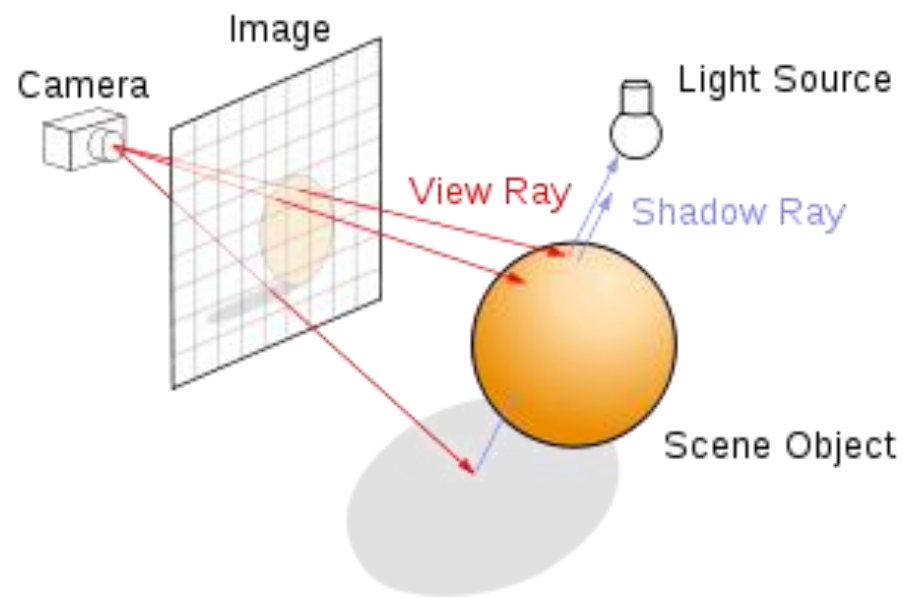


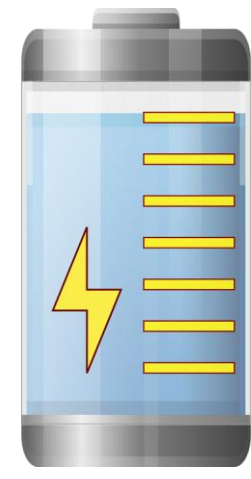
Tulipp: Towards Ubiquitous Low-power Image Processing Platforms



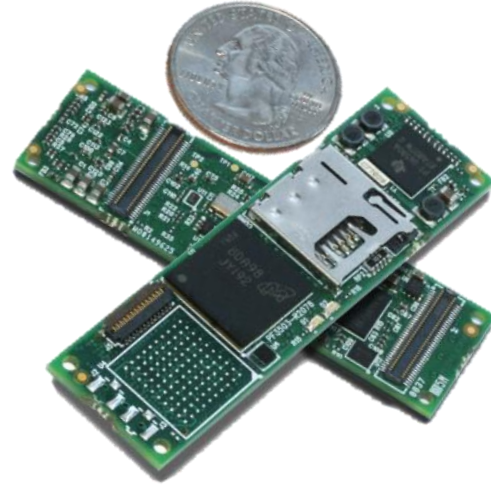
Scientific & Technical problem



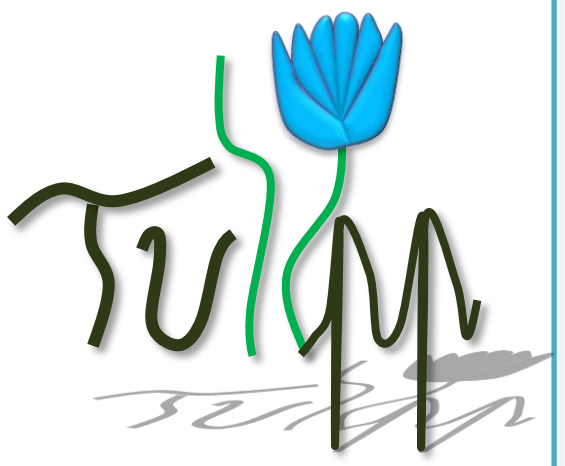
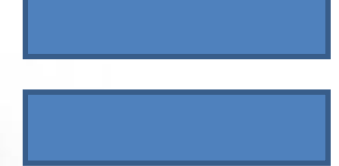
Intensive Image Processing



Embedded Constraints



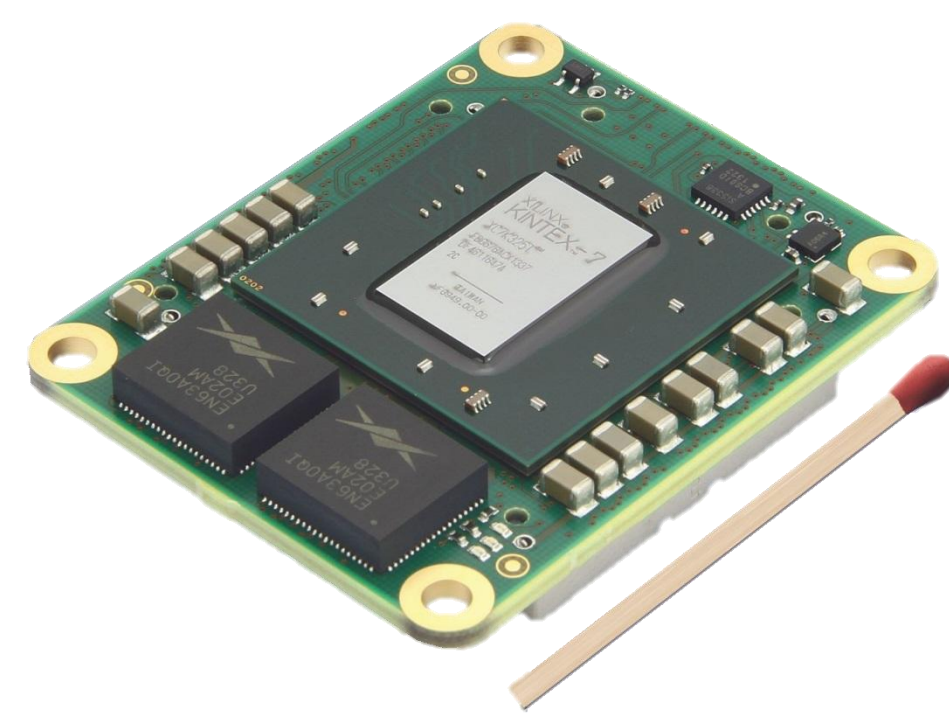
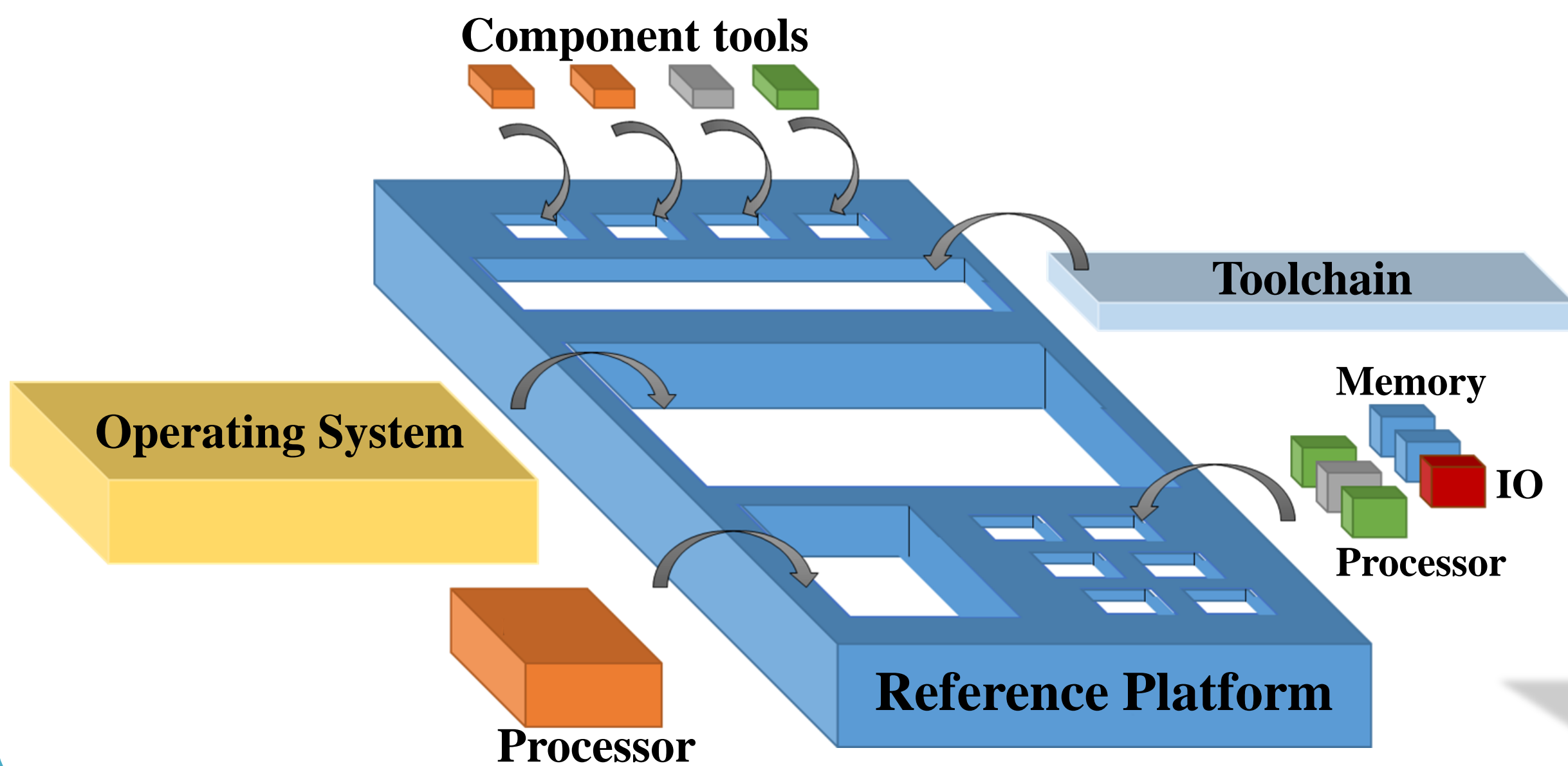
Time-to-market / Cost-sensitive



Tulipp: Bringing energy efficiency from chip level to system level

Tulipp solution: Reference Platform Concept

Define implementation rules and interfaces between heterogeneous off-the-shelf HW, OS and Toolchain



A Tulipp Hardware Instance

All Programmable
FPGA and SoC Modules

Same 5x4 cm
form factor

- Extended device life cycle
- Rugged for industrial applications
- Mechanically compatible
- Small and powerful
- Customizable

Improvements compared to 2013	End of Tulipp 2018	5 years later 2023
Peak perf. per watt	x 4	x 100
Average perf. per watt	x 10	x 200

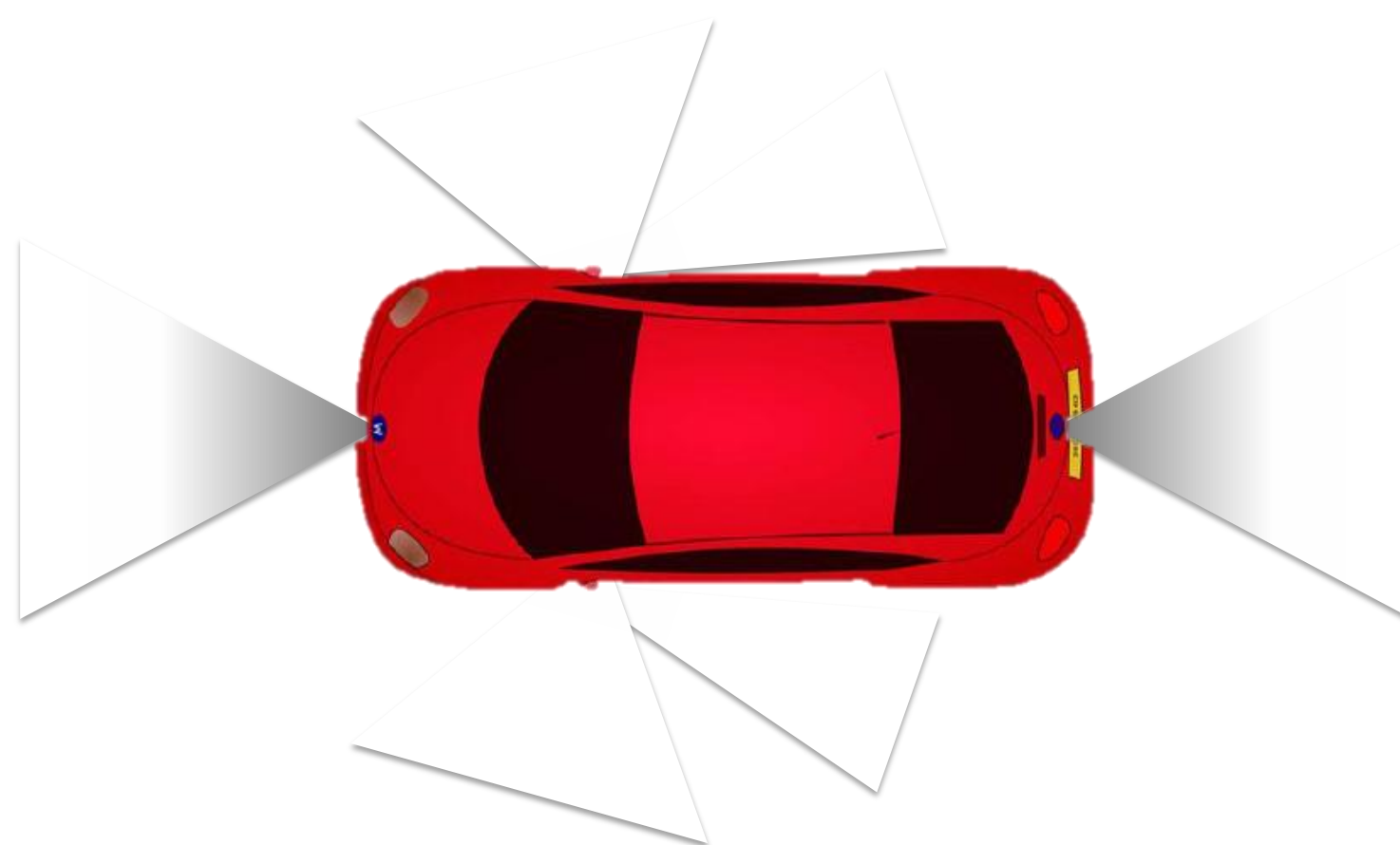
Use cases

Medical X-Ray Imaging



Divide by 4 Radiation Dose

Advanced Driver Assistance



Safer driving experience

Surveillance and Rescue UAVs



Bring intelligence to the drones

Low-Power Image Processing Ecosystem

efficient
innovation

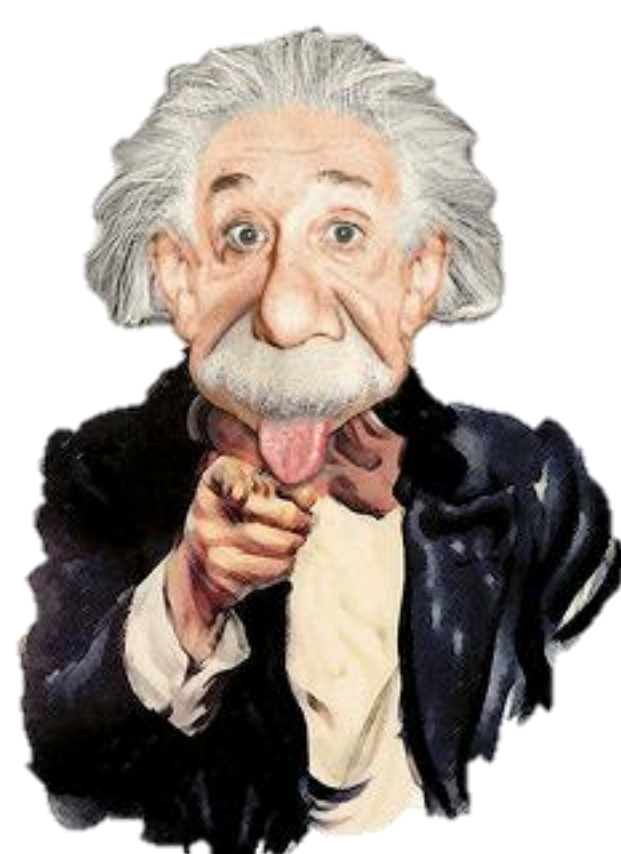
HIPPEROS
Predictable Real-Time, Proven Performance

THALES



Synective Labs

Fraunhofer
IOSB



WE NEED YOU!

- Join the Ecosystem or Advisory Board
- Test our full solution
- Give us feedback



Contact:
philippe.millet@thalesgroup.com