PINT enhancements to SDP/SIP

SDP stuff

1. **Network Type "TN" and Address Type "RFCxxxx"**

2. **Media Types, Transport Protocol parameters, format parameters and format specific attributes for TN connected terminals**

3. **Format attributes for included content data**

4. **Attribute Tags to pass information into the Telephone Network**

5. **The "strict" attribute**

SIP stuff

1. **Multi-part mime sending of included data**

2. **Warning headers**

3. **The STATUS request**

4. **PINT URLs within PINT requests**

5. **Telephone Network Parameters within PINT URLs**

6. **BYE requests in PINT**

7. **REGISTER requests in PINT**

c= stuff

Network Type "TN"

means that the terminal in question is connected to the telephone network

Address Type "RFCxxxx" (SIP RFC or Telephony URL RFC)

strings that begin with + are int’l e.164 numbers, and without are not. In the latter case either implicit or explicit context is used to understand the number

m= stuff

Media Types

can be “text” “image” “application” (eventually any MIME type)

Transport Protocol Parameters

can be “voice” “fax” or “pager”

Format Parameters

can be any MIME subtype of the MIME type listed in the media type: e.g.

plain for media type text,
tif for media type image,
url for media type application

a= stuff

1. Format Specific Attributes

Always uses format parameter after fmtp:

Contains either URL for the data to be sent, or Content-ID of data included in request. (can distinguish between the two automatically), e.g.

a=fmtp:plain http://myserver/plain.txt

a=fmtp:plain 1237681@myserver.com

2. Telephone Address attributes

a=Q763-nature:x “nature of address indicator”
a=Q763-plan:y “numbering plan”
a=Q763-INN:z “Internal Net. No. routable”

values as in ITU-T Q.763
we may allow registration of other attributes as required for interoperability.

a=phone-context:xxxx

contains a network number or prefix or some X-non-standard attribute. Used to identify the “local context” within which the telephone number is to be interpreted. E.g.

c=TN RFCxxxx 1-800-765-1234
a=phone-context:+1

c= TN RFCxxxx 1-800-765-1234
a=phone-context:+972

3. “Strict” Attribute

a=strict:<attribute list>
ensures that server respects attributes listed

SIP stuff

Warning Headers

used to convey extra warnings about the telephone session or the ability of the PINT gateway/telephone system to do the job.

Right now also conveys status of the telephone session (bad idea).

STATUS method

a request to receive or convey immediate notification about the status of the telephone session or the PINT session.

(Should be merged with SUBSCRIBE/NOTIFY?)

REQUIRE headers

to ensure that an error will be returned if server does not support a certain PINT feature

Format and Use of URLs

Normally the SDP description implies the service required – no need to say “this is the xxx service”. But sometimes it is necessary to be explicit.

a. can’t use SDP for routing if it’s encrypted
b. speeds up routing processing in any case
c. enables servers to register the service they provide
d. may need to identify explicitly TN provider or PINT provider

<service>@<PSP>
<service>%<TSP>@<PSP>

<service> is
R2T (for Request To Call)
R2F (for Request To Fax)
R2HC (for Request To Hear Content)

PSP is “PINT service provider”
TSP is “TN service provider”

Questions:
a) To:, From:, and Request-URI fields
b) should this info be in new headers and not URLs?

Also, a way to specify the SDP attributes within telephone URLs is given.

BYE requests

Bye requests normally mean “count me out of the session; I’ve left it, and am no longer interested in its continuation”.

Normally, if this is a two-party point-to-point session, this is effectively a request to stop sending any media.

What if the Fax was already sent, or can’t be stopped, etc.??

Some warnings were added to indicate these problems

REGISTER requests

There are no new semantics for REGISTER, but it is noted that it may be that several “competing” PINT gateways (i.e. user agents) may register with a single “PINT broker” (i.e. proxy).

Open Issues

1. do we need to disallow things like:
   m=audio 0 fax wav (“play the .wav file out the fax machine”)

2. replace STATUS with SUBSCRIBE and NOTIFY? Just have the client re-issue the INVITE for synchronous notification?

3. should require tags be org.ietf.mmusic.sip.xxx or org.ietf.mmusic.pint.xxxx

4. Using SDP and wildcards within REGISTER messages to indicate “I can accept requests with SDP like this….”

5. security security security

6. Q.1231 is a draft document –we have a dependency on an ITU-T non-final draft (hahaha)

7. Do we need to deal with the policy questions related to how a PINT proxy broker might make it’s choice among various PINT GWs that can service a request. (Does it have to be auditable, fair, controllable, etc.?)

Open issues from Email with Jonathan and Henning

1. Don’t have Location: mean necessarily that the server supports any particular feature. (Answer: Location: in PINT means that there is a PINT server there, so it supports minimal PINT features)

2. Would rather see the PINT URL stuff moved to new headers (Like “pint-provider” and “tn-provider”

and “pint-service”) Also, Request-URIs can change and can’t be used for end-to-end service requests (I often ask ZZZ to complete a call, and it turns out that ZZZ asks someone else without telling me).

3. Telephone URL encoding – don’t like multiple a= fields.

4. Included content – even with TCP things can fan out and get nasty. So specify if the content is longer than 1.4K, use a “re-invite” scheme after the client discovers the true server “location:”

5. Organize the spec better (duh). How about:

- **Intro**
- **SDP enhancements**
- **SIP enhancements**
- **Security Mechanisms**
- **PINT services**
- **Implementing PINT services**
- **Security Considerations**
- **Relation to Other Standards**