SLIM: Selecting (human) Language for Internet Media
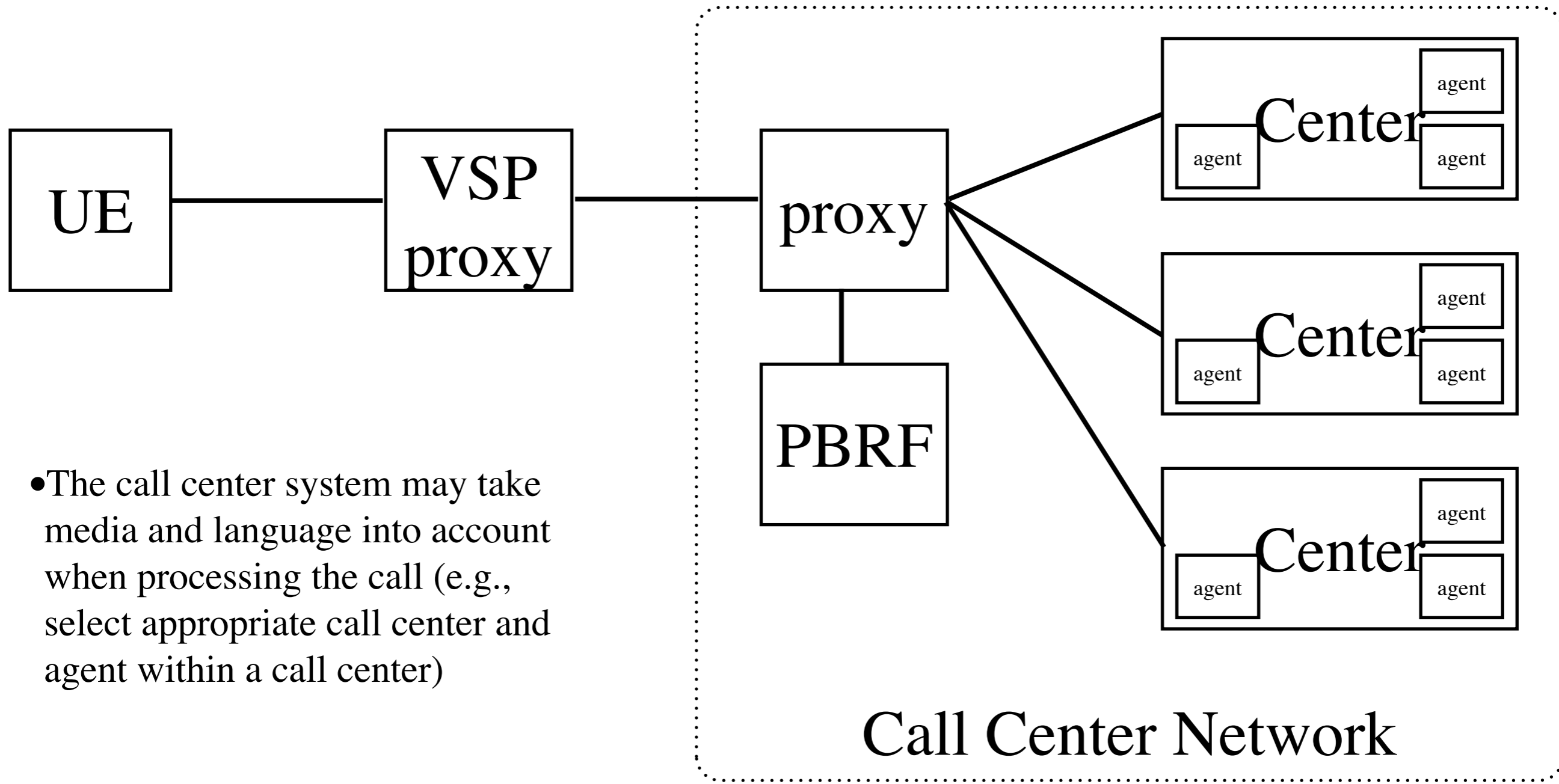
Real-Time Problem Space

draft-gellens-slim-negotiating-human-language-02
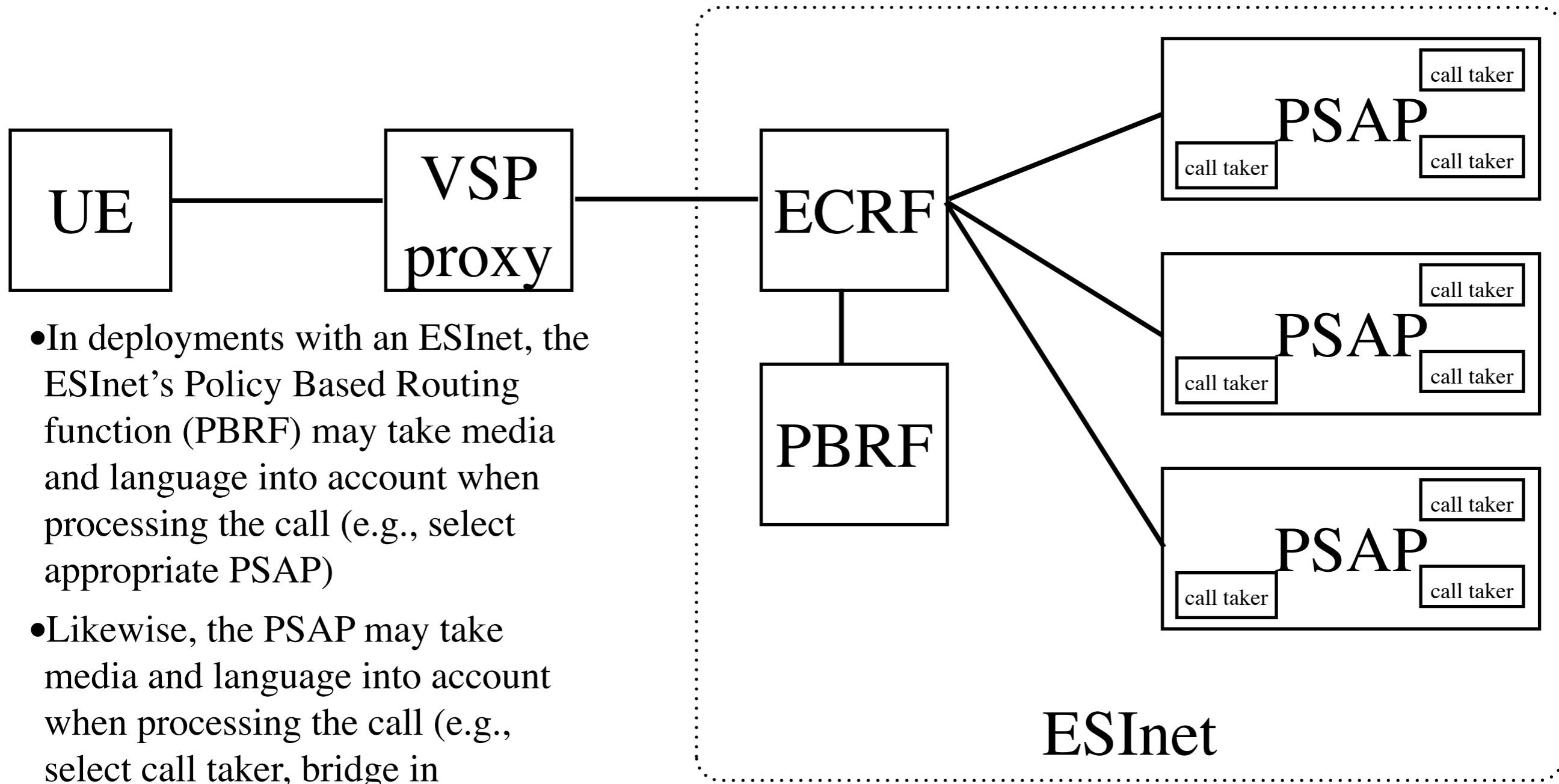
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- Enable matching the caller's language and media needs with called party capabilities

- Language may be spoken, written, signed

- Especially needed without context/ understanding (e.g., not calling a friend)

- Canonical example: call center handling multiple languages, including sign language, via in-house attendants and/or external translators

  - Emergency calls are an important example of this kind of call center

- Human language (spoken/written/signed) can be negotiated in conjunction with media (audio/text/video)
- The user may use one or a set of languages, while the PSAP/call center supports a set of languages and media
  - Support may be native (e.g., call taker fluent in language, able to use media)
  - Support may require bridging in translation/interpretation/relay service
- Negotiation selects the user's most preferred language and media supported by the call center
- This is conceptually similar to the way other aspects of each media stream are negotiated using SDP (e.g., media type and codecs)
- Both sides are aware of what was negotiated
- Entities in call path can see media and language in SDP
- Call can be routed to a facility that supports the language/media or resources can be bridged in

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UE — VSP proxy — proxy

proxy — PBRF

Call Center Network

Center

agent | agent | agent

Center

agent | agent | agent

Center

agent | agent | agent

- The call center system may take media and language into account when processing the call (e.g., select appropriate call center and agent within a call center)

General Call Center Case

UE — **VSP proxy** — **ECRF**

PBRF

ESInet

PSAP (call taker, call taker, call taker)

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- In deployments with an ESInet, the ESInet's Policy Based Routing function (PBRF) may take media and language into account when processing the call (e.g., select appropriate PSAP)

- Likewise, the PSAP may take media and language into account when processing the call (e.g., select call taker, bridge in translator/relay)

Emergency Calling Case

Proposal

- SDP stream attribute with RFC 5646 language tags in preference order

- Send/receive values usually set the same

- Text cautions against overly complex values and "silly states" (signed language for audio)

History

- This work has been kicking around for several years with considerable debate as to which level should negotiate (SDP or SIP)

- Extensive evaluation showed that no proposal was perfect but either could work

- SDP selected because it eliminates the risk that the language and media negotiated in SIP don't match the media SDP negotiated

Open Issues

- Is there a need for conveying language preference information beyond ordered list?

  - E.g.: none, 3-level (good/OK/poor), q-value

- Continuing discussions on complexity vs completeness (how much of language communication usage needs to be able to be technically specified versus just used)

- Is it harmful to do work in same group as for non-real-time (email)?

- Is more work needed to enable routing?

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