System XML Formatting and Design Guide

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1   Introduction

The purpose of this document is to define how system-level XMLs are formatted. After reading the document, developers will be able to write existing XMLs (system, structure, etc.) and to extend the existing XML parser in a cohesive fashion.

This document will *not* detail how the XML directory is set up; see "README.md" in the XML directory.

2   Reserved Tags

Certain tag names are reserved as special tags. As a result, these tag names are **must** be defined for their use as defined in this section.

Import

The "Import" tag allows for XML elements from other files to be included where the import tag is declared. To use this tag, declare the "href" and "xpath" attributes. The "href" attribute declares a relative path to the XML file to reference. The "xpath" attribute declares an XPath path in the XML to the element to be imported.

For example, assume that file "B.xml" exists in the subdirectory "src" with the following contents:

```xml
<?xml version="1.0" ?>

<B>
    <MyTag>
        <MyElement myAttr="C" />
    </MyTag>
    <SomeoneElse otherAttr="D" />
</B>
```

If "A.xml" wants to import the MyTag block, then one would use the "Import" tag as follows.

```xml
<Import href="src/B.xml" xpath="/B/MyTag" />
```

After "A.xml" is preprocessed, then the "Import" tag will be replaced with the "MyTag" element, including all of that tag's content.

Include

The "Include" tag acts as a useful shorthand for a common use-case of the "Import" tag–full content importing. Functionally, it is equivalent to. . .

```xml
<Import href="your/href/here"xpath="/"/>
```

To use this tag, declare the "href" attribute. Just like the "Import" tag, the "href" attribute declares a relative path to an XML file to reference.

3   Preprocessors

In addition to the reserved tags, the XML preprocessor also supports macros for importing information handled by the preprocessor. Macros apply to all attributes in an XML document. Macros are currently simple; attributes with contents starting with the character '$' are sent through the macro preprocessor. To literally declare a '$' character at the start of an attribute use "$$".

$PATH:

The path macro allows for path-relative addressing in attributes. This uses the same system as the "Import" and "Include" tags.

Commonly, this is used in compiled/processed XMLs, such as config LUT entries.

For example, a config LUT XML will usually be compiled into a binary file in the "bin/" subdirectory. To do this, the "Struct" tag will use the "binary" attribute with the path macro. The example below shows a structure that will be compiled into the path "bin/out.bin" relative to the XML's location.

```xml
<?xml version="1.0">
<Struct binary="$PATH:bin/out.bin">
    <Signature>
        <StructID value="4" />
        <ConfigID value="0xFFF0" />
    </Signature>
    <Data>
        <Flags value="0" />
    </Data>
</Struct>
```