SLIM Use Cases
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Abstract

   Use cases for selection of language for internet media.

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   provisions of BCP 78 and BCP 79.

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   This Internet-Draft will expire on October 7, 2016.

1. Introduction

The SLIM Working Group [SLIM] is developing standards for language
selection for non-real-time and real-time communications. There are
a number of relevant use cases which could benefit from this
functionality including emergency service real-time communications
and customer service. This document details the use cases for SLIM
and gives some indication of necessary requirements. For each use
case a 'Solution' is provided, indicating the implementability of the
use case based on "Negotiating Human Language in Real-Time
Communications" [NEGOTIATING-HUMAN-LANG].

2. Use Cases

Use cases are listed below:

2.1. Single two-way language

The simplest use case. One language and modality both ways in media
described in SDP [RFC4566] as audio or video or text.
Straightforward. Works for spoken, written and signed languages. An
example is when a user makes a voice call and the preferred language
of that user is specified in SDP, allowing the answerer to make
decisions based on that specification.

o Solution: Possible

2.2. Alternatives in the same modality

Two or more language alternatives in the same modality. Two or more
languages both ways in media described in SDP as audio or video or
text, but only in one modality. Straightforward. Works for spoken,
written and signed languages. The answering part selects. There is
a relative preference expressed by the order, and the answering part
can try to fulfill that in the best way. An example is a user who
makes a voice call and prefers French as their first language and
German as their second, and the answerer selects to speak German as
no French speaking abilites are available.

o Solution: Possible

2.3. Fairly equal alternatives in different modalities.

Two or more modality alternatives. Two or more languages in
different modalities both ways in media described in SDP as audio or
video or text. An example is a person with hearing abilities who is
also competent in sign language declares both spoken and sign
language competence in audio and video. This is fairly

straightforward, as long as there is no strong difference in
preference for these alternatives. The indication of sign language
competence is needed to avoid invoking relay services in calls with
deaf sign language users only indicating sign language.

o   Solution: Possible

2.4. Last resort indication

One language in the different modalities. Allows the user to
indicate one last resort language when no other is available. For
example, a hearing user has text capability but want to use that as
last resort. (With current specifications, there is no way to
describe preference level between modalities and no way to describe
absolute preference.)

o   Solution: An answering service will have no guidance to which is
    the preferred modality and may select to use the modality that is
    the callers last resort even if the preferred alternative is
    available.

Another practical case can be a sign language user with a small
mobile terminal that has some inconvenient means for texting, but
sign language will be strongly preferred. In order to not miss any
calls, the indication of text as last resort would be desirable.

o   Solution: need coding of an absolute preference: hi, med, lo
    together with the tag.

2.5. Directional capabilities in different modalities

Two or more language alternatives in the different modalities. For
example, a hard-of-hearing user strongly prefers to talk and receive
text back. Spoken language input is appreciated. This can be
indicated by spoken language two-ways in audio, and reception of
language in text. (There is no current solution that says that the
text path is important. The answering part may see it as an
alternative.)

o   Solution: Need for preference indication per modality

2.5.1. Fail gracefully?

There currently are methods to indicate that the call shall fail if a
language is not met, but that may be too drastic for some users
including the one in the above scenario (Section 2.5). It may be
important to be able to connect and just say something, or use
residual hearing to get something back when the voice is familiar.

o Possible solution: coding of an absolute preference together with
   the tag could solve this case if used together with the
   directional indications. For example:

"preference: hi, med, lo"

Another solution would be to indicate required grouping of media,
however this raises the complexity level.

2.6. Combination of modalities

Similar to Section 2.5, two or more language alternatives in the
different modalities. A person who is deaf-blind may have highest
preference for signing to the answerer and then receiving text in
return. This requires the indication of sign language output in
video and text reception in text, using the current directional
attributes. An answering party may seek suitable modalities for each
direction and find the only possible combination.

o Solution: Need for preference indication per modality

2.7. Person with speech disabilities who prefer speech-to-speech
       service

One specific language for one specific modality with a speech-speech
engine. A person who may find that others have some difficulty in
understanding what they are trying to say may be used to have support
of a speech-to-speech relay service that aids clear speech when
needed for the understanding. Typically, only calls with close
friends and family might be possible without the relay service.

This user would indicate preference for receiving spoken language in
audio. Text output can be indicated but this user might want to use
this method as a last resort. (There is no current coding for vague
or unarticulated speech or other needs for a speech-to-speech
service.)

A possibility could be to indicate no preference for spoken language
out, a coding of proposed assisting service and an indication of text
output on a low absolute level.

o Solution: Need of service indication, and absolute level of
   preference indication.

2.8. Person with speech disabilities who prefer to type and hear

Two or more language alternatives for multiple modalities. A person
who speaks in a way that may be hard to understand, may be used to
using text for output and listen to spoken language for input. This
user would indicate preference for receiving spoken language in
audio. Text output modality can be indicated.

If the answering party has text and audio capabilities, there is a
match. If only voice capabilities exist there is a need to invoke a
text relay service.

o Solution: Need of service indication, and absolute level of
   preference indication.

2.9. All Possibilities

Mutiple languages and multiple modalities. For example: a tele-sales
center calls out and wants to offer all kinds of possibilities so
that the answering party can select. A tele-sales center has
competence in multiple spoken languages and can invoke relay services
rapidly if needed. So, it indicates in the call setup competence in
a number of spoken languages in audio, a number of sign languages in
video and a number of written languages in text. This would allow,
as a further example, a deaf-blind person who prefers to sign out and
get text back answers with only these capabilities. The center can
detect that and act accordingly, this could work in the following
methods:

o Solution Alternative 1: The center calls without SDP. A deafblind
   user includes its SDP offer and the center sees what is needed to
   fulfill the call.

o Solution Alternative 2: The center calls out with only the spoken
   language capabilities indicated that the caller can handle.

The person with deaf and / or sight disabilities who answers, or
terminal or service provider detects the difference compared to the
capabilities of the answering party, and adds a suitable relay
service. (This does not use all the offerings of the callers
competence to pull in extra services, but is maybe a more realistic
case for what usually happens in practice.)

o Solution: Possible in the same way as cases in Section 1.8.

3. Final Comments

   The use cases identified here try to cover all cases of when users
   wish to make text, voice or video communication using the language of
   set of languages in which they are able to speak, write or sign and
   for which the receivers are also able to communicate. Some of these
   use cases go even further to allow give some users the ability to
   select multiple and different languages based on their abilities and
   needs.

   To fulfill all the use cases the currently specified directionality
   will be needed, as well as an indication of absolute preference. An
   indication of suitable service and its spoken language is needed for
   the speech-to-speech case, but can be useful for other cases as well.
   There is no clear need for explicit grouping of modalities seem to be
   needed.

   Subsequent work in the Selection of Language for Internet Media
   Working Group [SLIM] will work on Internet Drafts to support these
   use cases.

4. Security Considerations

   Indications of user preferred language may give indications as to
   their nationality, background and abilities. It may also give
   indication to any possible disabilities and some existing and ongoing
   health issues.

5. IANA Considerations

   This document has no IANA actions.

6. Informative References

   [RFC4566] Handley, M., Jacobson, V., and C. Perkins, "SDP: Session
              Description Protocol", RFC 4566, DOI 10.17487/RFC4566,
              July 2006, <http://www.rfc-editor.org/info/rfc4566>.

   [SLIM]   "SLIM Working Group", n.d.,
              <https://datatracker.ietf.org/wg/slim/charter/>.

   [NEGOTIATING-HUMAN-LANG]
              Gellens, R., "Negotiating Human Language in Real-Time
              Communications", 2016, <https://datatracker.ietf.org/doc/
              draft-ietf-slim-negotiating-human-language/>.

Appendix A. Acknowledgments

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