

RSS Support in Nokia Video Center

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Multimedia

NOKIA

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Change history

September 26, 2006	Version 1.0	Initial document release
July 10, 2007	Version 1.1	Nokia Video Center upgrade features added
April 15, 2008	Version 2.0	Nokia Video Center MRSS and search support features added

1 Scope of this document

Real Simple Syndication (RSS) [1] is a widely used Internet specification for describing Internet content for automated reader applications. The format is commonly used for new services in the Web browser environment. RSS is also increasingly being used to describe video services available on the Internet.

The Nokia Video Center application supports RSS for video service metadata descriptions. Metadata defines additional information about the content to help selecting the video that the user is interested in.

This document describes only video-centric RSS usage as supported by the Nokia Video Center application. Browser or audio service applications based on RSS descriptions are beyond the scope of this document.

2 Nokia Video Center service operation

2.1 Service provisioning to the terminal

A user can find new RSS-based video services from the Nokia Video Service Directory and provision the service settings (for example, URL address, service name, service description, search URL) to the terminal as a browser HTTP response. Nokia Video Center accepts simple XML-based provisioning files. It is possible to define user authentication for the service using standard HTTP authentication [2].

The user can also manually add RSS feeds to the Nokia Video Center application in the video center service view options. The manually added RSS feed is added to the general Video feeds service in the Nokia Video Center application.

2.2 Service usage

Service usage can be divided into metadata and content consumption features. Metadata is downloaded to the terminal when the user selects the service. The user can see the name of the content and possibly a thumbnail image for the content. Additional information, for example, a description, may be provided, and can be found under the Options menu on the terminal UI.

2.2.1 RSS metadata download

RSS metadata is downloaded using the standard HTTP protocol [4]. Download is automatic when the service or RSS feed is selected. The Web server technology for modification time stamps should be used so that unnecessary data transfer is avoided. The downloaded RSS file is parsed, stored in the terminal replacing any older description, and the new content descriptions are rendered to the UI.

2.2.2 Video search support in Video Center

Video search is an optional element in Nokia Video Center. It allows searching videos from a service backend. The user enters a keyword to the search view and Video Center runs a Web query that returns a temporary RSS feed containing the search results.

The service provider can add a Search option to the video service by specifying a search URL. The search URL will be included in a provisioning file from the Nokia Video Service Directory. The search URL must contain a #search# tag that is replaced by the actual search keyword entered by the user before running the query in a network.

An example of a search URL in the provisioning file:

http://video.serviceprovider.com/videofeed?type=search&q=#search#&so=0&num=20∓output=rss.

When the user starts the search with the keyword “news”, Video Center will send the following query to the service backend

:http://video.serviceprovider.com/videofeed?type=search;q=news;so=0;num=20;output=rss

The service backend must return an RSS feed as a result, otherwise an error will occur. The result RSS feed is parsed in the same way as any other RSS feed, and they are shown in the “Search results” view of the service.

The provider can specify any additional parameters in the query, such as video formats or the number of results, but those will always be static information.

2.2.3 Video download

If the content metadata shows that the content is fetched using HTTP, the user has the possibility to “download” the content selected in the content selection view to the terminal. Content is downloaded to the terminal and stored in either the terminal memory or in the memory card. The user can see the download progress in the content selection view. Content is visible in the My Videos application in the Nokia Video Center.

2.2.4 Video streaming

If the content metadata shows that the content is streamed to the terminal using RTSP and RTP protocols, the user has the possibility to “play” the content selected in the content selection view. Content is streamed to the terminal and rendered to the user immediately. Content is not stored in the terminal.

3 Nokia Video Center RSS support

```
<?xml version="1.0" encoding="utf-8"?>
<rss version="2.0" xmlns:media="http://search.yahoo.com/mrss/">
  <channel>
    <title>Example Mobile News</title>
    <image>
      <url>http://255.255.255.255/logo/service.jpg</url>
      <height>144</height>
      <width>144</width>
    </image>
    <item>
      <title>Hourly news</title>
      <description>Hourly news stream</description>
      <guid>rtsp://255.255.255.255/news/24/newest.3gp</guid>
      <pubDate>Tue, 13 Feb 2007 15:45:00 GMT</pubDate>
      <author>Nokia</author>
      <copyright>Nokia 2008</copyright>
      <enclosure url="rtsp://255.255.255.255/news/24/newest.3gp"
        length="3967360" type="video/3gpp"/>
      <media:thumbnail url="http://255.255.255.255/logo/news.jpg"
        width="128" height="96"/>
      <link>http://www.nokia.mobi</link>
    </item>
  </channel>
</rss>
```

Example 1: Example RSS feed description for video service

3.1 RSS support

3.1.1 XML feed description

<?xml> XML version 1.0, encoding must be UTF-8. The maximum number of videos in a service is 500.

3.1.2 RSS element

<rss version = "2.0"> RSS is the root element in the RSS description XML document. The supported RSS version is 2.0. Detailed RSS specifications are available at <http://www.rss-specifications.com/>.

3.1.3 RSS channel element (mandatory for Video Center)

<channel> The *channel* element contains the title element , the image element, and the item elements.

3.1.4 Channel title element (mandatory for Video Center)

<title> The *title* element defines the name of the channel.

3.1.5 Channel image element (mandatory for Video Center)

<image> Channel *image* element defines the logo for the service. The service logo is shown in the Video Center service selection view. The image element includes the URL to the logo file and the height and width of the logo.

The *URL* element is used to fetch the logo file. The URL should be absolute, that is, contain the domain name and path. The preferred logo format is JPEG.

Height and *width* elements define the logo size. The optimal size is 144 x 144 pixels. The Nokia Video Center application will scale the logo to a suitable size to fit into the title pane.

3.1.6 Channel item element (mandatory for Video Center)

<item> The *item* element defines a single video or a single streaming channel offered to the user. Each item that the Nokia Video Center application supports as video format is shown to the user in the content selection view. Terminal support for the video format is analyzed from an *enclosure* URL file extension and from *type* parameters.

The item contains title, description, pubDate, author, enclosure, guid, and link elements. The copyright element can also be used in Video Center.

3.1.6.1 Item title element (mandatory for Video Center)

<title> the *title* element defines the name of the video clip.

3.1.6.2 Item description element (mandatory for Video Center)

<description> The *description* element gives information about the specific video clip. The maximum number of characters in the free text is 256. The video clip description is shown in the Nokia Video Center video details view.

3.1.6.3 *Item guid element*

<guid> The *guid* element is a global identifier for the video clip. The Nokia Video Center application can use it to identify content as new (not previously published in the RSS loaded to the terminal).

3.1.6.4 *Item pubDate element*

<pubDate> The *pubDate* element gives the time when the video clip was added. The pubDate element can be used to check, e.g., in scheduled download functionality whether the item/video is new or updated in the video service.

3.1.6.5 *Item author element*

<author> The *author* element is used to indicate the creator of the video clip. The author of the video is shown in the Nokia Video Center details view.

3.1.6.6 *Copyright element*

<copyright> The *copyright* element is used to indicate the copyright owner of a video clip. The copyright of the video is shown in the Nokia Video Center details view.

3.1.6.7 *Item enclosure element (mandatory for Video Center)*

<enclosure> The *enclosure* element describes a media object that is attached to the item. The enclosure element has three required attributes: URL defines where the video clip is located, length defines how big it is in bytes, and type defines its type (a standard MIME type).

The *URL* attribute must be an absolute URL (<http://>) to a valid 3GP or MP4 downloadable file or absolute streaming URL (<rtsp://>) to a valid 3GP or MP4 streaming file.

The *Length* attribute defines how big the video file is in bytes. For linear streaming services, such as a 24/7 TV channel, *length="0"* can be used to hide the size information.

The *Type* attribute defines the MIME type of the content. Currently the accepted MIME types are:

- video/3gpp
- video/mp4
- video/vnd.rn-realvideo
- application/vnd.rn-realmedia
- application/sdp
- video/x-m4v
- video/m4v

Note: In the RSS 2.0 specification, *enclosure* is an optional subelement of *item*. For the RSS reader in the Nokia Video Center application, the *item enclosure* element is a mandatory subelement and it contains the video content of the item. Newer releases of the Nokia Video Center application also support for MRSS *Content* items; see Section 3.2.7, “Media group and content MRSS element.”

3.1.6.8 Item MRSS thumbnail element

<media:thumbnail> The *media thumbnail* element contains an absolute URL parameter to an image that is used as a thumbnail for the specific video clip. The preferred image format is JPEG. The image attribute's width and height is defined. The optimum thumbnail size is 128 x 96 pixels.

Note: The media thumbnail element can also be used with RSS 2.0 without any other MRSS extension elements to provide a better visual experience in the video service. Other MRSS elements are described in Section 3.2, "MRSS extension support."

3.1.6.9 Item link element

<link> The *link* element is a URL to the Web page corresponding to the specific video clip. The Nokia Video Center application can open a browsing session to the given link, enabling the Service Provider to offer more information and additional services (voting, donations, etc.) to the user.

3.2 MRSS extension support

Nokia Video Center supports the Yahoo media RSS extensions [4]. Extension usage must be identified in the XML document RSS element with the namespace <http://search.yahoo.com/mrss>.

```
<?xml version="1.0" encoding="utf-8"?>
<rss version="2.0" xmlns:media="http://search.yahoo.com/mrss/">
<channel>
  <title>Example Mobile News</title>
  <image>
    <url>http://255.255.255.255/logo/service.jpg</url>
    <height>144</height>
    <width>144</width>
  </image>
  <item>
    <guid> http://www.sample.com/mobile/mobile_qvga.3gp </guid>
    <pubDate>Tue, 13 Feb 2007 15:45:00 GMT</pubDate>
    <media:title>Video no. 1 title</media:title>
    <media:description>Video no. 1 description</media:description>
    <media:category label="Football">Sports</media:category>
    <media:copyright>Nokia 2008</media:copyright>
    <media:rating scheme="urn:num">17</media:rating>
    <media:thumbnail url="http://www.sample.com/mobile/mobile.JPG"
      width="128" height="96" />
    <media:group>
      <media:content url="http://www.sample.com/mobile/mobile_vga.mp4"
        fileSize="1216320"
        type="video/mp4" expression="full" duration="720" width="640"
        height="480" />
      <media:content url="http://www.sample.com/mobile/mobile_qvga.3gp"
        fileSize="916510"
        type="video/3gpp" expression="full" duration="720" width="320"
        height="240" />
      <media:content url="http://www.sample.com/mobile/mobile_sample.3gp"
        type="video/3gpp" expression="sample" duration="15" width="320"
        height="240" />
    </media:group>
  </item>
</channel>
</rss>
```

Example 2: Example MRSS description for video service with enclosure

3.2.1 Media title

<media:title> The *media title* element defines the name of the video clip.

3.2.2 Media description

<media:description> The *media description* element gives information about the specific video clip. The maximum number of characters in the free text is 256. The video clip description is shown in the Nokia Video Center video details view.

3.2.3 Media category

<media:category> Media category defines the category structure of the videos in the MRSS feed. A label attribute (“Football”) is shown as a category name in the Video Center. If there is no label attribute, the Video Center uses the value of the media category element (Sports) as the category name.

Note: If there is only one category defined in the MRSS feed, the category list is not shown.

3.2.4 Media copyright

<media:copyright> The *media copyright* element is used to indicate the copyright owner of a video clip. Copyright is shown in the Nokia Video Center video details view.

3.2.5 Media rating element

<media:rating> Age control is implemented by using URN:NUM scheme or URN:Simple scheme. The terminal application can be set by the user to limit the RSS content visible to the user based on the rating element. For example, if the terminal application is set to age control setting 15, any content whose numeric rating is above 15 or is marked in the simple scheme as “adult” is not shown to the user in the content selection view.

URN:NUM values are supported between 0-18. Value 0 means unlimited viewing rights.

URN:simple supports “adult” and “nonadult” content. Adult content is understood to be restricted to 18 and over. The default value is nonadult.

Simple scheme example: <media:rating scheme="urn:simple">adult</media:rating>

3.2.6 Item MRSS thumbnail element

<media:thumbnail> The *Media thumbnail* element contains an absolute URL parameter to an image that is used as a thumbnail for the specific video clip. The preferred image format is JPEG. The image attribute’s width and height is defined. The optimum thumbnail size is 128 x 96 pixels.

3.2.7 Media group and content MRSS element

<media:group> The *group* element contains multiple *content* elements, which define the same content in different video formats. The Video Center application selects the optimal video format that the device can play from the *Group* and *content* elements. The same content item can be provided as download and streaming offering in multiple resolutions and formats, with a preview option.

3.2.7.1 *Media content url attribute*

The *media content url* attribute must be an absolute URL (<http://>) to a valid 3GP or MP4 downloadable file or absolute streaming URL (<rtsp://>) to a valid 3GP or MP4 streaming file.

3.2.7.2 *Media content fileSize attribute*

The *media content fileSize* attribute defines how big the video file is in bytes. For linear streaming services, such as a 24/7 TV channel, *fileSize="0"* can be used for hiding the size information.

3.2.7.3 *Media content type attribute*

The *media content type* attribute defines the MIME type of the content. Currently the accepted MIME types are:

- video/3gpp
- video/mp4
- video/vnd.rn-realvideo
- application/vnd.rn-realmedia
- application/sdp
- video/x-m4v
- video/m4v

3.2.7.4 *Media content bitrate attribute*

The Video Center application uses the *media content bitrate* attribute to verify that the bit rate of the content is supported by the terminal.

3.2.7.5 *Media content framerate attribute*

The Video Center application uses the *media content framerate* attribute to verify that the frame rate of the content is supported by the terminal.

3.2.7.6 *Media content expression attribute*

The *Media content expression* attribute defines if the content is in full length (*expression="full"*) or preview (*expression=sample*). The default value is full.

3.2.7.7 *Media content duration attribute*

The *Media content duration* attribute defines the duration of the video. The value is given in seconds.

3.2.7.8 *Media content height and width attributes*

The *media content height* and *width* attributes define the resolution of the content. The Video Center application uses the *height* and *width* attributes to verify that the resolution of the content is supported by the terminal.

3.2.7.9 *Media content lang attribute*

The *Media content lang* attribute defines the language of the video. Separation for audio and subtitle language is not supported.

3.3 Limitations

3.3.1 HTML markup usage is not supported in the description element

HTML usage in description elements should be avoided. HTML is not parsed by the terminal application, and poor user experience and confusion may result from HTML code in description fields.

3.3.2 URL

In general, the maximum supported URL length is 255 bytes. RSS Item URL and MRSS thumbnail URL length can be 2k bytes long.

4 Terms and abbreviations

Term or abbreviation	Meaning
GIF	Graphics Interchange Format
HTTP	Hypertext Transfer Protocol
IP	Internet Protocol
JPEG	Joint Pictures Experts Group
MMS	Multimedia Messaging Service
MRSS	Media RSS
PNG	Portable Network Graphics
RTP	Real-Time Protocol
RTSP	Real-Time Streaming Protocoll
RSS	Real Simple Syndication
SMS	Short Message Service
UI	User Interface
URL	Uniform Resource Locator
WLAN	Wireless Local Area Network
XML	Extensible Markup Language

5 References

- [1] Real Simple Syndication Specification, Version 2.0, <http://blogs.law.harvard.edu/tech/rss>
- [2] HTTP Authentication: Basic and Digest Access Authentication, RFC 2617, <http://www.ietf.org>
- [3] [Nokia Video Center White Paper](#), available at <http://www.forum.nokia.com>
- [4] HyperText Transfer Protocol – HTTP1.1, RFC 2616, <http://www.ietf.org>
- [5] Media RSS, Version 1.1.1, <http://search.yahoo.com/mrss>
- [6] Real-Time Streaming Protocol (RTSP), RFC 2326, <http://www.ietf.org>
- [7] RTP: A Transport Protocol for Real-Time Applications, RFC 3550, <http://www.ietf.org>
- [8] RTP Payload Format for MPEG-4 Audio/Visual Streams, RFC 3016, <http://www.ietf.org>
- [9] RTP Payload for Transport of H.264/AVC Content, RFC 3984, <http://www.ietf.org>

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