KLEPSYDRA
TECHNOLOGIES

Klepsydra AI

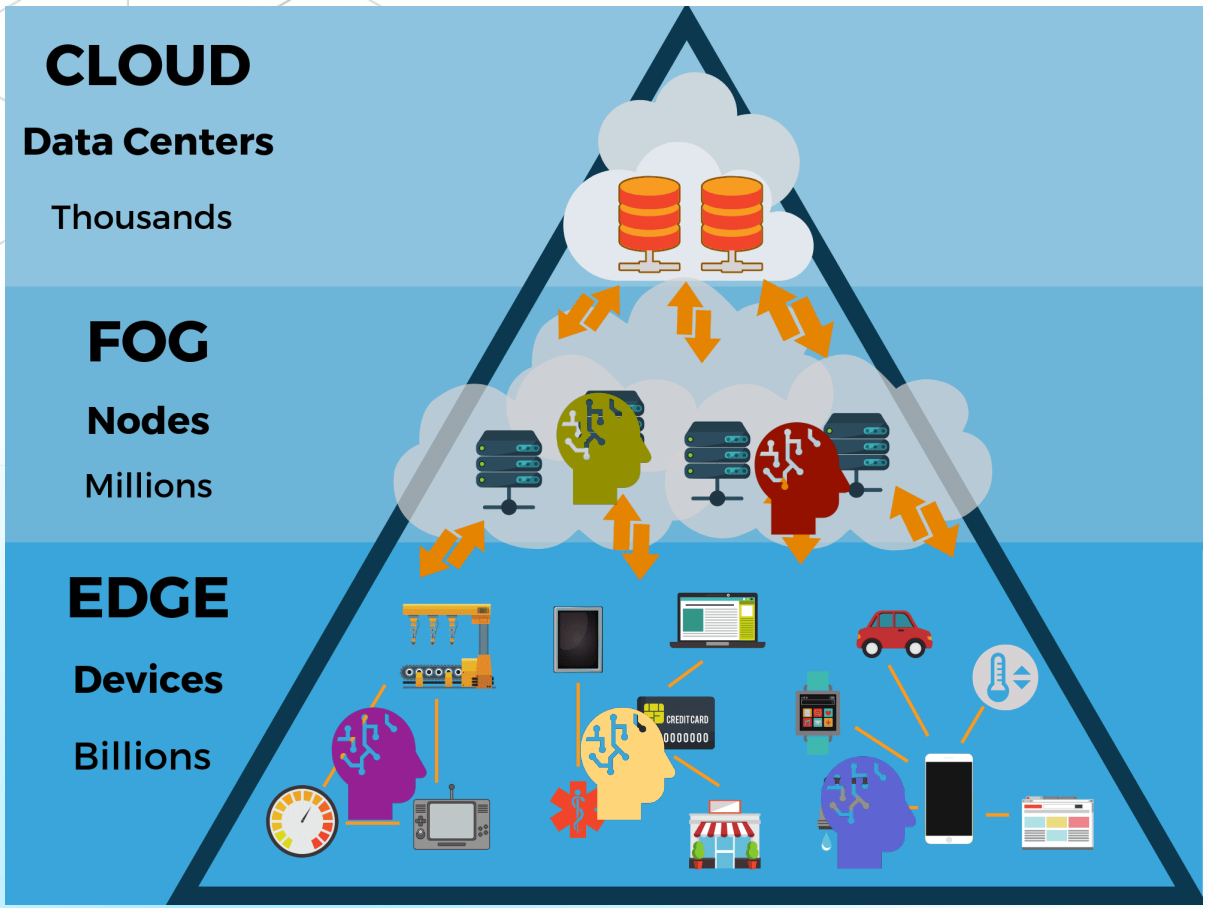
Software Framework for highly efficient AI inference and data processing to enable Intelligence for embedded systems

Klepsydra

March 2025

Problem

Edge AI - fast growing field dealing with billions of AI ...



Implementing AI for one model & one platform is already complex!

Data Preparation → AI Model Design and Training → Simulation and Testing → Deployment

Edge runs on many different platforms

Problem	Implication	Need
Algorithms do not run on the required Hardware	Low Medium High RISK	Run algorithms more efficently, → no hardware upgrade
AI application might need to run on different hardware		Unified development framewoks, agnostic of the hardware → development costs are kept low
Different hardware types come with different AI deployment tools		Software that runs agonstically on different processors while providing high efficiency

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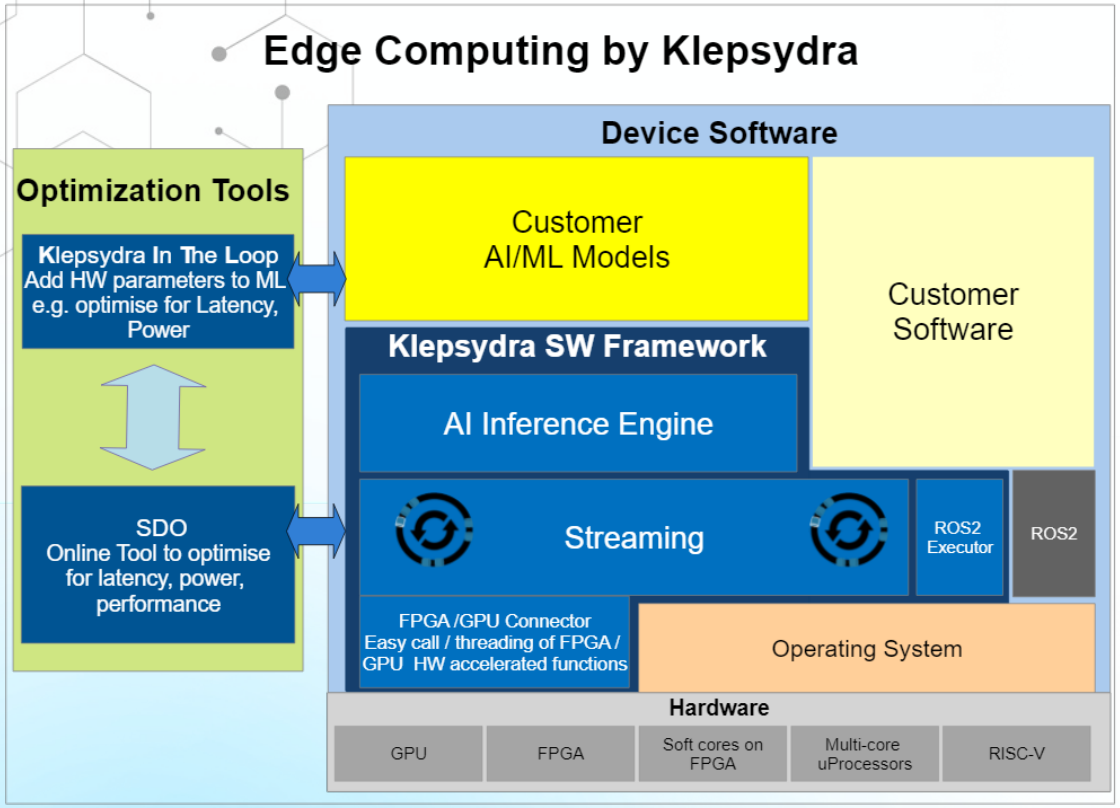
Addressing the Need

Klepsydra SW framework for edge computers



Performance is achieved by:

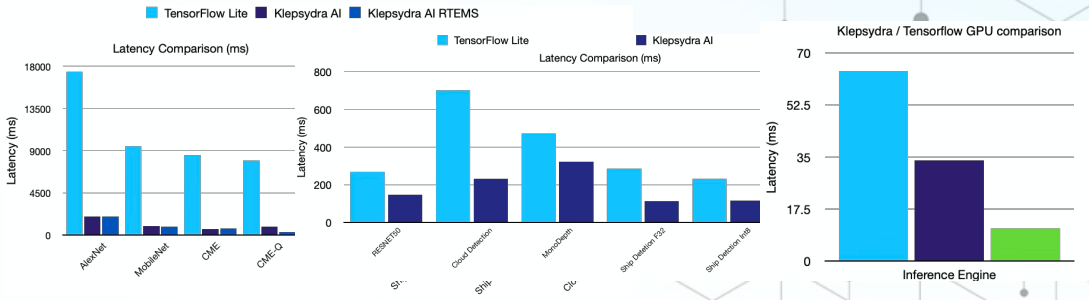
Lock-Free Algorithms

2-dim Threading Framework

Utilize the full Potential of available Computers

	Klepsydra	TensorFlow Lite	OpenCV
Throughput	☺	☹	☹
CPU Usage	☺	☹	☺
Model Agnostic	☺	😐	☹
Hardware Agnostic	☺	😐	☹

Comparison done in a Project with esa



Implement Intelligence on a larger range of Systems

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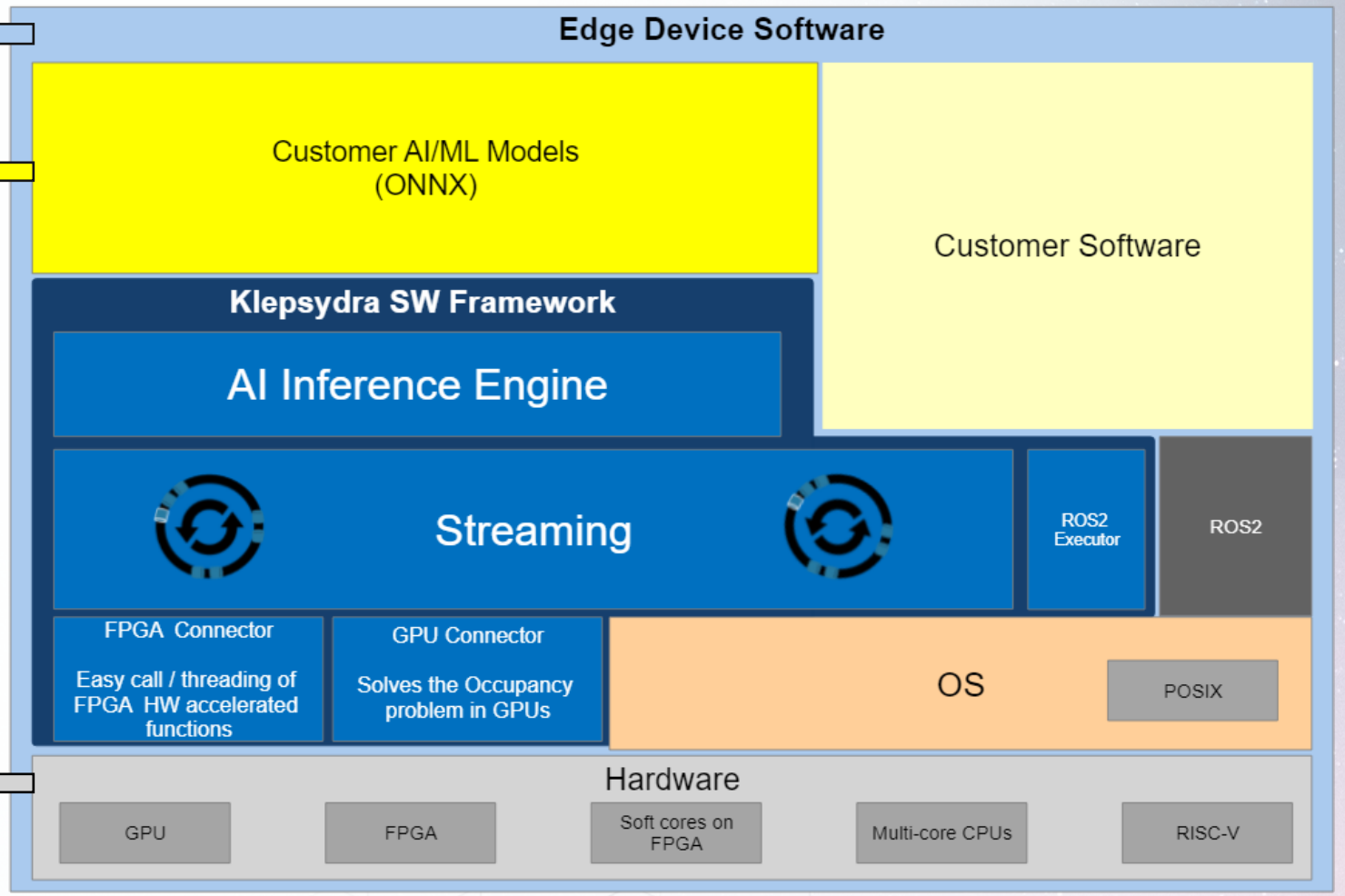
What are we looking for?

Projects using / focusing on AI data processing @ Edge

Partner interested to bring their AI to different edge processors

Partner interested to provide a HW/SW Platform for Edge AI



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Company Information

About Klepsydra

> **Europe / RoW**

Klaus Buchheim
Business Development
Klepsydra Technologies AG, Switzerland
+41 78 249 3720
klaus.buchheim@klepsydra.com

> **US**

Mike Carey
President
Klepsydra North America LLC
9057 Center Rd, Traverse City, MI 49686, US
mike.carey@klepsydra.com

> **General**

sales@klepsydra.com

3 mEUR orders secured
in 3 sectors Space, Defense, Mobility

3 mEUR
Funding - Investments & Grants

15 People
Across Europe and North America

2 Patents
1 Granted, 1 Pending
Wordwide application

KRONOR
Space GPU
In-Orbit-Validation

PATTERN
Support of GR740 & GR765
RTEMS6

ENORMITY
Ramon RC64 support

REBECCA
RISC-V support

SMART-Connect
Framework for on-device
acceleration

Scale-UP INVEST
Bring AI to Space

AI-Cy
CyberSecurity on the Edge

SSA-SAT
AI on-board a satellite

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