OpenKsk Data Formats

1. Matrices
2. Normalized ink
3. MS ink

1. Matrices

Matrices are 2×3 (i.e. homogenous 3×3) and stored as: m11, m12, m21, m22, m13, m23.

m11	m12	m13
m21	m22	m23

2. Normalized Ink Data

x (pixels)	y (pixels)	time (ms)	pressure (0-1024)

We should work towards storing in this format. However, for converting to the MS format, use 96 DPI and an ink to device scale of (1, 1). For example, x pixels should be stored as x*96 inches.

3. Ink Data

This section describes the MS ink format. All units and conversions are derived from a TabletPropertyMetrics objects, which is stored in the all_tablet_properties section of the OpenKSK file. There is also a scaling between ink and device coordinates, called the "ink to device" scale (x, y).

Each ink buffer is stored as an interleaved integer array (int[]). Each ink buffer could be stored in a different format, depending on the dimensions of the device. However, for simplicity we support two formats (corresponding to the mouse and pen respectively):

x	y	time

x	y	pressure	time

The int[] is just a sequence of these frames.

The values in the array are in "ink" coordinates, which must must be mapped to "device" coordinates (read: pixels) according to the tablet metrics. Our tablet metrics are stored without any intelligible property names, so programs should determine the frame format by the number of dimensions (i.e. 3 or 4).

value	**range**	**units**	**conversion to normal form**	**notes**
x, y	0 to unbounded	variable resolution per inch or cm	VALUE * (ink to device scale) / (resolution in inches) * DPI	assume 96 DPI
pressure	0 to 1024	unitless		
time	0 to unbounded	ms		