

Schema documentation for asf.xsd

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Namespace: ""

Schemas

Main schema asf.xsd

Namespace	No namespace
Annotations	<p>This document provides specification for XML that describe drivers, applications and other software modules (from here on called modules) in the AVR Software Framework.</p> <p>Upon start the parser will scan through the ASF directory structure for all asf.xml files, strip the "asf" tag and then include all elements into one XML file.</p> <p>The resulting XML file is used as a database for all software modules in the ASF.</p> <p>The database can be used to resolve dependencies for any module in the ASF, and find other information regarding the software modules.</p>

Elements

Element asf

Namespace	No namespace				
Annotations	Top level element for any build system XML file. Each XML file can be validated with this XML Schema.				
Diagram	<pre>graph LR asf[asf] --- xmlversion[xmlversion] asf --- seq((1..∞)) seq --- project[project] seq --- device-map[device-map] seq --- board[board] seq --- module[module] seq --- select-by-device[select-by-device] seq --- select-by-config[select-by-config] seq --- framework-version[framework-version]</pre>				
Model	project{0,1} device-map{0,1} board{0,1} module{0,1} select-by-device{0,1} select-by-config{0,1} framework-version{0,1}				
Children	board, device-map, framework-version, module, project, select-by-config, select-by-device				
Instance	<pre><asf xmlversion=""> <project caption="" id="">{0,1}</project> <device-map id="">{0,1}</device-map> <board caption="" id="" mcu="">{0,1}</board> <module caption="" id="" type="">{0,1}</module> <select-by-device caption="" id="">{0,1}</select-by-device> <select-by-config caption="" default="" id="" name="">{0,1}</select-by-config> <framework-version name="">{0,1}</framework-version> </asf></pre>				
Attributes	QName	Type	Fixed	Default	Use
	xmlversion	restriction of xs:string			required
		ASF XML version. Current version is 1.0			

Element project

Namespace	No namespace
Annotations	<p>A project is an application that is configured for a specific board. An application is described with the module tag.</p> <p>A project description is the starting point for the project generator, and must at least state:</p> <ol style="list-style-type: none"> 1. which board the project makes use of 2. which project generators can be used


	3. which application the project is for				
Diagram	<pre>graph LR project["project 1..∞"] --- attributes["attributes"] project --- build["build 0..∞"] project --- require["require 0..∞"] project --- info["info 0..∞"] project --- config["config 0..∞"] project --- generator["generator 0..∞"] attributes --- id["id 0..1 Type xs:string"] attributes --- caption["caption 0..1 Type xs:string"]</pre>				
Used by	Element asf				
Model	build* require* info* config* generator*				
Children	build, config, generator, info, require				
Instance	<pre><project caption="" id=""> <build name="" subtype="" toolchain="" type="" value="">{0,unbounded}</build> <require idref="">{0,unbounded}</require> <info type="" value="">{0,unbounded}</info> <config name="" value="">{0,unbounded}</config> <generator value="">{0,unbounded}</generator> </project></pre>				
Attributes	QName	Type	Fixed	Default	Use
	caption	xs:string			required
	Description of the project				
	id	xs:string			required
	Unique id				

Element build

Namespace	No namespace				
Annotations	The build element is used for specifying what files and defines is needed for a given module.				
Diagram					
Used by	Elements	board, module, project			
Attributes	QName	Type	Fixed	Default	Use
	name	xs:string			optional
	The name of the build type. This is used for define builds.				
	subtype	restriction of xs:string			optional
	The subtype of build entity				
	toolchain	generatorType			optional

	QName	Type	Fixed	Default	Use
		Build element is only valid for the toolchain with the given name			
	type	restriction of xs:string			required
		The type of build entity			
	value	xs:string			required
		The build element			

Element require

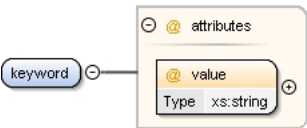
Namespace	No namespace				
Annotations	The require element is used for specifying what other modules is needed by a module.				
Diagram					
Used by	Elements	board, module, project			
Attributes	QName	Type	Fixed	Default	Use
	idref	xs:string			required
		The id of the required element			

Element info

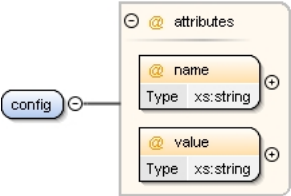
Namespace	No namespace				
Annotations	The info element is used for specifying additional information on a module				
Diagram					
Used by	Elements	board, module, project			
Model	keyword				
Children	keyword				
Instance	<pre><info type="" value=""> <keyword value="">{1,1}</keyword> </info></pre>				
Attributes	QName	Type	Fixed	Default	Use
	type	restriction of xs:string			optional
	The type of information entity. The following types are supported: - keyword TBD - license License for the module - appnote Appnote number for related appnote. Ex: AVR123 - status The status of the module. The following statuses can be used: * testing - new module in development or testing, not to be distributed in an ASF release * stable - stable, distributed in a release * mature - will probably be removed in i a future release, is distributed in a release * deprecated - will be removed, not distributed in a release - description				

QName	Type	Fixed	Default	Use
	Textual description of the module. Can be of type: <ul style="list-style-type: none"> * summary - Quick "one line" description. * detailed - Longer, more detailed description. The exact guidelines are TBD. - distribution The distribution status for the module. The following can be used: <ul style="list-style-type: none"> * internal - Internal code, which can not be released due to confidentiality or license issues * public - Code which can be distributed. 			
value	xs:string			required
	The actual information, or category for blocks of keywords: <ul style="list-style-type: none"> - kit - device - technology - application 			

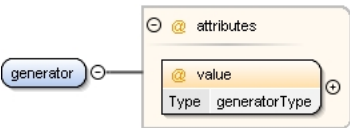
Element keyword

Namespace	No namespace				
Diagram					
Used by	Element	info			
Attributes	QName	Type	Fixed	Default	Use
	value	xs:string			required
	A keyword.				

Element config

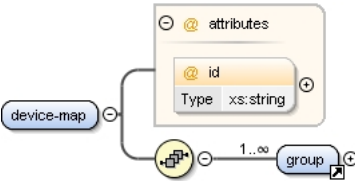
Namespace	No namespace				
Annotations	The config element is used to set the value of a configuration setting.				
Diagram					
Used by	Elements	board, project			
Attributes	QName	Type	Fixed	Default	Use
	name	xs:string			required
	The name of the configuration setting.				
	value	xs:string			required
	The value to set for the configuration.				

Element generator

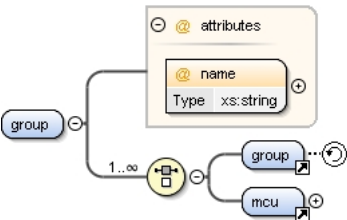
Namespace	No namespace				
Annotations	Add a generator to a project.				
Diagram					

Used by	Element project				
Attributes	QName	Type	Fixed	Default	Use
	value	generatorType			required
This restricted value define a set of generator which is used to generate project files for a project.					

Element device-map

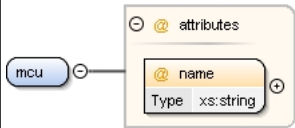
Namespace	No namespace				
Annotations	The device-map is used for specifying the selection process of a select-by-device tag and device-support elements.				
Diagram					
Used by	Element asf				
Model	group+				
Children	group				
Instance	<pre><device-map id=""> <group name="">{1,unbounded}</group> </device-map></pre>				
Attributes	QName	Type	Fixed	Default	Use
	id	xs:string			optional
Unique id of device-map.					

Element group

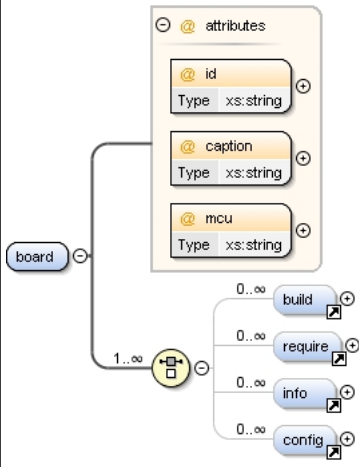
Namespace	No namespace				
Annotations	Family group name				
Diagram					
Used by	Elements device-map, group				
Model	group mcu				
Children	group, mcu				
Instance	<pre><group name=""> <group name="">{1,1}</group> <mcu name="">{1,1}</mcu> </group></pre>				
Attributes	QName	Type	Fixed	Default	Use
	name	xs:string			required
Name of the family group. For example uc3a.					

Element mcu

Namespace	No namespace				
Annotations	MCU name				

Diagram					
Used by	Element group				
Attributes	QName	Type	Fixed	Default	Use
	name	xs:string			required
	Name of the MCU. For example atxmega128a1				

Element board

Namespace	No namespace				
Annotations	The board element is used for describing a board that a project is run on				
Diagram					
Used by	Element asf				
Model	build* require* info* config*				
Children	build, config, info, require				
Instance	<pre> <board caption="" id="" mcu=""> <build name="" subtype="" toolchain="" type="" value="">{0,unbounded}</build> <require idref="">{0,unbounded}</require> <info type="" value="">{0,unbounded}</info> <config name="" value="">{0,unbounded}</config> </board> </pre>				
Attributes	QName	Type	Fixed	Default	Use
	caption	xs:string			required
	Description of the board				
	id	xs:string			required
	unique id				
	mcu	xs:string			required
	The target mcu that is on the board				

Element module

Namespace	No namespace
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Diagram					
Used by	Elements asf, select-by-config, select-by-device				
Model	build* require* info* device-support*				
Children	build, device-support, info, require				
Instance	<pre><module caption="" id="" type=""> <build name="" subtype="" toolchain="" type="" value="">{0,unbounded}</build> <require idref="">{0,unbounded}</require> <info type="" value="">{0,unbounded}</info> <device-support value="">{0,unbounded}</device-support> </module></pre>				
Attributes	QName	Type	Fixed	Default	Use
	caption	xs:string			required
	Description of the module				
	id	xs:string			required
	Unique id for module				
	type	restriction of xs:string			required
	The type of the module. It can be :				
	- driver - component - service - library - application - meta - build-specific				

Element device-support

Namespace	No namespace				
Diagram					
Used by	Element	module			
Attributes	QName	Type	Fixed	Default	Use
	value	xs:string			optional
		Identifier of device that is supported. For example atxmegal28a1.			

Element select-by-device

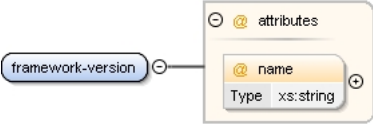
Namespace	No namespace																									
Annotations	<p>The select-by-device element is used for resolving device dependent modules. It will try to find a module within the tag that contains the same id, with a hash and the device appended.</p> <p>It starts searching at the MCU in the device-map and then to each parent node, until a match is found.</p> <p>This ensures that a driver for one specific device has higher priority than a family generic driver.</p>																									
Diagram																										
Used by	Elements asf, select-by-config																									
Model	module*																									
Children	module																									
Instance	<pre><select-by-device caption="" id=""> <module caption="" id="" type="">{0,unbounded}</module> </select-by-device></pre>																									
Attributes	<table><thead><tr><th>QName</th><th>Type</th><th>Fixed</th><th>Default</th><th>Use</th></tr></thead><tbody><tr><td>caption</td><td>xs:string</td><td></td><td></td><td>optional</td></tr><tr><td colspan="5">Description of the selector</td></tr><tr><td>id</td><td>xs:string</td><td></td><td></td><td>required</td></tr><tr><td colspan="5">Unique ID</td></tr></tbody></table>	QName	Type	Fixed	Default	Use	caption	xs:string			optional	Description of the selector					id	xs:string			required	Unique ID				
QName	Type	Fixed	Default	Use																						
caption	xs:string			optional																						
Description of the selector																										
id	xs:string			required																						
Unique ID																										

Element select-by-config

Namespace	No namespace
Annotations	The select-by-config element is used for resolving configuration dependent modules. It will try to find a module within the tag that contains the same id, with a hash and the configuration appended.
Diagram	<pre>graph LR subgraph select-by-config [select-by-config] direction TB attributes[attributes] id[id] name[name] default[default] caption[caption] id -- Type xs:string --- id_val[id] name -- Type xs:string --- name_val[name] default -- Type xs:string --- default_val[default] caption -- Type xs:string --- caption_val[caption] end select-by-config -- 1..∞ --- module[module] module -- 1..∞ --- select-by-device[select-by-device] select-by-config -- 0..∞ --- select-by-config2[select-by-config]</pre>
Used by	Elements asf, select-by-config
Model	select-by-config* select-by-device* module+
Children	module, select-by-config, select-by-device
Instance	<pre><select-by-config caption="" default="" id="" name=""> <select-by-config caption="" default="" id="" name="">{0,unbounded}</select-by-config> <select-by-device caption="" id="">{0,unbounded}</select-by-device> </select-by-config> <module caption="" id="" type="">{1,unbounded}</module></pre>

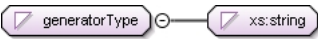
	</select-by-config>				
Attributes	QName	Type	Fixed	Default	Use
	caption	xs:string			optional
		Description of the selector			
	default	xs:string			optional
		The default value of the configuration if no value is configured.			
	id	xs:string			required
		Unique ID			
	name	xs:string			required
		Name of the configuration to use for this selector.			

Element framework-version

Namespace	No namespace				
Diagram					
Used by	Element	asf			
Attributes	QName	Type	Fixed	Default	Use
	name	xs:string			optional
		Release identifier name of the AVR Software Framework			

Simple Types

Simple Type generatorType

Namespace	No namespace				
Diagram					
Type	restriction of xs:string				
Facets	enumeration	verbose			
	enumeration	avrgcc			
	enumeration	avr32gcc			
	enumeration	iarew			
	enumeration	iarew32			
	enumeration	doxygen			
	enumeration	as5_8			
	enumeration	as5_32			
Used by	Attributes	build/@toolchain, generator/@value			

Attributes

Attribute build / @type

Namespace	No namespace				
Annotations	The type of build entity				
Type	restriction of xs:string				
Facets	enumeration	c-source			
	enumeration	include-path			
	enumeration	header-file			
	enumeration	module-config			

	enumeration	asm-source
	enumeration	define
	enumeration	distribute
	enumeration	library
	enumeration	linker-config
Used by	Element	build

Attribute build / @subtype

Namespace	No namespace	
Annotations	The subtype of build entity	
Type	restriction of xs:string	
Facets	enumeration	api
	enumeration	path
	enumeration	required-header-file
	enumeration	directory
	enumeration	file
	enumeration	compiler
	enumeration	user
	enumeration	flags
	enumeration	script
Used by	Element	build

Attribute build / @name

Namespace	No namespace	
Annotations	The name of the build type. This is used for define builds.	
Type	xs:string	
Used by	Element	build

Attribute build / @value

Namespace	No namespace	
Annotations	The build element	
Type	xs:string	
Used by	Element	build

Attribute build / @toolchain

Namespace	No namespace	
Annotations	Build element is only valid for the toolchain with the given name	
Type	generatorType	
Facets	enumeration	verbose
	enumeration	avrgcc
	enumeration	avr32gcc
	enumeration	iarew
	enumeration	iarew32
	enumeration	doxygen
	enumeration	as5_8
	enumeration	as5_32
Used by	Element	build

Attribute require / @idref

Namespace	No namespace
Annotations	The id of the required element
Type	xs:string
Used by	Element require

Attribute keyword / @value

Namespace	No namespace
Annotations	A keyword.
Type	xs:string
Used by	Element keyword

Attribute info / @type

Namespace	No namespace
Annotations	<p>The type of information entity. The following types are supported:</p> <ul style="list-style-type: none"> - keyword TBD - license License for the module - appnote Appnote number for related appnote. Ex: AVR123 - status The status of the module. The following statuses can be used: <ul style="list-style-type: none"> * testing - new module in development or testing, not to be distributed in an ASF release * stable - stable, distributed in a release * mature - will probably be removed in i a future release, is distributed in a release * deprecated - will be removed, not distributed in a release - description Textual description of the module. Can be of type: <ul style="list-style-type: none"> * summary - Quick "one line" description. * detailed - Longer, more detailed description. The exact guidelines are TBD. - distribution The distribution status for the module. The following can be used: <ul style="list-style-type: none"> * internal - Internal code, which can not be released due to confidentiality or license issues * public - Code which can be distributed.
Type	restriction of xs:string
Facets	enumeration keyword
	enumeration license
	enumeration appnote
	enumeration status
	enumeration distribution
	enumeration status
	enumeration description
Used by	Element info

Attribute info / @value

Namespace	No namespace
Annotations	<p>The actual information, or category for blocks of keywords:</p> <ul style="list-style-type: none"> - kit - device - technology

	- application
Type	xs:string
Used by	Element info

Attribute config / @name

Namespace	No namespace
Annotations	The name of the configuration setting.
Type	xs:string
Used by	Element config

Attribute config / @value

Namespace	No namespace
Annotations	The value to set for the configuration.
Type	xs:string
Used by	Element config

Attribute generator / @value

Namespace	No namespace
Annotations	This restricted value define a set of generator which is used to generate project files for a project.
Type	generatorType
Facets	enumeration verbose
	enumeration avrgcc
	enumeration avr32gcc
	enumeration iarew
	enumeration iarew32
	enumeration doxygen
	enumeration as5_8
	enumeration as5_32
Used by	Element generator

Attribute project / @id

Namespace	No namespace
Annotations	Unique id
Type	xs:string
Used by	Element project

Attribute project / @caption

Namespace	No namespace
Annotations	Description of the project
Type	xs:string
Used by	Element project

Attribute mcu / @name

Namespace	No namespace
Annotations	Name of the MCU. For example atxmegal28a1
Type	xs:string

Used by	Element	mcu
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Attribute group / @name

Namespace	No namespace
Annotations	Name of the family group. For example uc3a.
Type	xs:string
Used by	Element group

Attribute device-map / @id

Namespace	No namespace
Annotations	Unique id of device-map.
Type	xs:string
Used by	Element device-map

Attribute board / @id

Namespace	No namespace
Annotations	unique id
Type	xs:string
Used by	Element board

Attribute board / @caption

Namespace	No namespace
Annotations	Description of the board
Type	xs:string
Used by	Element board

Attribute board / @mcu

Namespace	No namespace
Annotations	The target mcu that is on the board
Type	xs:string
Used by	Element board

Attribute device-support / @value

Namespace	No namespace
Annotations	Identifier of device that is supported. For example atxmegal28a1.
Type	xs:string
Used by	Element device-support

Attribute module / @id

Namespace	No namespace
Annotations	Unique id for module
Type	xs:string
Used by	Element module

Attribute module / @caption

Namespace	No namespace
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Annotations	Description of the module	
Type	xs:string	
Used by	Element	module

Attribute module / @type

Namespace	No namespace	
Annotations	The type of the module. It can be : - driver - component - service - library - application - meta - build-specific	
Type	restriction of xs:string	
Facets	enumeration	driver
	enumeration	component
	enumeration	service
	enumeration	library
	enumeration	application
	enumeration	meta
	enumeration	build-specific
Used by	Element	module

Attribute select-by-device / @id

Namespace	No namespace	
Annotations	Unique ID	
Type	xs:string	
Used by	Element	select-by-device

Attribute select-by-device / @caption

Namespace	No namespace	
Annotations	Description of the selector	
Type	xs:string	
Used by	Element	select-by-device

Attribute select-by-config / @id

Namespace	No namespace	
Annotations	Unique ID	
Type	xs:string	
Used by	Element	select-by-config

Attribute select-by-config / @name

Namespace	No namespace	
Annotations	Name of the configuration to use for this selector.	
Type	xs:string	

Used by	Element	select-by-config
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Attribute select-by-config / @default

Namespace	No namespace	
Annotations	The default value of the configuration if no value is configured.	
Type	xs:string	
Used by	Element	select-by-config

Attribute select-by-config / @caption

Namespace	No namespace	
Annotations	Description of the selector	
Type	xs:string	
Used by	Element	select-by-config

Attribute framework-version / @name

Namespace	No namespace	
Annotations	Release identifier name of the AVR Software Framework	
Type	xs:string	
Used by	Element	framework-version

Attribute asf / @xmlversion

Namespace	No namespace	
Annotations	ASF XML version. Current version is 1.0	
Type	restriction of xs:string	
Facets	enumeration	1.0
Used by	Element	asf