.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

This standard contains attached files in the form of a zip file. These files are intended to be used as a complement and do not form an integral part of the standard.

The committee has decided that the contents of the base publication and its amendment will remain unchanged until the stability date indicated on the IEC web site under "<http://webstore.iec.ch>" in the data related to the specific publication. At this date, the publication will be

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

## **RADIATION PROTECTION INSTRUMENTATION – DATA FORMAT FOR RADIATION INSTRUMENTS USED IN THE DETECTION OF ILLICIT TRAFFICKING OF RADIOACTIVE MATERIALS**

### **1 Scope and object**

The purpose of this International Standard is to provide a uniform format for data to be output from radiation measurement instruments for use in detection of illicit trafficking of radioactive materials. This enables interpretation of data without reference to manufacturer's documentation.

This standard specifies the data format used for both required and optional data available at the output of radiation measurement instruments that are used for the detection of illicit trafficking of radioactive materials. The performance requirements for these types of radiation measurement instruments are described in other standards such as IEC 62401, IEC 62533, IEC 62694, IEC 62244, IEC 62327, IEC 62484, and IEC 62618 [26]<sup>1</sup>.

The output consists of measurement data and results of any analysis performed by the radiation measurement instrument.

This standard does not address instrument control, data transmission protocols, or the physical media used for communications.

To ensure the largest interoperability of radiation instruments and worldwide operations, the technical content (e.g. data elements and attributes, document structure) of this standard matches the ANSI/IEEE N42.42 standard [28].

### **2 Normative references**

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60050-393:2003, *International Electrotechnical Vocabulary – Part 393: Nuclear instrumentation – Physical phenomena and basic concepts*

IEC 60050-394:2007, *International Electrotechnical Vocabulary – Part 394: Nuclear instrumentation – Instruments, systems, equipment and detectors*

ISO/IEC 10646-1, *Information technology – Universal Multiple-Octet Coded Character Set (UCS) – Part 1: Architecture and Basic Multilingual Plane*<sup>2</sup>

ISO/IEC 11578, *Information technology – Open Systems Interconnect – Remote Procedure Call (RPC)*<sup>3</sup>

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<sup>1</sup> Numbers in square brackets refer to the Bibliography.

<sup>2</sup> The Unicode Consortium's Unicode Standard 4.0 is equivalent to the ISO document.

<sup>3</sup> The Universally Unique Identifier (UUID) URN Namespace from W3C RFC 4122 is an equivalent standard covering the format of the UUID. Available at <http://www.ietf.org/rfc/rfc4122.txt>



ISO 8601, *Data elements and interchange formats – Information interchange – Representation of dates and times*