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FlyDVS: An Event-Driven Wireless Ultra-Low Power Visual Sensor Node

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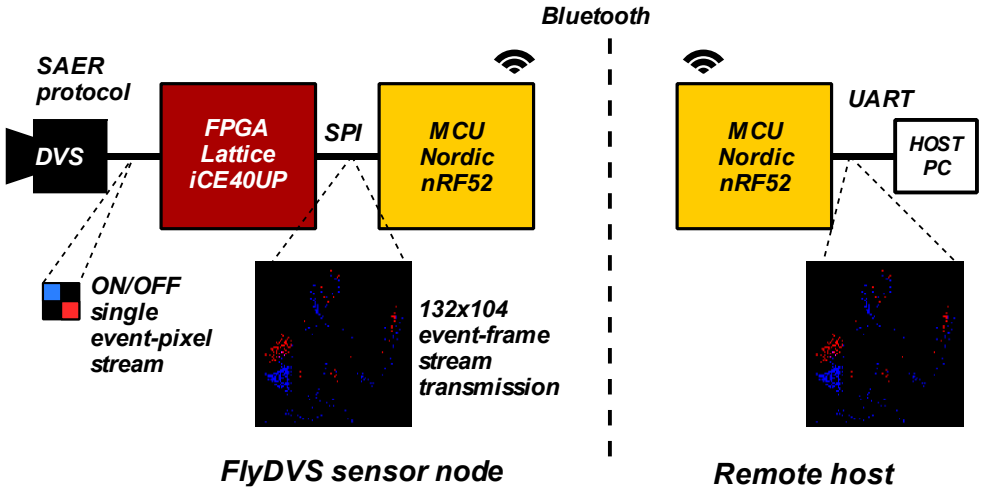
Sensor node description

The system:

- FlyDVS is a wireless visual sensor node
- Low latency and a high frame-rate are achieved by exploiting an event-camera
- Low power event acquisition is performed by a Lattice iCE40 FPGA
- Event-frame are handled by a Nordic nRF52 microcontroller

Working principle:

1. Events are read from the DVS camera by an ultra-low power FPGA
2. The FPGA creates event-frames
3. Event-frames are transferred via SPI to microcontroller
4. Event-frames are streamed to a host PC over a wireless channel



The FPGA can acquire up to **874 efps** (event-frames per second) **from the DVS Camera**, and transmitting up to **200 efps over the wireless channel.** The total power consumption of the sensor node is **26.5mW**