Technical Specification Group Services and System Aspects
Meeting #21, Frankfurt, Germany, 22-25 September 2003

TSGS#21(03)0466

Source: **SA1**

Title: **Assorted CRs to 22.233 on Packet-switched streaming service (Rel-6)**

Document for: **Approval**

Agenda Item: **7.1.3**

Meeting	SA Doc	TS No.	CR No	Rev	Rel	Cat	Subject	Vers. Current	Vers New	SA1 Doc
SP-21	SP-030466	22.233	011	-	Rel-6	C	Removal of content cache information in PSS architecture	6.2.0	6.3.0	S1-030962
SP-21	SP-030466	22.233	012	-	Rel-6	C	Reliable delivery mechanism	6.2.0	6.3.0	S1-030963

CR-Form-v7

CHANGE REQUEST

⌘ **22.233** **CR** **011** ⌘ **rev** **-** ⌘ Current version: **6.2.0** ⌘

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

Proposed change affects: UICC apps⌘ ☐ ME ☐ Radio Access Network ☐ Core Network **X**

Title:	⌘	Removal of content cache information in PSS architecture
Source:	⌘	Ericsson
Work item code:	⌘	PSS
Date:	⌘	24/06/2003
Category:	⌘	**C**
Release:	⌘	Rel-6

Use one 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.

Use one 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)*
Rel-6	*(Release 6)*

Reason for change:	⌘	Not possible for SA4 to realise the architectural change from introducing content cache as 3GPP network elements within Rel 6 time frame
Summary of change:	⌘	Remove information on content cache from entities involved in streaming.
Consequences if not approved:	⌘	PSS Rel 6 jeopardized.

Clauses affected:	⌘	4

		Y	N		
Other specs affected:	⌘		X	Other core specifications	⌘
			X	Test specifications	
			X	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/specs/CR.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.

4 Entities involved in Streaming service

The figure shows the basic entities involved in the Streaming service and how they connect.

Clients initiate the service and connect to the selected content server. Content servers can generate live content e.g. video from a concert. User profile and terminal capability data can be stored on a network server and will be contacted at the initial set up. User Profile will provide the Streaming service with the user's preferences. Terminal capabilities will be used by the Streaming service to decide whether or not the client is capable of receiving the streamed content.

Portals are servers allowing convenient access to streamed media content. For instance, a portal might offer content browse and search facilities. In the simplest case, it is simply a Web/WAP-page with a list of links to streaming content. The content itself is usually stored on content servers ~~(or content caches)~~, which can be located elsewhere in the network. ~~Content Cache located at the edge of the Internet close to clients can be used. It can enable transmission optimisation by caching content from content servers.~~

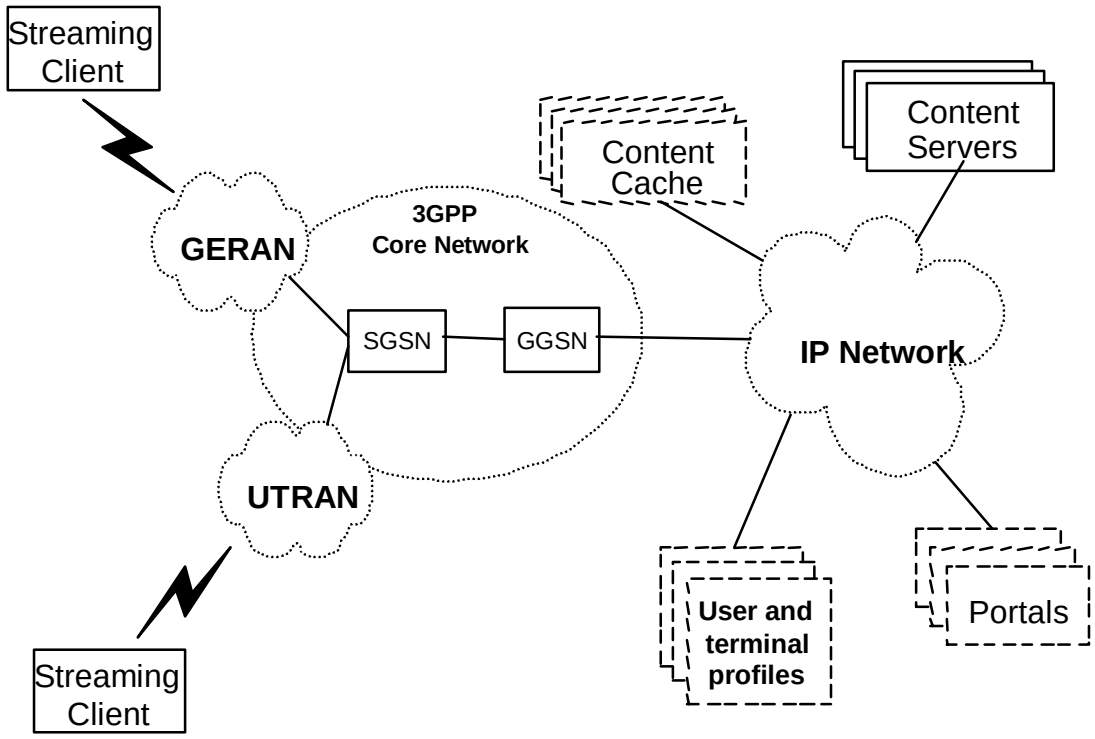

Figure: Network elements involved in a 3G packet switched streaming service

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CR-Form-v7

CHANGE REQUEST

⌘ **22.233** **CR** **012** ⌘ **rev** **-** ⌘ Current version: **6.2.0** ⌘

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

Proposed change affects: UICC apps⌘ [X] ME [X] Radio Access Network [X] Core Network [X]

Title:	⌘	Reliable delivery mechanism
Source:	⌘	Ericsson
Work item code:	⌘	PSS
Date:	⌘	24/06/2003
Category:	⌘	**C**
Release:	⌘	Rel-6

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
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R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*

Reason for change:	⌘	To clarify requirement on reliable delivery mechanism.
Summary of change:	⌘	Clarification that reliable delivery of live content is not included in Rel 6 PSS requirements.
Consequences if not approved:	⌘	SA4 will not have enough information to progress on a solution for the requirements on reliable delivery mechanism.

Clauses affected:	⌘	5.4			
Other specs affected:	⌘	**Y** / **N**		⌘	SA4 to advise
		X /	Other core specifications		
		/ X	Test specifications		
		/ X	O&M Specifications		
Other comments:	⌘				

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5.4 Transport

- The PSS transport shall be provided by the PS Domain.
- Quality of Service (e.g. time delay) requirements shall be in accordance with requirements in 22.105 (ref. 3)
- The PSS should be able to work over different QoS bearers.
- The PSS shall provide a mechanism whereby the client is sent a list of media encoding bit rates and the client determines which one to use based on the network service bearers offered and the user preferences.
- The PSS client shall be capable of requesting an appropriate level of QoS for the session. The QoS supplied may be limited by the local operator's access policy and/or network functionality.
- The PSS should provide mechanisms for streaming servers and clients to adapt to the network conditions in order to achieve significant improvement in the quality of streaming, e.g. using information on end-to-end transport quality from the network.
- The PSS should provide a reliable delivery mechanism that enables the user to receive the content without any errors due to the transport mechanism, i.e. a delivery mechanism without bit errors or packet loss. Such mechanism should support the following features :

  - The rendering of -video content without any transport degradation : the content is downloaded without any errors, it assures that the subscribers see the content that has been designed by the content creators.

Note: User expectation of live video is related to the fact that it is delivered without interruptions or long delays. As such, reliable delivery mechanism is not considered for rendering of live video content (under poor conditions it might even be difficult to achieve).

  - The rendering of the content should start before the transfer is complete.
  - A broken session should be restarted efficiently without going back to the beginning : the PSS client is able to detect what content is missing and to ask the server to send this content.

Note: In addition to the regular PSS transport mechanism it is possible to use download transport mechanisms in the following way: Audiovisual data encapsulated in a file is transmitted from the server to the client. The user is able to play the content during the file download, giving a similar look and feel to the regular PSS transport mechanism.