
**Road vehicles — Product data
exchange between chassis and
bodywork manufacturers (BEP) —**

**Part 1:
General principles**

*Véhicules routiers — Échange de données de produit entre les
fabricants de châssis et de carrosseries (BEP) —*

Partie 1: Principes généraux

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 22, *Road vehicles*, Subcommittee SC 40, *Specific aspects for light and heavy commercial vehicles, busses and trailers*.

This first edition of ISO 21308-1 cancels and replaces ISO/PAS 21308-1:2007, which has been technically revised. The main changes compared to the previous edition are:

- an update of the BEP coding principles in [Table 1](#); and
- the addition of new [Annexes A](#) and [B](#).

A list of all parts in the ISO 21308 series can be found on the ISO website.

Introduction

Truck chassis manufacturers deal with configuration of chassis in infinite numbers of possible combinations, and bodywork manufacturers produce highly customised superstructures on these chassis. Bodywork manufacturers build their superstructures on chassis of several different truck brands.

The production efficiency of a specific truck chassis and its body combinations can be greatly improved by achieving the correct technical and commercial information about the specific chassis communicated with the bodywork manufacturer in advance. The information has to be reliable and give the bodywork manufacturer confidence to prefabricate the body or the superstructure before the chassis is delivered. With uniform conditions, unambiguous dimensions and supplementary information can be established, transferred and correctly interpreted by the receiver. Increased information efficiency will improve the quality and reduce the lead times.

ISO 21308 specifies a system of codes to exchange specific data between chassis and bodywork manufacturers, providing a platform for efficient communication between the parties. The process of exchanging data according to this document is irrelevant of IT sophistication degree.

Exchanging codes according to ISO 21308 is useful in various situations, e.g. for the design and manufacturing, technical specifications, technical drawings and leaflets.

ISO 21308 uses the applicable definitions from the related ISO 612 and ISO 7656 and adds a number of dimensional codes, together with general, mass and administrative codes.

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Road vehicles — Product data exchange between chassis and bodywork manufacturers (BEP) —

Part 1: General principles

1 Scope

This document series describes a generic system for the exchange of data between truck chassis manufacturers and bodywork manufacturers. It applies to commercial vehicles as defined in ISO 3833, having a maximum gross vehicle mass above 3 500 kg.

The process of exchanging product data can involve:

- chassis manufacturer;
- chassis importer;
- chassis dealer;
- one or more bodywork manufacturers; and
- bodywork component suppliers, e.g. manufacturers of demountable bodies, cranes and loading equipment, tipping equipment.

This document describes the general principles and provides an overview and recommendations to assist the parties implementing BEP codes for their communication process. The recommendations cover different ways to communicate and present the BEP codes. In particular, the application of XML for communication of BEP codes in an unambiguous way is described.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 21308-2, *Road vehicles — Product data exchange between chassis and bodywork manufacturers (BEP) — Part 2: Dimensional exchange parameters*

ISO 21308-3, *Road vehicles — Product data exchange between chassis and bodywork manufacturers (BEP) — Part 3: General, mass and administrative exchange parameters*

ISO/TS 21308-4, *Road vehicles — Product data exchange between chassis and bodywork manufacturers (BEP) — Part 4: Mapping to STEP application protocol 239*

ISO 21308-5, *Road vehicles — Product data exchange between chassis and body work manufacturers (BEP) — Part 5: Coding of loader crane bodywork*

ISO 21308-6, *Road vehicles — Product data exchange between chassis and bodywork manufacturers (BEP) — Part 6: Coding of hook loader bodywork*

ISO 21308-7, *Road vehicles — Product data exchange between chassis and bodywork manufacturers (BEP) — Part 7: Coding of skip loader bodywork*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 612, ISO 7656 and ISO 21308-2 apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <https://www.iso.org/obp>

4 Benefits of using BEP codes for the involved parties

4.1 Bodywork manufacturer

The bodywork manufacturer's use of the BEP system will provide the following benefits:

- clear understanding;
- prefabrication;
- internal time reduction;
- reliable documentation and information;
- less conflicts between chassis and body parts;
- detailed information for re-production (additional copies of the bodywork);
- simplified feedback process;
- less late changes and order modifications;
- easier to work with several different chassis manufacturers; and
- possibilities for outsourcing parts of the job.

4.2 Chassis manufacturer

The chassis manufacturer's use of the BEP system will provide the following benefits:

- clear understanding;
- cut in lead time, better cash flow;
- communication of chassis features and interfaces;
- bi-directional communication;
- less late changes and order modifications;
- internal communication between the departments involved;
- higher quality of the complete work;
- cost reductions;
- documentation of the complete vehicle; and
- data for homologation type approval.

4.3 Chassis dealer

For the chassis dealer, use of the BEP system will provide the following benefits:

- clear understanding;
- cut in lead time;
- cost savings as a result of cut in turnaround time;
- clear specifications and information to/from the customer;
- less late changes and order modifications; and
- improved quality of the complete vehicle.

4.4 End customer

The end customer will benefit from:

- improved quality;
- clear specifications and information;
- shorter delivery time; and
- cost savings.

4.5 Homologation bodies and inspection

For homologation parties, the following benefits can be obtained:

- BEP data related to the legal requirements could be extracted; and
- periodical technical inspection would be facilitated.

5 Coding principles

5.1 BEP codes of truck chassis and bodywork

Each characteristic related to truck chassis and bodywork, is assigned a code composed of the items given below. A prefix "BEP", followed by a dash (-), shall be used to avoid confusion with other coding systems.

BEP codes are formatted according to the principles in [Table 1](#).

Table 1 — BEP coding principles

BEP-ppMccc.n.p.q.s.t		
Item	Assignment	Description
pp	Bodywork category	pp = None or 00 for codes related to vehicle chassis (ISO 21308-2 and ISO 21308-3) pp = 01 for codes related to loader cranes (ISO 21308-5) pp = 02 for codes related to hook loaders (ISO 21308-6) pp = 03 for codes related to skip loaders (ISO 21308-7) Future parts of the ISO 21308 series may introduce new pp numbers.
M	Measure type	A capital letter, which denotes the type of code: H = Z direction, coordinate system in accordance with ISO 4130 L = X direction, coordinate system in accordance with ISO 4130 W = Y direction, coordinate system in accordance with ISO 4130 C = Coordinate (x,y) or (x,y,z) in the Cartesian coordinate system M = Mass (m), or mass point (m,x,y,z) F = Force (static or dynamic) T = Moment (static or dynamic) R = Radius V = Angle G = General A = Administrative
ccc	BEP code number	Code number given by the standard
.n	Index number	.n is used to designate object number n
.p	Entity number	.p is used to designate a certain set of object characteristics or entities (e.g. dimensions, coordinates, address information) Where both n and p are specified, they are given in the .n .p order.
.q	Corner number	.q is used to designate contour corner index number
.s	Side designator	L or R
.t	Type designator	Optional coding to describe the object type (e.g. fuel tank)

5.2 Units of BEP code values

The following units are preferred when reporting values related to BEP codes:

- dimensions (L, W, H, R) and coordinates (x,y,z) in millimetres (mm);
- masses in kilograms (kg);
- forces in Newtons (N), or kN;
- moments in Newtonmetres (Nm), or kNm; and
- angles in degrees (°).

Guidance on units is shown in the unit column of the respective BEP code. BEP codes are not restricted to the use of SI units, however if non-recommended units are used, this should be clearly defined in the representation format used.

6 Communication of the BEP codes

6.1 Communication methods

Examples are given below:

- e-mail;
- website (which could include e.g. a STEP browser, and drawing information);
- online databases, IT networks; and
- internal PDM systems.

6.2 Formats of BEP representation

- plain text;
- comma-separated text (simplest form of structured information);
- spreadsheets (Excel¹⁾™ forms for parts 2 and 3 are available at the ISO Standards Maintenance website: <http://standards.iso.org/iso/21308>); and
- XML, which shall be written according to the indication in Annexes A and B (xsd schema files are available at the ISO Standards Maintenance website: <http://standards.iso.org/iso/21308>);
- STEP file (or information derived from a STEP file), shall be prepared according to ISO/TS 21308-4.

6.3 Communication of BEP codes and values

It is recommended to use the following simple rules:

- BEP code to the left; value to the right (see [Table 1](#)); and
- Unit should be specified (see [Table 1](#));

Table 2 — Example of communication of a BEP code

BEP code	Description	Value	Unit
BEP-H079	Fifth-wheel coupling above ground, laden, lowest position	1 230	mm

- In drawings, the BEP code relation to the measurement value should be clearly indicated.

7 Advanced communication of BEP data

Advanced communication of BEP data according to [Figure 1](#), with the use of STEP, shall be handled as stated in in ISO/TS 21308-4.

1) Excel is the trademark of a product supplied by Microsoft™. This information is given for the convenience of users of this document and does not constitute an endorsement by ISO of the product named. Equivalent products may be used if they can be shown to lead to the same results.

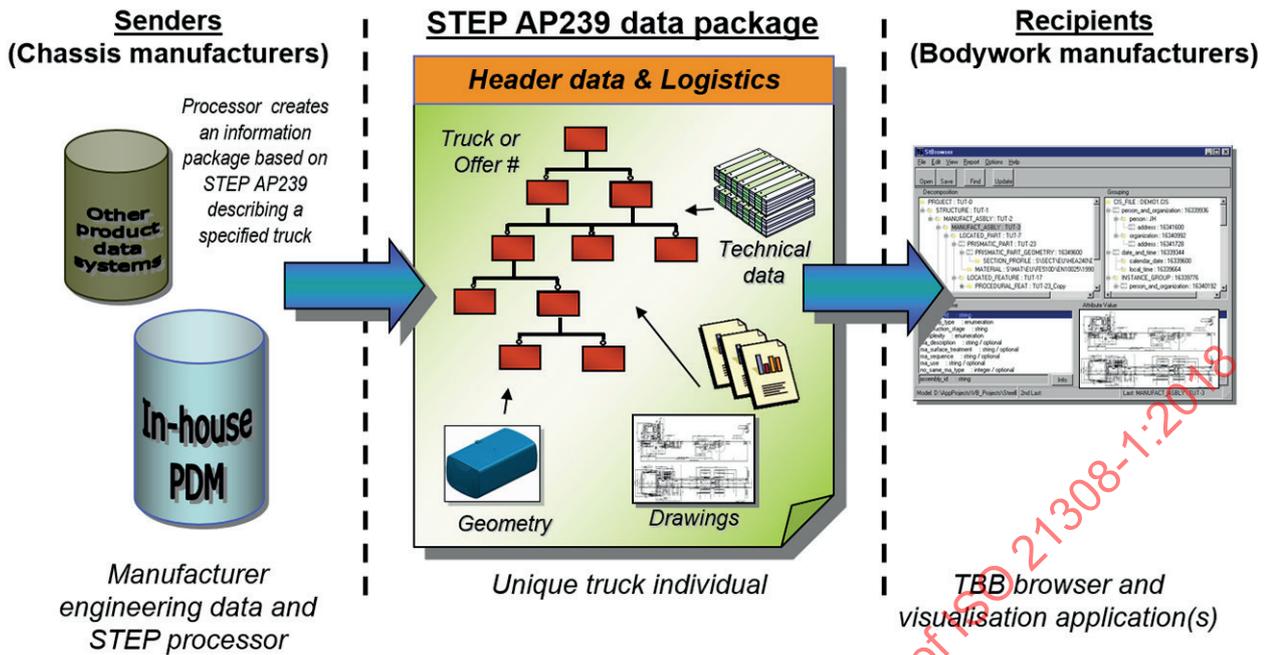


Figure 1 — Communication of BEP data between chassis manufacturer and bodywork manufacturer

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Annex A (normative)

XML representation and communication

A.1 General

A flexible way to exchange data is provided by XML files. XML stands for *Extensible Markup Language*. Markup languages describe how the contents of a document should be interpreted.

XML can be created manually or by computer programs. XML can be read using a standard text processor, can be displayed by any Web browser and can be processed by computer programs.

Every XML file shall be *well-formed* and shall be *valid*. A document is *well-formed* when the rules, specified in the latest version of the XML language, are followed.

A document is *valid* when the content complies with a defined structure. The structure may be defined in a *document type definition* (DTD) or in a *schema*. A *schema* is a more powerful DTD. Among other features, the data type of individual elements can be specified in a schema.

This document describes the schema for creating valid ISO 21308 BEP XML-documents and shows how XML can be displayed in a web browser.

The complete and validated xsd schema files are available at the ISO Standards Maintenance web site, at the following URL: <http://standards.iso.org/iso/21308>.

A.2 Creating well-formed documents

In an XML document, information is packed into an *element*.

```
<BEP></BEP>
```

An element consists of a start tag <BEP> and of an end tag </BEP>. An element can contain data:

```
<B00G003>Low</B00G003>
```

An element can also contain other elements:

```
<Pictures>
  <Picture n="Chassis (Top view)">chassis.jpg</Picture>
</Pictures>
```

In this case, element <Picture> contains attribute n. Attributes can be used to quantify or to identify single elements.

An element can be an “empty”:

```
<Contact Salutation="Ms" FirstName="FirstName" LastName="LastName"/>
```

This means that the element contains neither data nor elements. In this case, the element carries data in attributes.

A well-formed constraint is that each combination of attributes may appear only once in a document. This means that

```
<Contact Salutation="Mr" FirstName="FirstName" LastName="LastName"/>  
<Contact Salutation="Ms" FirstName="FirstName" LastName="LastName"/>
```

is valid, but

```
<Contact Salutation="Ms" FirstName="Name" LastName="LastName"/>  
<Contact Salutation="Ms" FirstName="Name" LastName="LastName"/>
```

is not. Note that the attribute values are enclosed in quotes. This means that attribute values cannot contain quotation marks themselves. Quotes and other reserved characters can be embedded using *entity references*.

The most frequently used entity references are

```
&amp;      the & character,  
&lt;     the < character,  
&gt;     the > character,  
&apos;   the ' character,  
&quot;   the " character,
```

Note that numerous other entity references exist.

Attribute values are case sensitive. This means that `<Contact>` and `<contact>` are different elements.

A.3 Creating valid documents

The layout of the ISO 21308 file must respect the key features of XML. This means that the content shall be structured in a way that allows for automatic validation. Within XML, this is only possible if BEP codes and BEP denotations are either XML elements or XML attributes.

<code><myElement>Test</myElement></code>	XML element with data
<code><MyElement name="MyName">Test</myElement></code>	XML element with an attribute and data
<code><!--Comment--></code>	A comment

XML elements without an attribute cannot be separated from other elements at the same level. This format can be used if an element only occurs once or when there is no relation to other elements at the same level.

XML elements with an attribute can be related to other elements or can be distinguished from other elements at the same level.

XML comments are meant for documentation only. They are ignored by XML parsers.

In general, only elements and attributes can be subject to validation by XML parsers. The XML parser must know the rules for validating the documents. The rules can be implemented as a Document Type Definition (DTD) or as a Schema. Data can only be checked on the applied data type (date, text, integer, etc.). This means that BEP codes shall be implemented as elements and BEP code details (.n, .p, .t) shall be implemented as either elements or as attributes of elements.

Examples are given below:

<code><B00H001>3300</B00H001></code>	the maximum external height, unladen
<code><B00W003 n="1">2056</B00W003></code>	the outer width of the first axle
<code><B00W010 s="R" n="1" t="lt">32</B00W010></code>	the maximum turning radius of the first right hand side axle performing a left turn
<code><B00W010 s="L" n="1" t="lt">40</B00W010></code>	the maximum turning radius of the first left hand side axle performing a left turn
<code><B00W010 s="R" n="2" t="lt">25</B00W010></code>	the maximum turning radius of the second right hand side axle performing a left turn
<code><B00W010 s="L" n="2" t="lt">32</B00W010></code>	the maximum turning radius of the second left hand side axle performing a left turn

XML elements can be grouped, allowing the creation of hierarchies of information. The following example extends BEP-A003.p and allows for automatic processing of contact details.

```
< B00A003 p="Customer GroupID">
  <Contact Salutation ="Mr" LastName="TestPerson">
    <Function>Function Description</Function>
    <Email>Info@TheCustomersSite.com</Email>
  </Contact>
  <Street>Postal Address</Street>
  <PostalCode>Postal Code</PostalCode>
  <City>Customer's City of Residence</City>
  <Country>Customer's Country of Residence</Country>
  <Telephone>(xyz) 123456 0</Telephone>
  <FAX>(xyz) 123456 7</FAX>
</ B00A003>
```

This group can be repeated for other contacts, provided that a unique party identifier “p” is used.

A.4 Creating an XML document

The formatting rules are implemented in the Schema file. The files are hosted at ISO but can also be hosted privately, as part of a local environment. The schema shall not be changed.

A schema, however, can be inherited. This means that additional definitions can be added to the ISO Standard, incorporating information private to an implementer.

```
<xs:redefine schemaLocation="ISO21308-5.xsd">
  <!-- Redefine BEP Elements-->
  <xs:complexType name="bepType">
    <xs:complexContent>
      <pal:extension base="bepType">
        <xs:sequence>
          <xs:element name="OemExtension"
            type="OemExtensionType"
            maxOccurs="1"/>
        </xs:sequence>
      </xs:extension>
    </xs:complexContent>
  </xs:complexType>
</xs:redefine>
```

```
<xs:complexType name=" OemExtensionType ">  
  <xs:sequence>  
    <!--Add Oem Extensions here -->  
  </xs:sequence>  
</ xs:complexType>
```

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Annex B (normative)

ISO 21308 XML representation

B.1 ISO 21308 Schema Files

Schema ISO21308-1.xsd implements the basic structure of an ISO 21308 document and defines the basic data types. Successive ISO 21308 parts introduce additional data types.

Basic XML data types are extended by attributes (see [A.3](#)). Types can be referenced by hyperlinks. Hence, the implementation of data types.

<code>integerReferencedType</code>	Adds a <code>href</code> attribute to an integer type
<code>nonNegativeIntegerReferencedType</code>	Adds a <code>href</code> attribute to a non-negative integer type
<code>positiveIntegerReferencedType</code>	Adds a <code>href</code> attribute to a positive integer type
<code>stringReferencedType</code>	Adds a <code>href</code> attribute to a string type

In general, types that contain `Referenced` in the data type name, implement a variant of the given data type that includes a `href` attribute. Equivalent to this, data types that contain `Labeled` in the data type name, implement a variant of the given data type that includes a `p` attribute and data types that contain `Indexed` in the data type name, implement a variant of the given data type that includes an `n` attribute.

B.2 ISO 21308-1 Schema

```
<?xml version="1.0" encoding="utf-8"?>
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema"
<xs:schema targetNamespace="http://standards.iso.org/iso/21308"
  elementFormDefault="qualified">
<xs:annotation>
<xs:appinfo>ISO 21308-1</xs:appinfo>
<xs:documentation xml:lang="en-us">ISO 21308 data
  exchange</xs:documentation>
</xs:annotation>
<!-- The root element -->
<xs:element name="BEP" type="bepType"/>
<!-- Define types -->
<xs:complexType name="bepType">
<xs:sequence>
<xs:element name="Administrative" type="administrativeType"/>
<xs:any namespace="##other" processContents="skip" minOccurs="0"
  maxOccurs="unbounded"/>
</xs:sequence>
</xs:complexType>
<xs:complexType name="administrativeType">
<xs:sequence>
<xs:element name="B00U001" type="unitDefinitionType"
  maxOccurs="unbounded">
<xs:annotation>
<xs:documentation>Defines the unit of distance</xs:documentation>
</xs:annotation>
</xs:element>
</xs:sequence>
</xs:complexType>
</xs:complexType name="unitDefinitionType">
```

```

<xs:simpleContent>
<xs:extension base="xs:string">
<xs:attribute name="n" use="required">
<xs:annotation>
<xs:documentation>The type of unit</xs:documentation>
  </xs:annotation>
<xs:simpleType>
<xs:restriction base="xs:string">
<xs:enumeration value="H">
<xs:annotation>
<xs:documentation>Define the unit of height</xs:documentation>
  </xs:annotation>
  </xs:enumeration>
<xs:enumeration value="L">
<xs:annotation>
<xs:documentation>Define the unit of length</xs:documentation>
  </xs:annotation>
  </xs:enumeration>
<xs:enumeration value="W">
<xs:annotation>
<xs:documentation>Define the unit of width</xs:documentation>
  </xs:annotation>
  </xs:enumeration>
<xs:enumeration value="C">
<xs:annotation>
<xs:documentation>Define the unit of coordinates</xs:documentation>
  </xs:annotation>
  </xs:enumeration>
<xs:enumeration value="M">
<xs:annotation>
<xs:documentation>Define the unit of mass</xs:documentation>
  </xs:annotation>
  </xs:enumeration>
<xs:enumeration value="F">
<xs:annotation>
<xs:documentation>Define the unit of force</xs:documentation>
  </xs:annotation>
  </xs:enumeration>
<xs:enumeration value="T">
<xs:annotation>
<xs:documentation>Define the unit of torque</xs:documentation>
  </xs:annotation>
  </xs:enumeration>
<xs:enumeration value="R">
<xs:annotation>
<xs:documentation>Define the unit of radius</xs:documentation>
  </xs:annotation>
  </xs:enumeration>
<xs:enumeration value="V">
<xs:annotation>
<xs:documentation>Define the unit of angle</xs:documentation>
  </xs:annotation>
  </xs:enumeration>
</xs:restriction>
</xs:simpleType>
</xs:attribute>
<xs:attribute name="href" use="optional">
<xs:simpleType>
<xs:annotation>
<xs:documentation>Location to the hyperlink</xs:documentation>
  </xs:annotation>
<xs:restriction base="xs:string"/>
  </xs:simpleType>
  </xs:attribute>
</xs:extension>
</xs:simpleContent>
</xs:complexType>
<xs:complexType name="coordinate2dReferencedType">
<xs:sequence>
<xs:element name="X" type="xs:double">
<xs:annotation>

```

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```

<xs:documentation>The X-coordinate</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:element name="Y" type="xs:double">
<xs:annotation>
<xs:documentation>The Y-coordinate</xs:documentation>
  </xs:annotation>
</xs:element>
</xs:sequence>
<xs:attribute name="href" use="optional">
<xs:simpleType>
<xs:annotation>
<xs:documentation>Hyperlink to documentation</xs:documentation>
  </xs:annotation>
<xs:restriction base="xs:string"/>
  </xs:simpleType>
</xs:attribute>
</xs:complexType>
<xs:complexType name="coordinate2dReferencedIndexedType">
<xs:complexContent>
<xs:extension base="coordinate2dReferencedType">
<xs:attribute name="n" use="required">
<xs:annotation>
<xs:documentation>The index of the entry</xs:documentation>
  </xs:annotation>
<xs:simpleType>
<xs:restriction base="xs:positiveInteger"/>
  </xs:simpleType>
</xs:attribute>
</xs:extension>
</xs:complexContent>
</xs:complexType>
<xs:complexType name="coordinate2dReferencedLabeledType">
<xs:complexContent>
<xs:extension base="coordinate2dReferencedType">
<xs:attribute name="p" use="required">
<xs:annotation>
<xs:documentation>The number of the item</xs:documentation>
  </xs:annotation>
<xs:simpleType>
<xs:restriction base="xs:positiveInteger"/>
  </xs:simpleType>
</xs:attribute>
</xs:extension>
</xs:complexContent>
</xs:complexType>
<xs:complexType name="coordinate2dReferencedIndexedLabeledType">
<xs:complexContent>
<xs:extension base="coordinate2dReferencedIndexedType">
<xs:attribute name="p" use="required">
<xs:annotation>
<xs:documentation>The label of the entry</xs:documentation>
  </xs:annotation>
<xs:simpleType>
<xs:restriction base="xs:positiveInteger"/>
  </xs:simpleType>
</xs:attribute>
</xs:extension>
</xs:complexContent>
</xs:complexType>
<xs:complexType name="coordinate3dReferencedType">
<xs:sequence>
<xs:element name="X" type="xs:double">
<xs:annotation>
<xs:documentation>The X-coordinate</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:element name="Y" type="xs:double">
<xs:annotation>
<xs:documentation>The Y-coordinate</xs:documentation>
  </xs:annotation>

```

```

    </xs:element>
<xs:element name="Z" type="xs:double">
<xs:annotation>
<xs:documentation>The Z-coordinate</xs:documentation>
    </xs:annotation>
</xs:element>
</xs:sequence>
<xs:attribute name="href" use="optional">
<xs:simpleType>
<xs:annotation>
<xs:documentation>Hyperlink to documentation</xs:documentation>
    </xs:annotation>
<xs:restriction base="xs:string"/>
    </xs:simpleType>
</xs:attribute>
</xs:complexType>
<xs:complexType name="coordinate3dReferencedIndexedType">
<xs:complexContent>
<xs:extension base="coordinate3dReferencedType">
<xs:attribute name="n" use="required">
<xs:annotation>
<xs:documentation>The index of the entry</xs:documentation>
    </xs:annotation>
<xs:simpleType>
<xs:restriction base="xs:positiveInteger"/>
    </xs:simpleType>
</xs:attribute>
</xs:extension>
</xs:complexContent>
</xs:complexType>
<xs:complexType name="coordinate3dReferencedLabeledType">
<xs:complexContent>
<xs:extension base="coordinate3dReferencedType">
<xs:attribute name="p" use="required">
<xs:annotation>
<xs:documentation>The number of the item</xs:documentation>
    </xs:annotation>
<xs:simpleType>
<xs:restriction base="xs:positiveInteger"/>
    </xs:simpleType>
</xs:attribute>
</xs:extension>
</xs:complexContent>
</xs:complexType>
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<xs:complexContent>
<xs:extension base="coordinate3dReferencedIndexedType">
<xs:attribute name="p" use="required">
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<xs:documentation>The label of the entry</xs:documentation>
    </xs:annotation>
<xs:simpleType>
<xs:restriction base="xs:positiveInteger"/>
    </xs:simpleType>
</xs:attribute>
</xs:extension>
</xs:complexContent>
</xs:complexType>
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<xs:simpleContent>
<xs:extension base="xs:integer">
<xs:attribute name="href" use="optional">
<xs:simpleType>
<xs:annotation>
<xs:documentation>Location to the hyperlink</xs:documentation>
    </xs:annotation>
<xs:restriction base="xs:string"/>
    </xs:simpleType>
</xs:attribute>
</xs:extension>
</xs:simpleContent>

```