

<u>Towards Ubiquitous Low-power</u> <u>Image Processing Platforms</u>

senso



Horizon 2020

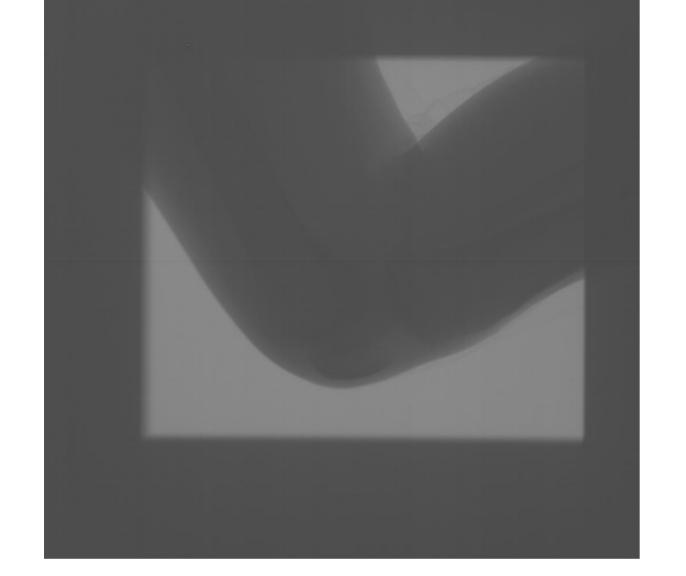
Medical Use-case

- Used on X-ray video for surgery
- Embedded on the sensor
- Lowered radiation doses by factor 4
- Implements image denoise & enhancement
- Operates on 1024x1024 24-bit images
- < 20 W Thermal dissipation

Mathematics The Application



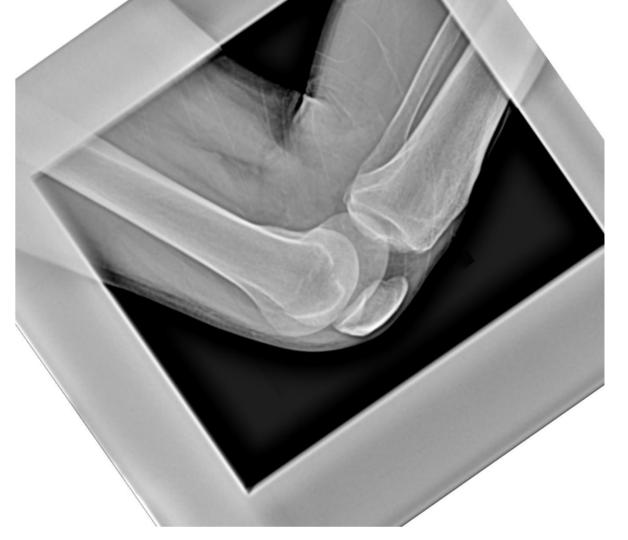




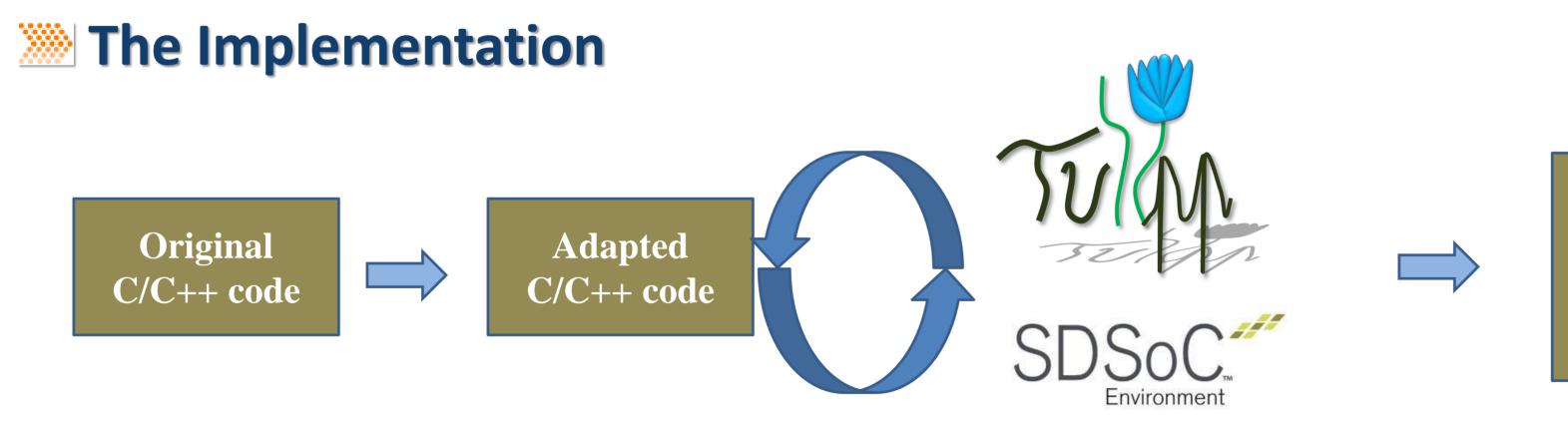
Noisy input image



Denoised image + some enhancement



Enhanced image + rotation



Accelerated implementation on the Tulipp Platform (Xilinx ZU3)

Reference running on GPU platform, ~150 W, ms/frame Tulipp platform, ~10W Follow us on http://tulipp.eu/ **Partners HIPPEROS** efficient —— innovation — TECHNISCHE **Fraunhofer** THALES **UNIVERSITÄT** PESDE IOSB **Follow us on social media:** SUNDANCE 🕒 YouTube 🔰 🖬 in NTNU **Synective Labs**