Negotiation of Generic Image Attributes in SDP

draft-johansson-mmusic-image-attributes-02
- Updates since -01
  - Requirement spec. added
  - Most known issues taken into consideration
  - Use of PAR/SAR aligned with established conventions
  - Support for asymmetry (send and recv direction)
Requirements:
- REQ-1: Support the offer of a specific image size on the receiver display
- REQ-2: Support asymmetric setups
- REQ-3: Interoperate with codec specific parameters such as sprop-parameter-sets in H.264 or config in MPEG4
- REQ-4: Make the attribute generic with as little codec specific details/tricks as possible
- OPT-1: Make it possible to use attribute for other purposes than video
Objective of this draft

- Make it possible to negotiate a desired image size on the receiver display
  - Less need to allocate abundant memory
  - Reduce/remove the need to rescale the image
    - Optimum quality for given bitrate / image size can be achieved
    - Less image distortion (e.g. blurring)
- Generic, should (preferably) not be codec dependent

http://www.3gpp.org/ftp/tsg_sa/WG4_CODEC/TSGS4_47/Docs/S4-080009.zip
Examples

A few examples how the attribute is used
Different image sizes

- Offer the image sizes in the figure
  - Equal preference unless specified by q parameter.
- Answerer picks the desired image size

Offer:
```plaintext
a=imageattr:97
send [x=352,y=288] [x=320,y=240] [x=272,y=224] \\
[x=224,y=176] [x=176,y=144]
recv [x=352,y=288] [x=320,y=240,q=0.6] [x=272,y=224] \\
[x=224,y=176] [x=176,y=144]
```

Answer:
```plaintext
a=imageattr:97 recv [x=272,y=224] send [x=320,y=240,q=0.6]
```
Different image sizes with supported PAR

- Support ranges with limitation in possible picture aspect ratios (PAR)
- Eliminates problem with odd combinations

Offer:
\[
\text{a=imageattr:97} \ \backslash \\
\text{send } [\text{par}=[1.1-1.3],x=[176:16:352],y=[144:16:288]] \ \backslash \\
\text{recv } [x=352,y=288]
\]
SAR

- **SAR** = Sample Aspect Ratio
  - Specifies the pixel dx/dy ratio for the range on x and y values
  - SAR = 1.0 by default (square pixels)

```
a=imageattr:97 \n  send [sar=[0.91,1.0,1.09,1.45] x=720,y=576] \n  recv *
```
Working group item?

- Authors would like to propose this to become a working group item
  - The current formulation already proposed to be used in 3GPP SA4.
    ftp://ftp.3gpp.org/TSG_SA/WG4_CODEC/Ad-hoc_MTSI/Docs/S4-AHM104.zip