



*Providing the Tools You Need*

*for compliance with*

***CIECA STANDARDS***

***BUSINESS***

***MESSAGE***

***SPECIFICATIONS***

*Utilizing the*

***Universally Unique***

***Identifier Implementation***



# CIECA's UUID

## Universally Unique Identifier Implementation

### Description of Problem

The [Collision Industry Electronic Commerce Association's](#) Business Message Specification calls for the support of a Universally Unique Identifier, or UUID. CIECA has prepared this document to assist those responsible for implementing CIECA Standards with questions they may have concerning UUID generation. This document includes the following information:

- Definition of a UUID
- Resources to better understand the UUID
- Creating a UUID in your development environment or operating environment
- Sample XML utilizing a UUID

### Definition of a UUID

In CIECA's Business Message Specification (BMS), a UUID is defined as follows:

UUID elements are Narrow Character with a length of 36.

A UUID is an identifier that is unique across both space and time, with respect to the space of all UUIDs. To be precise, the UUID consists of a finite bit space. Thus, the time value used for constructing a UUID is limited and will roll over in the future (approximately at A.D. 3400, based on the specified algorithm). A UUID may be used for multiple purposes, from tagging objects with an extremely short lifetime to reliably identifying very persistent objects across a network. The following information on UUID is based on Internet-Draft <leach-uuids-uuids-01.txt>:

The generation of UUIDs does not require that a registration authority be contacted for each identifier. Instead, it requires a unique value over space for each UUID generator. This spatially unique value is specified as an IEEE 802 address, which is usually already available to network-connected systems. This 48-bit address may be assigned based on an address block obtained through the IEEE registration authority. This section of the UUID specification assumes the availability of an IEEE 802 address to a system desiring to generate a UUID, but if one is not available, refer to the additional resources links (below) to generate a probabilistically unique one that cannot conflict with any properly assigned :IEEE 802 address.3.1 Format". In its most general form, all that may be said of the UUID format is that a UUID is 16 octets, and that some bits of octet 8 of the UUID called the variant field (specified in the next section) determine finer structure.

For use in human-readable text, a UUID string representation is specified as a sequence of fields, some of which are separated by single dashes. Each field is treated as an integer and has its value printed as a zero-filled hexadecimal digit string with the most significant digit first. The hexadecimal values a to f inclusive are output as lower case characters, and are case insensitive on input. The sequence is the same as the UUID constructed type. The



formal definition of the UUID string representation is provided by the following extended BNF:

<b>UUID</b>	<b>&lt;time_low&gt; “-” &lt;time_mid&gt; “-” &lt;time_high_and_version&gt; “-” &lt;clock_seq_and_reserved&gt; &lt;clock_seq_low&gt; “-” &lt;node&gt;</b>
time_low	4*<hexOctet>
time_mid	2*<hexOctet>
time_high_and_version	2*<hexOctet>
clock_seq_and_reserved	<hexOctet>
clock_seq_low	<hexOctet>
node	6*<hexOctet>
HexOctet	<hexDigit> <hexDigit>
HexDigit	zero   “1”   “2”   “3”   “4”   “5”   “6”   “7”   “8”   “9”   “a”   “b”   “c”   “d”   “e”   “f”   “A”   “B”   “C”   “D”   “E”   “F”

The following is an example of the string representation of a UUID:

**f81d4fae-7dec-11d0-a765-00a0c91e6bf6**

Many technical references contain references to GUIDs (Globally Unique Identifiers). GUID refers specifically to Microsoft’s implementation of UUID; the two terms are considered interchangeable.

**Additional Resources**

There are many ways in which you can generate a UUID. The resources listed below are meant to further define the UUID concept and to provide you with greater understanding of UUID creation.

<b>Online Resources:</b>	<a href="http://www.opengroup.org/onlinepubs/9629399/apdx.htm">http://www.opengroup.org/onlinepubs/9629399/apdx.htm</a>
	<a href="http://www.itu.int/ITU-T/studygroups/com17/oid.html">http://www.itu.int/ITU-T/studygroups/com17/oid.html</a>
	<a href="http://www.rfc-archive.org/getrfc.php?rfc=4122">http://www.rfc-archive.org/getrfc.php?rfc=4122</a>



## Creating a UUID in your development environment or operating environment

Given the fact that different tools will be used to implement the BMS, CIECA is providing the following language- and platform- specific information. These tables were compiled by a group of developers who regularly contribute to CIECA by participating on one or more of our SDCs (Standards Development Committees).

If you are working with a software language or in an operating system that is not included below, please contact CIECA ([www.cieca.com](http://www.cieca.com)) so that we may consider including it in this document. Our objective is to be inclusive and to take into account the various development environments in which CIECA standards are put to use.

Language Examples	
<b>.Net</b>	System.Guid.NewGuid()
<b>Visual Studio.NET</b>	Tools-->Create GUID
<b>COM</b>	CoCreateGuid
<b>C in the RPC library on windows</b>	UuidCreate
<b>Java</b>	java.util.UUID
<b>VBScript</b>	MSDN- HOW TO: Create GUIDs by Using Active Server Pages in IIS
<b>Tcl</b>	uuid ( <a href="http://tcllib.sourceforge.net/doc/uuid.html">http://tcllib.sourceforge.net/doc/uuid.html</a> )
<b>ColdFusion</b>	CreateUUID ( <a href="http://livedocs.macromedia.com/coldfusion/6.1/htmldocs/funciti54.htm">http://livedocs.macromedia.com/coldfusion/6.1/htmldocs/funciti54.htm</a> )

Platforms	
<b>Windows</b>	If Visual Studio is installed, then use guidgen.exe or uuidgen.exe
<b>Linux</b>	uuidgen
<b>Solaris</b>	makeuuid
<b>Mac OS X</b>	uuidgen (on the command-line)



## Sample XML

```
<SubmitProcurement>
  <ProcurementAddRq>
    <RqUID>9bced6a0-42a1-40dc-9ec4-68aed5b97ca2</RqUID>
    <AsyncRqUID>4e7c5f77-8525-402b-951d-83dfb7ab1bd2</AsyncRqUID>
    <PartnerKey/>
    <SvcProviderName/>
    <DocumentInfo>
      .....
    </DocumentInfo>
    <ProcurementFolder>
      <ProcurementFolderID>f50d5c8c-bd52-456e-bd30-6bb1c57a67e8</ProcurementFolderID>
      <ProcurementFolderVerNum>0</ProcurementFolderVerNum>
      <CreateDateTime>2001-12-17T09:30:47.0Z</CreateDateTime>
      <LastModifiedDateTime>2001-12-17T09:30:47.0Z</LastModifiedDateTime>
      <CurrencyInfo>
        .....
      </CurrencyInfo>
      <Header>
        <BMSObject>
          <UUID>be9ff01c-671a-4469-952b-72d7b8daced4</UUID>
          <RefUUID>f50d5c8c-bd52-456e-bd30-6bb1c57a67e8</RefUUID>
        </BMSObject>
        .....
      </Header>
      .....
    </ProcurementFolder>
  </ProcurementAddRq>
</SubmitProcurement>
```