METHOD FOR CONSTRUCTING A HIGH-RESOLUTION MIXED SIGNAL OR IMAGE FROM A PLURALITY OF LOW-RESOLUTION SIGNALS OR A PLURALITY OF LOW-RESOLUTION IMAGES

Technological advantages

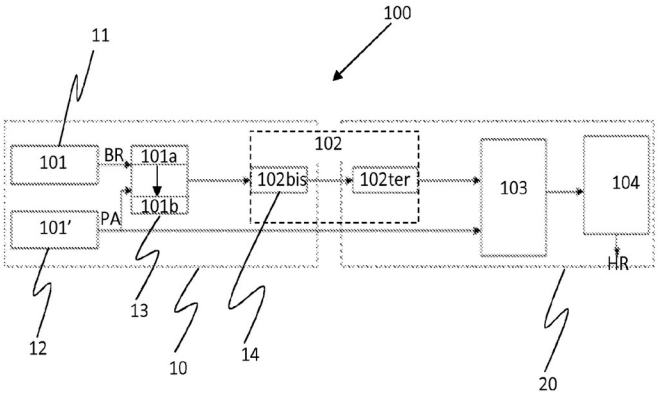
- **Does not require powerful onboard resources**
- **Does not degrade the signal (compression)**
- **Requires lower bandwidth (energy, time) compared to present solutions**
- **Reduces onboard storage requirements**

Invention synthesis

The invention deals with imaging processing and the creation of a high resolution image from a set of low resolution images.
Traditional methods for merging sequential images from a mobile source to obtain high resolution images have limitations. They require large onboard computing power and storage, they may degrade the quality (compression artifacts).
The invention presents a remote process to construct a high resolution merged signal. On board, low resolution images (or signals) are pre-merged and filtered, then compressed and transmitted to a remote computing unit. The acquisition parameter also are transmitted. The remote unit computes the pre-merged signal using inverse filtering and computes the high resolution signal using known variational methods.

Potential applications

- Applications for imaging : from space, from an aircraft, a drone. Medical imaging. Smartphones.



Detailed description to exemplify the image construction

(10) Acquisition device
(11) Sensor
(12) Measurement unit
(13) Onboard computing unit
(14) Data communication unit
(20) Remote computing unit
(101) Low resolution signal recorder
(101a) Signals pre-merging
(101b) Pre-merged signal filtering
(102bis) Compression unit
(102ter) Decompression unit
(103) Remote computing unit for the filtered pre-merged signal
(104) Remote building of the high resolution signal

Commercial benefits

- Efficient system applicable in various imaging domains
- Applicable to signals and images
- Requires fewer onboard resources compared to traditional methods

Patented invention - under license.

For more information :

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