



# **Guide to Schematron Rules and Patterns**

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## **AUTHCAT Schematron Guide**

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## Chapter 1 - Introduction

### 1.1 - Purpose

This is an informative supplement for AUTHCAT. This guide is generated from the AUTHCAT Schematron rules and provides a consolidated reference for the business rules of this specification.

### 1.2 - Overview

Chapter 2 is a listing of all the numbered rules in AUTHCAT. For each rule, there is a rule description, a code description, and a code block with the Schematron rule.

Chapter 3 is a listing of abstract patterns used in AUTHCAT. The abstract patterns may be used in numbered rules or provided as reference for use in rules developed by users of AUTHCAT. Each abstract pattern has a code description and a code block with the abstract Schematron pattern.

Chapter 4 is a listing of the master AUTHCAT Schematron file with all of the imports of rules and patterns. Many of the rules and patterns listed in Chapters 3 and 4 rely on functions and variables defined in the master file.

Chapter 5 is a listing of rules that have been deleted.

### 1.3 - Schematron

The business rules for AUTHCAT are encoded using ISO Schematron. Schematron is a rule-based validation language that uses XML Path Language to make assertions about an XML document.

AUTHCAT uses the XSLT 2.0 implementation of Schematron by Rick Jelliffe (2010-04-14) as its reference implementation. The only available identifying descriptors for this implementation are the implementer's name and date of release. This implementation may be found at the following URL: <http://code.google.com/p/schematron/>.



#### Important

The Schematron rules in this specification use XSLT 2.0 query binding.

### 1.4 - Conformance

This guide is informative. The Schematron rules listed here are normative in the sense that they convey criteria that a document **MUST** adhere to, exactly as English may be used to convey normative criteria. It is not necessary for implementers to use the specific Schematron encoding in this specification. Implementers **MAY** use any encodings, tools, or languages desired to implement validation schemes for conformance to this specification. However, to conform to the specification, validation schemes **MUST** match the behavior of the reference Schematron implementation. That is, a validator **MUST** find a document valid *if and only if* the reference Schematron implementation would find the document valid according to AUTHCAT's Schematron rules.

## Chapter 2 - Rules

All of the numbered Rules for AUTHCAT are listed in this section. These rules may depend on patterns defined in the Abstract Patterns section or on variables defined in the Schematron Schema section.

Rules identifiers are all of the format AUTHCAT-ID-XXXXX, with rule files named AUTHCAT\_ID\_XXXXX.sch. Any other heading indicates a supporting file that may influence a rule but is not actually a numbered rule.

## 2.1 - ../Rules/AUTHCAT\_ID\_00001.sch

### Rule Description

[AUTHCAT-ID-00001][Warning] ac:CESVersion attribute SHOULD be specified as version 201804 with an optional extension.

### Code Description

This rule supports extending the version identifier with an optional trailing hyphen and up to 23 additional characters. The version must match the regular expression “^201804(-.{1,23})?\$”.

### Schematron Code

```
<?ICEA pattern?>
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-->

<sch:pattern id="AUTHCAT-ID-00001">
  <sch:rule id="AUTHCAT-ID-00001-R1" context="*[@ac:CESVersion]">
    <sch:assert test="matches(@ac:CESVersion, '^201804(-.{1,23})?$' )"
      flag="warning"
      role="warning">[AUTHCAT-ID-00001][Warning] ac:CESVersion attribute SHOULD be specified as version 201804 with an optional extension.</sch:assert>
  </sch:rule>
</sch:pattern>
```

### Chapter 3 - Abstract Patterns

There are no Abstract Patterns currently defined for AUTHCAT.

## Chapter 4 - Schematron Schema

The top level Schematron file for AUTHCAT is in this section. This file imports all of the others and also defines many global variables they are all dependent on.

## 4.1 - ../AUTHCAT\_XML.sch

### Schematron Code

```
<!--UNCLASSIFIED-->
<?ICEA master?>
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-->
<!-- WARNING:
      Once compiled into an XSLT the result will
      be the aggregate classification of all the CVES
      and included .sch files
-->

<sch:schema queryBinding="xslt2">
    <sch:ns uri="http://www.w3.org/2001/XMLSchema" prefix="xs"/>
    <sch:ns uri="urn:us:gov:ic:authcat" prefix="ac"/>
    <!--*****-->
<!-- (U) AUTHCAT Phases -->
<!--*****-->
<!--*****-->
<!-- (U) AUTHCAT ID Rules -->
<!--*****-->
<!--(U) -->

<sch:include href="../Rules/AUTHCAT_ID_00001.sch"/>
    <!--*****-->
<!-- (U) AUTHCAT Phases -->
<!--*****-->
</sch:schema>

<!--UNCLASSIFIED-->
```

## Chapter 5 - Removed Rules

There are no rules that have been removed for AUTHCAT.