「新しい社会システムデザインに向けた情報基盤技術の創出」
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バッテリーレス・ワイヤレス動画収集機能をもつ高分散型監視システム

§1. 研究成果の概要

With the increasing number of wireless video cameras, the surveillance systems is challenged by the power efficiency. This research aims at realizing ultra low power wireless video surveillance system by applying compressed image sensor.

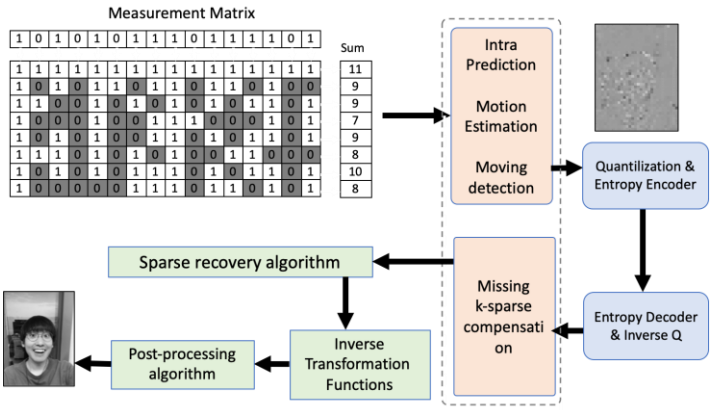

Fig. 1. Overall architecture

Fig 1 shows the overall architecture of this proposal. The input pixels are sensed by a measurement matrix; and then several prediction algorithms are proposed to explore the redundancy; after that, quantilization and entropy coding are applied to compress the residual (difference) between the original data and predicted data; finally, the compressed image is reconstructed. In FY2019, the whole architecture was implemented. 1) Three prediction were proposed and integrated to greatly increase the compression ratio and then reduce the transmission power. 2) Deep learning based post processing was applied to improve the video quality.