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SERIES H: AUDIOVISUAL AND MULTIMEDIA SYSTEMS

Infrastructure of audiovisual services – Supplementary services for multimedia

Digit maps within ITU-T H.323 systems

Recommendation ITU-T H.460.7

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Recommendation ITU-T H.460.7

Digit maps within ITU-T H.323 systems

Summary

Recommendation ITU-T H.460.7 specifies the usage of Digit Maps within ITU-T H.323 systems. Digit Maps can improve the post dial delay experienced by the user and can reduce the amount of provisioning that would otherwise have to occur in order to reduce such delays.

This revision introduces a number of corrections and clarifications by incorporating technical and editorial corrections from the ITU-T H.323-series Implementers Guide (03/2011).

History

Edition	Recommendation	Approval	Study Group
1.0	ITU-T H.460.7	2002-11-29	16
2.0	ITU-T H.460.7	2013-03-16	16

FOREWORD

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In some areas of information technology which fall within ITU-T's purview, the necessary standards are prepared on a collaborative basis with ISO and IEC.

NOTE

In this Recommendation, the expression "Administration" is used for conciseness to indicate both a telecommunication administration and a recognized operating agency.

Compliance with this Recommendation is voluntary. However, the Recommendation may contain certain mandatory provisions (to ensure, e.g., interoperability or applicability) and compliance with the Recommendation is achieved when all of these mandatory provisions are met. The words "shall" or some other obligatory language such as "must" and the negative equivalents are used to express requirements. The use of such words does not suggest that compliance with the Recommendation is required of any party.

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As of the date of approval of this Recommendation, ITU had not received notice of intellectual property, protected by patents, which may be required to implement this Recommendation. However, implementers are cautioned that this may not represent the latest information and are therefore strongly urged to consult the TSB patent database at http://www.itu.int/ITU-T/ipr/.

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Digit maps within ITU-T H.323 systems

1 Scope

This Recommendation defines the usage of Digit Maps within ITU-T H.323 systems. Digit Maps can improve the post dial delay experienced by the user and can reduce the amount of provisioning that would otherwise have to occur in order to reduce such delays.

A Digit Map is a set of textual strings that serve as a template representing the dialling plan available to the endpoint. Digit Map information is conveyed from the gatekeeper to the endpoint following registration. The advertisement of capabilities and the conveyance of Digit Maps are performed through the use of the Generic Extensibility Framework, as defined in [ITU-T H.323].

2 References

The following ITU-T Recommendations and other references contain provisions which, through reference in this text, constitute provisions of this Recommendation. At the time of publication, the editions indicated were valid. All Recommendations and other references are subject to revision; users of this Recommendation are therefore encouraged to investigate the possibility of applying the most recent edition of the Recommendations and other references listed below. A list of the currently valid ITU-T Recommendations is regularly published. The reference to a document within this Recommendation does not give it, as a stand-alone document, the status of a Recommendation.

[ITU-T H.225.0] Recommendation ITU-T H.225.0 (2009), *Call signalling protocols and media stream packetization for packet-based multimedia communication systems*.

[ITU-T H.248.1] Recommendation ITU-T H.248.1 (2005), *Gateway control protocol: Version 3*.

[ITU-T H.323] Recommendation ITU-T H.323 (2009), *Packet-based multimedia communications systems*.

[ITU-T Q.931] Recommendation ITU-T Q.931 (1998), *ISDN user-network interface layer 3 specification for basic call control*.

[ITU-T T.50] Recommendation ITU-T T.50 (1992), *International Reference Alphabet (IRA) (Formerly International Alphabet No. 5 or IA5) – Information technology – 7-bit coded character set for information interchange*.

[IETF RFC 2234] ISOC/IETF RFC 2234 (1997), *Augmented BNF for Syntax Specifications: ABNF*.

[IETF RFC 2616] ISOC/IETF RFC 2616 (1999), *Hypertext Transfer Protocol – HTTP/1.1*.

3 Abbreviations and acronyms

This Recommendation uses the following abbreviations and acronyms:

ABNF Augmented Backus-Naur Form

ARJ Admission Reject

ARQ Admission Request

GEF Generic Extensible Framework

HTTP Hypertext Transfer Protocol

RAS Registration, Admission and Status

RCF Registration Confirm

RRQ Registration Request

SCI Service Control Indication

SCR Service Control Response

ToN Type of Number

4 General considerations

A Digit Map is a collection of strings that represent valid dialling plans. The exact syntax of each string is defined in clause 10. The Digit Map information should be used by the endpoint to expeditiously detect a complete number so as to reduce the post-dial delay experienced by the calling user.

The Gatekeeper may provide a primary Digit Map for use when the Type of Number is unknown, and separate Digit Maps that are associated with a particular Type of Number that is known. In the event that the Gatekeeper does not provide a Digit Map for a particular Type of Number, or in the case that the endpoint or environment has no concept of a Type of Number, the endpoint shall match numbers against the primary Digit Map. Digit Maps may be provided directly through RAS signalling, or referenced by a URL provided through RAS signalling.

5 Capability advertisement

Endpoints capable of accepting, and willing to accept, Digit Maps from the Gatekeeper shall advertise that capability in all RRQ messages sent to the Gatekeeper, except lightweight RRQ messages. The capability shall not be advertised in lightweight RRQ messages. If the capability is not present in the aforementioned RRQ messages, the Gatekeeper shall assume that Digit Map support is no longer present.

An endpoint signals support for Digit Maps by advertising the capability in the **featureSet.supportedFeatures** field of the RRQ message. The Digit Maps capability is indicated with the feature identifier shown in Table 1.

Table 1 – Indication of the Digit Maps feature

Feature name:	**Digit Maps**
Feature Description:	This feature allows a Gatekeeper to transmit Digit Map information and for an endpoint to use that information in accordance with this Recommendation
Feature identifier type:	Standard
Feature identifier value:	7

The endpoint shall provide the parameter that indicates the total number of bytes of memory that the endpoint can allocate to store the Digit Maps provided by the Gatekeeper. That parameter is shown in Table 2.

Table 2 – Digit Maps Length

Parameter name:	**Digit Maps Length**
Parameter description:	This value represents the total number of bytes of memory that the endpoint can allocate to store the Digit Maps provided by the Gatekeeper, either through RAS or HTTP. A length of 0 indicates that the endpoint does not impose a limit on the length of the Digit Map information it will accept.
Parameter identifier type:	Standard
Parameter identifier value:	1
Parameter type:	number32
Parameter cardinality:	Once

The endpoint may provide the parameter described in Table 3, which indicates the total number of bytes of memory that the endpoint can allocate to store a temporary Digit Map information provided by the Gatekeeper in an ARJ message when doing overlapped sending. The absence of this parameter indicates that the endpoint does not support the reception of a Digit Map for use within the context of overlapped sending via RAS. If the endpoint wishes to indicate the ability to accept a temporary Digit Map within the context of overlapped sending without specifying a maximum amount of memory, the value of this parameter shall be set to zero.

Table 3 – Digit Map Length for Overlapped Sending

Parameter name:	**Digit Maps Length for Overlapped Sending**
Parameter description:	This value represents the total number of bytes of memory that the endpoint can allocate to store the Digit Map provided by the Gatekeeper when performing overlapped sending, or 0 if it does not wish to indicate a limit.
Parameter identifier type:	Standard
Parameter identifier value:	2
Parameter type:	number32
Parameter cardinality:	Zero or one

If the endpoint has the ability to transfer Digit Map information via HTTP, it shall include in the capability advertisement the parameter shown in Table 4 with its value set to TRUE. Otherwise, the parameter shall be included with the value FALSE.

Table 4 – HTTP Digit Maps Download Capability

Parameter name:	**HTTP Download Capability**
Parameter description:	The presence of this parameter indicates that the endpoint has the capability of downloading Digit Maps via HTTP.
Parameter identifier type:	Standard
Parameter identifier value:	3
Parameter type:	bool
Parameter cardinality:	Once

Other parameters are for further study and shall be ignored if received.

6 Conveyance of digit maps

The Gatekeeper may provide Digit Map information to an endpoint that advertises support for the Digit Maps feature. The Digit Map information is conveyed to the endpoint through the RCF (including a response to a lightweight RRQ), SCI, or ARJ messages by populating the **genericData** field with the Digit Map information or with a URL to said information. The Gatekeeper should provide the Digit Map information in the RCF message, but may utilize the SCI message in order to provide updated information in the absence of an RRQ/RCF exchange.

Digit Map information may be updated later by the Gatekeeper in any RCF message or any SCI message. Such an update from the Gatekeeper shall result in the replacement of any previously received Digit Map information in RCF or SCI with the new information. The endpoint shall always utilize the most recently transmitted Digit Map information.

The Gatekeeper may also provide a more refined, temporary Digit Map as part of the overlapped signalling procedures defined in clause 8.1.12 of [ITU-T H.323]. In this case, the Digit Map information shall be provided via the ARJ message and shall contain a single Digit Map for the particular Type of Number signalled in the related ARQ. Further, the Digit Map shall only have significance with respect to that particular call. This temporary Digit Map shall be the only Digit Map subsequently considered when matching digits for that call, and can only be updated through subsequent ARJ messages. The reception of Digit Map information within an ARJ shall not result in the replacement of Digit Map information provided in an RCF or SCI, as that information would remain valid for other calls that are initiated. Use of the ARJ message is for support of overlapped sending as described more fully in clause 7.

NOTE – Implementers should be conscientious of the fact that, since RAS is asynchronous in nature, an RCF containing Digit Map information may be received by an endpoint after an SCI message containing a more up-to-date Digit Map information, for example. If care is not exercised, the end result may be that the endpoint would be operating on older Digit Map information. Therefore, implementers are cautioned to take steps to ensure that the most recently transmitted Digit Map information is utilized.

6.1 Use of the RCF message

To provide Digit Map information via RCF, the **genericData** field shall contain an element that contains the feature identifier shown in Table 1. The Gatekeeper may include the Digit Map information as **parameters** as described in clauses 6.3 and 6.4, or may include a URL **parameter** as described in clause 6.5 that refers to the Digit Map information; however, it shall not include both. The Gatekeeper is not required to convey Digit Map information in every RCF, especially RCF messages transmitted in response to lightweight RRQ messages. While the Gatekeeper is not required to repeatedly transmit Digit Map information in response to RRQ messages that are not lightweight RRQ messages, the Gatekeeper should give consideration to the possibility that the endpoint may be transmitting the RRQ after rebooting, and to the possibility that any previously transmitted information has been lost.

If the Gatekeeper sends an RCF message containing the Digit Maps feature advertised within the **genericData** field, but includes no Digit Map **parameters**, this indicates that the Gatekeeper is revoking the Digit Map information previously sent to the endpoint. In such a case, the endpoint shall clear all internally stored Digit Map information and operate as if no Digit Map information was ever received from the Gatekeeper from that point forward, or until new Digit Map information is received.

6.2 Use of the SCI message

When sending the SCI message to convey Digit Map information, the Gatekeeper shall construct an SCI message that includes a single **ServiceControlSession** sequence in the **serviceControl** field. Within the single **ServiceControlSession** sequence, the **sessionID** shall be set to a value selected by the Gatekeeper that represents the Digit Maps "session" and the **reason** field shall be set to **open**.

The **contents** field may be omitted, with the Digit Map information contained within the **genericData** field. If the **contents** field is present, the **url** choice shall be selected, providing the location of the Digit Map information. The **genericData** field shall be populated with a single entry for the Digit Map information using the feature identifier shown in Table 1. This single entry is the indicator to the endpoint that the SCI message is transmitted for the sole purpose of conveying Digit Map information. Within the single **genericData** field, the Gatekeeper may include the Digit Map strings as **parameters** as described in clause 6.4. A Gatekeeper shall include either the Digit Map strings as **parameters** or provide a **url**, as described above, but not both.

An endpoint in receipt of an SCI message with Digit Map information shall ignore all fields within the SCI message, except the fields pertaining to the Digit Map information referenced in this clause. In response to an SCI message containing Digit Map information, the endpoint shall send an SCR message to the Gatekeeper with only the required **requestSeqNum** field present.

If the Gatekeeper sends an SCI message containing the Digit Maps feature advertised within the **genericData** field, but includes no Digit Map **parameters** and no **url** is specified, this indicates that the Gatekeeper is revoking the Digit Map information previously sent to the endpoint. In such a case, the endpoint shall clear all internally stored Digit Map information and operate as if no Digit Map information was ever received from the Gatekeeper from that point forward, or until new Digit Map information is received.

6.3 Timer parameters

Timers are used by the endpoint to facilitate the matching of a string within a Digit Map and may be provided by the Gatekeeper as **parameters**. Such timers provided by the Gatekeeper override any provisioned values in the endpoint. The **parameters** for the three timers defined in this Recommendation are shown in Tables 5 through 7.

Table 5 – Start Timer

Parameter name:	**Start Timer** (T)
Parameter description:	This parameter contains the value of the "Start Timer", in seconds. This timer indicates the amount of time the endpoint shall wait for the first digit to be received (see clause 8 for details).
Parameter identifier type:	Standard
Parameter identifier value:	1
Parameter type:	number8
Parameter cardinality:	Zero or one

Table 6 – Short Timer

Parameter name:	**Short Timer** (S)
Parameter description:	This parameter contains the value of the "Short Timer", in seconds. This timer indicates the amount of time that the endpoint shall wait to match the next digit (see clause 8 for details).
Parameter identifier type:	Standard
Parameter identifier value:	2
Parameter type:	number8
Parameter cardinality:	Zero or one

Table 7 – Long Timer

Parameter name:	**Long Timer** (L)
Parameter description:	This parameter contains the value of the "Long Timer", in seconds. This timer indicates the amount of time that the endpoint shall wait to match a Digit Map string (see clause 8 for details).
Parameter identifier type:	Standard
Parameter identifier value:	3
Parameter type:	number8
Parameter cardinality:	Zero or one

6.4 Digit map string parameters

Individual strings of a Digit Map shall be conveyed to the endpoint in the **parameters** field of the **GenericData** sequence, with one string per **EnumeratedParameter**. The **EnumeratedParameter** is constructed as shown in Table 8.

Table 8 – Digit Map String parameter

Parameter name:	**Digit Map String**
Parameter description:	This parameter contains a single Digit Map string
Parameter identifier type:	Standard
Parameter identifier value:	4
Parameter type:	Text
Parameter cardinality:	Zero or more

Digit Maps conveyed as shown in Table 8 are associated with the "unknown" Type of Number as defined in [ITU-T Q.931], or with any dialled or received digits that are of an unknown type or whose values are not listed in Table 10.

The Gatekeeper may provide a separate set of Digit Maps for each Type of Number, which is used only when the endpoint receives digits for that Type of Number. To provide Digit Maps associated with a Type of Number, the Gatekeeper may include the parameter defined in Table 9.

Table 9 – Type of Number Associated Digit Map

Parameter name:	**ToN Associated Digit Map**
Parameter description:	This compound type conveys Digit Map associated with a particular Type of Number
Parameter identifier type:	Standard
Parameter identifier value:	5
Parameter type:	Compound
Parameter cardinality:	Zero or more

Within the **compound** type defined in Table 9, the parameters defined in Tables 10 and 11 shall be included to convey one or more Digit Map strings for a particular Type of Number.

Table 10 – Type of Number parameter

Parameter name:	**Type of Number** (ToN)
Parameter description:	This parameter indicates the type of number
Parameter identifier type:	Standard
Parameter identifier value:	1
Parameter type:	Number8
Parameter valid values:	1 International number 2 National number 3 Network specific number 4 Subscriber number 6 Abbreviated number
Parameter cardinality:	Once

The Digit Map strings comprising the Digit Map associated with a Type of Number (ToN) are conveyed as additional parameters within the **compound** type of the ToN Associated Digit Maps parameter shown in Table 9. This is shown in Table 11.

Table 11 – Digit Map strings for ToN parameter

Parameter name:	**Digit Map Strings for ToN**
Parameter description:	This parameter contains a single Digit Map string
Parameter identifier type:	Standard
Parameter identifier value:	2
Parameter type:	Text
Parameter cardinality:	One or more

The syntax of the **text** field, which holds a single Digit Map string, is described in clause 10.

The order of the Digit Map strings in the **parameters** field has no significance.

6.5 URL parameter

When using the RCF message to provide a URL to an endpoint that refers to Digit Map information, the Gatekeeper shall provide the parameter shown in Table 12.

Table 12 – URL parameter

Parameter name:	**Digit Map URL**
Parameter description:	This parameter contains a URL to Digit Map information accessible via HTTP
Parameter identifier type:	Standard
Parameter identifier value:	6
Parameter type:	Alias
Parameter cardinality:	Zero or one

The **alias** shall be a **url-ID**. This parameter shall not be present when Digit Map strings are transmitted as **parameters**.

This parameter shall not be present in an SCI message, as the URL is provided in the **contents** field of that message.

7 Overlapped sending

In some cases, it may not be practical or possible for the Gatekeeper to send a complete Digit Map to the endpoint. In such a case, and when the endpoint has advertised the capability to use Digit Maps within the context of overlapped sending, the Gatekeeper may transmit a Digit Map that is a subset of a complete Digit Map. This may result in invoking the endpoint to utilize the overlapped sending feature in RAS (clause 8.1.12 of [ITU-T H.323]), as the endpoint would prematurely transmit an ARQ message. The Gatekeeper would then need to request additional digits if the address is incomplete. Consider the following example Digit Map:

```
00
010xxxxxxxx
013xxxxxxxxx
...
```

The Digit Map string "00" indicates the first two digits for the international dialling plan known to the Gatekeeper. Given the multitude of Digit Map strings that may be required to support the various international dialling plans, the Gatekeeper may prefer not to provide, or may be incapable of providing, a complete set of Digit Map strings to support international dialling. Instead, it may provide just "00", as shown in the above example. Once the endpoint receives the digits "00", it may send an ARQ to the Gatekeeper. The Gatekeeper may then return an ARJ with the rejection reason set to **incompleteAddress**. Contained within the ARJ, the Gatekeeper may include a new temporary Digit Map in the **genericData** field that shall be used only for the purposes of collecting digits and matching the dial plan for that particular call. The new temporary Digit Map may look like this, for example:

```
005233xxxxxxxx
009729xxxxxxx
001xxxxxxxxxx
00331xxxxxxxx
...
```

It should be noted that this new Digit Map does not contain any Digit Map strings that start with anything other than "00". While it is acceptable for a Gatekeeper to provide a temporary Digit Map that contains strings that cannot possibly match, it should be understood that doing so would yield no matches.

Once the endpoint has collected enough digits to match an entry in this new temporary Digit Map, the endpoint shall then reattempt to get admission for the call by sending an ARQ. This process may be repeated as often as necessary, as per clause 8.1.12 of [ITU-T H.323], with each successive ARJ containing a revised Digit Map with finer granularity.

If the Gatekeeper returns an ARJ with the reason **incompleteAddress**, but does not include a new Digit Map, this indicates that the endpoint should continue collecting digits as normal without attempting to match a particular Digit Map string. In effect, the procedures of clause 8.1.12 of [ITU-T H.323] shall be followed without the continued use of a Digit Map for this call.

8 Digit map timers and matching strings

There are three timers defined within the scope of this Recommendation that may be signalled by the Gatekeeper. They are:

Timer	Meaning
T	Start Timer – This is the amount of time the endpoint shall wait for the first digit to be received. A value of zero implies that the endpoint shall wait indefinitely.
S	Short Timer – This is the amount of time that the endpoint shall wait to match the next digit. This time will automatically go into effect when at least one Digit Map string is matched, even if another Digit Map string could be matched.
L	Long Timer – This is the amount of time that the endpoint shall wait to match a Digit Map string. This timer is activated when at least one digit is received, but there are no matching Digit Map strings.

The default values for these three timers are provisioned in the endpoint. It is recommended that the default timer values be provisioned with these values: 9 seconds for T, 5 seconds for S, and 16 seconds for L.

When the endpoint begins to collect digits, the endpoint shall start timer T. If timer T is 0, the endpoint shall wait an indefinite amount of time to receive the first digit.

Once the first digit is received, the endpoint shall stop timer T and start timer L.

If the collected digits fully match a Digit Map string, but there is the possibility of matching other strings if more digits are received, the endpoint shall stop the running timer and start timer S.

If the collected digits fail to fully match a Digit Map string and there is the possibility of fully matching a Digit Map string if additional digits are collected, the endpoint shall stop the running timer and start timer L.

Once the running timer has expired, the endpoint shall stop the running timer signal to the user or network that insufficient digits have been received.

Once a Digit Map string has been fully matched and no alternative matches are possible, the endpoint shall stop the running timer sending an ARQ to the Gatekeeper.

If the endpoint collects digits that result in no partial matches, the endpoint shall stop the running timer and alert the user or network that it has received an invalid number.

If the endpoint knows the Type of Number it is processing, and a Digit Map is provided for that Type of Number, then the endpoint shall only match digits within the associated Digit Map, not the primary Digit Map.

For example, suppose the following Digit Map has been provided:

```
30
3001xx
41
```

Initially, the endpoint will start timer T.

Scenario 1

Suppose that the endpoint collects the digit "2". Having received the first digit, it will stop timer T and start timer L. Since "2" does not match any of the Digit Map strings, the endpoint shall stop timer L and alert the user or network that an invalid digit was received.

Scenario 2

Suppose that the endpoint collects the digit "3". Having received the first digit, it will stop timer T and start timer L. Since "3" alone does not fully match any Digit Map strings, the endpoint shall continue to collect digits. Suppose that the endpoint now collects "0" as the next digit. Having fully matched the Digit Map string "30", the endpoint shall stop timer L and start timer S, since there is the possibility of fully matching other strings if additional digits are received. If no further digits are received within time S, the endpoint will send an ARQ with the digits "30".

Scenario 3

Suppose that the endpoint collects the digit "3". Having received the first digit, it will stop timer T and start timer L. Since "3" alone does not fully match any Digit Map strings, the endpoint shall continue to collect digits. Suppose that the endpoint now collects "0" as the next digit. Having matched the Digit Map string "30", the endpoint shall stop timer L and start timer S, since there is the possibility of fully matching other strings if additional digits are received. Suppose that the endpoint then collects a second "0". At this point, the collected digits are "300". Since the endpoint does not fully match any Digit Map strings (although there is a potential for a future match of "3001xx"), the endpoint shall stop timer S and start timer L. Suppose that the endpoint continues to collect digits and collects "300122". Once the last "2" is collected, the endpoint matches the string "3001xx" with no other possible matches. It shall then stop timer L and send an ARQ to the Gatekeeper.

Scenario 4

Suppose that the endpoint collects the digit "4". Having received the first digit, it will stop timer T and start timer L. Since "4" alone does not fully match any Digit Map string, the endpoint shall continue to collect digits. Suppose that the endpoint now collects "1". Since this fully matched the Digit Map "41" and there are no possible alternative matches, the endpoint shall stop timer L and send an ARQ to the Gatekeeper.

9 Format of digit map information data stream retrieved via HTTP

When HTTP is used to transmit the Digit Map information to the endpoint, the information shall be conveyed with each timer value or single Digit Map string on a separate text line of the data stream. Each line shall be terminated by either a linefeed (LF) character or a carriage return and linefeed pair (CRLF). There shall be no characters from the C0 set (see [ITU-T T.50]) in the stream, other than the CR and LF characters. The timer values, if present, may be indicated with the timer name followed by "=" followed by the time in seconds. The primary Digit Map shall be provided first. When sending Digit Map strings for a Type of Number, the Type of Number shall be specified with "ToN=" (case sensitive) followed by the Type of Number value with the associated Digit Map strings following that line. Below is a sample data stream:

```
T=15
S=5
L=15
00x.
1919xxxxxxx
[235-7]xxxx
ToN=3
4xxxx
5xxxx
6xxxx
```

10 Digit Map string syntax

The Digit Map strings are constructed specified with the following ABNF syntax:

```
DigitMapString     =    1*(DigitMapElement ["."])
DigitMapElement    =    DigitMapLetter / DigitMapRange
DigitMapLetter     =    DIGIT / "#" / "*" / ","
DigitMapRange      =    "x" / ("[" DigitMapRangeElem "]")
DigitMapRangeElem  =    *((1*DIGIT "-" 1*DIGIT) / DigitMapLetter)
```

This syntax allows for a variety of Digit Map strings to be expressed. For example, these are all valid Digit Map strings:

Digit Map String	**Meaning**
`1919xxxxxxx`	Digits match the literal value "1919" followed by precisely 7 `DigitMapLetter` characters
`00x.`	Match the literal value "00" followed by any number of `DigitMapLetter` characters
`[235-7]xxxx`	Match any number starting with 2,3,5,6 or 7 followed by four `DigitMapLetter` characters
`911`	Match the literal value "911"

The character "x" represents any value from the `DigitMapLetter` set of values. The character "." Indicates that the preceding character is matched zero or more times.

When specifying `DigitMapRange` values, the digit following the hyphen character shall be greater than the digit preceding the hyphen character. In the event that the digit following the hyphen character is less than or equal to the digit preceding the hyphen, the endpoint shall ignore the digit following the hyphen character.

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