ProgramGuideML Specification

Version 1.0

DRAFT

2003-9-15

NSK NewsML Team

List of Content

1. Status of this document

This Specification describes and amplifies the ProgramGuideML version 1.0 Document Type Definition. Amendments to this Specification override and supercede notes in the ProgramGuideML version 1.0 Document Type Definition. The requirements of ProgramGuideML is to express Radio and TV listing in media-independent. ProgramGuideML is developed for news providers such as newspaper and news agency to handle Radio and TV program information as a program unit or listing table via various media.

2. Typographical conventions

Blue background is used for extracts from the formal declaration of the ProgramGuideML DTD

Yellow background is used for illustrative examples of ProgramGuideML

3. Acknowledgements

This specification is the result of a team effort by members of the Japan Newspaper Publishers & Editors Association (NSK) with input and assistance from others. This specification was edited by the members of RadioTV-NewsML sub working party of NSK NewsML Team, whose main members were Manabu Miyake(Yomiuri Shimbun, Leader of the team), Ryugo Onishi(Tokyo News Service), Tsuyoshi Uchida(Kyodo News), Takahiro Fujiwara(EAST Co.), Tatsuya Suzuki(Sanno Consulting), Hiroshi Kashima(Tokyo Shimbun), Katsumi Hayashi(Nippon System Gijutsu Co.), Kazuyuki Sakamoto(Sankei Shimbun), Masato Yokota(Fujitsu), Satoru Ichinose(Nikkan Henshu Center), Hideo Sugiura(Tokyo News Service), Masaaki Shioyama(Nihon Short-Wave Broadcasting Co.), Kazuki Nitta (NEC) and Hideo Miyata(NHK).

4. ProgramGuideML Overview

ProgramGuideML uses XML technology and compose radio and TV program information in simple and powerful structure. It handles arbitrary mixtures of media types, formats and languages. ProgramGuideML documents can be wrapped in NewsML and also distributed as it is. ProgramGuideML adopts controlled vocabulary mechanism of NewsML.

4.1. ProgramGuideML provides a framework for interchange of program information of radio and television

ProgramGuideML is originally a format for interchange of program information of radio and television, however, it may also be used as a format to store program information of radio and television.

4.2. ProgramGuideML is based on XML

ProgramGuideML document is a XML document, which should be valid with respect to the ProgramGuideML DTD or ProgramGuideML Schema. As well as all XML documents, ProgramGuideML documents are logical rather than physical objects. ProgramGuideML document can be built up of the contents of multiple physical files by using entity references as described in the XML specification or pointers within ProgramGuideML document.

4.3. ProgramGuideML is medium for media

ProgramGuideML can contain text, video, audio, graphics, photos, or other media and combinations of media yet to be invented.

5. ProgramGuideML function

In this section, we work through the entire structure of ProgramGuideML document, beginning from the root (programguideml) element, and explain the purpose and structure of each element and each attribute. Illustrative examples of key constructs will also be provided.

ProgramGuideML is able to represent broadcasting program information of terrestrial, satellite, communications satellite, cable broadcasting, etc., as a unit of each broadcasting program. It is also able to express a listing table of a broadcasting service by compiling data of each program information. The programguideml element has xml:lang and version attributes. The xml:lang attribute specifies language used in the ProgramGuideML documents. The version attribute is required to specify the number of version. The programguideml element always has program.table, program.information and program.content element as subelements.

```
<!ELEMENT programguideml (program.table | (program.information, program.content))>
<!ATTLIST programguideml xml:lang CDATA #IMPLIED version CDATA #REQUIRED>
```

1)TV listings expression

```
<?xml version="1.0" encoding="UTF-8" ?>
```

```
<programguideml xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:noNamespaceSchemaLocation="./ProgramGuideML.xsd" version="1.0">
    <program.table>
        :
    </program.table>
</programguideml>

2)program expression
<?xml version="1.0" encoding="UTF-8" ?>
<programguideml xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:noNamespaceSchemaLocation="./ProgramGuideML.xsd" version="1.0">
    <program.information program.id="itv20020623T0600">
        :
    </program.information>
    <program.content>
        :
    </program.content>
</programguideml>
```

5.1. program.information

This element specifies administrative information, rights information, and descriptive information on broadcast programs. The program.id attribute provides an indication of ID to identify a broadcast program. The xml:lang attribute specifies a main language in which program information is described. This language is not the main language used in a program itself, but is the main language used to describe program information. Plural language element may be included as child element. The administrative.information, rights.information, and descriptive.information elements are required.

```
<!ELEMENT program.information (language*, administrative.information, rights.information,
descriptive.information)>
<!ATTLIST program.information program.id ID #IMPLIED xml:lang CDATA #IMPLIED>
```

```
<program.information program.id="itv20020623T0600">
```

5.1.1 language

The language element expresses languages used in a broadcast program. The newsml_urn, and the newsml_scheme are set as information to identify newsml_formalname. This element has role attirbute. Value of the role attribute is main or sub.

```
<!ELEMENT language EMPTY>
<!ATTLIST language
        %newsml_code;
        role (main | sub) #REQUIRED
>
```

```
This example shows that main sound is Japanese, and sub sound is English and Spanish
<language newsml_scheme="ISO639" newsml_formalname="ja" role="main"
 newsml_urn="urn:newsml:iptc.org:20001006:topicset.iso-language:3"/>
<language newsml_scheme="ISO639" newsml_formalname="en" role="sub"
 newsml_urn="urn:newsml:iptc.org:20001006:topicset.iso-language:3"/>
<language newsml_scheme="ISO639" newsml_formalname="es" role="sub"
newsml_urn="urn:newsml:iptc.org:20001006:topicset.iso-language:3"/>
```

```
<!ENTITY % newsml_code "newsml_formalname CDATA #REQUIRED
                        newsml_urn CDATA #IMPLIED
                        newsml_scheme CDATA #IMPLIED">
```

▼newsml_code

The meaning of this ENTITY declaration is to replace %newsml_code, which exists within DTD, with newsml_formalname attribute, newsml_urn attribute and newsml_scheme attribute. It provides a method to specify one value of FormalName from the TopicSet file, which is the collected list of candidate values as called controlled vocabulary.

newsml_formalname:

There exists controlled vocabulary defining separately a list of candidates which may be set to an attribute, and its FormalName value is able to be specified in newsml_formalname. The meaning of FormalName value is described in the controlled vocabulary. The value of newsml_formalname should be the one of values in

the controlled vocabulary, which specified separately. The usage of this attribute is the same as FormalName attribute of NewsML.

newsml_urn:

The newsml_urn specifies a controlled vocabulary which includes the candidates of value as newsml_formalname. Actually, the kind of controlled vocabulary for each element is decided. The description form of a value follows the description of NewsML-URN in NewsML specification. The Catalog/Resource/DefaultVocabularyFor element of NewsML may point at ProgramGuideML data within DataContent and tacitly declare NewsML-URN, which is used when newsml_urn omitted. In this case, as the adjustment of controlled vocabulary can't be checked when only the inside of DataContent is extracted and used, it becomes restrictive uses. The usage of this attribute and FormalName attribute of NewsML are the same.

newsml_scheme:

The newsml_scheme is used in order to specify newsml_formalname clearly. Although the FormalName which has Scheme in the controlled vocabulary has to specify newsml_scheme, the Catalog/Resource/DefaultVocabularyFor element of NewsML may point at ProgramGuideML data within DataContent and tacitly declare Scheme, which is used when newsml_scheme omitted. In this case, as the adjustment of controlled vocabulary can't be checked when only the inside of DataContent is extracted and used, it becomes restrictive uses. The usage of this attribute is the same as FormalName attribute of NewsML.

5.1.2 administrative.information

Both administrative information on broadcast program information and program itself are specified by administrative.information element. This includes information on broadcasting companies, start date and time of program, end date and time of program, length of program, extension length, broadcast mode, charge, additional broadcasting details, related URL, and re-broadcast.

This element has parentalrate attribute which sets the view permission by age. The values will be 2 digit numbers as follows:

00: No restriction, anyone can watch

01: Not permitted under age 1

02: Not permitted under age 2

: :

19: Not permitted under age 19

20: Not permitted under age 20

: :

This element always includes each one station element and mode element. In addition, it may have each one startdate, enddate, length, extension.time, and payperview elements, and one or more subsidiaryinfo, url, alsoshown, and previouslyshown elements.

```
<!ELEMENT administrative.information (station, startdate?, enddate?, length?, extension.time?,
mode, payperview?, subsidiaryinfo*, url*, alsoshown*, previouslyshown*)>
<!ATTLIST administrative.information parentalrate CDATA #IMPLIED >
```

```
<administrative.information parentalrate="0">
```

5.1.2.1. station

Broadcasting service name is identification which has additional information such as broadcasting station name, media, details of broadcast media, call sign, URL of broadcasting station. This information is set to newsml_formalname of station element.

```
<!ELEMENT station EMPTY>
<!ATTLIST station %newsml_code;>
```

```
In the following example, Broadcasting service name is " TBS-TV ".
<station newsml_formalname=" TBS-TV " newsml_scheme="RadioTV-JP"
newsml_urn="urn:newsml:pressnet.or.jp:20020123:topicset.radiotv-BroadcastService:3"/>
```

```
The TopicSet of Broadcasting service name is composed as the following sample.
<Topic Duid="BroadcastingServiceName0001">
  <TopicType Scheme="RadiotvTopicType" FormalName="BroadcastService"/>
  <FormalName Scheme="RadioTV-JP">TBS-TV</FormalName>
  <Description xml:lang="en-US">Tokyo Broadcasting System</Description>
  <Property FormalName="Media" Value="TV"/>
  <Property FormalName="MediaDetail" Value="Terrestrial-TV"/>
```

```
  <Property FormalName="CallSign" Value="JOKR-TV"/>
  <Property FormalName="Url" Value="http://www.tbs.co.jp/"/>
</Topic>
```

5.1.2.2. startdate

Broadcasting start date and time is set in the startdate element. This should be in ISO8601 format (CCYYMMDDTHHMMSS{+|-}HHMM). CCYY is for year, MM for month, and DD for date. T follows them and then HH is for hour, MM for minute, and SS for second. These values are mandatory. Then, optionally, difference between Universal Standard Time can be added after + or - sign in HHMM format. If start date and time is not yet decided, this element can be omitted.

```
<!ELEMENT startdate (#PCDATA)>
```

In the following example, the start of service time is 13 August 2003 at 0500 hours Japanese local time.

```
<startdate>20030813T050000+0900</startdate>
```

5.1.2.3. enddate

Broadcasting end date and time is set in the enddate element. This element can be omitted. This should be in ISO8601 format (CCYYMMDDTHHMMSS{+|-}HHMM). CCYY is for year, MM for month, and DD for date. T follows them and then HH is for hour, MM for minute, and SS for second. These values are mandatory. Then, optionally, difference between Universal Standard Time can be added after + or – sign in HHMM format. Either enddate or length element can show the end time. This specification does not specify which to use. When omitted, see refer to 5.1.2.2 startdate chapter.

```
<!ELEMENT enddate (#PCDATA)>
```

In the following example, the end of service time is 13 August 2003 at 0515 hours Japanese local time.

```
<enddate>20030813T051500+0900</enddate>
```

5.1.2.4. length

The length element specifies time from the start of broadcasting to the end of it. The unit is usually minutes, but seconds, minutes or hours can be used. Among seconds, minutes, or hours, one unit should be specified. Either enddate or length element can show the end time. This specification does not specify which to use. When omitted, see refer to 5.1.2.2 startdate chapter.

```
<!ELEMENT length (#PCDATA)>
<!ATTLIST length units (seconds | minutes | hours) #REQUIRED>
```

```
In the following example, brodcasting time is 15 minutes.
<length units="minutes">15</length>
```

5.1.2.5. extension.time

When extension of a program is expected, extension.time element specifies extension time of a program. The unit is usually minutes, but seconds, minutes, or hours can be used.

```
<!ELEMENT extension.time (#PCDATA)>
<!ATTLIST extension.time
        units (seconds | minutes | hours) #REQUIRED
>
```

```
In the following example, an extension time of broadcasting is twenty-four minutes.
<extension.time units="minutes">24</extension.time>
```

5.1.2.6. mode

The mode element gives an indication of audio-mode, broadcast-mode, additional-mode for the broadcasting, and data-mode for the data broadcast. The mode element may have each one audio.mode, broadcast.mode, additional.mode, data.mode as subelements.

```
<!ELEMENT mode (audio.mode?, broadcast.mode?, additional.mode?, data.mode?)>
```

5.1.2.6.1 audio.mode

The audio.mode element specifies audio-mode of the broadcast. This element may have one multilingual subelement. The audio.mode has soundtype, expalanation, multiplexing as attributes. The soundtype is required. Default values of expalanation attribute and multiplexing attribute are "no".

*The soundtype attribute specifies monaural, stereo, B-mode, or surround.

Surround stereophonic: three-dimensional sound using 6 speakers.

B mode stereophonic: stereo broadcasting in higher quality than CD

*The explanation attribute specifies whether voice commentary exists or not. When the explanation of a scene, motion of person, etc., other than usual sounds, is broadcasted for visually handicapped people, which can be heard with exclusive-use TV tuner, the value of "yes" is set. Default value is "no."

*The multiplexing attribute specifies whether a sound multiplex broadcast exists or not. When multiplexing two or more different sounds to one television broadcasting, value of "yes" is set. Default value is "no."
(eg. In addition to the running commentary of the baseball game, if the sound is switched, introduction of baseball player is broadcasted.)

```
<!ELEMENT audio.mode (multilingual?)>
<!ATTLIST audio.mode
        soundtype (monaural | stereo | B-mode | surround) #REQUIRED
        explanation (yes | no) "no"
        multiplexing (yes | no) "no"
>
```

```
In the following example, sound type is stereo mode.
<audio.mode soundtype="stereo"/>
```

5.1.2.6.1.1 multilingual

The multilingual element specifies the number of languages in the broadcast. This element always set count attribute. The count attribute sets the number of languages used in a program currently. This number of languages is the same as the number specified by the language element.

```
<!ELEMENT multilingual EMPTY>
<!ATTLIST multilingual
        count CDATA #REQUIRED
>
```

```
In the following example, the number of language used in broadcast is two.
<multilingual count="2"/>
```

5.1.2.6.2 broadcast.mode

The broadcast.mode element sets broadcast-mode of the broadcast. This element has sdtv, hdtv, progressive, wide, multiview as attributes. Default values of these attributes are "no".

* If the program is broadcasted in standard TV (SDTV), sdtv attribute is "yes".
* If the program is broadcasted in high-definition TV (HDTV), hdtv attribute is "yes".
*"The progressive attribute is "yes", when a program is broadcasted in progressive broadcasting method.
The progressive broadcasting method uses all the 525 vertical interlace scanning lines every 1/60 second.(yes: progressive, no: interlace)
*The wide attribute is "yes", when in wide-screen broadcasting.
Among the variety of screen sizes, the vista size (height : width = 1:1.85), wide (9:16) and cinesco (1: 2.3) are popular.
*The multiview attribute is "yes", when in multi-view broadcasting.
Multi-view broadcasting broadcasts related two or three programs simultaneously by dividing one channel, usually used for HDTV, into three channel at maximum.

```
<!ELEMENT broadcast.mode EMPTY>
<!ATTLIST broadcast.mode
        sdtv (yes | no) "no"
        hdtv (yes | no) "no"
        progressive (yes | no) "no"
        wide (yes | no) "no"
        multiview (yes | no) "no"
>
```

```
In the following example, broadcasting image mode is "hdtv".
```

```
<broadcast.mode hdtv="yes"/>
```

5.1.2.6.3 additional.mode

The additional.mode element sets a program additional mode of broadcast. This element has teletext, sign-language and superimposition as attributes. Default values of these attributes are ”no”.

*The teletext attribute describes teletext. This attribute is "yes", when a program contains text information on a television screen for a person hard of hearing.

*The sign-language attribute is "yes", when a program contains sign language information.

*The superimposition attribute is "yes", when a program contains subtitles (captions).

```
<!ELEMENT additional.mode EMPTY>
<!ATTLIST additional.mode
        teletext (yes | no) "no"
        sign-language (yes | no) "no"
        superimposition (yes | no) "no"
>
```

```
In the following example, multiplex broadcasting of character is set.
<additional.mode teletext="yes"/>
```

5.1.2.6.4 data.mode

The data.mode element describes mode of data broadcasting. This element has coupling attribute and interactive attribute. Default values of these attributes are ”no”.

*The coupling attribute is "yes", when a program is linked with multiplexed data broadcasting.

*The interactive attribute is "yes", when interactive data broadcasting is broadcasted.

```
<!ELEMENT data.mode EMPTY>
<!ATTLIST data.mode
        coupling (yes | no) "no"
        interactive (yes | no) "no"
>
```

```
Following example expresses interactive data broadcasting.
<data.mode interactive="yes"/>
```

5.1.2.7. payperview

The **payperview** element specifies program charge of the pay per view. The unit of currency is set to newsml_formalname.

```
<!ELEMENT payperview (#PCDATA)>
<!ATTLIST payperview
        %newsml_code;
>
```

```
In the following example, a charge of pay per view is one thousand yen.
<payperview newsml_urn="urn:newsml:iptc.org:20001006:topicset.iso-currency:2"
newsml_formalname="JPY" newsml_scheme="ISO4217">1000</payperview>
```

5.1.2.8. subsidiaryinfo

When broadcasting schedule has possibility of program changes, the **subsidiaryinfo** element expresses them. The content of program change is set to newsml_formalname.

For instance, in Japan, value of information in conformity to ARIB (Association of Radio Industries and Businesses) code may be set.

- 00 = The program has possibility of cancel (e.g.: Live broadcast of baseball game has possibility of cancel because of rain.).
- 01 = The program has possibility of extension (e.g.: Live broadcast of baseball game has possibility of extension because of extra innings).
- 02 = The program has possibility of interruption.
- 03 = The serial number of a program has possibility of change. (e.g.: If baseball game is called off by rain and 16th of a serial program, primarily scheduled in next week, is broadcasted instead, 17th will be broadcasted a week later at the time of 16th scheduled.)
- 04 = Undecided (the program is not yet decided at a few days before the broadcasting day.)
- 16 = The program has possibility of being interrupted by breaking news.
- 17 = The program has possibility of containing other extraordinary service.

```
<!ELEMENT subsidiaryinfo EMPTY>
<!ATTLIST subsidiaryinfo %newsml_code; >
```

```
In this example, the program has a possiblity of cancellation.
<subsidiaryinfo newsml_formalname="00" newsml_scheme="ARIB"/>
```

5.1.2.9. url

The url element expresses the URL of websites related with the program.

```
<!ELEMENT url (#PCDATA)>
```

```
<url>http://www.tbs.co.jp</url>
```

5.1.2.10. alsoshown

The alsoshown element is set when the program is decided to be broadcasted in the future. This element has required station and startdate subelements.

```
<!ELEMENT alsoshown (station, startdate)>
```

```
In the following example, broadcasting service name is "TBS-TV", and this program will be broadcasted at 13 August 2003 at 1145 hours Japanese local time.
<alsoshown>
  <station newsml_formalname="TBS-TV" newsml_scheme="RadioTV-JP"
           newsml_urn="urn:newsml:pressnet.or.jp:20020123:topicset.radiotv-BroadcastService:3"/>
  <startdate>20030813T114500+0900</startdate>
</alsoshown>
```

5.1.2.11. previouslyshown

The previouslyshown element sets the information of the program broadcasted in the past. This element has required station and startdate subelements.

```
<!ELEMENT previouslyshown (station, startdate)>
```

```
In the following example, broadcasting service name is "TBS-TV", and this program was broadcasted
```

```
at 12 August 2003 at 0800 hours Japanese local time.

<previouslyshown>
  <station newsml_formalname="TBS-TV" newsml_scheme="RadioTV-JP"
           newsml_urn="urn:newsml:pressnet.or.jp:20020123:topicset.radiotv-BroadcastService:3"/>
  <startdate>20030812T080000+0900</startdate>
</previouslyshown>
```

5.1.3 rights.information

The rights.information element expresses both copyright information and usage rights information for the broadcasting program. It may have one or more copyright subelement, and one usagerights subelement.

```
<!ELEMENT rights.information (copyright*, usagerights?)>
```

5.1.3.1. copyright

The copyright element expresses the copyright information of the program. This element has copyright.holder, copyright.date, copyright.description as subelement. The copyright.holder and the copyright.date are required. And it may have one or more copyright.description subelement.

```
<!ELEMENT copyright (copyright.holder, copyright.date, copyright.description*)>
```

5.1.3.1.1. copyright.holder

The copyright.holder element expresses the information of the copyright holder of the program.

```
<!ELEMENT copyright.holder (#PCDATA)>
```

5.1.3.1.2. copyright.date

The copyright.date element expresses the date when copyright generates. This is described as the ISO 8601 Basic Format (CCYYMMDD). CCYY is for year, MM is for month and DD is for date.

```
<!ELEMENT copyright.date (#PCDATA)>
```

5.1.3.1.3. copyright.description

The copyright.description element set the details of the copyright. This element can set the language describing the copyright content by xml:lang attribute, and also, contains different expressions using the same language by variant attribute.

```
<!ELEMENT copyright.description (#PCDATA)>
<!ATTLIST copyright.description
        xml:lang CDATA #IMPLIED
        variant CDATA #IMPLIED
>
```

```
The example below shows copyright information of NHK for the program.
<copyright>
  <copyright.holder>NHK</copyright.holder>
  <copyright.date>2003</copyright.date>
</copyright>
```

5.1.3.2. usagerights

The usagerights element expresses the usage rights information, analog copy flag, digital copy flag, recording purchase flag, accumulation data flag, and single attention flag. It may have each one attribute of analogcopy, digitalcopy, telerecording, ondemand, accumulation and singleview.

```
<!ELEMENT usagerights (analogcopy?, digitalcopy?, telerecording?,
                                ondemand?, accumulation?, singleview?)>
```

5.1.3.2.1. analogcopy

The analogcopy element expresses the copy control information for devices which record the program in analog media. Record condition should be designated by setting the condition attribute as follows;

prohibition = analog recording is prohibited.

onetime = analog recording is allowed only one time.

permission = analog recording is allowed with no frequency restriction.

```
<!ELEMENT analogcopy EMPTY>
<!ATTLIST analogcopy
        condition (prohibition | onetime | permission) #REQUIRED
>
```

```
This example expresses to prohibit recording by analog mode.
<analogcopy condition="prohibition"/>
```

5.1.3.2.2. digitalcopy

The digitalcopy element expresses the copy control information for devices which record the program in digital media. Record condition should be designated by setting the condition attribute as follows;

prohibition = digital recording is prohibited.

onetime = digital recording is allowed only one time.

permission = digital recording is allowed with no frequency restriction.

```
<!ELEMENT digitalcopy EMPTY>
<!ATTLIST digitalcopy
        condition (prohibition | onetime | permission) #REQUIRED
>
```

```
This example expresses to permit recording by digital mode.
<digitalcopy condition="permission"/>
```

5.1.3.2.3. telerecording

The telerecording element expresses the copy control information for pay per view (PPV) program. Record condition should be designated by setting the condition attribute as follows;

prohibition = copy never

onetime = copy once

permission = copy free

```
<!ELEMENT telerecording EMPTY>
<!ATTLIST telerecording
        condition (prohibition | onetime | permission) #REQUIRED
>
```

```
This example expresses that recording of pay per view program is permitted just one time.
<telerecording condition="onetime"/>
```

5.1.3.2.4. ondemand

The ondemand element expresses the copy control information for real-time hard disk recording. Record condition should be designated by setting the permission attribute as follows;

yes = Real-time watching with simultaneous disk recording is permitted.

no = Watching the program once recorded in a hard disk is permitted. Such programs cannot be watched with TVs without hard disk.

```
<!ELEMENT ondemand EMPTY>
<!ATTLIST ondemand
        permission (yes | no) #REQUIRED
>
```

```
In the following example, real-time watching with hard disk accumulation is prohibited.
<ondemand permission="no"/>
```

5.1.3.2.5. accumulation

This element sets whether the program is permitted to be accumulated to disk. Record condition should be designated by setting the permission attribute as follows;

no = Do not permit accumulation to disk.

yes = Permit accumulation to disk.

```
<!ELEMENT accumulation EMPTY>
<!ATTLIST accumulation
        permission (yes | no) #REQUIRED
>
```

```
This example sets to prohibit accumulation.
<accumulation permission="no"/>
```

5.1.3.2.6. singleview

The condition of whether the program could be viewed as the single program, not

package contract, is set to the singleview element. Record condition should be designated by setting the permission attribute as follows;

no = prohibit single viewing

yes = permit single viewing

```
<!ELEMENT singleview EMPTY>
<!ATTLIST singleview
        permission (yes | no) #REQUIRED
>
```

```
In this example, single view is permitted.
<singleview permission="yes"/>
```

5.1.4 descriptive.information

The descriptive.information element expresses descriptive information of the program. New program, final episode, re-broadcast, specific information (game information), key word, genre, serial number of the broadcasting program, total number of episodes in serial program, and first broadcast date are contained.

This element may have newprogram, final and rebroadcast attributes.

* When the program is a new program, newprogram attribute ("yes") is set.
* When the program is the final episode, final attribute ("yes") is set.
* When the program is a rebroadcast program, rebroadcast attribute ("yes") is set.

This element has required one or more genre subelement. Also it may have one episode and one firstdate subelements, and one or more particularity, keyword, recommendable subelements.

```
<!ELEMENT descriptive.information (genre+, episode?, firstdate?, particularity*, keyword*,
recommendable*)>
<!ATTLIST descriptive.information newprogram (yes | no) #IMPLIED
final (yes | no) #IMPLIED
rebroadcast (yes | no) #IMPLIED >
```

5.1.4.1. genre

The genre element sets the genre of the program. For example, the genre code by ARIB(Japan) may be set to newsml_formalname.

```
<!ELEMENT genre EMPTY>
<!ATTLIST genre %newsml_code; >
```

```
In the following example, genre of the program is weather forecast.
<genre newsml_formalname="01" newsml_scheme="RadiotvARIBGenre"
newsml_urn="urn:newsml:pressnet.or.jp:20020826:topicset.radiotv-ARIBVocabulary:2" />
```

5.1.4.2. episode

The episode element expresses the serial number of serial program.

This element should have required number attribute and may have total attribute.

*The number attribute expresses the serial number of the serial program.

*The total attribute expresses the total scheduled number of the episodes in the series.

When the total scheduled number is undecided, the total attribute is omitted.

```
<!ELEMENT episode EMPTY>
<!ATTLIST episode
        number CDATA #REQUIRED
        total CDATA #IMPLIED
>
```

```
The example below shows this program is the first episode of this serial and the number of total
episodes is sixteen.
<episode number=”1” total="16"/>
```

5.1.4.3. firstdate

The firstdate element expresses the first broadcast date of a program.(CCYYMMDD)

When the program is re-broadcast, the date of the first broadcast is set.

```
<!ELEMENT firstdate (#PCDATA)>
```

```
This example shows the first broadcasitng date is 4 August 2003.
<firstdate>20030804</firstdate>
```

5.1.4.4. particularity

The particularity element expresses information on game such as baseball, soccer, etc. It specifies name of the sports by the classification attribute. Team names, player names and stadium information are contained. This element may have plural player subelement and one location subelement.

```
<!ELEMENT particularity (player*, location?)>
<!ATTLIST particularity classification CDATA #REQUIRED >
```

```
The following example expresses a program of soccer game, which is the match of England vs France at France stadium.
<particularity classification="soccer">
   <player>England</player>
   <player>France</player>
   <location>France stadium</location>
</particularity>
```

5.1.4.4.1. player

The player element specifies the team names or player names.

```
<!ELEMENT player (#PCDATA)>
```

5.1.4.4.2. location

The location element specifies the holding place of the game. Eg.: National Stadium, Tokyo Dome, etc.

```
<!ELEMENT location (#PCDATA)>
```

5.1.4.5. keyword

The keyword element expresses the key word to search the program. The providing side decides key word beforehand, and the user sets the key word by its information. For example, among the program information of cinema and drama, user may search “adventure” or “love romance” program by using keyword element.

```
<!ELEMENT keyword (#PCDATA)>
```

```
This example shows that the keyword to search programs is ”sport”.
< keyword >sport</ keyword >
```

5.1.4.6. recommendable

The recommendable element expresses recommendation information for the program. Providing side sets the value. When the providing side recommends the program most, an attribute value is set to "1". The value are from 1 to 9.

```
<!ELEMENT recommendable EMPTY>
<!ATTLIST recommendable value NMTOKEN #REQUIRED >
```

```
This example shows that providing side thinks this program is the most recommendable one.
<recommendable value="1"/>
```

5.2. program.content

The program.content element expresses detailed information of program such as frame title, program name, program content information, performer, cinema, record and sub-program. It has title subelement and some auxiliary subelements (titlepronounce, frametitle, subtitle, body, credit, cinema, record and sub-program). It has one or more required title subelement, and may have one or more some subelements (titleponounce, subtitle, body, credit, sub-program). The other element can be included only one. It has program.content.id attribute, which identify broadcast program. Among all the programs broadcasted or will be broadcasted, if the value of this attribute are the same, the programs are identified as same one.

```
<!ELEMENT program.content (frametitle?, (title, titlepronounce?, subtitle?)+, body*,
credit*, cinema?, record?, sub-program*)>
<!ATTLIST program.content
        program.content.id ID #REQUIRED
>
```

5.2.1 frametitle

The frametitle element expresses broadcast frame title.

```
<!ELEMENT frametitle (#PCDATA)>
```

```
In this example, broadcast frame title is "foreign news".
<frametitle>foreign news</frametitle>
```

5.2.2. title

The title element expresses the title of the program. In order to supplement program information, a titlepronounce element and a subtitle element respectively express pronunciation information and a subtitle. These subelements should be described in correspondence with the title element.

The titlepronounce element expresses pronunciation of the title. It may be used for automatic voice pronunciation. This element may be written in Katakana or Hiragana characters (Japanese), International Phonetic Alphabets, Romanization of Japanese (ISO3602), or etc., identified by the newsml_formalname attribute.

Language describing title, titlepronounce and subtitle content may be set by xml:lang attribute.

```
<!ELEMENT title (#PCDATA)>
<!ATTLIST title
        xml:lang CDATA #IMPLIED
>

<!ELEMENT titlepronounce (#PCDATA)>
<!ATTLIST titlepronounce
        %newsml_code;
        xml:lang CDATA #IMPLIED
>

<!ELEMENT subtitle (#PCDATA)>
<!ATTLIST subtitle
        xml:lang CDATA #IMPLIED
>
```

```
<program.content>
```

```
<frametitle>The Monday World News</frametitle>
<title xml:lang="en-US">NHK News</title>
<titlepronounce newsml_formalname=”KATAKANA” xml:lang="ja-JP">...</titlepronounce>
<subtitle xml:lang="en-US">The report of the prime minister election</subtitle>
<title xml:lang="fr-FR">NHK News</title>
<subtitle xml:lang="fr-FR">Le rapport de l'élection de premier ministre</subtitle>
        :
```

5.2.3 body

The body element expresses the content display of the program information on program table of newspapers, websites, magazines, and so on. A href attribute points the content information. It may be elsewhere in a document or in some external resource. This element may have one modification, one caption, and one body.content subelement. The kind of display information of the program is set to newsml_formalname attribute of body element. Three types attributes as below can distinguish the usage.

*program information for newspaper

*program information for websites

*published information of program from broadcasting station

```
<!ELEMENT body (modification?, caption?, body.content?)>
<!ATTLIST body %newsml_code; href CDATA #IMPLIDE>
```

```
In the following example, display information of program for web site is expressed.
<body newsml_formalname="web">
  <body.content>
    <p>Grand Sumo Autumn Tournament will be held from September 7th until 21st at Ryogoku Kokugikan in Tokyo.</p>
    <p>The broadcast will be in dual language, Japanese in the main and English in the sub-audio track. </p>
  </body.content>
</body>
```

5.2.3.1. modification

The modification element is used to correct a description of program information.

For example,

* Performer determined
* Program changed
* Performer added

```
<!ELEMENT modification (#PCDATA)>
```

```
In the following example, program information was changed because the program was changed.
<modification>Program change</modification>
```

5.2.3.2. caption

The caption element is additional description, which is used when program-image (photograph) is indicated with href attribute of body element.

```
<!ELEMENT caption (#PCDATA)>
```

```
<caption>Explanation of a program photograph is described here.</caption>
```

5.2.3.3. body.content

The body.content element specifies display content of program information and has href attribute serves as a pointer to information. It may be elsewhere in a document or in some external resource. The body.content element may have plural #PCDATA and p element. And p element may have plural #PCDATA, symbol element, and funciton element.

```
<!ELEMENT body.content (#PCDATA | p)*>
<!ATTLIST body.content href CDATA #IMPLIDE>
<!ELEMENT p (#PCDATA | symbol | function)*>
<!ELEMENT symbol EMPTY>
<!ATTLIST symbol %newsml_code; >
<!ELEMENT function(#PCDATA)>
<!ATTLIST function %newsml_code; >
```

The p element sets the lay out of one line within a program cell's width, in other words, distinguishes one line from the following line. Each line is put between and .

The p element has two subelements. The symbol subelement expresses information of stereophonic broadcast or bilingual broadcast, using an attribute, as the time table is displayed using specific symbols for stereo broadcasting, bilingual program, etc. The function subelement sets the attribute of character strings, such as font, etc.

```
Sample:
1); program content is described in body.content by p element.
<body newsml_formalname="newspaper">
  <body.content>
    <p>Today's sepecial</p>
    <p>is resort hotels</p>
  <body.content>
</body>

2); external program content information is pointed by href attribute.
<body newsml_formalname="web">
  <body.content href=" sample.table" />
</body>

3); using function element, "XXX News" and "from asia" are displayed by Gothic type.
<body newsml_formalname="newspaper">
  <body.content>
    <p>9.00
      <function newsml_formalname="Gothic"/>XXX News</function>
      <symbol newsml_formalname="news"/>
    </p>
    <p>
      <function newsml_formalname="Gothic"/>from asia</function>
    </p>
  </body.content>
</body>
```

5.2.4 credit

The credit element expresses information of participants and contributors to the program. The order attribute expresses the priority among them. This element has name, part, and cast subelement. The name element is required. Plural part element

and the optional cast element may be set for a name element.

```
<!ELEMENT credit (name, (part, cast?)*)>
<!ATTLIST credit
        order CDATA #IMPLIED
>
```

```
Ex. Larry King
<credit>
    <name>Larry King</name>
</credit>
Ex. Director MIYAZAKI<credit>
    <name>Hayao Miyazaki</name>
    <part>director</part>
</credit>
Ex. Participant's Name: Ewan McGregor / Performance Name:Obi-Wan Kenobi)
<credit>
    <name>Ewan McGregor</name>
    <part>performer</part>
    <cast>Obi-Wan Kenobi</cast>
</credit>
```

5.2.4.1. name

The name element expresses a name of participant or contributor.

```
<!ELEMENT name (#PCDATA)>
```

```
<name>Ewan McGregor</name>
```

5.2.4.2. part

The part element expresses a performer's role in the program. For example, supervisor, performer, original writer, playwright, director, musician, camera, planner, narrator, guest, etc., may be contained.

```
<!ELEMENT part (#PCDATA)>
```

```
<part>director</part>
```

5.2.4.3. cast

The cast element expresses a specific name of cast.

```
<!ELEMENT cast (#PCDATA)>
```

```
<cast>Obi-Wan Kenobi</cast>
```

5.2.5 cinema

The cinema element contains cinema information such as country or company where the cinema was produced. It should have required year attribute. It may also have id attribute to set id already used in the cinema industry for the content management. This element may have one or more country subelement and plural creator subelement.

The year attribute express production year(CCYY) of cinema.
This specification does not prescribe id attribute.

```
<!ELEMENT cinema (country+, creator*)>
<!ATTLIST cinema
        year CDATA #REQUIRED
        id CDATA #IMPLIED
>
```

```
Ex. STAR WARS EPISODE 1
<cinema year="1999" classification="2">
  <countory newsml_scheme="ISO3166-alpha3" newsml_formalname="USA">
  <creator>Lucas Film</creator>
</cinema>
```

5.2.5.1. country

The country element expresses a country where the cinema was produced. The name of country is set to newsml_formalname.

```
<!ELEMENT country EMPTY>
<!ATTLIST country
        %newsml_code;
>
```

```
<country newsml_scheme="ISO3166-alpha3" newsml_formalname="JPN">
```

5.2.5.2. creator

The creator element expresses the production company of the cinema.

```
<!ELEMENT creator (#PCDATA)>
```

```
Ex. STUDIO GHIBLI
<creator>STUDIO GHIBLI</creator>
```

5.2.6 record

The record element sets a videotape-recording reservation code (VCR code) for reservation. This code is for raising the audience's convenience to reserve a recording of program. A reservation code system is set to newsml_formalname.

```
<!ELEMENT record (#PCDATA)>
<!ATTLIST record
        %newsml_code;
>
```

```
In this example, information of code is '1234' of G-CODE.
<record newsml_formalname="G-CODE">1234</record>
```

5.2.7 sub-program

This element expresses detailed sub-program, which cannot be expressed in the ordinary program table. This element may have one sub-program.information subelement and has required sub-program.content subelement. As attribute, it may set xml:lang, order, and role. The xml:lang attribute sets the language to express the

sub-program information. The order attribute expresses the sequential order of sub-programs. The role attribute expresses the role of sub-program such as:

*When a program is re-expressed in detail(followed by)

*When detailed program is additionally expressed(Including)

```
<!ELEMENT sub-program (sub-program.information?, sub-program.content)>
<!ATTLIST sub-program
        xml:lang CDATA #IMPLIED
        order CDATA #IMPLIED
        role CDATA #IMPLIED
>
```

```
<sub-program xml:lang=”ja-JP” order="1">
```

5.2.7.1. sub-program.information

The sub-program.information element expresses the administrative information, rights information, and descriptive information of sub-program. This element has program.id and xml:lang attributes. The program.id attribute sets the id to identify each sub-program. The xml:lang attribute sets language which expresses administrative information. This element may have plural language subelement, each one administrative.information, rights.information, and descriptive.information subelements.

As for the detail, see refer to 5.1 program.information chapter.

```
<!ELEMENT sub-program.information (language*,
administrative.information?, rights.information?, descriptive.information?)>
<!ATTLIST sub-program.information
        program.id ID #IMPLIED
        xml:lang CDATA #IMPLIED
>
```

```
<sub-program.information program.id="nhk1-tv_spi_20020813T0500-1">
  <administrative.information parentalrate="0">
..
```

5.2.7.2. sub-program.content

The sub-program.content element expresses the detailed information of the program, such as name of broadcasting frame, title, content information, performer, information of cinema, and information of record. This element has program.content.id attribute to distinguish broadcasting program. Among the all programs, broadcasted in the past or to be broadcasted in the future, certain programs can be identified as the same if the program.content.id are the same.

This element has frametitle, title, titlepronounce, subtitle, body, credit, cinema, and record subelements. Title, titlepronounce, subtitle, body, and credit may be set one or more. The title element is required and should be set more than one time. The other elements can be set only one time.

As for the details, see refer to 5.2 program.content chapter.

```
<!ELEMENT sub-program.content (frametitle?, (title, titlepronounce?, subtitle?)+, body*, credit*,
cinema?, record?)>
<!ATTLIST sub-program.content
        program.content.id ID #REQUIRED
>
```

```
<sub-program.content program.content.id="nhk1-tv_pc_20020813T0500-1">
  <title xml:lang="ja-JP">News, Weather, Sports</title>
  ..
```

5.3. program.table

The program.table element expresses a table of programs. This element has table.information, program.list, and substitutional.table subelements. Table.information element is required, and program.list elemnt should be set more than one. Plural substitutional.table element may be set.

```
<!ELEMENT program.table(table.information,
 program.list+, substitutional.table*)>
```

5.3.1 table.information

The table.information element expresses the start time, the end time, and broadcasting service name on a program table, expressed with program.list element. The table.information element has required station, startdate and enddate subelements. Information is replaced at a certain period of time.

```
<!ELEMENT table.informatin (station, startdate, enddate)>
```

5.3.1.1. station

The station element sets a broadcasting service name which broadcasts the programs expressed with the program.list element.

As for the details, see rerfer to 5.1.2.1 station chapter.

```
<!ELEMENT station EMPTY>
<!ATTLIST station %newsml_code;>
```

5.3.1.2. startdate

The startdate element expresses broadcast opening date and time of a program table. (It shows the time which first program in a program table begin.) The notation method of this element is based on ISO8601, then it notes CCYYMMDDTHHMMSS{+|-}HHMM.

As for the details, see refer to 5.1.2.2 startdate chapter.

```
<!ELEMENT startdate (#PCDATA)>
```

5.3.1.3. enddate

The enddate element expresses the broadcast ending date and time of a program table. (It shows the time which the last program in a program table ends.) The notation method of this element is based on ISO8601, then it notes CCYYMMDDTHHMMSS{+|-}HHMM. The enddate element expresses the end time of the program including commercials.

As for the details, see refer to 5.1.2.3 enddate chapter.

```
<!ELEMENT enddate (#PCDATA)>
```

```
In the following example, broadcasting service name is ”NHK1-TV”, start date is at 13 August 2003 at 0500 hours Japanse local time and end date is at 14 August 2003 at 0500 hours Jpanese local time.
<table.information>
  <station newsml_formalname="NHK1-TV" newsml_scheme="RadioTV-JP"
newsml_urn="urn:newsml:pressnet.or.jp:20020123:topicset.radiotv-BroadcastService:3"/>
  <startdate>20030813T050000+0900</startdate>
  <enddate>20030814T050000+0900</enddate>
</table.information>
```

5.3.2 program.list

The program.list element expresses one program table with connecting plural program information. The order attribute sets the order of a row of the program, expressed with the program.list element. The program.list element should have program.information and program.content subelement.

```
<!ELEMENT program.list (program.information, program.content)>
<!ATTLIST program.list order CDATA #IMPLIED >
```

```
This example shows that sequential order of this program is first.
<program.list order="1">
```

5.3.2.1. program.information

A program.information element expresses the administrative information, rights information and description information of the program. This element may have program.id and xml:lang attribute. The program.id attribute sets the id to identify the broadcasting program from others in the same day. The xml:lang attribute sets the language which expresses the administrative information of program. The program.information element has language, administrative.information, rights.information, and descriptive.information subelemements. It may have plural language elements. The administrative.information, the rights.information, and the descriptive.information elements are required.

As for the details, see refer to 5.1.1 program.information chapter.

```
<!ELEMENT program.information
                    (language*, administrative.information,
                    rights.information, descriptive.information)>
<!ATTLIST program.information program.id ID #IMPLIED
                                xml:lang CDATA #IMPLIED>
```

5.3.2.2. program.content

The program.content element expresses the detailed information of the program, such as broadcast frame title, program name (title), content information, performer, cinema information, the information for recording, and sub-program information. As subelement, there are frametitle, title, titlepronounce, subtitle, body, credit, cinema, record, and sub-program. Plural titlepronounce, subtitle, body, credit and sub-program element may be set. Title element is required and should be set one or more. The other elements may be set only one time.

As for the details, see refer to 5.2 program.content chapter.

```
<!ELEMENT program.content (frametitle?, (title, titlepronounce?, subtitle?)+, body*, credit*, cinema?,
record?, sub-program*)>
```

5.3.3 substitutional.table

The substitutional.table element expresses a substitutional program table. The substitutional program, which is broadcasted when the planned program cannot be broadcasted because of rain and so on, is set to this element. Order attribute sets the sequential broadcasting order of the substitutional programs. Substitutional.table element has required one or more program.list subelement, required one startdate and one enddate subelement. And it may have one comment subelement.

```
<!ELEMENT substitutional.table (comment?, startdate, enddate, program.list+)>
<!ATTLIST substitutional.table order CDATA #IMPLIED>
```

```
In this example, the order of this substitutional program is second.
<substitutional.table order="2">
```

5.3.3.1. comment

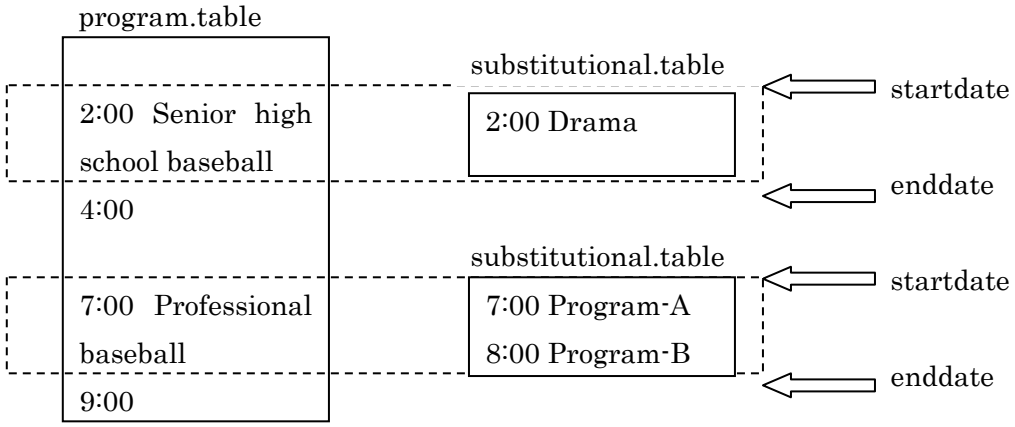
The comment element expresses additional information in human-readable natural language. Explanation for substitutional program is described.

```
<!ELEMENT comment (#PCDATA)>
```

```
This comment element is used to explain a substitutional program.
<comment>When the baseball match is called off</comment>
```

5.3.3.2. startdate

The startdate element, which is used in this section, expresses a start time of substitutional program list. There may be the case that several substitutional programs exist in a program list.



As for the details, see refer to 5.1.2.2 startdate chapter.

```
<!ELEMENT startdate (#PCDATA)>
```

5.3.3.3. enddate

The enddate element in this section expresses the end time of substitutional program list.

As for the details, see refer to 5.1.2.3 enddate chapter.

```
<!ELEMENT enddate (#PCDATA)>
```

5.3.3.4. program.list

The program.list element in this section expresses a substitutional program list. It has possibility to become the discontinuous time, when it becomes the order of a row of the continuous program and plural program has substitutional program. The program.list element may have order attribute, which expresses the order of a row of the program, expressed with program.list element. The program.list element should have one program.information subelement and one program.content subelement.

As for the details, see refer to 5.3.2 program.list chapter.

```
<!ELEMENT program.list (program.information, program.content)>
<!ATTLIST program.list order CDATA #IMPLIED >
```

```
<substitutional.table>
        <comment>When the baseball match is called off</comment>
        <startdate>20030812T140000+0900</startdate>
        <enddate>20030812T160000+0900</enddate>
        <program.list order="1">
                <program.information program.id="sub20030812T140000-001">
                        <administrative.information>
                                <station newsml_formalname="NHK1-TV"/>
                                <startdate>20030812T140000+0900</startdate>
                                <enddate>20030812T160000+0900</enddate>
                        ..
                </program.information>
                <program.content>
                        <title>drama</title>
                </program.content>
        </program.list>
</substitutional.table>
<substitutional.table>
        <comment>When the baseball match is called off</comment>
        <startdate>20030812T190000+0900</startdate>
        <enddate>20030812T210000+0900</enddate>
```

```
        <program.list order="1">
                <program.information program.id="sub20030812T190000-001">
                        <administrative.information>
                                <station newsml_formalname="NHK1-TV"/>
                                <startdate>20030812T190000+0900</startdate>
                                <enddate>20030812T193000+0900</enddate>
                        ..
                </program.information>
                <program.content>
                        <title>NHK News 7</title>
                        <body>..</body>
                </program.content>
        </program.list>
        <program.list order="2">
                <program.information program.id="sub20030812T190000-002">
                        <administrative.information>
                                <station newsml_formalname="NHK1-TV"/>
                                <startdate>20030812T193000+0900</startdate>
                                <enddate>20030812T204300+0900</enddate>
                        ..
                </program.information>
                <program.content>
                        <title>Children's English Lesson</title>
                        <subtitle>Fun with English</subtitle>
                </program.content>
        </program.list>
</substitutional.table>
```