
Stage three: #257 Hardware Domain

Provide a new domain to support documenting content associated with documenting hardware. (Formerly “Provide a new element to semantically tag things you press on keyboards or other input devices.”)

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Tracking information

Event	Date	Links
Stage 1 proposal accepted	18 June 2019	Minutes
Stage 2 proposal submitted	22 June 2020	Email
Stage 2 proposal discussed	23 June 2020	Minutes
Stage 2 proposal approved	30 June 2020	Minutes
Stage 3 proposal submitted to reviewers	8 July 2020 Revised 26 July 2020	Deb Bissantz Dr. Carsten Brennecke
Stage 3 proposal (this document) submitted to TC	27 July 2020	

Approved technical requirements

Create a new hardware domain (hw-d) to include elements germane to documenting hardware information.

Add the following new elements:

- `<hwcontrol>`
- `<partno>`

The `<hwcontrol>` element would inherit from `topic/ph` and be defined as follows:

The `<hwcontrol>` element represents the name of a key, button, switch, or other physical control on a device. This element is part of the DITA hardware domain, a special set of DITA elements designed to document hardware information.

The `<partno>` element would inherit from `topic/keyword` and be defined as follows:

The `<partno>` element represents a part number. This element is part of the DITA hardware domain, a special set of DITA elements designed to document hardware information.

Dependencies or interrelated proposals

None

New grammar files

The following files must be created:


```

        %foreign.unknown.incl; |
        %image; |
        %txt.incl; |
        %partno; )"
>
<!ENTITY % hwcontrol.attributes
    "keyref
        CDATA
            #IMPLIED
        %univ-atts;"
>
<!ELEMENT hwcontrol %hwcontrol.content;>
<!ATTLIST hwcontrol %hwcontrol.attributes;>

<!-- LONG NAME: Part number -->

```

**Comment by
Zoe**

**on
Draft 2**

I added data to partno

```

<!ENTITY % partno.content
    "(#PCDATA |
        %data; |
        %draft-comment; |
        %required-cleanup; |
        %text; |
        %tm;)"
>
<!ENTITY % partno.attributes
    "keyref
        CDATA
            #IMPLIED
        %univ-atts;"
>
<!ELEMENT partno %partno.content;>
<!ATTLIST partno %partno.attributes;>

<!-- ===== -->
<!-- SPECIALIZATION ATTRIBUTE DECLARATIONS -->
<!-- ===== -->

<!ATTLIST hwcontrol class CDATA "+ topic/ph hw-d/hwcontrol ">
<!ATTLIST partno class CDATA "+ topic/keyword hw-d/partno ">

<!-- ===== End of DITA Hardware Domain ===== -->

```

Figure 3: hwDomain.rng

**Comment by
Zoe**

Kris did most of this grammar file work.
I made guesses at changes to match what I did in the DTDs, but I am not familiar with rng files and how to make sure they work.

```

<?xml version="1.0" encoding="UTF-8"?>
<?xml-model href="urn:oasis:names:tc:dita:rng:vocabularyModuleDesc.rng"
    schematypens="http://relaxng.org/ns/structure/1.0"?>
<grammar xmlns:a="http://relaxng.org/ns/compatibility/annotations/1.0"
    xmlns:dita="http://dita.oasis-open.org/architecture/2005/"
    xmlns="http://relaxng.org/ns/structure/1.0">
  <moduleDesc xmlns="http://dita.oasis-open.org/architecture/2005/">
    <moduleTitle>DITA Hardware Domain</moduleTitle>
    <headerComment xml:space="preserve"><![CDATA[
=====
                        HEADER
=====

```

MODULE: DITA Hardware Domain
VERSION: 2.0
DATE: [[Release date]]

```
=====
]]></headerComment>
<moduleMetadata>
  <moduleType>elementdomain</moduleType>
  <moduleShortName>hw-d</moduleShortName>
  <modulePublicIds>
    <dtdMod>-//OASIS//ELEMENTS DITA<var presep=" " name="ditaver"/> Hardware Domain//EN</
dtdMod>
    <dtdEnt>-//OASIS//ENTITIES DITA<var presep=" " name="ditaver"/> Hardware Domain//EN</
dtdEnt>
    <rngMod>urn:oasis:names:tc:dita:rng:hwDomain.rng<var presep=":" name="ditaver"/></>
rngMod>
  </modulePublicIds>
  <domainsContribution>(topic hw-d)</domainsContribution>
</moduleMetadata>
</moduleDesc>
<div>
  <a:documentation>DOMAIN EXTENSION PATTERNS</a:documentation>
  <define name="hw-d-ph">
    <ref name="hwcontrol.element"/>
  </define>
  <define name="ph" combine="choice">
    <ref name="hw-d-ph"/>
  </define>
  <define name="hw-d-keyword">
    <ref name="partno.element"/>
  </define>
  <define name="keyword" combine="choice">
    <ref name="hw-d-keyword"/>
  </define>
</div>
<div>
  <a:documentation> LONG NAME: Hardware control </a:documentation>
  <define name="hwcontrol.content">
    <zeroOrMore>
      <choice>
        <text/>
        <ref name="text" dita:since="1.3"/>
        <ref name="tm"/>
        <ref name="state"/>
        <ref name="data.elements.incl"/>
        <ref name="draft-comment" dita:since="1.3"/>
        <ref name="foreign.unknown.incl"/>
        <ref name="required-cleanup" dita:since="1.3"/>
        <ref name="partno"/>
      </choice>
    </zeroOrMore>
  </define>
  <define name="hwcontrol.attributes">
    <optional>
      <attribute name="keyref"/>
    </optional>
    <ref name="univ-atts"/>
  </define>
  <define name="hwcontrol.element">
    <element name="hwcontrol" dita:longName="Hardware Control" dita:since="2.0">
      <a:documentation>The hwcontrol (&lt;hwcontrol&gt;) element is used to ... </
a:documentation>
      <ref name="hwcontrol.attlist"/>
      <ref name="hwcontrol.content"/>
    </element>
  </define>
  <define name="hwcontrol.attlist" combine="interleave">
    <ref name="hwcontrol.attributes"/>
  </define>
</div>
```

Comment by
Zoe
on
Draft 2

I added data to partno

```
<div>
  <a:documentation>LONG NAME: Part number</a:documentation>
  <define name="partno.content">
    <zeroOrMore>
      <choice>
        <text/>
        <ref name="data"/>
        <ref name="draft-comment"/>
        <ref name="required-cleanup"/>
        <ref name="text"/>
        <ref name="tm"/>
      </choice>
    </zeroOrMore>
  </define>
  <define name="partno.attributes">
    <optional>
      <attribute name="keyref"/>
    </optional>
    <ref name="univ-atts"/>
  </define>
  <define name="partno.element">
    <element name="partno" dita:longName="Part number">
      <a:documentation>The &lt;partno> element ... </a:documentation>
      <ref name="partno.attlist"/>
      <ref name="partno.content"/>
    </element>
  </define>
  <define name="partno.attlist" combine="interleave">
    <ref name="partno.attributes"/>
  </define>
</div>

<div>
  <a:documentation>DOMAIN EXTENSION PATTERNS</a:documentation>
  <define name="hw-d-ph" combine="choice">
    <choice>
      <ref name="hwcontrol.element"/>
    </choice>
  </define>
  <define name="ph" combine="choice">
    <ref name="hw-d-ph"/>
  </define>
  <define name="hw-d-keyword" combine="choice">
    <choice>
      <ref name="partno.element"/>
    </choice>
  </define>
  <define name="keyword" combine="choice">
    <ref name="hw-d-keyword"/>
  </define>
</div>
<div>
  <a:documentation> Specialization attributes. Global attributes and class defaults </
a:documentation>
  <define name="hwcontrol.attlist" combine="interleave">
    <optional>
      <attribute name="class" a:defaultValue="+ topic/ph hw-d/hwcontrol "/>
    </optional>
  </define>
  <define name="partno.attlist" combine="interleave">
    <optional>
      <attribute name="class" a:defaultValue="+ topic/keyword hw-d/partno "/>
    </optional>
  </define>
</div>
```

```
</grammar>
```

Modified grammar files

The following document-type shells must be modified:

DTD

- bookmap.dtd
- concept.dtd
- ditabase.dtd
- generalTask.dtd
- glossentry.dtd
- glossgroup.dtd
- map.dtd
- reference.dtd
- task.dtd
- topic.dtd
- troubleshooting.dtd

RNG

- bookmap.rng
- concept.rng
- ditabase.rng
- generalTask.rng
- glossentry.rng
- glossgroup.rng
- map.rng
- reference.rng
- task.rng
- topic.rng
- troubleshooting.rng

In the content below, the following conventions are used:

- Bold is used to indicate code to be added, for example, **addition**.
- Ellipses (...) indicate where code is snipped for brevity.

Figure 4: Changes to DTD-based document-type shells

```
...
<!-- ===== -->
<!--          DOMAIN ENTITY DECLARATIONS          -->
<!-- ===== -->
...
<!ENTITY % hw-d-dec
  PUBLIC "-//OASIS//ENTITIES DITA 2.0 Hardware Domain//EN"
  "hwDomain.ent"
>%hw-d-dec;
...
<!-- ===== -->
<!--          DOMAIN EXTENSIONS          -->
<!-- ===== -->
...
<!ENTITY % ph          "ph |
                       %hi-d-ph; |
```

```

        %hw-d-ph; |
        %pr-d-ph; |
        %sw-d-ph; |
        %ui-d-ph; |
        %equation-d-ph;
    ">
...
<!ENTITY % keyword      "keyword |
        %hw-d-keyword; |
        %markup-d-keyword; |
        %pr-d-keyword; |
        %sw-d-keyword; |
        %ui-d-keyword; |
        %xml-d-keyword;
    ">
...
<!-- ===== -->
<!--                DOMAINS ATTRIBUTE OVERRIDE                -->
<!-- ===== -->

<!ENTITY included-domains
        "&concept-att;
        &abbrev-d-att;
        &audienceAtt-d-att;
        &deliveryTargetAtt-d-att;
        &otherpropsAtt-d-att;
        &platformAtt-d-att;
        &productAtt-d-att;
        &equation-d-att;
        &hazard-d-att;
        &hi-d-att;
        &hw-d-att;
        &markup-d-att;
        &mathml-d-att;
        &pr-d-att;
        &relmgmt-d-att;
        &sw-d-att;
        &svg-d-att;
        &ui-d-att;
        &ut-d-att;
        &xml-d-att;
    "
>
...
<!-- ===== -->
<!--                DOMAIN ELEMENT INTEGRATION                -->
<!-- ===== -->

...
<!ENTITY % hw-d-def
    PUBLIC "-//OASIS//ELEMENTS DITA 2.0 Hardware Domain//EN"
        "hwDomain.mod"
>%hw-d-def;
...

```

Figure 5: Changes to RNG-based document-type shells

```

...
<div>
  <a:documentation>DOMAINS ATTRIBUTE</a:documentation>
  <define name="domains-att" combine="interleave">
    <optional>
      <attribute name="domains"
        a:defaultValue="(topic abbrev-d)
          (topic concept)
          (topic equation-d)
          (topic hazard-d)
          (topic hi-d)
          (topic hw-d)
        "
      >
    </optional>
  </define>
</div>
<a:documentation>MODULE INCLUSIONS</a:documentation>

```

```
...
<include href="hwDomain.rng"/>
...
```

Modified catalog files

The catalog files must be modified.

In the content below, the following conventions are used:

- Bold is used to indicate code to be added, for example, **addition**.
- Ellipses (...) indicate where code is snipped for brevity.

Figure 6: dtd/technicalContent/catalog.xml

```
...
<public publicId="-//OASIS//ELEMENTS DITA 2.0 Hardware Domain//EN"
  uri="dtd/hwDomain.mod"/>
<public publicId="-//OASIS//ELEMENTS DITA 2.x Hardware Domain//EN"
  uri="dtd/hwDomain.mod"/>
<public publicId="-//OASIS//ENTITIES DITA 2.0 Hardware Domain//EN"
  uri="dtd/hwDomain.ent"/>
<public publicId="-//OASIS//ENTITIES DITA 2.x Hardware Domain//EN"
  uri="dtd/hwDomain.ent"/>
...
```

Figure 7: rng/technicalContent/catalog.xml

```
<?xml version="1.0" encoding="UTF-8"?>
<catalog xmlns="urn:oasis:names:tc:entity:xmlns:xml:catalog">
<!--DITA Technical Communications modules-->
  <group><!-- System ID (URL) catalog entries -->
    ...
    <system systemId="urn:oasis:names:tc:dita:rng:hwDomain.rng:2.0"
      uri="rng/hwDomain.rng"/>
    <system systemId="urn:oasis:names:tc:dita:rng:hwDomainDomain.rng:2.x"
      uri="rng/hwDomain.rng"/>
    ...
  </group><!-- Public ID (URN) catalog entries -->
  ...
  <uri name="urn:oasis:names:tc:dita:rng:hwDomain.rng:2.0"
    uri="rng/hwDomain.rng"/>
  <uri name="urn:oasis:names:tc:dita:rng:hwDomain.rng:2.x"
    uri="rng/hwDomain.rng"/>
  ...
</catalog>
```

Modified terminology

None

Modified specification documentation

Three new topics.

- langref/containers/hwdomain.dita - Container for the Hardware domain.
- langRef/technicalContent/hwcontrol.dita
- langRef/technicalContent/partno.dita

Suggest this is added to langRef/technicalContent-elements.ditamap.

```
...
<!--Equation domain-->
<mapref href="equation-domain-elements.ditamap"/>
```



```

<!--Hardware domain-->
<mapref href="hardware-domain-elements.ditamap"/>
<!--Markup domain-->
<mapref href="markup-domain-elements.ditamap"/>
...

```

One new ditamap, langRef/hardware-domain-elements.ditamap.

```

<?xml version="1.0" encoding="UTF-8"?>
<!DOCTYPE map PUBLIC "-//OASIS//DTD DITA Map//EN" "map.dtd">
<map>
  <title>Software domain elements</title>
  <topicref href="containers/hwdomain.dita" navtitle="Hardware domain">
    <topicref href="technicalContent/hwcontrol.dita" keys="hwcontrol" navtitle="hwcontrol"/>
    <topicref href="technicalContent/partno.dita" keys="partno" navtitle="partno"/>
  </topicref>
</map>

```

Hardware domain

The hardware domain elements are used to document physical devices.

<hwcontrol>

The <hwcontrol> element represents the name of a key, button, switch, or other physical control on a device. This element is part of the DITA hardware domain, a special set of DITA elements designed to document hardware information.

Usage information

If you require different output between different types of hardware controls, you can use the @outputclass attribute to distinguish between different types of usage.

Specialization hierarchy

The <hwcontrol> element is specialized from <ph>. It is defined in the hardware domain module.

Example

```

<step><cmd>If the command is already running,
select the command window and press <hwcontrol>CTRL+C</hwcontrol>
to end processing.</cmd></step>

```

```

<step><cmd>After entering the amount you received, press <hwcontrol>Amt Tend</hwcontrol>.</cmd>
<stepresult>This opens the cash drawer. The display shows the amount of change to give the
customer.</stepresult></step>

```

```

<step><cmd>To set your machine for this type of hem, set the <hwcontrol
outputclass="knob">Stitch Length</hwcontrol> to
<userinput>3</userinput> and the <hwcontrol outputclass="lever">Stitch Selector</hwcontrol> to
<userinput>D</userinput>.

```

```

<step><cmd>To sew backwards, set the <hwcontrol outputclass="discrete-control">Stitch Length</
hwcontrol> to
<userinput>Reverse</userinput> and press the <hwcontrol outputclass="continuous-
control">pedal</hwcontrol> with your foot.

```

<partno>

The <partno> element represents a part number. This element is part of the DITA hardware domain, a special set of DITA elements designed to document hardware information.

Specialization hierarchy

The <partno> element is specialized from <keyword>. It is defined in the hardware domain module.

Example

```
<p>The basic model, <partno>DB-123-456</partno>, is an entry model. Most users can take advantage of all features with little to no set up. The <partno>DB-123-456</partno> is available with all systems.
```

```
<step>  
  <cmd>Place the replacement <hwcontrol>Component <partno>DB-123-789</partno></hwcontrol> in the slot and secure with the 4 screws.</cmd>  
</step>
```