

## MULTI-IMAGE SUPER RESOLUTION AND NOISE REMOVAL FOR EMBEDDED IMAGING

Optimized distribution of the computational load between a lightweight embedded-device and a remote more powerful processing solution to merge several low-resolution images into a single image of higher resolution and better quality.

# ERG\NEO

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### PRESENTATION

Multi-image fusion is a good solution for performing super-resolution and denoising images, especially for low-cost image capture systems. However, in embedded systems such as satellites, drones or smartphones, the lightweight embedded processing can be problematic. The innovative process optimizes the distribution of the computational load between the light-embedded processing device and the remote processing solution with a more powerful server. It can also considerably reduce the quantity of data to be transmitted or increase the quality of the result obtained for an equal quantity of data transmitted.



Super-resolution and denoising - Multi-image fusion  
Embedded imaging - Distributed computing

### APPLICATIONS

- Satellite
- Aerial recognition (defense or civil)
- AgriTech
- Burst mode on smartphone
- Multi-spectral/thermal/infrared imaging
- Sports camera

### COMPETITIVE ADVANTAGES

- Minimizes computer processing in the embedded system
- Drastically reduces the amount of data to be transmitted
- Drastically increases the quality of the result obtained with equal amount of data transmitted

### DEVELOPMENT PHASE

- ✓ Proof of concept demonstrated in simulation with realistic data from a pushframe satellite.
- ✓ TRL4

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### INTELLECTUAL PROPERTY

French patent application (FR2006182) filed on June the 12<sup>th</sup>, 2021.  
International patent application (WO/2021/250356 A1) filed on June the 10<sup>th</sup>, 2021.