FOV

→ Image plane
(W ×H piksel)

(x,y)
pusat citra

$y$

$\rightarrow x$

$h$

$L$

target
(lat, lon)

nadir
(lat$_0$, lon$_0$)

anggap y tidak 0

$$\tan(FOV) = \frac{L}{h}$$

$$L = h \tan(FOV)$$

Pusat citra $= \left(\frac{W}{2}, \frac{H}{2}\right)$

$$\Delta x = x - \frac{W}{2}$$

$$\Delta y = \frac{H}{2} - y$$

Skala
$$S_x = \frac{L}{W} \quad, \quad S_y = \frac{L}{H}$$

koordinat

$$X = \Delta x \cdot S_x$$

$$Y = \Delta y \cdot S_y$$

$1^\circ$ lintang $= 111\ 320$ meter
$1^\circ$ bujur $= 111\ 320 \cos(lat_0)$ meter

$$\Delta lat = \frac{Y}{111320}$$

$$\Delta lon = \frac{x}{111\ 320 \cos(lat_0)}$$

$$lat = lat_0 + \Delta lat$$

$$lon = lon_0 + \Delta lon$$