

INNOVATION
WITHOUT LIMITATION

Technical Documentation

How To Configure

Agenda

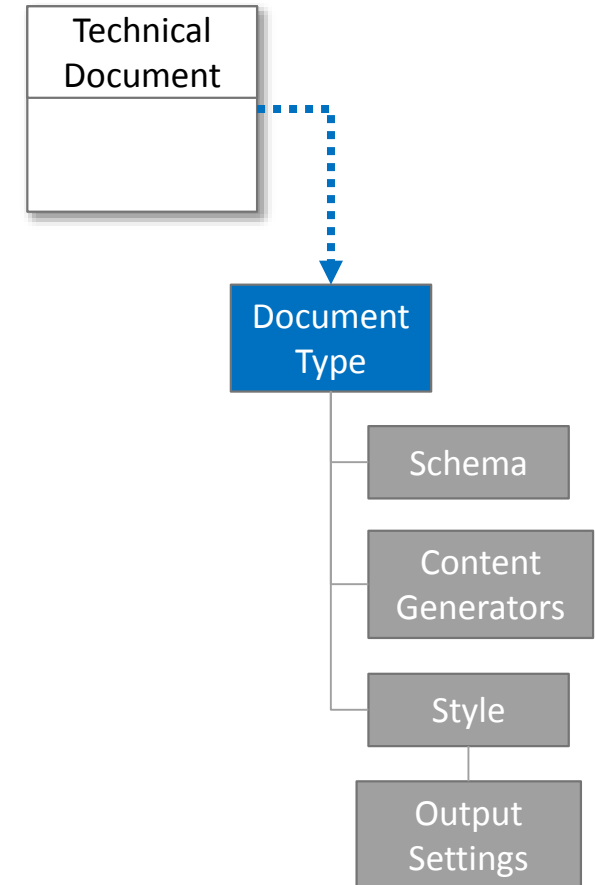


- Overview of Technical Documentation Architecture
- Walk-through configuration of example document

Technical Document Architecture

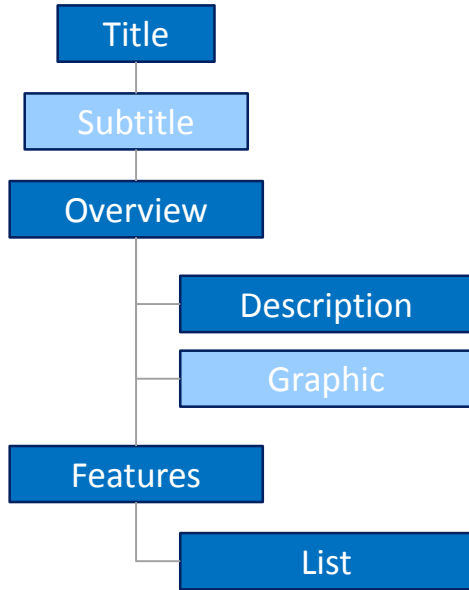
Document Types

- Defines all configuration options for Technical Documents
 - *Document Schema* – Document Structure
 - *Content Generators* – Item Referencing, Automated content creation
 - *Document Style* – Document Layout for Editor and Published content



Overview


Document Structure



Tech Document

MakerBot Replicator
Extruder #2954

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Maecenas porttitor congue massa. Fusce posuere, magna sed pulvinar ultricies, purus lectus malesuada libero, sit amet commodo magna eros quis urna. Nunc viverra imperdiet enim. Fusce est. Vivamus a tellus. Pellentesque habitant morbi tristique senectus et netus et malesuada fames ac turpis egestas. Proin pharetra nonummy pede. Mauris et orci. Aenean nec lorem. In porttitor. Donec laoreet nonummy augue. Suspendisse dui purus, scelerisque at, vulputate vitae, pretium mattis, nunc. Mauris eget neque at sem venenatis eleifend. Ut suscipit. Quisque aliquam tempor magna. Pellentesque habitant morbi tristique senectus et netus et malesuada fames ac turpis egestas. Nunc ac magna. Maecenas odio dolor, vulputate vel, auctor ac, accumsan id, felis. Pellentesque cursus sagittis felis.



Extruder
Features List

- Vivamus a tellus. Pellentesque habitant morbi tristique senectus et netus et malesuada fames ac turpis egestas.
- In porttitor. Donec laoreet nonummy augue.
- Donec ut est in lectus consequat consequat. Etiam eget dui.
- Integer ultrices lobortis eros. Pellentesque habitant morbi tristique senectus et netus et malesuada fames ac turpis egestas. Proin semper, ante vitae sollicitudin posuere, metus quam iaculis nibh, vitae scelerisque nunc massa eget pede.
- Cras non magna vel ante adipiscing rhoncus. Vivamus a mi. Morbi neque. Aliquam erat volutpat.
- Proin semper, ante vitae sollicitudin posuere, metus quam iaculis nibh, vitae scelerisque nunc massa eget pede.
- In fermentum, lorem non cursus porttitor, diam tunc accumsan lacus, sed interdum wisi nibh nec nisi.

```
<Marketing-Doc aras:id = "... " >
  <Title aras:id = "... " >
    <aras:emph>MakerBot Replicator</aras:emph>
  </Title>
  <Subtitle aras:id = "... " >
    <aras:emph>Extruder #2954</aras:emph>
  </Subtitle>
  <Overview aras:id = "... " >
    <Description aras:id = "... " >
      <aras:emph>Lorem ipsum dolor ...</aras:emph>
    </Description>
    <Graphic-Block aras:id = "... " >
      <Graphic ref-id = "... " imageId = "... " />
      <Label aras:id = "... " >
        <aras:emph>Extruder</aras:emph>
      </Label>
    </Graphic-Block>
  </Overview>
  <Features aras:id = "... " >
    ...
  </Marketing-Doc>
```

Required

Optional

Document Schema



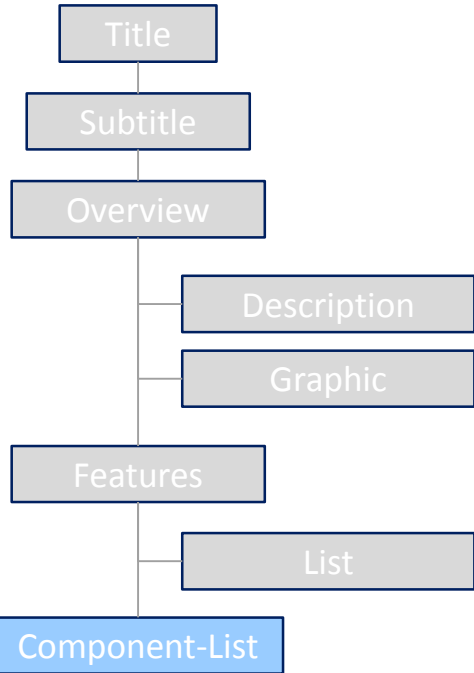
Specifies and Restricts Document Content



Stored as XML

Overview

Content Generation




- MP2954
- MP1705
- MP2607
- MP0138
- ...

Content Generator

Tech Document

MakerBot Replicator
Extruder #2954

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Maecenas porttitor congue massa. Fusce posuere, magna sed pulvinar ultricies, purus lectus malesuada libero, sit amet commodo magna eros quis urna. Nunc viverra imperdiet enim. Fusce est. Vivamus a tellus. Pellentesque habitant morbi tristique senectus et netus et malesuada fames ac turpis egestas. Proin pharetra nonummy pede. Mauris et orci. Aenean nec lorem. In porttitor. Donec laoreet nonummy augue. Suspendisse dui purus, scelerisque at, vulputate vitae, pretium mattis, nunc. Mauris eget neque at sem venenatis eleifend. Ut assummy. Quisque aliquam tempor magna. Pellentesque habitant morbi tristique senectus et netus et malesuada fames ac turpis egestas. Nunc ac magna. Maecenas odio dolor, vulputate vel, auctor ac, accumsan id, felis. Pellentesque cursus sagittis felis.



Extruder
Features List

- Vivamus a tellus. Pellentesque habitant morbi tristique senectus et netus et malesuada fames ac turpis egestas.
- In porttitor. Donec laoreet nonummy augue.
- Donec ut est in lectus consequat conaequat. Eham eget dui.
- Integer ultrices lobortis eros. Pellentesque habitant morbi tristique senectus et netus et malesuada fames ac turpis egestas. Proin semper, ante vitae sollicitudin posuere, metus quam iaculis nibh, vitae scelerisque nonc massa eget pede.
- Cras non magna vel ante adipiscing rhoncus. Vivamus a mi. Morbi neque. Aliquam erat volutpat.
- Proin semper, ante vitae sollicitudin posuere, metus quam iaculis nibh, vitae scelerisque nunc massa eget pede.
- In fermentum, lorem non cursus posuere, diam veni accumsan lacus, sed interdum wisi nibh nec nisi.

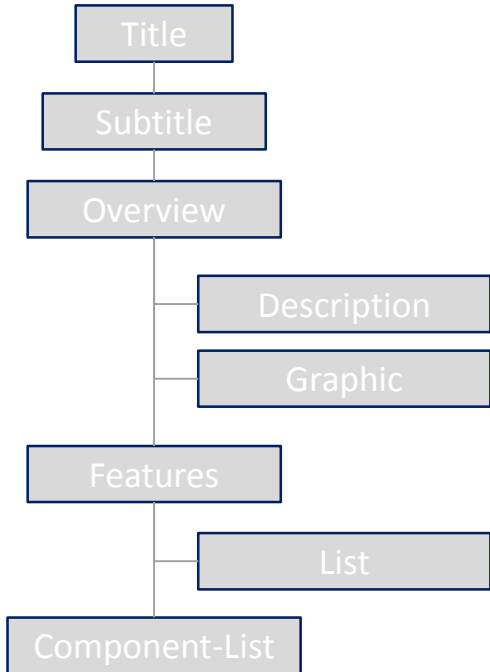
Item #	Name	Qty	Make / Buy	Description
MP1705	MK7 Thermal Core	2	Make	
MP2607	Cartidge Heater 40W 24V Right Angle East	2	Make	
MP0138	Type R Thermocouple	2	Make	
MP2966	Wire-Filament Extruder Guide	1	Make	
MP2959	Nylon Spacer with Flange	1	Make	
MP2906	MK8 Nozzle 0.4mm	2	Make	
MP1708	MK7 Heatink	2	Make	
MP2685	Spacer Black 16.5mm length 3.2mm ID 7mm OD	4	Make	
MP2675	Tube Fitting 45m Tube	2	Make	
MP2347	Fan 24V 40x40x10 1m leads	2	Make	
MP2953	Extruder Hardware	1	Make	
MP2590	MK8 Bar Mount	1	Make	
MP1872	Stepper Motor NEMA17	2	Make	

```

<Marketing-Doc aras:id = "... " >
  <Title aras:id = "... " >
    <aras:emph>MakerBot Replicator</aras:emph>
  </Title>
  <Subtitle aras:id = "... " >
    <aras:emph>Extruder #2954</aras:emph>
  </Subtitle>
  <Overview aras:id = "... " >
    <Description aras:id = "... " >
      <aras:emph>Lorem ipsum dolor ...</aras:emph>
    </Description>
    <Graphic-Block aras:id = "... " >
      <Graphic ref-id = "... " imageId = "... " />
      <Label aras:id = "... " >
        <aras:emph>Extruder</aras:emph>
      </Label>
    </Graphic-Block>
  </Overview>
  <Features aras:id = "... " >
    <Components-List aras:id = "... " >
      <Title aras:id = "... " >...</Title>
      <Component aras:id = "... " >
        ...
      </Component>
    </Components-list>
  </Features>
</Marketing-Doc>
  
```

Overview

Document Style



Tech Document

MakerBot Replicator
Extruder #2954

>Lorem ipsum dolor sit amet, consectetur adipiscing elit. Maecenas porttitor congue massa. Fusce posuere, magna sed pulvinar ultricies, purus lectus malesuada libero, sit amet commodo magna eros quis urna. Nunc viverra imperdiet enim. Fusce sit.

Vivamus a tellus. Pellentesque habitant morbi tristique senectus et netus et malesuada fames ac turpis egestas. Proin pharetra nonummy pede. Mauris et orci. Aenean nec lorem.

In porttitor. Donec laoreet nonummy augue. Suspendisse dui purus, scelerisque at, vulputate vitae, pretium mattis, nunc. Mauris eget neque at sem venenatis idelend. Ut nonummy. Quisque aliquam tempus magna. Pellentesque habitant morbi tristique senectus et netus et malesuada fames ac turpis egestas. Nunc ac magna. Maecenas odio dolor, vulputate vel, auctor ac, accumsan et, fida. Pellentesque cursus sagitta fidi.

Features List

- Vivamus a tellus. Pellentesque habitant morbi tristique senectus et netus et malesuada fames ac turpis egestas.
- In porttitor. Donec laoreet nonummy augue.
- Donec ut est in lectus consequat consequat. Etiam eget dui.
- Integer ultrices lobortis eros. Pellentesque habitant morbi tristique senectus et netus et malesuada fames ac turpis egestas. Proin semper, ante vitae sollicitudin posuere, metus quam iaculis nibh, vitae scelerisque nunc massa eget pede.
- Cras non magna vel ante adipiscing rhoncus. Vivamus a mi. Morbi neque. Aliquam erat volutpat.
- Proin semper, ante vitae sollicitudin posuere, metus quam iaculis nibh, vitae scelerisque nunc massa eget pede.
- In fermentum, lorem non cursus porttitor, diam urna accumsan lacus, sed interdum wisi nibh nec real.

Components

Item #	Name	Qty	Make / Buy	Description
MP1705	MK2 Thermal Core	2	Make	
MP2607	Cartridge Heater 40W 24V Right Angle Exit	2	Make	
MP0138	Type K Thermocouple	2	Make	
MP2966	Wire-Filament Extruder Guide	1	Make	
MP2959	Nylon Spacer with Flange	1	Make	
MP2506	MK8 Nozzle 0.4mm	2	Make	
MP1708	MK2 Heatseek	2	Make	



Extruder

```

<div class="Marketing-Doc">
  <div class="Title">
    <span>MakerBot Replicator</span>
  </div>
  <div class="Subtitle">
    <span>Extruder #2954</span>
  </div>
  <div class="Overview">
    <div class="Description">
      <span>Lorem ipsum dolor ...</span>
    </div>
    <div class="Graphic-Block">
      <img class="Graphic"/>
      <div class="Label">
        <span>Extruder</span>
      </div>
    </div>
  </div>
  <div class="Features"/>
  <div class="Component-List">
    <div class="Title">...</div>
    <div class="Component">
      ...
    </div>
  </div>
</div>
  
```

XML Converted to HTML

Document Structure



XML

- Extensible Markup Language
 - Storage and exchange of data
 - Industry standard
- Technical Document content = XML
 - Stored in `content` Property of `tp_Block`
- Tech Documents -> ItemType
- Document Elements -> XML

```
<Marketing-Doc aras:id = "... " >
  <Title aras:id = "... " >
    <aras:emph>MakerBot Replicator</aras:emph>
  </Title>
  <Subtitle aras:id = "... " >
    <aras:emph>Extruder #2954</aras:emph>
  </Subtitle>
  <Overview aras:id = "... " >
    <Description aras:id = "... " >
      <aras:emph>Lorem ipsum dolor ...</aras:emph>
    </Description>
    <Graphic-Block aras:id = "... " >
      <Graphic ref-id = "... " imageId = "... " />
      <Label aras:id = "... " >
        <aras:emph>Extruder</aras:emph>
      </Label>
    </Graphic-Block>
  </Overview>
  <Features aras:id = "... " >
    ...
  </Marketing-Doc>
```


Document Structure



XML Schema

- Defines the valid **Elements** of an XML File
 - Defines the *Document Elements* of a Technical Document
 - XML syntax
- Each Element is defined by:
 - **Name**: element name in XML file
 - **Type**: Extension of types defined by base schema
 - **Attributes**: Optional – provide add'l semantic markup
 - Child **Elements**: Optional - Defines content structure/hierarchy
- XML Validation
 - Compare XML content to specific XML Schema

```
<xs:element name="Marketing-Doc">
  <xs:complexType>
    <xs:sequence>
      <xs:element ref="Title"/>
      <xs:element ref="Subtitle" minOccurs="0" maxOccurs="1"/>
      <xs:element ref="Overview" minOccurs="1" maxOccurs="1"/>
      <xs:element ref="Features" minOccurs="0" maxOccurs="1"/>
      <xs:element ref="Component-List" minOccurs="0" maxOccurs="1"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>

<xs:element name="Title">
  <xs:complexType>
    <xs:complexContent>
      <xs:extension base="aras:text">
      </xs:extension>
    </xs:complexContent>
  </xs:complexType>
</xs:element>
```

Document Structure

XML Schema



Complex Types define
Element Structures

Sequences
specify *Order*

Min/Max occurrences
specify *Cardinality*
(Min/Max default to 1)

Base Schema
determines how
content is processed

Use Global Element
declarations!

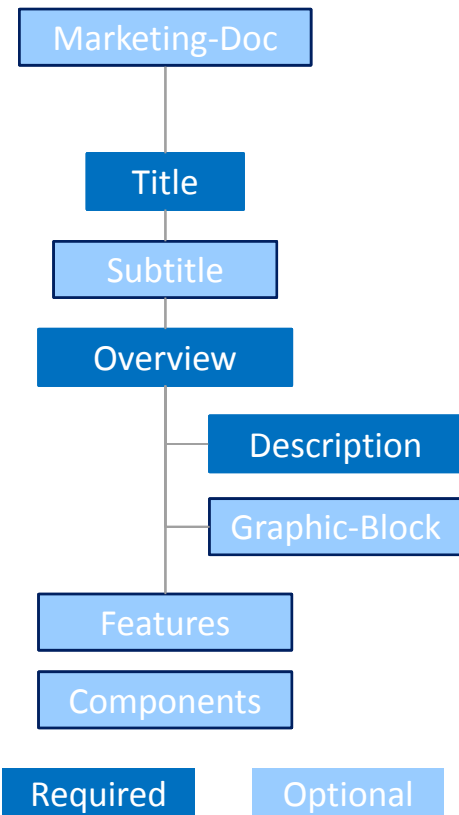
```
<xs:element name="Marketing-Doc">
  <xs:complexType>
    <xs:sequence>
      <xs:element ref="Title"/>
      <xs:element ref="Subtitle" minOccurs="0" maxOccurs="1"/>
      <xs:element ref="Overview" minOccurs="1" maxOccurs="1"/>
      <xs:element ref="Features" minOccurs="0" maxOccurs="1"/>
      <xs:element ref="Component-List" minOccurs="0" maxOccurs="1"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

```
<xs:element name="Title">
  <xs:complexType>
    <xs:complexContent>
      <xs:extension base="aras:text"/>
    </xs:complexContent>
  </xs:complexType>
</xs:element>
```

```
<Marketing-Doc aras:id = "... " >
  <Title aras:id = "... " >
    <aras:emph>MakerBot Replicator</aras:emph>
  </Title>
  <Subtitle aras:id = "... " >
    <aras:emph>Extruder #2954</aras:emph>
  </Subtitle>
  <Overview aras:id = "... " >
    <Description aras:id = "... " >
      <aras:emph>Lorem ipsum dolor ...</aras:emph>
    </Description>
    <Graphic-Block aras:id = "... " >
      <Graphic ref-id = "... " imageId = "... " />
      <Label aras:id = "... " >
        <aras:emph>Extruder</aras:emph>
      </Label>
    </Graphic-Block>
  </Overview>
  <Features aras:id = "... " >
    ...
</Marketing-Doc>
```

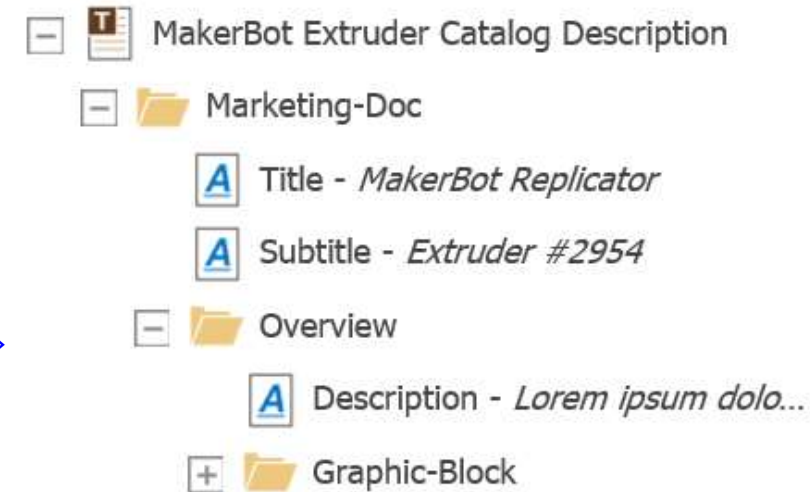
Document Structure

XML Schema



```
<xs:element name="Marketing-Doc">
  <xs:complexType>
    <xs:sequence>
      <xs:element ref="Title"/>
      <xs:element ref="Subtitle" minOccurs="0" maxOccurs="1"/>
      <xs:element ref="Overview" minOccurs="1" maxOccurs="1"/>
      <xs:element ref="Features" minOccurs="0" maxOccurs="1"/>
      <xs:element ref="Components" minOccurs="0" maxOccurs="1"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>

<xs:element name="Overview">
  <xs:complexType>
    <xs:sequence>
      <xs:element ref="Description" minOccurs="1" maxOccurs="1"/>
      <xs:element ref="Graphic-Block" minOccurs="0" maxOccurs="1"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```



Document Structure



Document Element Types

- **Text**
 - Formatted – Formatting functions on Toolbar apply
 - Unformatted – Formatting functions on Toolbar do not apply – text only
- **Tables** – Tabular Content
 - Row and Cell Document Elements
- **Lists**
 - List Item Document Elements: Bulleted, Numeric, Alpha-numeric
- **Graphics**
 - From tp_Image ItemTypes
- **Item References**
 - Link to Item instance

Document Element Type



Formatted Text

- Base Type: `text`
 - Formatted characterized delineated by `<emph>` tags
 - Bold, Italic, Underline, Strike Through, sub/super script, link

```
<xs:element name="Description">  
  <xs:complexType>  
    <xs:complexContent>  
      <xs:extension base="aras:text">  
      </xs:extension>  
    </xs:complexContent>  
  </xs:complexType>  
</xs:element>
```

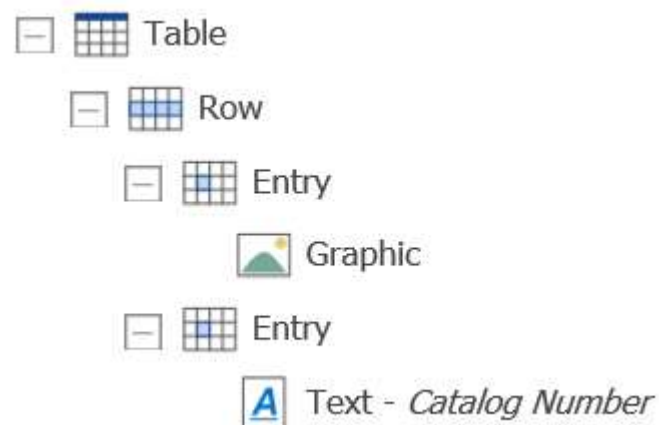
```
<Text aras:id =" ... " >  
  <aras:emph>Here is some </aras:emph><aras:emph bold =" true " >text </aras:emph><aras:emph>with </aras:emph>  
  <aras:emph under =" true " >various </aras:emph> <aras:emph>formatting </aras:emph> <aras:emph italic =" true " >applied</aras:emph>  
</Text>
```

Here is some **text** with various formatting *applied*

Document Element Type

Table

- Base *Abstract* Type: `table`
 - May only contain elements of type `tr`
- Base *Abstract* Type: `tr`
 - May only contain elements of type `td`
- Base *Abstract* Type: `td`
 - Defines valid content for each cell



```
<xs:element name="Table">
  <xs:complexType>
    <xs:complexContent>
      <xs:extension base="aras:table">
      </xs:extension>
    </xs:complexContent>
  </xs:complexType>
</xs:element>

<xs:element name="Row" substitutionGroup="aras:tablerow">
  <xs:complexType>
    <xs:complexContent>
      <xs:extension base="aras:tr"/>
    </xs:complexContent>
  </xs:complexType>
</xs:element>

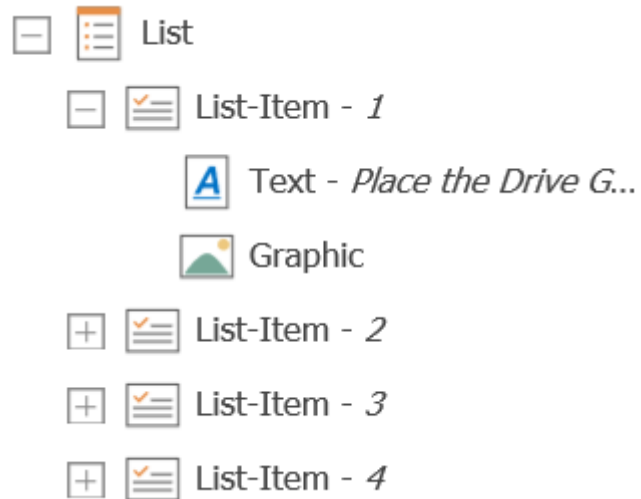
<xs:element name="Entry" substitutionGroup="aras:tablecell">
  <xs:complexType>
    <xs:complexContent>
      <xs:extension base="aras:td">
        <xs:sequence <!-- or choice -->
          --- Valid Content of Cell ---
        </xs:sequence>
      </xs:extension>
    </xs:complexContent>
  </xs:complexType>
</xs:element>
```

Document Element Type



List

- Base Type: `list`
 - May only contain elements of type `tr`
- Base *Abstract* Type: `listitemType`
 - Defines valid content for each List Item



```
<xs:element name="Features-List">
  <xs:complexType>
    <xs:complexContent>
      <xs:extension base="aras:list">
        <xs:choice maxOccurs="unbounded">
          <xs:element ref="Features-List-Item" />
        </xs:choice>
      </xs:extension>
    </xs:complexContent>
  </xs:complexType>
</xs:element>
```

```
<xs:element name="Features-List-Item">
  <xs:complexType>
    <xs:complexContent>
      <xs:extension base="aras:listitemType">
        <xs:choice maxOccurs="unbounded">
          --- Valid Content for List content ---
        </xs:choice>
      </xs:extension>
    </xs:complexContent>
  </xs:complexType>
</xs:element>
```

Document Element Type



Graphics

- Base Type: `imageType`
 - Should not have any child content
- Link to Items of type `tp_Image`
 - Currently the only option to embed graphics
 - User is prompted to select instance when node is placed in document
- Relationship to `tp_Image` added to document

```
<xs:element name="Graphic">  
  <xs:complexType>  
    <xs:complexContent>  
      <xs:extension base="aras:imageType">  
      </xs:extension>  
    </xs:complexContent>  
  </xs:complexType>  
</xs:element>
```


Document Element Type



Item References

- Base Type: `itemType`

- May have child content

- Link to Items of type `tp_Item`

- PolyItem

- Add PolySources if other Itemtypes are required
- Narrow ItemType by adding `typeId` attribute
- Ex:

- `<xs:attribute name="typeId" type="xs:string" fixed="4F1AC04A2B484F3ABA4E20DB63808A88"/><!-- typeId of the Part ItemType -->`

- User is prompted to select instance when node is placed in document

- Relationship to Item added to document

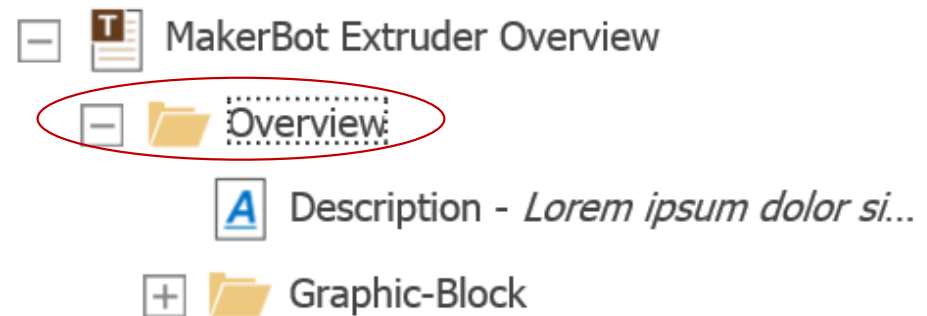
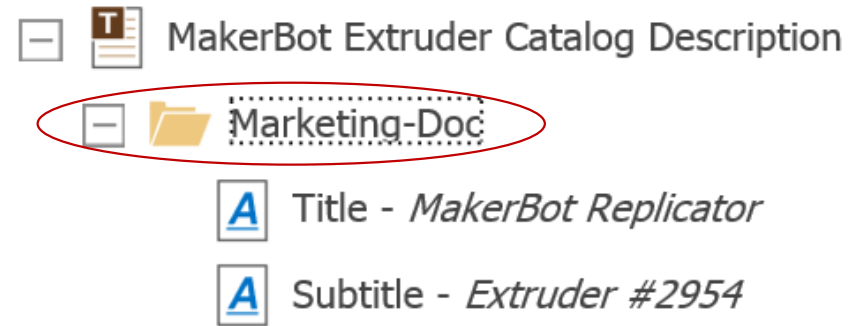
- Use Content Generator to fill child elements

```
<xs:element name="Component-List" >
  <xs:complexType>
    <xs:complexContent>
      <xs:extension base="aras:itemType">
        <xs:sequence <!-- or choice -->
          --- Valid Content ---
        </xs:sequence>
      </xs:extension>
    </xs:complexContent>
  </xs:complexType>
</xs:element>
```

Document Structure

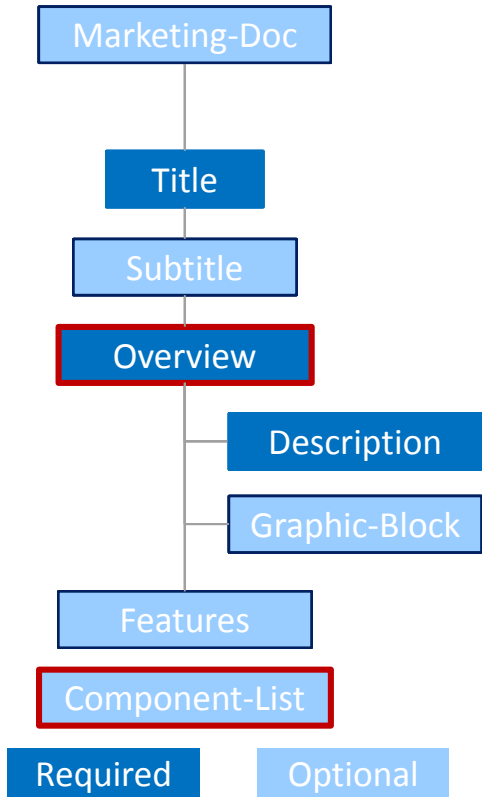
Root Elements & Content Aggregation

- Each Technical Document will have one or more Root Elements (Top-most XML Element)
 - Implicitly defines document type
 - Can be mapped to an Item Classification
- Identifies where each Document can be reused
 - Document content can be reused anywhere where root element is allowed



Document Structure

Root Elements & Content Aggregation



```

Tech Document
<Marketing-Doc aras:id ="... " >
  <Title aras:id ="... " >
    <aras:emph>MakerBot ...</aras:emph>
  </Title>
  <Subtitle aras:id ="... " >
    <aras:emph>Extruder #2954</aras:emph>
  </Subtitle>
  <external_block id ="... " >
  </external_block >
</Overview>
<Features aras:id ="... " >
  <external_block id ="... " >
  </external_block >
</Features>
</Marketing-Doc>
  
```

```

Tech Document
<Overview aras:id ="... " >
  <Description aras:id ="... " >
    ...
  </Description>
  <Graphic-Block aras:id ="... " >
    <Graphic imageId ="... " />
    <Label aras:id ="... " >
      ...
    </Label>
  </Graphic-Block>
</Overview>
  
```

```

Tech Document
<Component-List aras:id ="... " >
  <Title aras:id ="... " >...</Title>
  <Component aras:id ="... " >
    ...
  </Component>
</Component-List>
  
```

Document Structure



Misc.

- Use Global Elements
- Use Complex Types only
 - Elements must inherit from Aras Document Types
- Attributes added can be accessed in Tech Docs Editor UI
 - Accessed in Content Generators
- Associate Elements with Classifications
- Use XML Tool for Validation and syntax check

Content Generation



- Defined by Methods
 - Produces Document Element content
- Server-side (C#)
 - API for producing Document Element Types
- Attached to Document Element
 - Method invoked whenever:
 - Document Element is placed in Document (Static)
 - Document Element is placed or Document is refreshed or Published (Dynamic)

The screenshot shows the 'Document Type - MakerBot' configuration window in Aras Innovator. The 'Name' field is 'MakerBot' and the 'Target Namespace' is 'http://www.aras.com/TechDocExample'. The 'Content' field contains XML Schema Definition (XSD) code for a 'Marketing-Doc' element. Below the content field is a table with columns: Name, Renderer [...], Content Generator [...], Dynamic Content, and Document Classification. The 'Content Generator' for 'Marketing-Doc' is 'tp_BOMContentGenerator', which is circled in red. The status bar at the bottom indicates 'Ready', 'Items 1-3 of 3. Page 1 of 1', and 'Aras Innovator'.

Name	Renderer [...]	Content Generator [...]	Dynamic Content	Document Classification
Components-List		tp_BOMContentGenerator	<input type="checkbox"/>	
Assembly-Instructions			<input type="checkbox"/>	Assembly
Marketing-Doc			<input type="checkbox"/>	Marketing

Document Style



- Affects Editor, HTML, and PDF output
- Cascading Stylesheets (CSS)
- XML -> HTML Rules:
 - Document Elements - `<div>`
 - Document Element names added to `class` attribute
 - `aras:table` - `<table>`
 - Colgroups added for column size adjustment
 - Text - ``
 - Formatting added directly to style attribute
- PDF
 - [Prince XML](#)
 - CSS Paged Media for page-specific Settings
 - Page Numbers, Headers, Footers, TOC

Filters / Optional Content



- Defined by server-side Method (C#)
 - `tp_GetOptionFamilies`
- Return JSON string in the form:
 - “{ *Filter Name*: [List of Filter Values...], ... }”

```
“{  
  "Region": [ "Africa", "Asia", "Central America", "Eastern Europe", "European Union"],  
  "Zone": ["A", "B", "C"],  
  "Model": ["X", "Y", "Z"]  
}”
```

Example Document – Mersen Catalog

- Image of example document
- Considerations
 - Who are the authors?
 - Where is the information managed?
 - How is technical content visualized?
- Identify Document Elements
- Identify reusable content
- Identify Referenced Content
 - Identify ItemTypes/Properties



MULTIBLOC® 00.ST8
Size 00 160A, 690VAC Bottom Fitting, 1-,2-,4-pole

NH Fuse Switch Disconnectors

The production programme of MULTIBLOC® series 00.ST8 comprises NH fuse switch disconnectors for 160A. They are designed for bottom fitting/panel installation and are available in single pole, double pole and quadruple pole units. For installation of MULTIBLOC® NH fuse switch disconnectors in distribution units with central cover, respective covers are used to obtain a uniform profile in height and length. MULTIBLOC® size 00 are designed for NH fuse-links in accordance with IEC/EN 60269-2, VDE 0636-2, size 00, 160A. MULTIBLOC® offers the user the possibility of fast and easy installation as well as a high degree of security during installation and maintenance.

Features Benefits

- Touch protection IP 20 - when fuse link is in test mode IP rating is maintained
- Parking position of switch operating cover even with fuse-links inserted
- Modular system of cover - cover for cable termination area can be extended - optional
- Varieties of cable termination: screw, clamp strap, Al-Cu clamp, extendable for V-terminal - optional
- Padlocking and sealing of switch door cover - optional
- Indicating switch for switch door position - optional
- Safe on load connection/disconnection in accordance with IEC 60947-3

Applications

- House incoming units
- Meter distribution units
- Measuring transformer cabinets
- Transmitting stations for telecommunications

Technical data overview

Voltage AC	590 VAC
Voltage DC	230 VDC
Amper (A)	160 A
Size per Standard	00
OCGR	Ue = AC 400 V; Ie = 160 A 80kA Ue = AC 500 V; Ie = 160 A 80kA Ue = AC 690 V; Ie = 125 A 50kA
Mounting	bottom fitting/panel
Switchability	1-,2-,4-pole switching
Number of Poles	1,2,4

Standards
IEC/EN 60 947-3
For NH-fuse links size 000/00 in accordance with IEC/EN 60 269-2, VDE 0636-2.

CE

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Mersen Document Elements



MULTIBLOC® 00.ST8

Size 00 160A, 690VAC Bottom Fitting, 1-,2-,4-pole

NH Fuse Switch Disconnecter

The production programme of MULTIBLOC® series 00.ST8 comprises NH fuse switch disconnectors for 160A.

They are designed for bottom fitting/panel installation and are available in single pole, double pole and quadruple pole units.

For installation of MULTIBLOC® NH fuse switch disconnectors in distribution units with central cover, respective covers are used to obtain a uniform profile in height and length.

MULTIBLOC® size 00 are designed for NH fuse-links in accordance with IEC/EN 60269-2, VDE 0636-2, size 00, 160A.

MULTIBLOC® offers the user the possibility of fast and easy installation as well as a high degree of security during installation and maintenance.

Features Benefits

- Touch protection IP 20 - when fuse link is in test mode IP rating is maintained
- Parking position of switch operating cover even with fuse-links inserted
- Modular system of cover - cover for cable termination area can be extended - optional
- Varieties of cable termination: screw, clamp strap, Al-Cu clamp, extendable for V-terminal - optional
- Padlocking and sealing of switch door cover - optional
- Indicating switch for switch door position - optional
- Safe on load connection/disconnection in accordance with IEC 60947-3

Applications

- House incoming units
- Meter distribution units
- Measuring transformer cabinets
- Transmitting stations for telecommunications

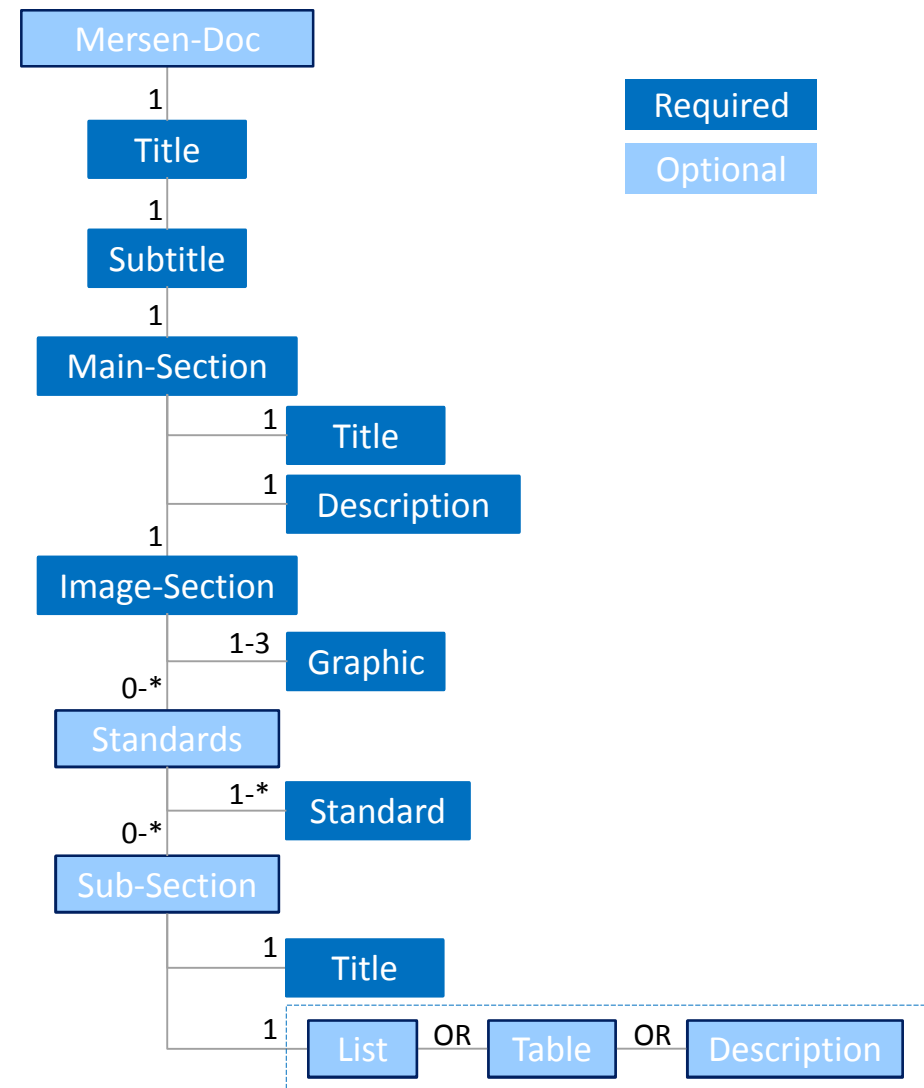
Technical data overview

Voltage AC	690 VAC
Voltage DC	230 VDC
Amper (A)	160 A
Size per Standard	00
OCGR	Ue = AC 400 V; Ie = 160 A 80kA Ue = AC 500 V; Ie = 160 A 80kA Ue = AC 690 V; Ie = 125 A 50kA
Mounting	bottom fitting/panel
Switchability	1-,2-,4-pole switching
Number of Poles	1,2,4

Standards

IEC/EN 60 947-3
For NH-fuse links size 000/00 in accordance with IEC/EN 60 269-2, VDE 0636-2

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Mersen Document Elements (Cont.)

MULTIBLOC® 00.ST8
Size 00 160A, 690VAC Bottom Fitting, 1-,2-,4-pole

Product range

MULTIBLOC® 00.ST8 size 00 160 A, 690 V AC bottom fitting, single pole

Catalog number	Reference number	Poles	Cable termination components	Design	Weight kg ¹⁾	Package
1.000.053	F229292	1	2 M8 terminal screws	-	0.32	1 piece
1.000.054	E1022998	1	2 clamp straps Cu 4-70 mm ²	-	0.32	1 piece
1.000.114	F1022999	1	2 Al/Cu clamps 1,5-70 mm ² round stranded, 95 mm ² sectorial solid	-	0.35	1 piece
1.001.817	G1023000	1	2 M8 terminal screws	for direct installation on to bus bars with M8 screw	0.29	1 piece

MULTIBLOC® 00.ST8 size 00 160 A, 690 V AC bottom fitting, double pole

Catalog number	Reference number	Poles	Cable termination components	Weight kg ¹⁾	Package
1.000.139	G229293	2	3 M8 terminal screws	0.62	1 piece
1.000.140	H1023001	2	4 clamp straps Cu 4-70 mm ²	0.62	1 piece

MULTIBLOC® 00.ST8 size 00 160 A, 690 V AC bottom fitting, quadruple pole

Catalog number	Reference number	Poles	Cable termination components	Design	Weight kg ¹⁾	Package
1.000.141	J1023002	4	8 M8 terminal screws	pole 4 right side	1.04	1 piece
1.000.142	K1023003	4	8 clamp straps Cu 4-70 mm ²	pole 4 right side	1.04	1 piece
1.001.575	L1023004	4	8 M8 terminal screws	pole 4 left side	1.04	1 piece
1.002.377	T1002127	4	8 M8 terminal screws	with ready fitted special solid link as neutral conductor in pole 4 for leading and lagging switching	1.80	1 piece
1.003.141	N1023006	4	8 clamp straps Cu 4-70 mm ²	with ready fitted special solid link as neutral conductor in pole 4 for leading and lagging switching	1.80	1 piece

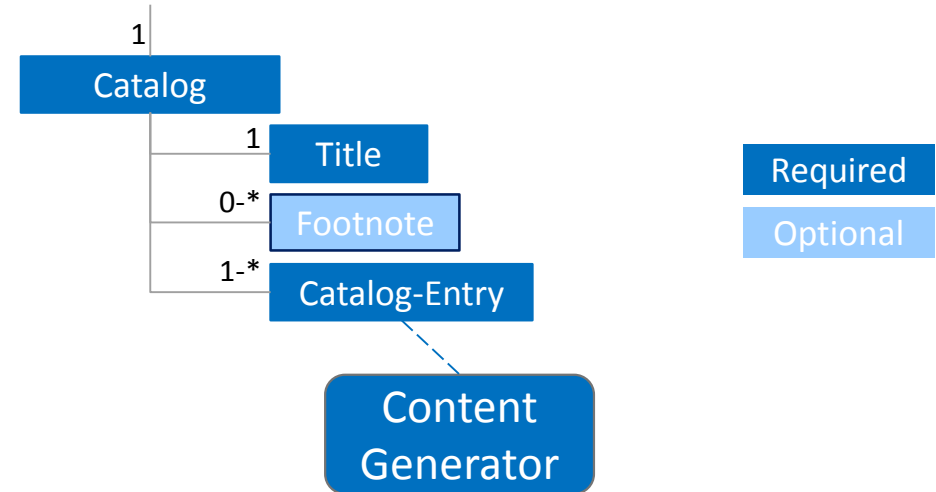
1) weight in kg per piece or set including package

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Referenced Content

Mersen Part ItemType



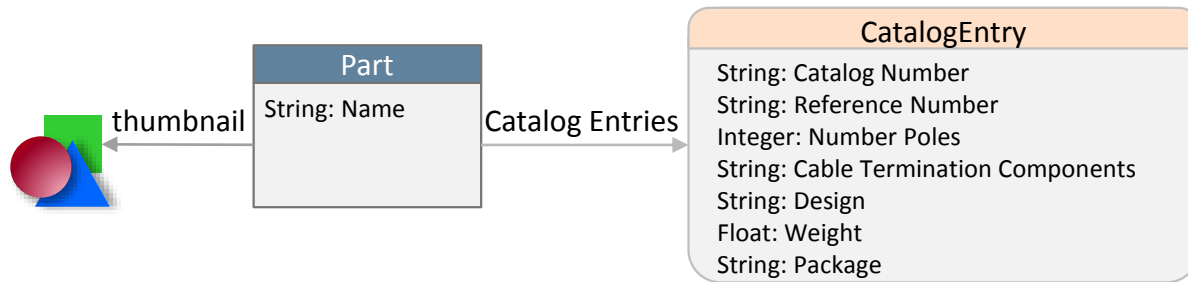
1.000.053



1.001.817

MULTIBLOC® 00.ST8 size 00 160 A, 690 V AC bottom fitting, single pole

Catalog number	Reference number	Poles	Cable termination components	Design	Weight kg ⁹	Package
1.000.053	F229292	1	2 M8 terminal screws	-	0.32	1 piece
1.000.054	E1022998	1	2 clamp straps Cu 4-70 mm ²	-	0.32	1 piece
1.000.114	F1022999	1	2 Al/Cu clamps 1,5-70 mm ² round stranded, 95 mm ² sectoral solid	-	0.35	1 piece
1.001.817	G1023000	1	2 M8 terminal screws	for direct installation on to bus bars with M8 screw	0.29	1 piece



Part - 1-000-053 (read only) - Windows Internet Explorer

File Edit Views Search Actions Reports Tools Help

Part

Part Number: 1-000-053
Revision: A
State: Preliminary

Name: MULTIBLOC® 00.ST8 size 00 160 A, 690 V AC bottom fitting, single

Type: Component
Unit: EA
Make / Buy: Make
Cost: []

Long Description: []

Created By: Innovator Admin
Created On: 12/11/2014
Modified By: Innovator Admin
Modified On: 12/12/2014
Locked By:
Major Rev: A
Release Date:
Effective Date:
Generation: 2
State: Preliminary

Assigned Creator:
Designated User:
Effective Date: []

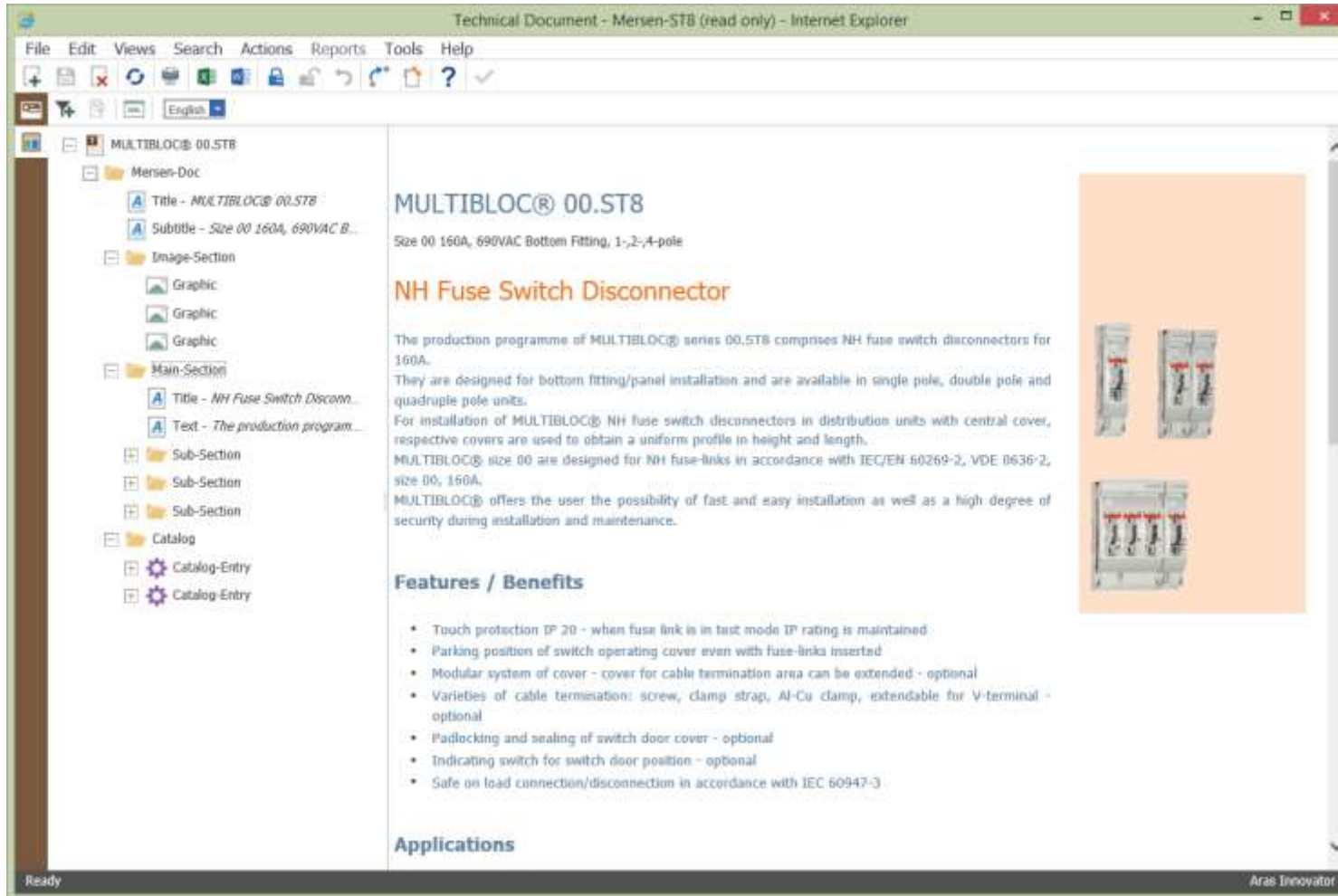
BOM BOM Structure Alternates AML **Catalog Entries** Time Studies Documents CAD Documents

Actions: No Related []

catalog_number	Reference Nu...	Num Poles	Cable Terminat...	Design	Weight	Package
1.000.053	F229292	1	M8 terminal scre...	-	0.32	1 piece
1.000.054	1022998	1	2 clamp straps C...	-	0.32	1 piece
1.000.114	1022999	1	Al/Cu clamps 1,...	-	0.32	1 piece
1.001.817	G1023000	1	2 M8 terminal sc...	for direct installa...	0.29	1 piece

Ready Items 1-4 of 4. Page 1 of 1 Aras Innovator

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MULTIBLOC® 00.ST8

Size 00 160A, 690VAC Bottom Fitting, 1-,2-,4-pole

NH Fuse Switch Disconnecter

The production programme of MULTIBLOC® series 00.ST8 comprises NH fuse switch disconnectors for 160A. They are designed for bottom fitting/panel installation and are available in single pole, double pole and quadruple pole units. For installation of MULTIBLOC® NH fuse switch disconnectors in distribution units with central cover, respective covers are used to obtain a uniform profile in height and length. MULTIBLOC® size 00 are designed for NH fuse-links in accordance with IEC/EN 60269-2, VDE 0636-2, size 00, 160A. MULTIBLOC® offers the user the possibility of fast and easy installation as well as a high degree of security during installation and maintenance.



Features Benefits

- Touch protection IP 20 - when fuse link is in test mode IP rating is maintained
- Parking position of switch operating cover even with fuse-links inserted
- Modular system of cover - cover for cable termination area can be extended - optional
- Varieties of cable termination: screw, clamp strap, Al-Cu clamp, extendable for V-terminal - optional
- Padlocking and sealing of switch door cover - optional
- Indicating switch for switch door position - optional
- Safe on load connection/disconnection in accordance with IEC 60947-3

Applications

- House incoming units
- Meter distribution units
- Measuring transformer cabinets
- Transmitting stations for telecommunications

Technical data overview

Voltage AC	590 VAC
Voltage DC	220 VDC
Amper (A)	160 A
Size per Standard	00
gCCR	Ue = AC 400 V; Ie = 160 A 80kA Ue = AC 500 V; Ie = 160 A 80kA Ue = AC 690 V; Ie = 125 A 50kA
Mounting	bottom fitting/panel
Switchability	1-,2-,4-pole switching
Number of Poles	1,2,4

Standards

IEC/EN 60 947-3
For NH-fuse links size 000/00 in accordance with IEC/EN 60 269-2, VDE 0636-2



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