TSG-SA WG1 #26 **S1-040963**
Sophia Antipolis, France, 11th to 15th October **Agenda Item:**

CR-Form-v7

CHANGE REQUEST

⌘ **22.242** **CR** **003** ⌘ **rev** **2** ⌘ 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 ☐

Title:	⌘	Removing text in DRM stage 1 specification and reference OMA RD
Source:	⌘	SA1
Work item code:	⌘	DRM ***Date:*** ⌘ 15/12/2004
Category:	⌘	**F** ***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:	⌘	Agreement between 3GPP and OMA that OMA does the DRM work, action point on SA1 from SA#25 to remove text in stage 1 DRM specification and reference OMA requirements description.
Summary of change:	⌘	Removal of whole 3GPP DRM stage 1 text and reference to OMA DRM RD.
Consequences if not approved:	⌘	Not fulfilling action point from SA.

Clauses affected:	⌘	All clauses removed.

		Y	N		
Other specs affected:	⌘		X	Other core specifications	⌘
			X	Test specifications	
			X	O&M Specifications	

Other comments: ⌘

3GPP TS 22.242 V6.2.0 (2003-03)

Technical Specification

3rd Generation Partnership Project;
Technical Specification Group Services and System Aspects;
Digital Rights Management (DRM);
Stage 1
(Release 6)

Keywords
UMTS, service, DRM

3GPP

Postal address

3GPP support office address
650 Route des Lucioles - Sophia Antipolis
Valbonne - FRANCE
Tel.: +33 4 92 94 42 00 Fax: +33 4 93 65 47 16

Internet
http://www.3gpp.org

Contents

Foreword

This Technical Specification has been produced by the 3rd Generation Partnership Project (3GPP).

The contents of the present document are subject to continuing work within the TSG and may change following formal TSG approval. Should the TSG modify the contents of the present document, it will be re-released by the TSG with an identifying change of release date and an increase in version number as follows:

Version x.y.z

where:

- x the first digit:
  - 1 presented to TSG for information;
  - 2 presented to TSG for approval;
  - 3 or greater indicates TSG approved document under change control.
- y the second digit is incremented for all changes of substance, i.e. technical enhancements, corrections, updates, etc.
- z the third digit is incremented when editorial only changes have been incorporated in the document.

~~Introduction~~

~~Historically, content such as books, music, games, and videos have been delivered on paper, magnetic tape, and disks. The technology required to digitally copy and redistribute this content on a large scale prohibited the secondary market from having much affect on revenues from content sales. With large decreases in the cost of technology, e.g. storage space and recordable digital media, and greater Internet bandwidth, services like Napster and Gnutella have sprung up to allow massive redistribution of music and similar content. At the same time, the absence of protection of rights associated with this kind of content in the digital environment has so far prevented the use of Internet as a distribution channel for valuable content.~~

~~With the advent of faster wireless networks and increasingly capable user equipment, the mobile environment will soon become another avenue for distributing valuable content. This will require taking steps to establish a model for protecting the rights of the content providers when distributing digital content in the mobile environment.~~

~~This specification defines the requirements for the support of digital rights management in the wireless network. The use cases defined in section 11 should be taken into account when defining a secure, consumer-friendly rights management system.~~

1 ~~Scope~~Void

~~This TS defines the stage one description for digital rights management. Stage one is the set of requirements that shall be supported to enable digital rights management, from content packaging to secure storage and rendering.~~

~~This TS includes requirements applicable to the content authors and providers, UE and network manufacturers, which are sufficient to provide complete support of digital rights management.~~

~~Additional functionalities not documented in this TS are considered outside the scope of this TS. Such additional functionality may be on a network-wide basis, nation-wide basis or particular to a group of users. Such additional functionality shall not compromise conformance to the requirements of the rights management system defined in this specification.~~

~~Note: Stage 2 and Stage 3 requirements shall be adopted from the corresponding DRM specifications by OMA (Open Mobile Alliance).~~

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*.

~~[1] 3GPP TR 21.905: 3rd Generation Partnership Project; Technical Specification Group Services and System Aspects; Vocabulary for 3GPP Specifications~~

[1] OMA-RD-DRM " OMA DRM Requirements" (Open Mobile Alliance) [Available at http://www.openmobilealliance.org/release_program/index.html]

3 ~~Definitions, symbols and abbreviations~~Void

~~3.1 Definitions~~

~~**Consumer**~~

~~User granted the right to access content.~~

Content

An image, a piece of music or a video, a book, an article, a game, an executable program or similar. Content may be delivered on its own (e.g. download or streaming of music), as part of some message (e.g. an image or music in an MMS or Email message), as part of some web content (e.g. an image in a web page), and so on. Content becomes DRM content once injected into the DRM system and governed by corresponding rights.

Content Provider

An entity (e.g. a web server or a carrier portal) that provides content to consumers. The content provider may itself be a rights holder, or may provide content on behalf of or with permission from a rights holder, and may at the same time assume the role of a rights issuer.

DRM System

The collection of entities participating in producing and specifying DRM content and rights, and in upholding and enforcing the consumption of DRM content according to the rights, e.g., UEs, content providers.

DRM Content

Content that is subject to protection by the DRM system and that can only be rendered according to corresponding rights governing the DRM content.

Render

To provide a visual or audio representation of content, execute content, etc.

Rights Holder

An entity owning the intellectual property rights (e.g. copyright) to content.

Rights Issuer

An entity issuing rights specifying the usage of DRM content. The rights issuer may be a content provider and/or rights holder.

Super distribution

Redistribution of DRM content from a UE to one or more secondary recipients. Secondary recipients may, for example, receive a free sample as defined by the usage rights (which might be limited), or purchase new rights to render the content.

Trust

Trust is used to denote the confidence between entities in the DRM system to correctly specify and produce DRM content and rights, and to uphold and enforce the consumption of DRM content according to the rights.

Usage Rights

Usage rights describe how DRM content may be used, including permissions (e.g. play, view, execute), constraints (e.g. ten times, for one month), etc.

3.2 Abbreviations

For the purposes of this document the following abbreviations apply:

3G Third Generation Mobile Communications Technology
DRM Digital Rights Management
EMS Enhanced Messaging Service
HTTP Hyper Text Transfer Protocol
MMS Multimedia Messaging Service
SMS Short Messaging Service

UE User Equipment

4 Digital Rights Management Model

The text in this specification has been removed. DRM specifications are elaborated in the Open Mobile Alliance (OMA) according to an agreement between 3GPP and OMA.

For DRM Service and System Aspects OMA-RD-DRM is referenced [1].

The following model that describes digital rights management (DRM) is not definitive, and no implementation model or architecture is implied or required by it. It is provided, however, to describe the functions and roles that shall be provided by the entities involved in providing the DRM solution.

DRM capabilities are required for content such as, but not limited to, ringtones, games, books, music, and video. The purpose of digital rights management is to provide an end-to-end solution, i.e. between a content provider and a UE, ensuring that rights associated with content are enforced, thus limiting illegal access.

The complexity of any DRM solution clearly will have a direct relationship with the value of the content being protected; the higher the value of the content, the higher the means which can be justified to protect it. It can be expected that 3G terminals will be able to render both ìlow valueî and ìhigh valueî content. The definition of what value to associate with which type of content, however, is a decision to be made by the content provider and is therefore out of the scope of standardization. Nevertheless, it shall be ensured that any standardized DRM solution is flexible enough to cater for the different values content may have.

At least the following classes of DRM shall be defined by the DRM specification:

- DRM Class 1: ìForward Lockî
- ìForward lockî DRM shall encompass some means for preventing the onward distribution of DRM content. The focus shall be on simplicity and ease of deployment rather than on strong security; e.g. it may be assumed that the UE provides a trusted environment. Requirements for class 1 DRM are listed in chapters 5, 9 and 10.
- DRM Class 2: ìComprehensive DRMî
- ìComprehensive DRMî shall encompass strong trust models, strong protection of contents and rights, allowing secure distribution and management of DRM content and rights in an open environment. The focus shall be on comprehensive rights expression, and comprehensive security models. Requirements for class 2 DRM are listed in chapters 6 through 10.

Digital rights management is not a single entity or functionality. Rather, it involves a number of different components, such as:

- Specification of usage rights.
- Usage rights express what a UE may or may not do with DRM content. Rights include permissions (e.g. play, view), constraints (e.g. ten times, for one month) and so on. Usage rights are always managed end-to-end ñ they are defined by the rights issuer (on behalf of rights holder) and enforced by the UE.
- Content protection
- A DRM solution should provide some means for protecting content, (e.g. encryption).
- Trust relationships
- A DRM solution should provide some means for ensuring the establishment of a trusted relationship between the UE and the content provider. This includes the trust of a content provider or rights issuer put in a UE to uphold and enforce usage rights for DRM content, and the trust of a UE put in a content provider or rights issuer that DRM content and rights have been correctly and legitimately generated.

In order to ensure a reasonable pace in the standardization of DRM, existing standards for mobile environment and for the individual DRM components should be re-used as far as possible and feasible. Further, to maximize interoperability, and to reduce terminal complexity, there should be one standardized solution for a rights description language, one

solution for content protection and one solution for trust relationships as part of the 3GPP DRM specification. Options should be avoided as far as possible.

On the other hand, it needs to be acknowledged that DRM component solutions will evolve over time, and content providers may wish to deploy more advanced solutions in the future, e.g. more advanced and robust cryptographic algorithms to protect their content. Therefore, a standardized DRM solution should be extensible. However, such an evolution shall occur within a tight standardization process that minimizes the number of parallel solutions existing in the market.

Distribution of content should be possible over any kind of transport; for example pull from a browser, end-to-end secure connections, streaming media, messaging (e.g. MMS, Email), local transfer (e.g. IrDA, Bluetooth), etc. The DRM system shall be transport independent to avoid multiple solutions for different transports.

A high-level model for digital rights management may be described as follows:

- DRM content, and corresponding usage rights, may be distributed from content providers and rights issuers to UEs.
- The UE enforces the usage rights, and prevents any unauthorised use of the content.
- If the usage rights allow, content may be distributed or moved, and accessed by the receiving UE if granted the rights to do so. The content provider may specify alternative usage rights to be applied to copies (e.g. limited ëpreviewí style rights).
- If a user possesses content for which usage rights have expired or for which the user wished to update the usage rights, then the user may acquire new usage rights.

---

5 to 10 Void

5 Requirements (Class 1 DRM)

The following minimum requirements apply to class 1 DRM.

5.1. General Requirements

1 The DRM specification shall provide a mechanism for preventing onward distribution of DRM content. The mechanism may be ì simpleî, e.g. based on a ì flagî or ì wrapperî.

2 The focus of class 1 DRM shall be on simplicity and ease of deployment rather than on strong security; e.g. it may be assumed that the UE provides a trusted environment

3 The DRM specification shall be delivery and media type independent, i.e., the delivery and specification of class 1 DRM content must be independent of format and delivery mechanism.

4 The DRM specification shall be designed as an open specification and re-use existing open standards as appropriate.

5 The DRM specification shall impose minimal signalling and computational load on UEs and on communication among entities of the DRM system for all components of the DRM solution.

6 The DRM specification shall not prevent the content provider from distributing content that is not rights protected.

7 The DRM specifcation shall work reliably in environments where fragment loss (e.g. packet loss or bit errors) for content may be encountered (note that rights must be delivered reliably).

5.2 User Requirements

1 The user experience shall not be impaired by the DRM specification.

2 The DRM system shall not prevent a user to access non-DRM content.

3 The DRM specification shall permit users to be informed about the rights status of DRM content.

5.3 UE Requirements

1 The UE shall enforce the forward locking of DRM content.

2 The DRM specification shall not prevent the user from managing content that is not rights protected.

6 High level requirements (Class 2 DRM)

The following high level requirements apply to class 2 DRM.

6.1 General Requirements

1 The DRM specification shall provide a mechanism allowing rights issuers to provide usage rights to a UE, and to associate usage rights with DRM content. The mechanism shall allow usage rights to be enforced.

2 The DRM content and corresponding usage rights may be physically separate, but shall be logically linked to each other.

3 The DRM specification shall allow usage rights and DRM content to be delivered via the same or different transport mechanisms.

4 The DRM system shall enable the clear, concise and unambiguous specification of rights.

5 Usage rights shall be unambiguously bound to DRM content.

6 The DRM specification shall be delivery and media type independent, i.e., the delivery and specification of DRM content and rights must be independent of format and delivery mechanism.

7 The DRM specification shall impose minimal signalling and computational load on UEs and on communication among entities of the DRM system for all components of the DRM solution, i.e., preparation of content for use in the DRM system, specifying, interpreting, and enforcing usage rights, and establishing trust relationships.

8 The DRM specification shall encompass the specification of the following three components: description of rights, content protection and establishment of trust relationship. For each component one concrete mechanism shall be specified.

9 DRM shall be extensible, i.e. allow evolved DRM component solutions to be deployed. This extensibility shall occur within a tight standardisation process. Within each version of a DRM specification, if feasible, there shall be only one solution specified for each DRM component.

10 The DRM specification shall not prevent the content provider from distributing content that is not rights protected.

11 The DRM specification shall be designed as an open specification and re-use existing open standards as appropriate.

12 The DRM specification shall work reliably in environments where fragment loss (e.g. packet loss or bit errors) for content may be encountered (note that rights must be delivered reliably, i.e., error free).

6.2 User Requirements

1 The user experience shall not be impaired by the DRM specification.

2 The DRM system shall not prevent a user to access non-DRM content.

3 The DRM specification shall permit users to be informed about the rights status of DRM content.

4 The user shall be able to manage rights independently from DRM content, e.g., he/she shall be able to delete content, but to keep the corresponding rights (so that he/she could restore the content on the UE later without having to obtain new rights).

5 If the user change his/her UE, it shall be possible to make the already obtained rights and content available on the new UE, if the rights allow it.

6 For any received content, the user shall have the possibility to request the corresponding rights.

6.3 UE Requirements

1 The UE shall enforce any usage rights associated with DRM content.

2 The DRM specification shall not prevent the user from managing content that is not rights protected.

---

7 Usage Rights (Class 2 DRM)

The following usage rights requirements apply to class 2 DRM.

1 The rights issuer shall generate the usage rights.

2 The usage rights shall provide computationally efficient interpretation and enforcement.

3 The UE shall obey and enforce the usage rights.

4 Usage rights shall be stored securely.

5 The usage rights shall allow the rights issuer to specify different ways of rendering and distributing (if required by the architecture) the DRM content (permissions) e.g. display, play, execute, copy, give etc.

6 The usage rights shall allow the rights issuer to specify different ways of restricting the use of DRM content (constraints), e.g. number of times, elapsed time, alternative usage rights for copies, specific UE or group of UEs (e.g. all devices owned by a user), specific users, etc.

7 The usage rights shall allow the rights issuer to specify additional information, for example where the content can be acquired, and where usage rights can be obtained or renewed.

---

8 Security (Class 2 DRM)

The following security requirements apply to class 2 DRM.

1 The DRM solution shall provide a mechanism, allowing content providers to make DRM content intrinsically secure and unusable to any UE not being granted corresponding rights to render the content.

2 The DRM solution shall allow content providers and rights issuers to establish a trust relationship with a UE.

3 The DRM solution shall enable UEs to establish a trust relationship with content providers and rights issuers.

4 The DRM system shall protect the integrity of usage rights.

---

9 Privacy

The following privacy requirements apply to class 1 and class 2 DRM.

1 User information used to create the usage rights shall not be disclosed without the explicit consent of the end user.

2 The user's identity shall not be disclosed to the content provider and/or to other parties without the explicit consent of the end user.

~~10 Charging~~

~~The following charging requirements apply to class 1 and class 2 DRM~~

~~In DRM the valuable asset is the rights to use the content and not the content itself. Thus, it is expected that charging will be handled for the rights and not for the content per se. The need to enable charging based on rights becomes evident when considering that rights to use the content once have a different value than rights to use the content ten times, for one week, or forever. The specification of the charging mechanism is out of scope of the DRM solution. Nevertheless, the DRM specification shall be able to support several business models. The following business models should be considered:~~

- ~~Charging on a subscription basis.~~
- ~~Charging on a pay before use (pre-pay) basis.~~
- ~~Charging on a one-time basis for obtaining rights to DRM content.~~
- ~~Charging to receive streamed content.~~

~~The above list is not exhaustive.~~

Annex A (informative): ~~Use cases~~Void

~~The following use cases help to describe the various aspects of the DRM specification and their impact on the consumer. Figure 1 depicts a high level view of how DRM fits into the content distribution model.~~

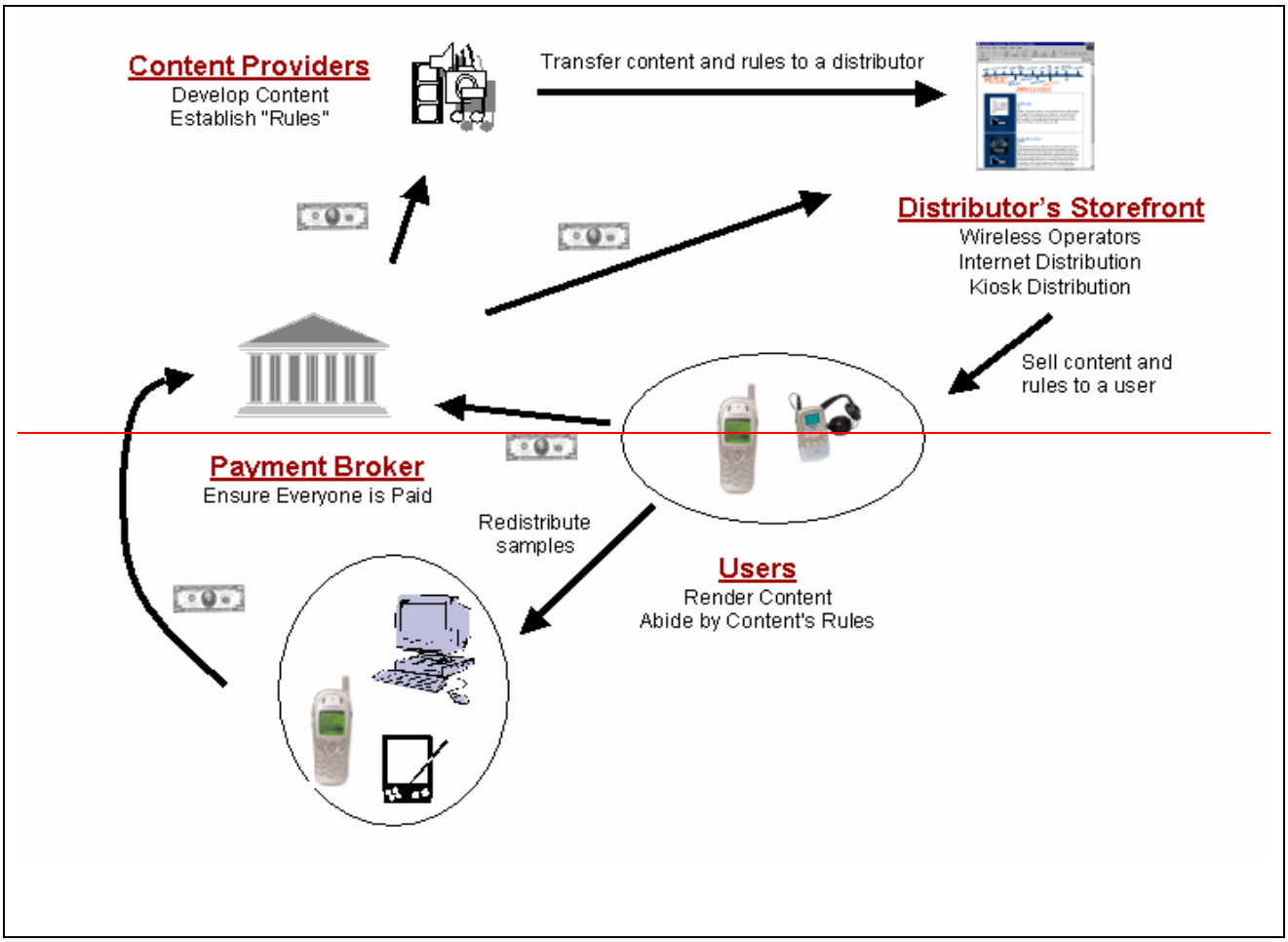

Figure 1 DRM and Content Distribution

Acquiring usage rights

When Alice wants to buy a song, she will simply browse a website with the UE and find the song she wants. The content provider may allow Alice to preview the available songs. After deciding on a song, she specifies which type of payment option she wants for the song. She chooses to buy the song, which gives her the right to play the song whenever she wants.

Content delivery

Once a song is downloaded, it can be accessed by Aliceís UE according to associated usage rights. In either case, the new song title will be added to Aliceís content list and Alice can play the song on her UE. Memory limitations on a UE may force Alice to keep some of her content in some other physical storage device, e.g. a memory card or a network store. The UE ensures that DRM content is encrypted before storing it in this way. Alice may be made aware of which music is local and which is stored remotely by using a separate listing or special marks on local songs. If Alice knows that she wants to listen to certain songs many times, she may want to store these songs locally on the UE.

Alice and the content provider may employ any of the following means to download content to her UE:

- Downloaded from the server, POS, or kiosk and stored on a UE
- Streaming from the server, POS, or kiosk to one or more UEs
- Delivered using SMS, EMS, or MMS
- Delivered over the air, via a local connection or personal area network, or using other transport mechanisms

Content usage

Alice downloads the content to her UE, but would also like to play it on another DRM enabled UE that she owns. The usage rights may allow her to transfer the song to the other UE and render it, according to the content usage rules.

While Alice is at work, the battery goes flat on her UE. After recharging her UE, she is able to access content saved in non-volatile memory, or backup copies saved on a memory card or in a network store.

~~A week later, Alice purchases a new UE. If usage rights allow, Alice may transfer her purchased content and play it on her new UE.~~

~~**Super distribution**~~
~~Depending on a songís usage rights, Alice may have the right to make copies and send them to other people. The copies may have another set of usage rights than Aliceís original; perhaps only allowing limited access to the content while full access can be purchased from the content provider. If Aliceís UE is capable of establishing a short range ad hoc network, transferring contents is made easier, and can rapidly lead to more content distribution and possibly increased content sales.~~

~~The samples that Alice distributes may consist of just a 20 or 30 second clip of a main portion of the song. Or, she may be allowed to distribute the song with the usage rights only allowing the song to be played one time. After the initial play, the user would have to purchase rights from the content provider to play the song again. Other types of sampling may also be possible.~~

~~**Gifting Rights**~~
~~Alice really likes the song and decides she wants to send it to Susan also. Alice contacts the content provider with her UE and pays to have content delivered to Susan. Susan receives the song, and is able to listen to it using the rights paid for by Alice. Alternatively, Susan may receive a notification that the song has been gifted to her and she can download it at her leisure.~~

~~**Other Services**~~
~~Additionally, other services may be provided within the DRM model. Examples include, but are not limited to:~~

- ~~Trust services~~
- ~~Authentication services~~
- ~~Payment brokers~~
- ~~Content bank (network storage of downloaded content)~~
- ~~Rights locker (network storage of usage rights)~~

~~The content provider may run such services itself, or they may be provided as generic services by communication service providers.~~

Annex B (informative): Change history

Change history											
TSG SA#	**SA Doc.**	**SA1 Doc**	**Spec**	**CR**	**Rev**	**Rel**	**Cat**	**Subject/Comment**	**Old**	**New**	**Work Item**
SP-15	SP-020061	S1-020659				Rel-6		Presentation to SA for information	1.0.0	1.0.0	DRM
SP-16	SP-020261	S1-021185				Rel-6		Presentation to SA for approval	2.0.0	6.0.0	DRM
SP-17	SP-020564	S1-021609	22.242	001		Rel-6	F	Clean-up of TS 22.242	6.0.0	6.1.0	DRM
SP-19	SP-030177		22.242	002	1	Rel-6	B	DRM collaboration with OMA	6.1.0	6.2.0	DRM