1. Abstract

This document provides multi-frequency (MF) tone generation and MF tone detection packages for Megaco/H.248.

2. Conventions used in this document

The key words "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT", "SHOULD", "SHOULD NOT", "RECOMMENDED", "MAY", and "OPTIONAL" in this document are to be interpreted as described in RFC-2119 [2].

3. Multi-Frequency Tone Generation Package

3.1 Package

PackageID: mfg (To be allocated through IANA)
Description: This package defines the basic MF tones as signals and extends the allowed values of parameter t1 of playtone in tonegen.
Version: 1
Extends: tonegen version 1

3.2 Properties

None.

3.3 Events

None.
3.4 Signals

Signal Name: MF signal code 0
Signal ID: mf0 (0x0050)
Description: Generate MF signal code 0. The characteristics of the MF signal code, including frequencies and durations, are provisioned on the MG.
Signal Type: Brief
Duration: Provisioned
Additional Parameters: None

Additional Values:

mf0 (0x0050) is defined as a toneid for playtone. (0x0050 was chosen arbitrarily).

The other MF signal codes are specified in exactly the same way. A table with all signal names and signal IDs is included below. Note that each mf signal code is defined as both a signal and a toneid, thus extending the basic tone generation package. Also note that mf signal IDs are different from the names used in a digit map.

<table>
<thead>
<tr>
<th>Signal Name</th>
<th>Signal ID/ tone id</th>
</tr>
</thead>
<tbody>
<tr>
<td>mf signal code 0</td>
<td>mf0 (0x0050)</td>
</tr>
<tr>
<td>mf signal code 1</td>
<td>mf1 (0x0051)</td>
</tr>
<tr>
<td>mf signal code 2</td>
<td>mf2 (0x0052)</td>
</tr>
<tr>
<td>mf signal code 3</td>
<td>mf3 (0x0053)</td>
</tr>
<tr>
<td>mf signal code 4</td>
<td>mf4 (0x0054)</td>
</tr>
<tr>
<td>mf signal code 5</td>
<td>mf5 (0x0055)</td>
</tr>
<tr>
<td>mf signal code 6</td>
<td>mf6 (0x0056)</td>
</tr>
<tr>
<td>mf signal code 7</td>
<td>mf7 (0x0057)</td>
</tr>
<tr>
<td>mf signal code 8</td>
<td>mf8 (0x0058)</td>
</tr>
<tr>
<td>mf signal code 9</td>
<td>mf9 (0x0059)</td>
</tr>
<tr>
<td>mf signal code KP</td>
<td>mfa (0x005a)</td>
</tr>
<tr>
<td>mf signal code KP’</td>
<td>mfb (0x005b)</td>
</tr>
<tr>
<td>mf signal code KP’’</td>
<td>mfc (0x005c)</td>
</tr>
<tr>
<td>mf signal code KP’’’</td>
<td>mfd (0x005d)</td>
</tr>
<tr>
<td>mf signal code ST</td>
<td>mfe (0x005e)</td>
</tr>
<tr>
<td>mf signal code ST’</td>
<td>mff (0x005f)</td>
</tr>
<tr>
<td>mf signal code ST’’</td>
<td>mfg (0x0060)</td>
</tr>
<tr>
<td>mf signal code ST’’’</td>
<td>mfh (0x0061)</td>
</tr>
</tbody>
</table>

3.5 Statistics
None.

Bothwell         Standards Track--Expires March 2002                 2
MF Tone Generation and Detection Packages         Sept. 2001

3.6 Procedures
None.

4. Multi-Frequency Tone Detection Package

4.1 Package

Package ID: mfd (To be allocated through IANA)
Description: This package defines the events required for basic MF tone detection. This package extends the possible values of tone id
in the "start tone detected", "end tone detected" and "long tone detected" events.
Version: 1
Extends: tonedet version 1

4.2 Properties
None.

4.3 Events

Event Name: MF signal code 0
EventID: mf0 (0x0050)
Description: Detect MF signal code 0. The characteristics of the MF signal code, including frequencies and durations, are provisioned on the MG.
EventsDescriptor Parameters: None.
ObservedEventsDescriptor Parameters: None.

Additional Values:

The other MF signal codes are specified in exactly the same way. A table with all event names, event Ids and digit map symbols is included below. The event Ids are defined with same names as the signal Ids in package mfg. The additional tone id values are the same tone id values defined in package mfg.

<table>
<thead>
<tr>
<th>Event Name</th>
<th>Event ID/ Tone id</th>
<th>Digit Map Symbol</th>
</tr>
</thead>
<tbody>
<tr>
<td>mf signal code 0</td>
<td>mf0 (0x0050)</td>
<td>&quot;0&quot;</td>
</tr>
<tr>
<td>mf signal code 1</td>
<td>mf1 (0x0051)</td>
<td>&quot;1&quot;</td>
</tr>
<tr>
<td>mf signal code 2</td>
<td>mf2 (0x0052)</td>
<td>&quot;2&quot;</td>
</tr>
<tr>
<td>mf signal code 3</td>
<td>mf3 (0x0053)</td>
<td>&quot;3&quot;</td>
</tr>
<tr>
<td>mf signal code 4</td>
<td>mf4 (0x0054)</td>
<td>&quot;4&quot;</td>
</tr>
<tr>
<td>mf signal code 5</td>
<td>mf5 (0x0055)</td>
<td>&quot;5&quot;</td>
</tr>
<tr>
<td>mf signal code 6</td>
<td>mf6 (0x0056)</td>
<td>&quot;6&quot;</td>
</tr>
<tr>
<td>mf signal code 7</td>
<td>mf7 (0x0057)</td>
<td>&quot;7&quot;</td>
</tr>
<tr>
<td>mf signal code 8</td>
<td>mf8 (0x0058)</td>
<td>&quot;8&quot;</td>
</tr>
<tr>
<td>mf signal code 9</td>
<td>mf9 (0x0059)</td>
<td>&quot;9&quot;</td>
</tr>
<tr>
<td>mf signal code KP</td>
<td>mfa (0x005a)</td>
<td>&quot;A&quot; or &quot;a&quot;</td>
</tr>
<tr>
<td>mf signal code KP'</td>
<td>mfb (0x005b)</td>
<td>&quot;B&quot; or &quot;b&quot;</td>
</tr>
<tr>
<td>mf signal code KP''</td>
<td>mfc (0x005c)</td>
<td>&quot;C&quot; or &quot;c&quot;</td>
</tr>
<tr>
<td>mf signal code KP'''</td>
<td>mfd (0x005d)</td>
<td>&quot;D&quot; or &quot;d&quot;</td>
</tr>
<tr>
<td>mf signal code ST</td>
<td>mfe (0x005e)</td>
<td>&quot;E&quot; or &quot;e&quot;</td>
</tr>
<tr>
<td>mf signal code ST'</td>
<td>mff (0x005f)</td>
<td>&quot;F&quot; or &quot;f&quot;</td>
</tr>
<tr>
<td>mf signal code ST''</td>
<td>mfg (0x0060)</td>
<td>&quot;G&quot; or &quot;g&quot;</td>
</tr>
<tr>
<td>mf signal code ST'''</td>
<td>mfh (0x0061)</td>
<td>&quot;H&quot; or &quot;h&quot;</td>
</tr>
</tbody>
</table>

Event Name: Digit Map Completion Event
EventID: ce
Description: Generated when a digit map completes.

EventsDescriptor Parameters: Digit map processing is activated only if a digit map parameter is present, specifying a digit map by name
or by value.

**ObservedEventsDescriptor Parameters:**

Parameter Name: Digit String  
ParameterID: ds (0x0001)  
Description: The collected address string which matched part or all of an alternative event sequence specified in the digit map.  
Type: string of digit map symbols returned as a quoted string. Possible values: a sequence of characters "0" through "9", "A" through "H", and the long duration modifier "Z", and the interdigit threshold timer "T", "S" and "L".

Parameter Name: Termination Method  
ParameterID: meth (0x0002)  
Description: indicates the reason for the generation of the address event.  
Type: enumeration  
Possible values:

- "UM" (0x0001) Unambiguous match
- "PM" (0x0002) Partial match, completion of timer expiry or unmatched event
- "FM" (0x0003) Full match, completion by timer expiry or unmatched event

4.4 Signals
None.

4.5 Statistics
None.

4.6 Procedures
None.

**5. Formal Syntax**
Not Applicable.

**6. Security Considerations**
Security considerations are addressed as per Section 10 of RFC-3015 [3].

**7. IANA Considerations**
The packages defined in this document are registered as per Section 13, "IANA Considerations", of RFC 3015 [3].

**8. References**


2. Bradner, S., "Key words for use in RFCs to Indicate Requirement
Levels", BCP 14, RFC 2119, March 1997


9. Acknowledgments

None.

10. Author’s Addresses

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11. Expiration Date

This memo is filed as <draft-bothwell-megaco-mftonepkg-02.txt>, and expires March 18, 2002.