

Basic Animations using Google Earth and KML

Two overlay types:

- Ground overlay
 - Image is overlaid on the earth, and can be viewed from different perspectives by moving the camera.
 - `<GroundOverlay> ... </GroundOverlay>`
- Screen overlay
 - Image is overlaid on the Google Earth window, and remains in the same position on the screen, independent of camera motion.
 - `<ScreenOverlay> ... </ScreenOverlay>`

There are attributes which can be assigned to overlays. These attributes facilitate the placement of images on the globe, and the animation of those images.

Ground overlay attributes:

- *Name*
 - Gives a particular overlay a name to be displayed with the image
 - `<name> ... </name>`
- *Time span*
 - Specifies how long an overlay should be displayed using two tags
 - `<begin> yyyy-mm-ddThh:mm:ssZ </begin>`
 - `<end> yyyy-mm-ddThh:mm:ssZ </end>`
 - `<TimeSpan> ... </TimeSpan>` (TimeSpan contains begin and end tags)
- *Icon*
 - Specify the image to overlay using a hyperlink reference
 - `<href> /path/to/image.png </href>`
 - `<Icon> ... </Icon>` (Icon contains href tag)
- *Latitude/longitude box*
 - Specifies the edge boundaries of the overlay using four tags
 - `<north> ... </north>`
 - `<south> ... </south>`
 - `<east> ... </east>`
 - `<west> ... </west>`
 - All boundaries are in decimal degree form
 - `<LatLonBox> ... </LatLonBox>` (LatLonBox contains north, south, east, and west tags)

Screen overlay attributes:

- *Name*
- *Icon*
- *overlay XY*
 - Specifies the anchor point on the overlay image
 - `x="..."`
 - `y="..."`
 - `xunits="{pixels | fraction | insetpixels}"`
 - `yunits="{pixels | fraction | insetpixels}"`
 - `x` and `y` values are dependent on `xunits` and `yunits` values
 - `<overlayXY x=".2" y="450" xunits="fraction" yunits="pixels"/>`
- *screen XY*
 - Specifies screen anchor point for the overlay image
 - `x="..."`
 - `y="..."`
 - `xunits="{pixels | fraction | insetpixels}"`
 - `yunits="{pixels | fraction | insetpixels}"`
 - `<screenXY x="35" y=".9" xunits="insetpixels" yunits="fraction"/>`
- *rotation XY*
 - Specifies point to rotate about
 - `x="..."`
 - `y="..."`
 - `xunits="{pixels | fraction | insetpixels}"`
 - `yunits="{pixels | fraction | insetpixels}"`
 - `<rotationXY x=".2" y=".6" xunits="fraction" yunits="fraction"/>`
- *size*
 - Specifies the size of the overlay
 - `x="..."`
 - `y="..."`
 - `xunits="{pixels | fraction | insetpixels}"`
 - `yunits="{pixels | fraction | insetpixels}"`
 - `<size x="300" y="150" xunits="pixels" yunits="pixels"/>`

Example:

```
<?xml version="1.0" encoding="utf-8"?>
<kml xmlns="http://earth.google.com/kml/2.2">
  <Folder>
    <name>Example animation</name>
    <GroundOverlay>
      <name>SAT 01-31</name>
      <TimeSpan>
        <begin>1948-01-01T00:00:00Z</begin>
        <end>1948-01-31T23:59:59Z</end>
      </TimeSpan>
      <Icon>
        <href>NCEP_air_01-31-1948-2007.png</href>
      </Icon>
      <LatLonBox>
        <north>90</north>
        <south>-90</south>
        <east>180</east>
        <west>-180</west>
      </LatLonBox>
    </GroundOverlay>
  </Folder>
</kml>
```