

Source: TSG-SA WG4

Title: CRs to TS 26.234 Corrections to Transparent end-to-end packet switched streaming service (PSS); Protocols and codecs (Release 4)

Document for: Approval

Agenda Item: 7.4.3

The following CRs, agreed at the TSG-SA WG4 meeting #18, are presented to TSG SA #13 for approval.

Spec	CR	Rev	Phase	Subject	Cat	Vers	WG	Meeting	S4 doc
26.234	001	1	REL-4	3GPP PSS4 SMIL Language Profile	F	4.0.0	S4	TSG-SA WG4#18	S4-010514
26.234	002		REL-4	Clarification of H.263 baseline settings	F	4.0.0	S4	TSG-SA WG4#18	S4-010487
26.234	003	2	REL-4	Updates to references	F	4.0.0	S4	TSG-SA WG4#18	S4-010540
26.234	004	1	REL-4	Corrections to Annex A	F	4.0.0	S4	TSG-SA WG4#18	S4-010526
26.234	005	1	REL-4	Clarifications to chapter 7	F	4.0.0	S4	TSG-SA WG4#18	S4-010527
26.234	006	1	REL-4	Clarification of the use of XHTML Basic	F	4.0.0	S4	TSG-SA WG4#18	S4-010521

CHANGE REQUEST

⌘ **26.234 CR 001** ⌘ ev **1** ⌘ Current version: **4.0.0** ⌘

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.

Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘ 3GPP PSS4 SMIL Language Profile		
Source:	⌘ TSG SA WG4		
Work item code:	⌘ PSTREAM	Date:	⌘ 24.09.2001
Category:	⌘ F Use <u>one</u> of the following categories: F (correction) A (corresponds to a correction in an earlier release) B (addition of feature), C (functional modification of feature) D (editorial modification) Detailed explanations of the above categories can be found in 3GPP TR 21.900.	Release:	⌘ REL-4 Use <u>one</u> of the following releases: 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) REL-4 (Release 4) REL-5 (Release 5)

Reason for change:	⌘ The submitters of this CR have reviewed the 3GPP PSS4 SMIL profile (chapter 8 of TS 26.234) after the Sophia Antipolis meeting (#16). We recommend putting the normative 3GPP PSS4 SMIL profile into more detail. The purpose is to more clearly define the use of SMIL where this is needed. We do <u>not</u> suggest any new functionality. SMIL 2.0 Basic is the minimal SMIL language profile. It is defined by referring to SMIL 2.0 Host Language Conformance requirements. To rightfully call itself SMIL a language must at least use the modules included in SMIL Basic. Definition of a SMIL module does not always fully define how to use the included elements and features. For instance, EventTiming module defines the mechanism for event processing but it does not specify any events. Events for EventTiming are defined only in the SMIL 2.0 Language profile. In SMIL 2.0, it is left to language profiles to define how exactly to use the elements, attributes, and their features. A language profile should also define rules how elements and attributes of different modules can be used in combination. Therefore, 3GPP should define its own 3GPP PSS4 SMIL language profile.
Summary of change:	⌘ In the following, we define a 3GPP PSS4 SMIL language that includes the SMIL 2.0 Basic modules and additional modules adopted by 3GPP for release 4 of its specification. The structure of this description is similar to the SMIL 2.0 Language profile (the full SMIL 2.0 profile). Reference to SMIL 2.0 Basic is made wherever possible to avoid any duplications of specification. Clarification on the inclusion of MediaAccessibility and MediaDescription modules into this 3GPP PSS4 SMIL Language Profile: The 'alt' attribute is considered very useful in PSS applications. The specification of SMIL in 26.234 was written with the assumption that the 'alt' attribute was included in SMIL 2.0 Basic Language Profile. However, in the meantime, during completion of the SMIL 2.0 Recommendation, the W3C SYMM group decided that this attribute is

not part of SMIL 2.0 Basic. To still have the 'alt' attribute included into the profile, this CR proposes to include the MediaAccessibility and MediaDescription modules into the 3GPP PSS4 Language Profile. The MediaAccessibility module is included because the MediaAccessibility module depends on it (i.e. MediaAccessibility can not be included without MediaDescription module).

Consequences if not approved:

⌘ The current specification 26.234 lacks relevant details on the use of SMIL to ensure that independelty developed implementations of a 3GPP PSS4 SMIL player will interoperate.

Clauses affected:

⌘ We suggest replacing the entirely chapter 8.2 of 3GPP TS 26.234 with the proposed next text. Slight changes should also be made to the introduction in clause 8.1 .

Other specs affected:

⌘ Other core specifications ⌘
 Test specifications
 O&M Specifications

Other comments:

⌘

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at: http://www.3gpp.org/3G_Specs/CRs.htm. Below is a brief summary:

- 1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under <ftp://ftp.3gpp.org/specs/> For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

8 Scene description

8.1 General

The 3GPP PSS use a subset of SMIL 2.0 [31] as format of the scene description. ~~This subset, or profile, is defined in this clause through the specification of the SMIL 2.0 modules that a minimal 3GPP PSS client shall support. PSS clients and servers with support for scene descriptions shall support the 3GPP PSS4 SMIL Language Profile defined in clause 8.2.~~ This profile is a subset of the SMIL 2.0 Language Profile, but a superset of the SMIL 2.0 Basic Language Profile. The present document also includes an informative Annex B that provides guidelines for SMIL content authors.

NOTE: The interpretation of this is not that all streaming sessions are required to use SMIL. For some types of sessions, e.g. consisting of one single continuous media or two media synchronised by using RTP timestamps, SMIL may not be needed.

8.2 3GPP PSS4 SMIL Language Profile

8.2.1 Introduction

3GPP PSS4 SMIL is a markup language based on SMIL Basic [31] and SMIL Scalability Framework.

3GPP PSS4 SMIL shall consist of the modules required by SMIL Basic Profile (and SMIL 2.0 Host Language Conformance) and additional MediaAccessibility, MediaDescription, MediaClipping, MetaInformation, PrefetchControl and EventTiming modules. All in all the following modules are included:

- SMIL 2.0 Content Control Modules – BasicContentControl, SkipContentControl and PrefetchControl
- SMIL 2.0 Layout Module -- BasicLayout
- SMIL 2.0 Linking Module -- BasicLinking
- SMIL 2.0 Media Object Modules – BasicMedia, MediaClipping, MediaAccessibility and MediaDescription
- SMIL 2.0 Metainformation Module -- Metainformation
- SMIL 2.0 Structure Module -- Structure
- SMIL 2.0 Timing and Synchronization Modules -- BasicInlineTiming, MinMaxTiming, BasicTimeContainers, RepeatTiming and EventTiming

8.2.2 Document Conformance

A conforming 3GPP PSS4 SMIL document shall be a conforming SMIL 2.0 document.

All 3GPP PSS4 SMIL documents use SMIL 2.0 namespace.

```
<smil xmlns="http://www.w3.org/2001/SMIL20/Language">
```

3GPP PSS4 SMIL documents may declare requirements using systemRequired attribute:

```
EXAMPLE 1: <smil xmlns="http://www.w3.org/2001/SMIL20/Language"
           xmlns:EventTiming="http://www.w3.org/2000/SMIL20/CR/EventTiming "
           systemRequired="EventTiming">
```

Namespace URI <http://www.3gpp.org/SMIL20/PSS4/> identifies the 3GPP PSS4 SMIL. Authors can use this URI to indicate requirement for exact 3GPP PSS4 SMIL semantics for a document or a subpart of a document:

EXAMPLE 2: `<smil xmlns="http://www.w3.org/2001/SMIL20/Language"
xmlns:pss4="http://www.3gpp.org/SMIL20/PSS4/"
systemRequired="pss4">`

The content authors generally should choose not to include the PSS requirement in the document unless the SMIL document relies on PSS specific semantics that are not part of the W3C SMIL. The reason for this is that SMIL players that are not conforming 3GPP PSS user agents may not recognize the PSS4 URI and thus refuse to play the document.

8.2.3 User Agent Conformance

A conforming 3GPP PSS4 SMIL user agent shall be a conforming SMIL Basic User Agent.

A conforming user agent shall implement the semantics of the language as described in this document.

A conforming user agent shall recognize the URIs of all included SMIL 2.0 modules. It shall also recognize URI <http://www.3gpp.org/SMIL20/PSS4/> as referring to all modules and semantics of 3GPP SMIL language.

8.2.4 3GPP SMIL Language Profile

3GPP PSS4 SMIL is based on SMIL 2.0 Basic language profile [31]. This chapter defines the content model and integration semantics of the included modules where they differ from those defined by SMIL Basic.

8.2.4.1 Content Control Modules

3GPP PSS4 SMIL shall include the content control functionality of the BasicContentControl, SkipContentControl and PrefetchControl modules of SMIL 2.0. PrefetchControl is not part of SMIL Basic and is an additional module in this profile.

All BasicContentControl attributes listed in the module specification shall be supported.

NOTE: The SMIL specification [31] defines that all functionality of PrefetchControl module is optional. This mean that even that PrefetchControl is mandatory user agents may implement semantics of PrefetchControl module only partially or not to implement them at all. PrefetchControl module adds the **prefetch** element to the content model of SMIL Basic **body**, **switch**, **par** and **seq** elements.

The **prefetch** element has the attributes defined by the PrefetchControl module (**mediaSize**, **mediaTime** and **bandwidth**), the **src** attribute, the BasicContentControl attributes and the **skip-content** attribute.

8.2.4.2 Layout Module

3GPP PSS4 SMIL shall use the BasicLayout module of SMIL 2.0 for spatial layout. The module is part of SMIL Basic.

Default values of the width and height attributes for root-layout shall be the dimensions of the device display area.

8.2.4.3 Linking Module

3GPP PSS4 SMIL shall use the SMIL 2.0 BasicLinking module for providing hyperlinks between documents and document fragments. This module is from SMIL Basic.

When linking to destinations outside the current document, implementations may ignore values "play" and "pause" of the 'sourcePlaystate' attribute and values "new" and "pause" of the 'show' attribute, instead using the semantics of values "stop" and "replace" respectively. When the values of 'sourcePlaystate' and 'show' are ignored the player may also ignore the 'sourceLevel' attribute since it is of no use then

8.2.4.4 Media Object Modules

3GPP PSS4 SMIL shall include the media elements from the SMIL 2.0 BasicMedia module and attributes from the MediaAccessibility, MediaDescription and MediaClipping modules. MediaAccessibility, MediaDescription and MediaClipping modules are additions in this profile to the SMIL Basic.

See clause 5.4 for what are the mandatory and optional MIME types a 3GPP PSS4 SMIL player needs to support.

MediaClipping module adds to the profile the ability to address sub-clips of continuous media. MediaClipping module adds 'clipBegin' and 'clipEnd' (and for compatibility 'clip-begin' and 'clip-end') attributes to all media elements.

MediaAccessibility module provides basic accessibility support for media elements. New attributes 'alt', 'longdesc' and 'readIndex' are added to all media elements by this module. MediaDescription module is included by the MediaAccessibility module and adds 'abstract', 'author' and 'copyright' attributes to media elements.

8.2.4.5 Metainformation Module

MetaInformation module of SMIL 2.0 shall be included to the profile. This module is addition in this profile to the SMIL Basic and provides a way to include descriptive information about the document content into the document.

This module adds **meta** and **metadata** elements to the content model of SMIL Basic **head** element.

8.2.4.6 Structure Module

The Structure module defines the top-level structure of the document. It's included by SMIL Basic.

8.2.4.7 Timing and Synchronization modules

The timing modules included in the 3GPP SMIL shall be BasicInlineTiming, MinMaxTiming, BasicTimeContainers, RepeatTiming and EventTiming. The EventTiming module is an addition in this profile to the SMIL Basic.

For 'begin' and 'end' attributes either single offset-value or single event-value shall be allowed. Offsets shall not be supported with event-values.

Event timing attributes that reference invalid IDs (for example elements that have been removed by the content control) shall be treated as being indefinite.

Supported event names and semantics shall be as defined by the SMIL 2.0 Language Profile. All user agents shall be able to raise the the following event types:

- activateEvent;
- beginEvent;
- endEvent.

Following SMIL 2.0 Language event types should be supported:

- focusInEvent;
- focusOutEvent;
- inBoundsEvent;
- outBoundsEvent;
- repeatEvent.

User agents shall ignore unknown event types and not treat them as errors.

Events do not bubble and shall be delivered to the associated media or timed elements only.

8.2.5 Content Model

This table shows the full content model and attributes of the 3GPP PSS4 SMIL profile. The attribute collections used are defined by SMIL Basic ([31], SMIL Host Language Conformance requirements, chapter 2.4). Changes to the SMIL Basic are shown in **bold**.

==

<u>Element</u>	<u>Elements</u>	<u>Attributes</u>
<u>smil</u>	<u>head, body</u>	<u>COMMON-ATTRS, CONTCTRL-ATTRS, xmlns</u>
<u>head</u>	<u>layout, switch, meta, metadata</u>	<u>COMMON-ATTRS</u>
<u>body</u>	<u>TIMING-ELMS, MEDIA-ELMS, switch, a, prefetch</u>	<u>COMMON-ATTRS</u>
<u>layout</u>	<u>root-layout, region</u>	<u>COMMON-ATTRS, CONTCTRL-ATTRS, type</u>
<u>root-layout</u>	<u>EMPTY</u>	<u>COMMON-ATTRS, backgroundColor, height, width, skip-content</u>
<u>region</u>	<u>EMPTY</u>	<u>COMMON-ATTRS, backgroundColor, bottom, fit, height, left, right, showBackground, top, width, z-index, skip-content, regionName</u>
<u>ref, animation, audio, img, video, text, textstream</u>	<u>area</u>	<u>COMMON-ATTRS, CONTCTRL-ATTRS, TIMING-ATTRS, repeat, region, MEDIA-ATTRS, clipBegin(clip-begin), clipEnd(clip-end), alt, longDesc, readIndex, abstract, author, copyright</u>
<u>a</u>	<u>MEDIA-ELMS</u>	<u>COMMON-ATTRS, LINKING-ATTRS</u>
<u>area</u>	<u>EMPTY</u>	<u>COMMON-ATTRS, LINKING-ATTRS, TIMING-ATTRS, repeat, shape, coords, nohref</u>
<u>par, seg</u>	<u>TIMING-ELMS, MEDIA-ELMS, switch, a, prefetch</u>	<u>COMMON-ATTRS, CONTCTRL-ATTRS, TIMING-ATTRS, repeat</u>
<u>switch</u>	<u>TIMING-ELMS, MEDIA-ELMS, layout, a, prefetch</u>	<u>COMMON-ATTRS, CONTCTRL-ATTRS</u>
<u>prefetch</u>	<u>EMPTY</u>	<u>COMMON-ATTRS, CONTCTRL-ATTRS, mediaSize, mediaTime, bandwidth, src, skip-content</u>
<u>meta</u>	<u>EMPTY</u>	<u>COMMON-ATTRS, content, name, skip-content</u>
<u>metadata</u>	<u>EMPTY</u>	<u>COMMON-ATTRS, skip-content</u>

8.2 PSS SMIL module collection

PSS clients and servers offering scene descriptions shall support the SMIL 2.0 Basic Language Profile plus the following SMIL 2.0 modules:

- ~~EventTiming;~~
- ~~MediaClipping;~~
- ~~MetaInformation.~~

The modules in the SMIL 2.0 Basic Language Profile plus the three additional modules mentioned above constitute the PSS SMIL module collection. SMIL requires that a module collection have a unique namespace URI identifier. The namespace URI identifier for the PSS SMIL module collection shall be <http://www.3gpp.org/SMIL20/PSS4/>.

In addition to the modules specified above, a PSS client should support the PrefetchControl module. This module is optional.

NOTE:— The SMIL 2.0 Basic Language Profile is equal to the SMIL 2.0 Host Language Conformance subset of SMIL 2.0 and consists of the modules Structure, BasicContentControl, BasicInlineTiming, BasicLayout, BasicLinking, BasicMedia, BasicTimeContainers, MinMaxTiming, RepeatTiming and SkipContentControl.

CHANGE REQUEST

⌘ **26.234 CR 002** ⌘ rev ⌘ Current version: **4.0.0** ⌘

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.

Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘ Clarification of H.263 baseline settings		
Source:	⌘ TSG SA WG4		
Work item code:	⌘ PSTREAM	Date:	⌘ 24-Sep-2001
Category:	⌘ F	Release:	⌘ REL-4
	Use <u>one</u> of the following categories: F (correction) A (corresponds to a correction in an earlier release) B (Addition of feature), C (Functional modification of feature) D (Editorial modification)		Use <u>one</u> of the following releases: 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) REL-4 (Release 4) REL-5 (Release 5)
	Detailed explanations of the above categories can be found in 3GPP TR 21.900.		

Reason for change:	⌘ PSS uses SDP to describe the parameter settings of the encoded data. H.263 baseline specifies the functionalities and the coding on bit-level, however the setting of the paramters, such as image size or maximum frame rate, are covered by the overall system standard. PSS does not specify particular parameters that are mandatory. In H.263 Annex X particular parameters are defined by a specific level. This implies that the following parameters are mandatory to be supported: <ul style="list-style-type: none"> • QCIF • Max. 15fps • Upto 64 kbit/s Therefore we propose to change the wording H.263 base-line to H.263 profile 0 level 10.
Summary of change:	⌘
Consequences if not approved:	⌘ Potential interoperability malfunctions of user equipment

Clauses affected:	⌘		
Other specs affected:	<input type="checkbox"/> Other core specifications <input type="checkbox"/> Test specifications <input type="checkbox"/> O&M Specifications	⌘	
Other comments:	⌘		

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at: http://www.3gpp.org/3G_Specs/CRs.htm. Below is a brief summary:

- 1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under <ftp://www.3gpp.org/specs/>. For the latest version, look for the directory name with the latest date e.g. 2000-09 contains the specifications resulting from the September 2000 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

7.4 Video

ITU-T H.263 baseline profile 0 level 10 [22, 23] shall be supported. This is the mandatory video codec for the PSS. In addition, PSS should support

- H.263 Profile 3 Level 10, [23];
- MPEG-4 Visual Simple Profile Level 0, [24] and [25].

These two video codecs are optional to implement.

NOTE: ITU-T H.263 baseline has been mandated to ensure that video-enabled PSS support a minimum baseline video capability and interoperability can be guaranteed (an H.263 baseline bitstream can be decoded by both H.263 and MPEG-4 decoders). It also provides a simple upgrade path for mandating more advanced codecs in the future (from both the ITU-T and ISO MPEG).

CR-Form-v4

CHANGE REQUEST

⌘ **26.234 CR 003** ⌘ ev **2** ⌘ Current version: **4.0.0** ⌘

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.

Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘ Updates to references		
Source:	⌘ TSG SA WG4		
Work item code:	⌘ PSTREAM	Date:	⌘ 24-September-2001
Category:	⌘ F	Release:	⌘ REL-4
	Use <u>one</u> of the following categories:		Use <u>one</u> of the following releases:
	F (correction)		2 (GSM Phase 2)
	A (corresponds to a correction in an earlier release)		R96 (Release 1996)
	B (addition of feature),		R97 (Release 1997)
	C (functional modification of feature)		R98 (Release 1998)
	D (editorial modification)		R99 (Release 1999)
	Detailed explanations of the above categories can be found in 3GPP TR 21.900 .		REL-4 (Release 4)
			REL-5 (Release 5)

Reason for change:	⌘ An updated version of one reference has become available. References within the document are incorrect.
Summary of change:	⌘
Consequences if not approved:	⌘ The TS would contain incorrect references

Clauses affected:	⌘ 2, 5.4 and 7.3		
Other specs affected:	⌘ <input type="checkbox"/> Other core specifications	⌘	
	<input type="checkbox"/> Test specifications		
	<input type="checkbox"/> O&M Specifications		
Other comments:	⌘		

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at: http://www.3gpp.org/3G_Specs/CRs.htm. Below is a brief summary:

- 1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under [ftp://ftp.3gpp.org/specs/](http://ftp.3gpp.org/specs/). For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document*.

This specification may contain references to pre-Release-4 GSM specifications. These references shall be taken to refer to the Release 4 version where that version exists. Conversion from the pre-Release-4 number to the Release 4 (onwards) number is given in clause 6.1 of 3GPP TR 41.001[1].

- [1] 3GPP TR 41.001: "GSM Specification set".
- [2] 3GPP TS 26.233: "End-to-end transparent streaming service; General description".
- [3] 3GPP TR 21.905: "3G Vocabulary".
- [4] IETF RFC 1738: "Uniform Resource Locators (URL)", Berners-Lee, Masinter & McCahill, December 1994.
- [5] IETF RFC 2326: "Real Time Streaming Protocol (RTSP)", Schulzrinne H., Rao A. and Lanphier R., April 1998.
- [6] IETF RFC 2327: "SDP: Session Description Protocol", Handley M. and Jacobson V., April 1998.
- [7] IETF STD 0006: "User Datagram Protocol", Postel J., August 1980.
- [8] IETF STD 0007: "Transmission Control Protocol", Postel J., September 1981.
- [9] IETF RFC 1889: "RTP: A Transport Protocol for Real-Time Applications", Schulzrinne H. et al., January 1996.
- [10] IETF RFC 1890: "RTP Profile for Audio and Video Conferences with Minimal Control", Schulzrinne H. et al., January 1996.
- [11] 3GPP TS 26.235: "Packet Switched Conversational Multimedia Applications; Default Codecs; Annex D: RTP payload format for AMR".
- [12] 3GPP TS 26.235: "Packet switched conversational multimedia applications; Default codecs; Annex B: AMR-WB RTP payload and MIME type registration".
- [13] IETF RFC 3016: "RTP Payload Format for MPEG-4 Audio/Visual Streams", Kikuchi Y. et al., November 2000.
- [14] IETF RFC 2429: "RTP Payload Format for the 1998 Version of ITU-T Rec. H.263 Video (H.263+)", Bormann C. et al., October 1998.
- [15] IETF RFC 2046: "Multipurpose Internet Mail Extensions (MIME) Part Two: Media Types", N. Freed, N. Borenstein, November 1996.
- [16] IETF RFC 3023: "XML Media Types", Murata, M., St.Laurent, S., Kohn, D., January 2001.
- [17] IETF RFC 2616: "Hypertext Transfer Protocol - HTTP/1.1", Fielding R. et al., June 1999.
- [18] 3GPP TS 26.071: "Mandatory Speech Codec speech processing functions; AMR Speech Codec; General description".

- [19] 3GPP TS 26.101: "Mandatory Speech Codec speech processing functions; AMR Speech Codec; Frame Structure".
- [20] 3GPP TS 26.171: "AMR speech codec, wideband; General description".
- [21] ISO/IEC 14496-3 (1999): "Information technology - Coding of audio-visual objects - Part 3: Audio".
- [22] ITU-T Recommendation H.263: "Video coding for low bit rate communication".
- [23] ITU-T Recommendation H.263 (annex X): "Annex X, Profiles and levels definition".
- [24] ISO/IEC 14496-2 (1999): "Information technology - Coding of audio-visual objects - Part 2: Visual".
- [25] ISO/IEC 14496-2:1999/FDAM4, ISO/IEC JTC1/SC 29/WG11 N3904, Pisa, January, 2001
- [26] ITU-T Recommendation T.81 (1991) | ISO/IEC 10918-1 (1992): "Information technology - Digital compression and coding of continuous-tone still images - Requirements and guidelines.
- [27] "JPEG File Interchange Format", Version 1.02, September 1, 1992.
- [28] W3C Recommendation: "XHTML Basic", <http://www.w3.org/TR/2000/REC-xhtml-basic-20001219>, December 2000
- [29] ISO/IEC 10646-1 (2000): "Information technology - Universal Multiple-Octet Coded Character Set (UCS) - Part 1: Architecture and Basic Multilingual Plane".
- [30] The Unicode Consortium: "The Unicode Standard", Version 3.0 Reading, MA, Addison-Wesley Developers Press, 2000, ISBN 0-201-61633-5.
- [31] [W3C Recommendation: "Synchronized Multimedia Integration Language \(SMIL 2.0\)", http://www.w3.org/TR/2001/REC-smil20-20010807/, August 2001](http://www.w3.org/TR/2001/REC-smil20-20010807/)
[_W3C Working Draft Recommendation: "Synchronised Multimedia Integration Language \(SMIL 2.0\) Specification", http://www.w3.org/TR/2001/WD-smil20-20010301/](http://www.w3.org/TR/2001/WD-smil20-20010301/)
- [32] CompuServe Incorporated: "GIF Graphics Interchange Format: A Standard defining a mechanism for the storage and transmission of raster-based graphics information", Columbus, OH, USA, 1987.
- [33] CompuServe Incorporated: "Graphics Interchange Format: Version 89a", Columbus, OH, USA, 1990.
- [34] ISO/IEC 14496-1 (2000): "Information technology - Coding of audio-visual objects - Part 1: Systems".
- [35] 3GPP TS 23.140: "Multimedia Messaging Service (MMS), Functional description stage 2/3".

5.4 MIME media types

MIME media types for JPEG, GIF and XHTML can be used both in the "Content-type" field in HTTP and in the "type" attribute in SMIL 2.0. The following MIME media types shall be used for these media:

- JPEG (see clause 7.56) MIME media type as defined in [15];
- GIF (see clause 7.67) MIME media type as defined in [15];

- XHTML (see clause 7.8) MIME media type as defined in annex C clause C.2 of the present document.

MIME media type used for SMIL files shall be according to [31] and for SDP files according to [6].

7.3 Audio

MPEG-4 AAC Low Complexity object type [21] should be supported. The maximum sampling rate to be supported by the decoder is 48 kHz. The channel configurations to be supported are mono (1/0) and stereo (2/0). In addition, the MPEG-4 AAC Long Term Prediction object type may be supported.

CR-Form-v4

CHANGE REQUEST

⌘ **26.234 CR 004** ⌘ ev **1** ⌘ Current version: **4.0.0** ⌘

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.

Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘ Corrections to Annex A		
Source:	⌘ TSG SA WG4		
Work item code:	⌘ PSTREAM	Date:	⌘ 24-September-2001
Category:	⌘ F	Release:	⌘ REL-4
	<i>Use <u>one</u> of the following categories:</i> F (correction) A (corresponds to a correction in an earlier release) B (addition of feature), C (functional modification of feature) D (editorial modification) Detailed explanations of the above categories can be found in 3GPP TR 21.900 .		<i>Use <u>one</u> of the following releases:</i> 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) REL-4 (Release 4) REL-5 (Release 5)

Reason for change:	⌘ The information in Annex A concerning the required support for the SDP attribute "c=" is incorrect.
Summary of change:	⌘
Consequences if not approved:	⌘ The information in Annex A would differ from the RFC 2327 about SDP.

Clauses affected:	⌘ A.1 and A.2		
Other specs affected:	<input type="checkbox"/> Other core specifications <input type="checkbox"/> Test specifications <input type="checkbox"/> O&M Specifications	⌘	
Other comments:	⌘		

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at: http://www.3gpp.org/3G_Specs/CRs.htm. Below is a brief summary:

- 1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under [ftp://ftp.3gpp.org/specs/](http://ftp.3gpp.org/specs/). For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

Error! No text of specified style in document.

2

Error! No text of specified style in document.

Annex A (informative): Protocols

A.1 SDP

This clause gives some background information on SDP.

Table A.1 provides an overview of the different SDP fields that can be identified in a SDP file.

Table A.1: Overview of fields in SDP

Type	Description		Requirement according to [Error! Bookmark not defined.]	Requirement according to the present document
Session Description				
V	Protocol version		R	R
O	Owner/creator and session identifier		R	R
S	Session Name		R	R
I	Session information		O	O
U	URI of description		O	O
E	Email address		O	O
P	Phone number		O	O
C	Connection Information		R O	R O
B	Bandwidth information	AS	O	R
Z	Time zone adjustments		O	O
K	Encryption key		O	O
A	Session attributes	control	O	R
		range	O	R
Time Description				
T	Time the session is active		R	R
R	Repeat times		O	O
Media Description				
M	Media name and transport address		R	R
I	Media title		O	O
C	Connection information		R O	R O
B	Bandwidth information	AS	O	R
K	Encryption Key		O	O
A	Attribute Lines	control	O	R
		range	O	R
		fntp	O	R
		rtpmap	O	R
Note 1: R = Required, O = Optional Note 2: The "c" type is only required on the session level if not present on the media level. Note 3: The "c" type is only required on the media level if not present on the session level.				

The example below shows an SDP file that could be sent to a PSS client to initiate unicast streaming of a H.263 video sequence.

EXAMPLE: v=0
 o=ghost 2890844526 2890842807 IN IP4 192.168.10.10
 s=3GPP Unicast SDP Example
 i=Example of Unicast SDP file
 u=http://www.infoserver.com/ae600
 e=ghost@mailserver.com
 c=IN IP4 192.168.30.29
 a=range:npt=0-45.678
 b=AS:128
 t=0 0
 m=video 1024 RTP/AVP 96
 a=rtpmap:96 H263-2000/90000
 a=fmtp:96 profile=3;level=10
 a=control:rtsp://mediaserver.com/movie
 a=recvonly
 b=AS:128

A.2 RTSP

The example below is intended to give some more understanding of how RTSP and SDP are used within the 3GPP PSS. The example assumes that the streaming client has the RTSP URL to a presentation consisting of an H.263 video sequence and AMR speech. RTSP messages sent from the client to the server are in **bold** and messages from the server to the client in *italic*. In the example the server provides aggregate control of the two streams.

EXAMPLE:

DESCRIBE rtsp://mediaserver.com/movie.test RTSP/1.0
CSeq: 1

RTSP/1.0 200 OK
CSeq: 1
Content-Type: application/sdp
Content-Length: 203

v=0
 o=- 950814089 950814089 IN IP4 144.132.134.67
 s=Example of aggregate control of AMR speech and H.263 video
 c=*IN IP4 192.168.30.29*
 a=range:npt=0-59.3478
 a=control:*

b=AS:77
 t=0 0
 m=audio 0 RTP/AVP 97
 a=rtpmap:97 AMR/8000
 a=fmtp:97 mode-set=0,2,5,7; maxframes=1
 a=control:streamID=0
 b=AS:13
 m=video 0 RTP/AVP 98
 a=rtpmap:98 H263-2000/90000
 a=fmtp:98 profile=3;level=10
 a=control: streamID=1
 b=AS:64

SETUP rtsp://mediaserver.com/movie.test/streamID=0 RTSP/1.0
CSeq: 2
Transport: RTP/AVP/UDP;unicast;client_port=3456-3457

RTSP/1.0 200 OK
CSeq: 2
Transport: RTP/AVP/UDP;unicast;client_port=3456-3457; server_port=5678-5679
Session: dfhyrio90llk

SETUP rtsp://mediaserver.com/movie.test/streamID=1 RTSP/1.0
CSeq: 3
Transport: RTP/AVP/UDP;unicast;client_port=3458-3459
Session: dfhyrio90llk

RTSP/1.0 200 OK
CSeq: 3
Transport: RTP/AVP/UDP;unicast;client_port=3458-3459; server_port=5680-5681
Session: dfhyrio90llk

PLAY rtsp://mediaserver.com/movie.test RTSP/1.0
CSeq: 4
Session: dfhyrio90llk

RTSP/1.0 200 OK
CSeq: 4
Session: dfhyrio90llk
Range: npt=0-
RTP-Info: url= rtsp://mediaserver.com/movie.test/streamID=0; seq=9900093;rtptime=4470048,
url= rtsp://mediaserver.com/movie.test/streamID=1; seq=1004096;rtptime=1070549

The user watches the movie for 20 seconds and then decides to fast forward to 10 seconds before the end...

PAUSE rtsp://mediaserver.com/movie.test RTSP/1.0
CSeq: 5
Session: dfhyrio90llk

PLAY rtsp://mediaserver.com/movie.test RTSP/1.0
CSeq: 6
Range: npt=50-59.3478
Session: dfhyrio90llk

RTSP/1.0 200 OK
CSeq: 5
Session: dfhyrio90llk

RTSP/1.0 200 OK
CSeq: 6
Session: dfhyrio90llk
Range: npt=50-59.3478
RTP-Info: url= rtsp://mediaserver.com/movie.test/streamID=0;
seq=39900043;rtptime=44470648, url= rtsp://mediaserver.com/movie.test/streamID=1;
seq=31004046;rtptime=41090349

After the movie is over the client issues a TEARDOWN to end the session...

TEARDOWN rtsp://mediaserver.com/movie.test RTSP/1.0
CSeq: 7
Session: dfhyrio90llk

RTSP/1.0 200 OK
Cseq: 7
Session: dfhyrio90llk
Connection: close

7.8 Text

The text codec is intended to enable formatted text in a SMIL presentation. A PSS client shall support

- text formatted according to XHTML Basic [Error! Bookmark not defined.];
- rendering a SMIL presentation where text is referenced with the SMIL 2.0 "text" element together with the SMIL 2.0 "src" attribute.

~~Text shall be formatted according to XHTML Basic [28], [29] and [30].~~

The following character encoding shall be supported:

- UTF-8, [Error! Bookmark not defined.];
- UCS-2, [Error! Bookmark not defined.].

NOTE: Since both SMIL and XHTML are XML based languages it would be possible to define a SMIL plus XHTML profile. In contrast to the present defined PSS4 SMIL Language Profile that only contain SMIL modules, such a profile would also contain XHTML modules. No combined SMIL and XHTML profile is specified for PSS. Rendering of such documents is out of the scope of the present document.

CR-Form-v4

CHANGE REQUEST

⌘ **TS 26.234 CR 006** ⌘ ev **1** ⌘ Current version: **4.0.0** ⌘

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.

Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘ Clarification of the use of XHTML Basic		
Source:	⌘ TSG SA WG4		
Work item code:	⌘ PSTREAM	Date:	⌘ 24 Sep, 2001
Category:	⌘ F	Release:	⌘ REL-4
	<i>Use one of the following categories:</i> F (correction) A (corresponds to a correction in an earlier release) B (addition of feature), C (functional modification of feature) D (editorial modification) Detailed explanations of the above categories can be found in 3GPP TR 21.900.		<i>Use one of the following releases:</i> 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) REL-4 (Release 4) REL-5 (Release 5)

Reason for change:	⌘ Correction is necessary to avoid ambiguity.		
Summary of change:	⌘ A new clause is added to the authoring guidelines. The clause informs: (1) If XHTML Basic is used as text media, images are not encouraged to be included in an XHTML Basic text; (2) The images should be included by means of SMIL.		
Consequences if not approved:	⌘ It could cause an interoperability problem. Potentially it is interpreted that images are referred in an XHTML Basic document even when the document is used as text media.		

Clauses affected:	⌘ B.7		
Other specs affected:	<input type="checkbox"/> Other core specifications <input type="checkbox"/> Test specifications <input type="checkbox"/> O&M Specifications	⌘	
Other comments:	⌘		

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at: http://www.3gpp.org/3G_Specs/CRs.htm. Below is a brief summary:

- 1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under <ftp://ftp.3gpp.org/specs/>. For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

B.6 XML entities

Entities are a mechanism to insert XML fragments inside an XML document. Entities can be internal, essentially a macro expansion, or external. Use of XML entities in SMIL presentations is not recommended, as many current XML parsers do not fully support them.

B.7 XHTML Basic

When rendering texts in a SMIL presentation, authors are able to use XHTML Basic that contains eleven modules. However, some of the modules include non-text information. When referring to an XHTML Basic document from a SMIL document, authors should use only *the required XHTML Host Language modules* : Structure Module, Text Module, Hypertext Module and List Module. The use of the Image Module, in particular, should not be used. Images and other non-text contents should be included in the SMIL document.

Note: An XHTML file Including a module which is not part of the XHTML Host Language modules may not be shown as intended.