

The W3C Speech Interface Framework Media Types:  
application/voicexml+xml, application/ssml+xml, application/srgs,  
application/srgs+xml, application/ccxml+xml, and application/pls+xml

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#### Abstract

This document defines the media types for the languages of the W3C Speech Interface Framework, as designed by the Voice Browser Working Group in the following specifications: the Voice Extensible Markup Language (VoiceXML), the Speech Synthesis Markup Language (SSML), the Speech Recognition Grammar Specification (SRGS), the Call Control XML (CCXML), and the Pronunciation Lexicon Specification (PLS).

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## 1. Introduction

This specification defines the media types of the Voice Extensible Markup Language (VoiceXML), the Speech Synthesis Markup Language (SSML), the Speech Recognition Grammar Specification (SRGS), the Call Control XML (CCXML), and the Pronunciation Lexicon Specification (PLS), the specifications of the W3C Speech Interface Framework.

VoiceXML ([VoiceXML2.0]) is an Extensible Markup Language (XML) designed for creating audio dialogs that feature synthesized speech, digitized audio, recognition of spoken and DTMF key input, recording of spoken input, telephony, and mixed initiative conversations. The associated media type defined in this document is "application/voicexml+xml".

The Speech Synthesis Markup Language specification (SSML) defines an XML-based markup language for assisting the generation of synthetic speech in Web and other applications. The essential role of SSML is to provide authors of synthesizable content a standard way to control aspects of speech such as pronunciation, volume, pitch, and rate, across different synthesis-capable platforms. The associated media type defined in this document is "application/ssml+xml".

The Speech Recognition Grammar Specification (SRGS) defines syntax for representing grammars for use in speech recognition so that developers can specify the words and patterns of words to be listened for by a speech recognizer. The syntax of the grammar format exists in two forms, an Augmented BNF (ABNF) Form and an XML Form. The respective media types defined in this document are "application/srgs" and "application/srgs+xml".

The Call Control EXTensible Markup Language (CCXML) is an XML designed to provide telephony call control support for dialog systems, such as VoiceXML. The associated media type defined in this document is "application/ccxml+xml".

The Pronunciation Lexicon Specification (PLS) defines an XML syntax for specifying pronunciation lexicons to be used by speech recognition and speech synthesis engines in voice browser applications. The associated media type defined in this document is "application/pls+xml".

2. Registration of application/voicexml+xml, application/ssml+xml, application/srgs+xml, application/ccxml+xml, and application/pls+xml

MIME media type name: application

MIME subtype names: voicexml+xml, ssml+xml, srgs+xml, ccxml+xml, pls+xml

Required parameters: none

Optional parameters:

"charset": This parameter has identical semantics to the charset parameter of the "application/xml" media type as specified in RFC 3023 [RFC3023].

### 2.1. Encoding Considerations

Identical to those of "application/xml" as described in RFC 3023 [RFC3023], section 3.2.

### 2.2. Interoperability Considerations

There are no known interoperability issues.

### 2.3. Published Specifications

Voice Extensible Markup Language 2.0 [VoiceXML2.0]

Voice Extensible Markup Language 2.1 [VoiceXML2.1]

Speech Synthesis Markup Language (SSML) Version 1.0 [SSML]

Speech Recognition Grammar Specification Version 1.0 [SRGS]

Voice Browser Call Control: CCXML Version 1.0 [CCXML]

Pronunciation Lexicon Specification (PLS) Version 1.0 [PLS]

## 2.4. Applications that Use These Media Types

Various W3C Speech Interface Framework implementations use these media types.

## 2.5. Security Considerations

Several instructions in the cited specifications may cause arbitrary Uniform Resource Identifiers (URIs) to be dereferenced. In this case, the security issues of [RFC3986], section 7, should be considered.

In addition, because of the extensibility features of those specifications, it is possible that the registered media types may describe content that has security implications beyond those described here. However, if the processor follows only the normative semantics of the specifications, this content will be ignored. Only in the case where the processor recognizes and processes the additional content, or where further processing of that content is dispatched to other processors, would security issues potentially arise. And in that case, they would fall outside the domain of this registration document.

## 2.6. Additional Information

### 2.6.1. Magic Numbers

Although no byte sequences can be counted on to always be present, XML MIME entities in ASCII-compatible charsets (including UTF-8) often begin with hexadecimal 3C 3F 78 6D 6C ("`<?xml`"), and those in UTF-16 often begin with hexadecimal FE FF 00 3C 00 3F 00 78 00 6D 00 6C or FF FE 3C 00 3F 00 78 00 6D 00 6C 00 (the Byte Order Mark (BOM) followed by "`<?xml`"). For more information, see Appendix F of [XML].

### 2.6.2. File Extensions

VoiceXML files: `.vxml`

SSML files: `.ssml`

SRGS files (XML syntax): `.grxml`

CCXML files: `.ccxml`

PLS files: `.pls`

### 2.6.3. Fragment Identifiers

Identical to that of "application/xml" as described in RFC 3023 [RFC3023], section 5.

### 2.6.4. Macintosh File Type Code

"TEXT"

### 2.6.5. Person and Email Address to Contact for Further Information

World Wide Web Consortium <web-human@w3.org>

### 2.6.6. Intended Usage

COMMON

### 2.6.7. Change Controller

The Speech Interface Framework specifications set is a work product of the World Wide Web Consortium's Voice Browser Working Group. The W3C has change control over these specifications.

## 3. Registration of application/srgs

MIME media type name: application

MIME subtype names: srgs

Required parameters: none

Optional parameters: none

### 3.1. Encoding Considerations

The ABNF Form of SRGS follows the character encoding handling defined for XML: an ABNF grammar processor must accept both the UTF-8 and UTF-16 encodings of ISO/IEC 10646 and may support other character encodings.

### 3.2. Interoperability Considerations

There are no known interoperability issues.

### 3.3. Published Specifications

Speech Recognition Grammar Specification Version 1.0 [SRGS]

### 3.4. Applications That Use This Media Type

Various SRGS implementations use this media type.

### 3.5. Security Considerations

Several instructions in SRGS may cause arbitrary URIs to be dereferenced. In this case, the security issues of [RFC3986], section 7, should be considered.

In addition, because of the extensibility features of SRGS, it is possible that the registered media types may describe content that has security implications beyond those described here. However, if the processor follows only the normative semantics of the specifications, this content will be ignored. Only in the case where the processor recognizes and processes the additional content, or where further processing of that content is dispatched to other processors, would security issues potentially arise. In that case, they would fall outside the domain of this registration document.

### 3.6. Additional Information

#### 3.6.1. Magic Numbers

The ABNF self-identifying header must be present in any legal stand-alone ABNF Form grammar document. The first character of an ABNF document must be the "#" symbol (x23) unless preceded by an optional XML 1.0 byte order mark. The ABNF byte order mark follows the XML definition and requirements. For example, documents encoded in UTF-16 must begin with the byte order mark. The optional byte order mark and required "#" symbol must be followed immediately by the exact string "ABNF" (x41 x42 x4d x46) or the appropriate equivalent for the document's encoding (e.g., for UTF-16 little-endian: x23 x00 x41 x00 x42 x00 x4d x00 x46 x00). If the byte order mark is absent on a grammar encoded in UTF-16, then the grammar processor should perform auto-detection of character encoding in a manner analogous to auto-detection of character encoding in XML. Next follows a single-space character (x20) and the required version number, which is "1.0" for this specification (x31 x2e x30).

#### 3.6.2. File Extensions

.gram

#### 3.6.3. Macintosh File Type Code

"TEXT"

#### 3.6.4. Person and Email Address to Contact for Further Information

World Wide Web Consortium <web-human@w3.org>

#### 3.6.5. Intended Usage

COMMON

#### 3.6.6. Change Controller

The SRGS specification is a work product of the World Wide Web Consortium's Voice Browser Working Group. The W3C has change control over the SRGS specification.

### 4. IANA Considerations

This document registers six new MIME media types, according to the registrations in Section 2 and Section 3.

### 5. Normative References

- [CCXML] Auburn, R.J., Ed., "Voice Browser Call Control: CCXML Version 1.0, W3C Working Draft", January 2005, <<http://www.w3.org/TR/2005/WD-ccxml-20050111/>>.
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- [RFC3986] Berners-Lee, T., Fielding, R., and L. Masinter, "Uniform Resource Identifier (URI): Generic Syntax", STD 66, RFC 3986, January 2005.
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- [XML] Bray, T., Paoli, J., Sperberg-McQueen, C., Maler, E., and F. Yergeau, "Extensible Markup Language (XML) 1.0 (Third Edition)", February 2004, <<http://www.w3.org/TR/2004/REC-xml-20040204/>>.

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