

- Use of the attribute `controlIndicatorNumber`

Markup example:

```
<controlIndicatorRef controlIndicatorNumber="ci-0001">
...
</controlIndicatorRef>
```

2.1.3

Paragraph significant data

Description: The element `<inlineSignificantData>` contains a significant meaning, such as a lubricant or manufacturer code.

Markup element: `<inlineSignificantData>` (O)

Attributes:

- `significantParaDataType` (M), the meaning of the data. This attribute can have the following values:
 - "psd01" - "psd99" Refer to [Chap 3.9.6.1](#).

Child elements:

- None

Business rules decisions:

Business rules decisions include, but are not limited to, the following:

- Types of data to markup.

Markup example:

The following markup example illustrates the use of `<inlineSignificantData>`:

```
<para>Use lubricant
(<inlineSignificantData
significantParaDataType="psd03">1X234</inlineSignificantData>)
on threads...
</para>
```

The display of this markup can be as follows:

"Use lubricant (1X234) on threads..."

2.1.4

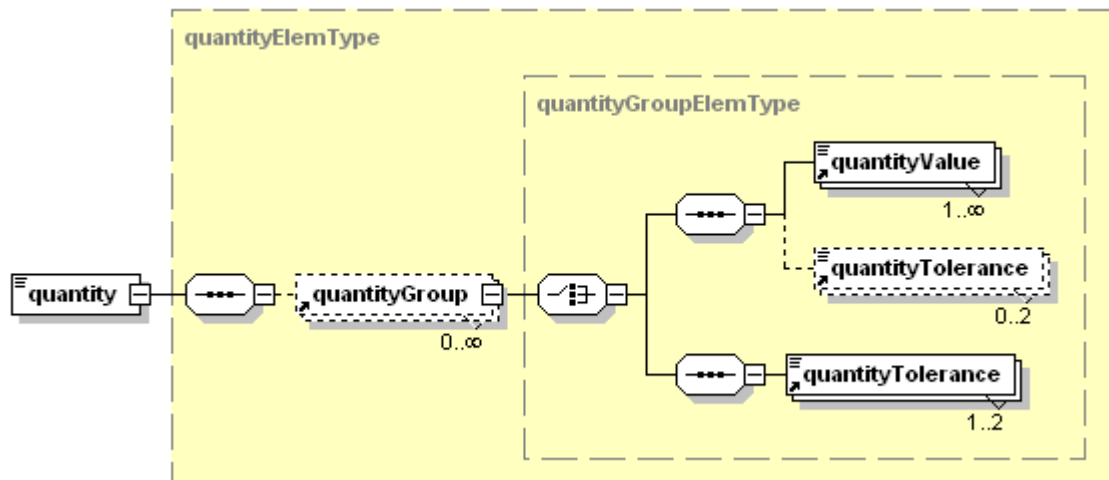
Quantity data

Description: The element `<quantity>` provides the capability to identify a portion of a paragraph that corresponds to a numeric value with a special meaning, such as a torque value. The exact meaning of the quantity data can be specified using a set of predefined S1000D values, or extended to support specific project needs.

The quantity data provides the ability to define numerical values to a very precise level. Use of the quantity group structure within quantity data provides the following capabilities:

- Specify a decimal value that does not contain display format information, ie adheres to the W3C XML standard for decimal numbers
- Specify a unit of measure that applies to the value
- Group a value and a tolerance together
- Specify units of measure to the value/tolerance group or to value and tolerance individually
- Group multiple values and tolerances together, units can be apply to the group or individual values

Markup element: <quantity> (O)



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Fig 4 Element <quantity>

Attributes:

- quantityType (O), the type of quantity, eg length, time. This attribute can have the following values:
 - "qty01" - "qty99". Refer to [Chap 3.9.6.1](#).

Child elements:

- <quantityGroup> (O). Refer to [Para 2.1.4.1](#).

Business rules decisions:

Business rules decisions include, but are not limited to, the following:

- Use of the quantity data markup and to what extent
- Determine which types of data to mark up and in what contexts

Markup example:

Example 1: Simple quantity with the use of the attribute type:

```
<para>Maximum torque not to exceed
<quantity quantityType="qty05">8 Nm</quantity>.
</para>
```

The display of this markup can be as follows:

"Maximum torque not to exceed 8 Nm."

Example 2: Quantity with the use of the quantity group:

```
<para>Maximum torque not to exceed
<quantity quantityType="qty05">
<quantityGroup quantityGroupType="nominal">
<quantityValue quantityUnitOfMeasure="N.m">8</quantityValue>
</quantityGroup>
</quantity>
.</para>
```

The display of this markup can be as follows:

"Maximum torque not to exceed 8 Nm."

2.1.4.1

Quantity group

Description: The element `<quantityGroup>` contains a group of values and tolerances and/or multiple values in the case where multiple units of measure are used (eg 2 h 30 min).

Markup element: `<quantityGroup>` (O)

Attributes:

- `quantityGroupType` (O). This attribute can have the following values:
 - "nominal" (D) - a single value
 - "minimum" - a "from" (beginning of a range) or "minimum" value
 - "maximum" - a "to" (end of a range) or "maximum" value
- `quantityUnitOfMeasure` (O), the unit of measure. Refer to [Chap 3.9.6.2](#) for an enumerated list of standard quantity unit of measures. These can be extended using the standard BREX file mechanism. The value within the attribute `quantityUnitOfMeasure` is a code specifying the exact unit of measure. A `quantityUnitOfMeasure` at this level indicates that the `quantityUnitOfMeasure` applies to the entire group, possibly including several values and/or tolerances. The implication is that by default the unit of measure will be displayed once after the value/tolerance; eg "0.250 +0.003 -0.000 in.", but other formats can be applied by stylesheets.

Refer to [Chap 3.9.1](#) for rules for presentation of unit of measurements and fractions.

About unit of measurements

- attribute `quantityUnitOfMeasure` on nothing indicates no unit of measure is to be displayed
- attribute `quantityUnitOfMeasure` on element `<quantityValue>` and on element `<quantityTolerance>` within same element `<quantityGroup>` applies to each value or tolerance independent of the others
- attribute `quantityUnitOfMeasure` on two elements `<quantityValue>` within same element `<quantityGroup>` applies to each value independent of the other or others

Note

In cases where the attribute `quantityUnitOfMeasure` is specified at both the element `<quantityGroup>` level and at the element `<quantityValue>` or element `<quantityTolerance>` level, the `quantityUnitOfMeasure` value from the lower level (element `<quantityValue>` or element `<quantityTolerance>`) must take precedence over the attribute `quantityUnitOfMeasure` value from the element `<quantityGroup>`.

Child elements:

- `<quantityValue>` (M), the value and an optional unit of measure. Refer to [Para 2.1.4.1.1](#)
- `<quantityTolerance>` (O), the tolerance value. Refer to [Para 2.1.4.1.2](#)

Business rules decisions:

Business rules decisions include, but are not limited to, the following:

- Use of value and tolerance decomposition and to what level of the markup that the unit of measure is to be applied
- Which unit of measure types to allow

Markup example:

Example 1: Quantity group and is a simple quantity with value and unit of measure:

```
<para>The windshield assembly weighs approximately
<quantity>
<quantityGroup quantityGroupType="nominal">
<quantityValue quantityUnitOfMeasure="kg">40</quantityValue>
</quantityGroup>
</quantity>
and requires two persons ...
</para>
```

The display of this markup can be as follows:

"The windshield assembly weighs approximately 40 kg and requires two persons ..."

Example 2: Quantity where value and tolerance have the same unit of measure:

```
<para>If hole tolerance of
<quantity>
<quantityGroup quantityGroupType="nominal"
quantityUnitOfMeasure="mm">
<quantityValue>0.700</quantityValue>
<quantityTolerance
quantityToleranceType="plus">0.010</quantityTolerance>
<quantityTolerance
quantityToleranceType="minus">0.000</quantityTolerance>
</quantityGroup>
</quantity>
has been exceeded ...
</para>
```

The display of this markup can be as follows:

"If hole tolerance of 0,700 +0,010 -0,000 mm has been exceeded ..."

Example 3: Quantity with minimum/maximum values:

```
<para>Tighten fasteners
<quantity quantityType="qty05">
<quantityGroup quantityGroupType="minimum">
<quantityValue quantityUnitOfMeasure="N.m">18.0</quantityValue>
</quantityGroup>
<quantityGroup quantityGroupType="maximum">
<quantityValue quantityUnitOfMeasure="N.m">22.0</quantityValue>
</quantityGroup>
</quantity>
using torque wrench ...
</para>
```

The display of this markup can be as follows:

"Tighten fasteners from 18,0 Nm to 22,0 Nm using torque wrench ..."

2.1.4.1.1 Value

Description: The element `<quantityValue>` contains a decimal value and an optional unit of measure. The value must conform to the W3C XML standard for decimal values which

requires use a period [.] for the separator between the integral part and the fractional part, and no thousands separator. The display format is not specified in the XML code but, must conform to program or country requirements at presentation (Refer to [Chap 3.9.1](#) for rules on presentation).

Markup element: `<quantityValue>` (M)

Attributes:

- `quantityUnitOfMeasure` (O), specifies the unit of measure. Refer to [Para 2.1.4.1](#).

Child elements:

- None

Business rules decisions:

Business rules decisions include, but are not limited to, the following:

- Use of value and tolerance decomposition and to what level of the markup that the unit of measure is to be applied
- Which unit of measure types to allow

Markup example:

The following markup example illustrates the use of quantity group and is a simple quantity with value and unit of measure:

```
<quantityValue quantityUnitOfMeasure="kg">40</quantityValue>
```

2.1.4.1.2 Tolerance

Description: The element `<quantityTolerance>` contains a decimal tolerance value, the type of tolerance, and an optional unit of measure. The tolerance value must conform to the W3C XML standard for decimal values which requires use a period [.] for the separator between the integral part and the fractional part, and no thousands separator. The display format is not specified in the XML code, but must conform to program or country requirements at presentation (refer to [Chap 3.9.1](#) for rules on presentation).

Markup element: `<quantityTolerance>` (O)

Attributes:

- `quantityToleranceType` (O), the type of tolerance with allowable values. This attribute can have the following values:
 - `"plus"` - the tolerance must be within the range of the value specified
 - `"minus"` - the tolerance must be within the range of the value specified
 - `"plusorminus"` - the tolerance must be within range of the value specified
- `quantityUnitOfMeasure` (O), specifies the unit of measure. Refer to [Para 2.1.4.1](#).

Child elements:

- None

Business rules decisions:

Business rules decisions include, but are not limited to, the following:

- Use of value and tolerance decomposition and to what level of the markup that the unit of measure is to be applied
- Which unit of measure types to allow

Markup example:

Example 1: Quantity with type, value, tolerance, and unit of measure:

```
<para>Holding nut, torque bolt to
<quantity quantityType="qty05">
<quantityGroup quantityGroupType="nominal" unitOfMeasure="N.m">
<quantityValue>20</quantityValue>
<quantityTolerance
quantityToleranceType="plusorminus">2</quantityTolerance>
</quantityGroup>
</quantity>
.
</para>
```

The display of this markup can be as follows:

"Holding nut, torque bolt to 20 ±2 Nm."

Example 2: Quantity with multiple value groups and value and tolerance with different units:

```
<para>Chamfer both sides of rib
<quantity>
<quantityGroup quantityGroupType="nominal">
<quantityValue>0.153</quantityValue>
<quantityTolerance
quantityToleranceType="plusorminus">0.005</quantityTolerance>
</quantityGroup>
x
<quantityGroup quantityGroupType="nominal">
<quantityValue quantityUnitOfMeasure="dega">45</quantityValue>
<quantityTolerance quantityToleranceType="plusorminus"
quantityUnitOfMeasure="mina">30
</quantityTolerance>
</quantityGroup>
</quantity>
.
</para>
```

The display of this markup formatted for Système International d'Unites (SI) can be as follows:

"Chamfer both sides of rib 0,153 ±0,005 × 45° ±30'."

The display of this markup formatted for imperial can be as follows:

"Chamfer both sides of rib 0.153 ±0.005 × 45° ±30'."

Example 3: Quantity with tolerance only:

```
<para>Make sure that spacing is within
<quantity>
<quantityGroup quantityGroupType="nominal">
<quantityTolerance
quantityToleranceType="plusorminus">0.030</quantityTolerance>
</quantityGroup>
</quantity>
on each side ...
</para>
```

The display of this markup formatted for SI can be as follows (comma separator):

"Make sure that spacing is within ±0,030 on each side ..."

The display of this markup formatted for imperial can be as follows (period separator):

"Make sure that spacing is within ± 0.030 on each side ..."

2.1.5

Zone

Description: The element `<zoneRef>` contains the zoning information (one or more), as described in [Chap 3.4](#). For the use of element `<zoneRef>` in connection with technical information repositories, refer to [Chap 4.13.2](#).

This element is available in the product management data within the element `<productionMaintData>` of preliminary requirements (refer to [Chap 3.9.5.2.1.9](#)) and within the element `<para>` of descriptive data modules.

Markup element: `<zoneRef>` (O), repeatable

Attributes:

- `id` (O), the identifier of the zone element. Refer to [Chap 3.9.5.2.1.2](#).
- `changeMark` (O), `changeType` (O) and `reasonForUpdateRefIds` (O), which are used to indicate change in accordance with [Chap 3.9.5.2.1.1](#)
- `zoneNumber` (O), the zone identifier
- `lsarData` (C), a mark to identify if the reference is derived from a Logistics Support Analysis Record (LSAR) or not. This attribute can have the following values:
 - "0" (D) - No, when not derived from an LSAR
 - "1" - Yes, when derived from an LSAR
- `authorityName` (O) and `authorityDocument` (O), which are used to indicate controlled content in accordance with [Chap 3.9.5.2.1.11](#)
- `securityClassification` (O), `commercialClassification` (O) and `caveat` (O), which are used for security and restrictive marking in accordance with [Chap 3.6](#)

Child elements:

- `<name>` (O), the name of the zone. Refer to [Para 2.1.16](#).
- `<refs>` (O). Refer to [Chap 3.9.5.2.1.2](#).

Business rules decisions:

Business rules decisions include, but are not limited to, the following:

- Use of the element `<zoneRef>`

Markup example:

Example 1: A zone with a name, zone number and indicating the use of LSAR data:

```
<zoneRef lsarData="1" zoneNumber="500">
  <name>Left wing</name>
</zoneRef>
```

Example 2: A zone with a zone identifier and a zone number:

```
<zoneRef id="zoneRef-210" zoneNumber="210"/>
```

2.1.6

Access point

Description: The element `<accessPointRef>` describe/identify any (one or more) access points like panels, doors, hatches. The identifier of the access point is given either through the attribute `accessPointNumber` or the element `<name>` element `<refs>`. For the use of