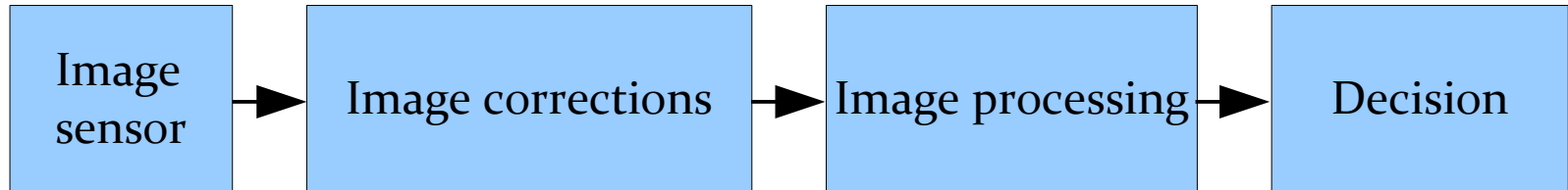


Use of image processing



Bloc diagram

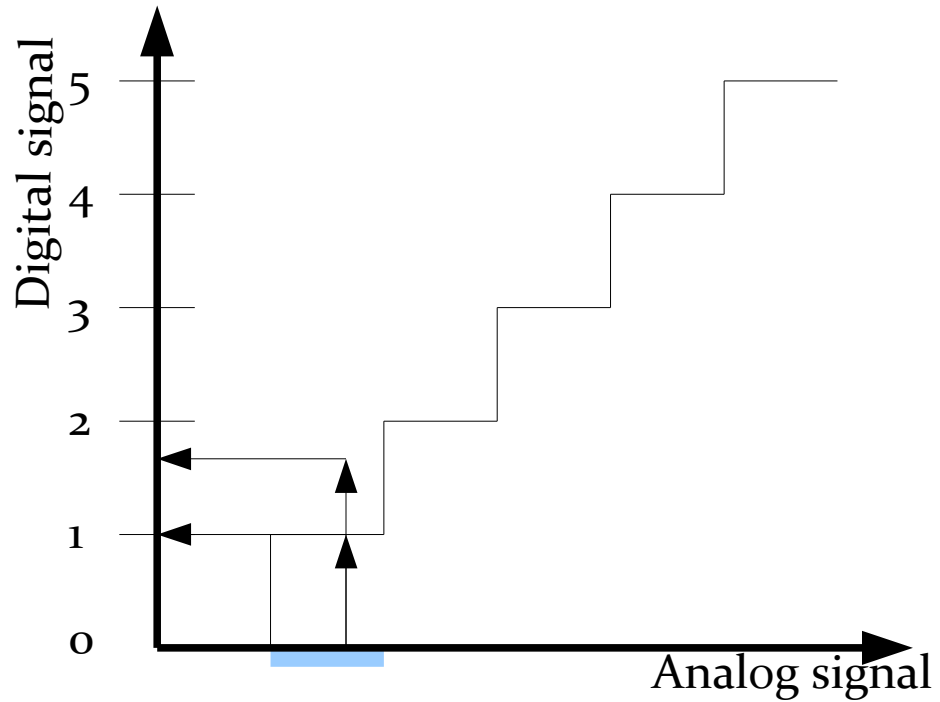


Detect
Measure lengths
Measure areas
Measure shapes
Measure color
Analyze
Count
Classify

Low Light Imaging Limitations

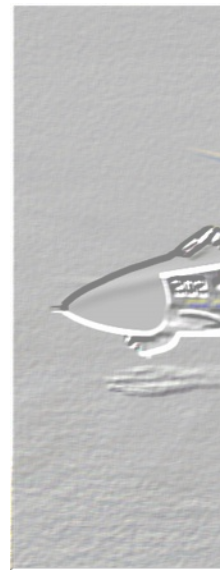
- Quantization noise

$$\sigma_q = \frac{1}{\sqrt{12}}$$



Neighborhood operations

- High pass example



Convolution Matrix

Preview

Matrix

0	0	0	0	0
0	-3	-2	-1	0
0	-2	0	2	0
0	1	2	3	0
0	0	0	0	0

Divisor: Offset:

Normalise
 Alpha-weighting

Border

Extend
 Wrap
 Crop

Channels

Red
 Green
 Blue
 Alpha

Edges

- Example : DoG filter



Motion

- The aperture problem : the operator that detects motion only looks into a limited region of space and may not be able to properly guess the motion vector (lack or significant matching pixel pairs)
- The correspondence problem : we can't find matching points even though the aperture is large enough.