Virtually Integrating Microbolometer

Julian Wingert,

RD-Innovation Development Services,

Basler AG, Ahrensburg

Abstract

Microbolometers are found in the low end segment of thermal imaging systems. They are relatively cheap and accurate. But they do have their limits. One of those limits is the time constant of the sensor, resulting in motion blur. This is a problem in every scenario where movement is in the image, being it mounted to a car or otherwise looking at movement. We have solved this and have created a method that can mathematically convert a Microbolometer to an integrating sensor, behaving like a standard rolling shutter sensor with an acquisition time equal to the frame time. This greatly reduces the motion blur and enables new high speed usages, before achievable only by 10-20 times more expensive cooled thermal imagers.