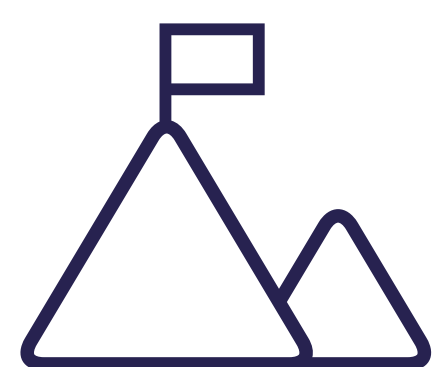
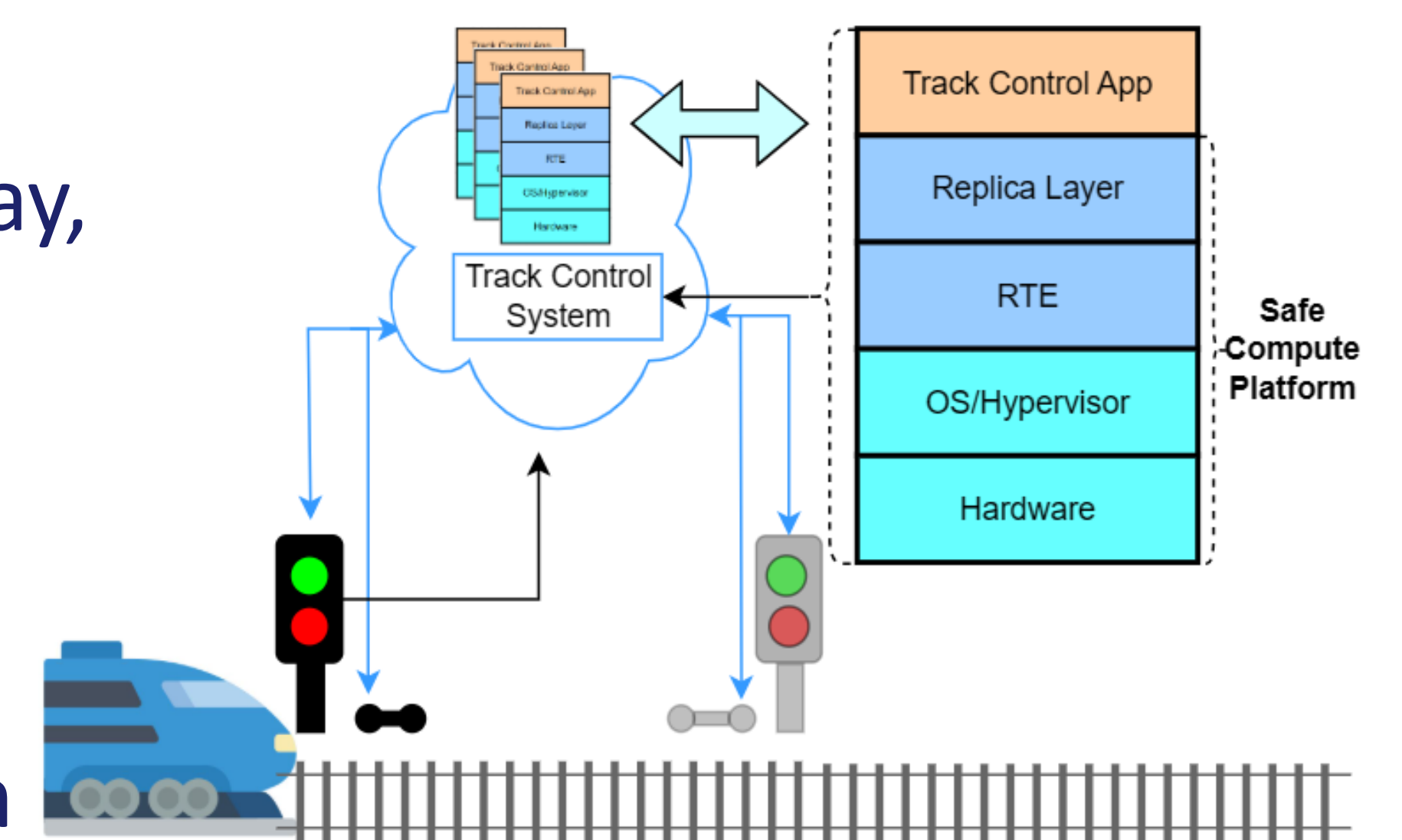


Focus: Demonstrate safe compute platform and middleware for cloud-distributed safety-critical applications, on multiple distributed replicas

What are we working on?

Safe compute platform for safety-critical embedded systems, e.g., railway, automotive, industrial control, and other domains. The safe compute platform features a hypervisor controlled by a Kubernetes interface.

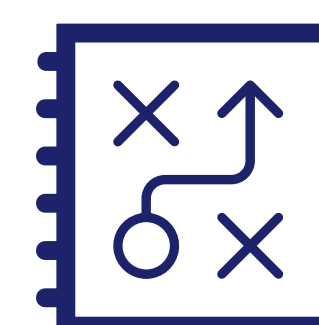
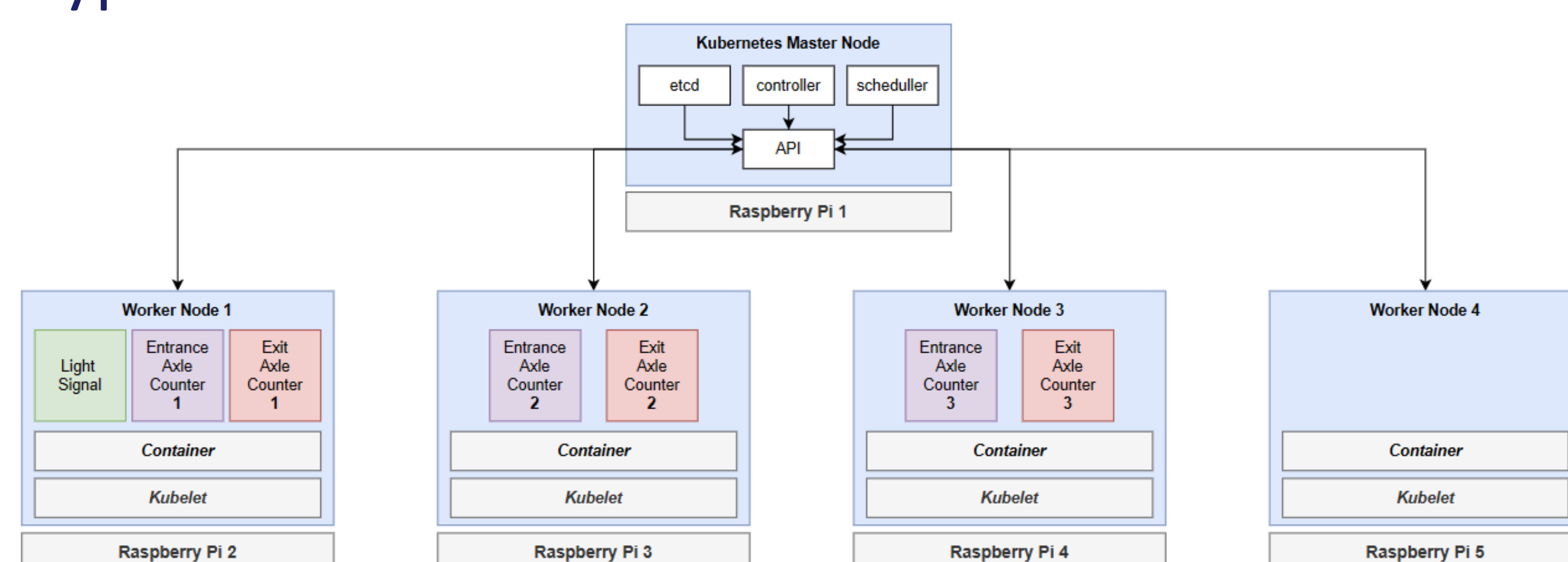
Reference implementation for the OCORA PI, a middleware for cloud-distributed safety-critical applications on multiple distributed replicas for safety. We abstract replicated communication away from application development.



What have we achieved?

Specification of OCORA PI API for flow management and voting.

Use of DDS (data distribution service) based OCORA PI flow and voting implementation, as well as Kubernetes control of hypervisor in lab.

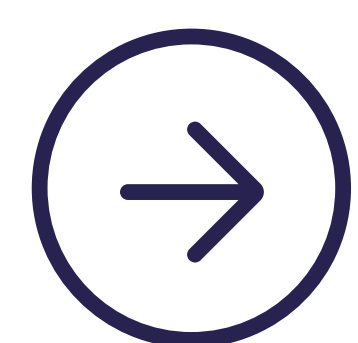
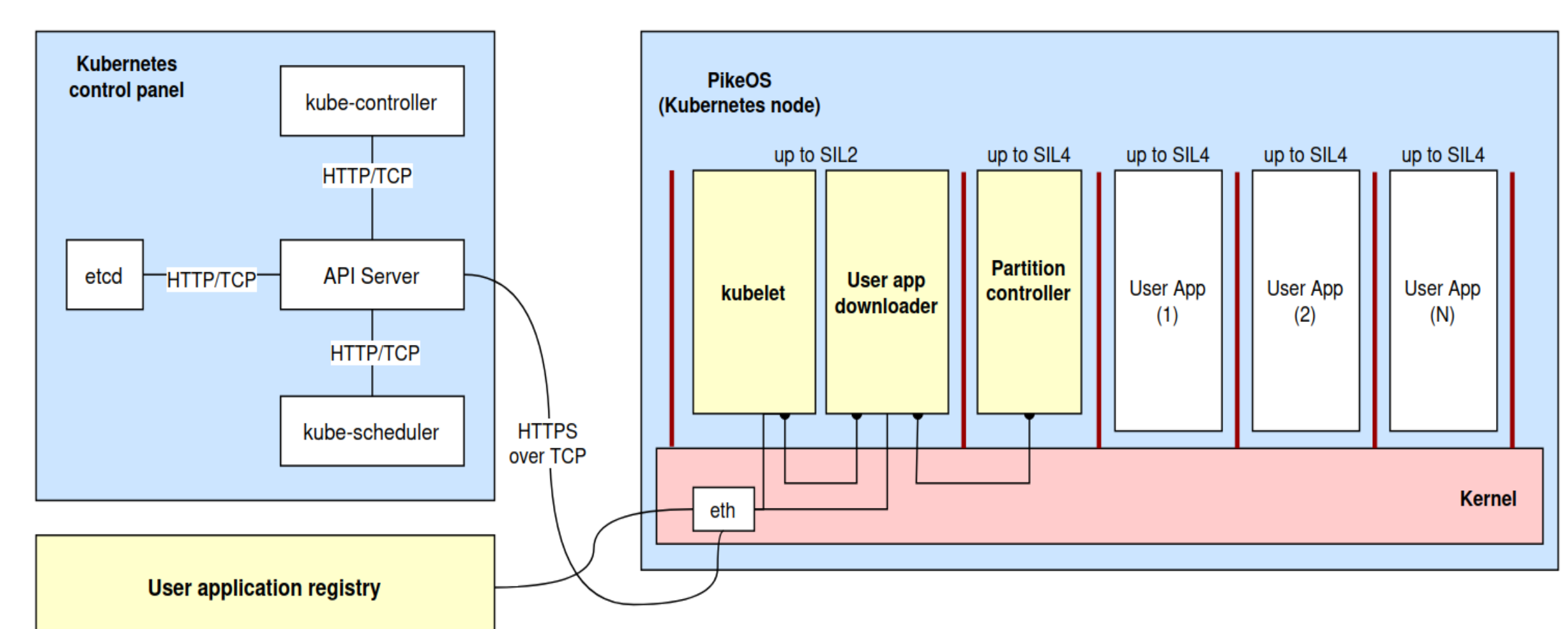


Current Challenges

Hardware selection of field demonstrator

Identifying and implementing relevant subset of Kubernetes API control interface for hypervisor

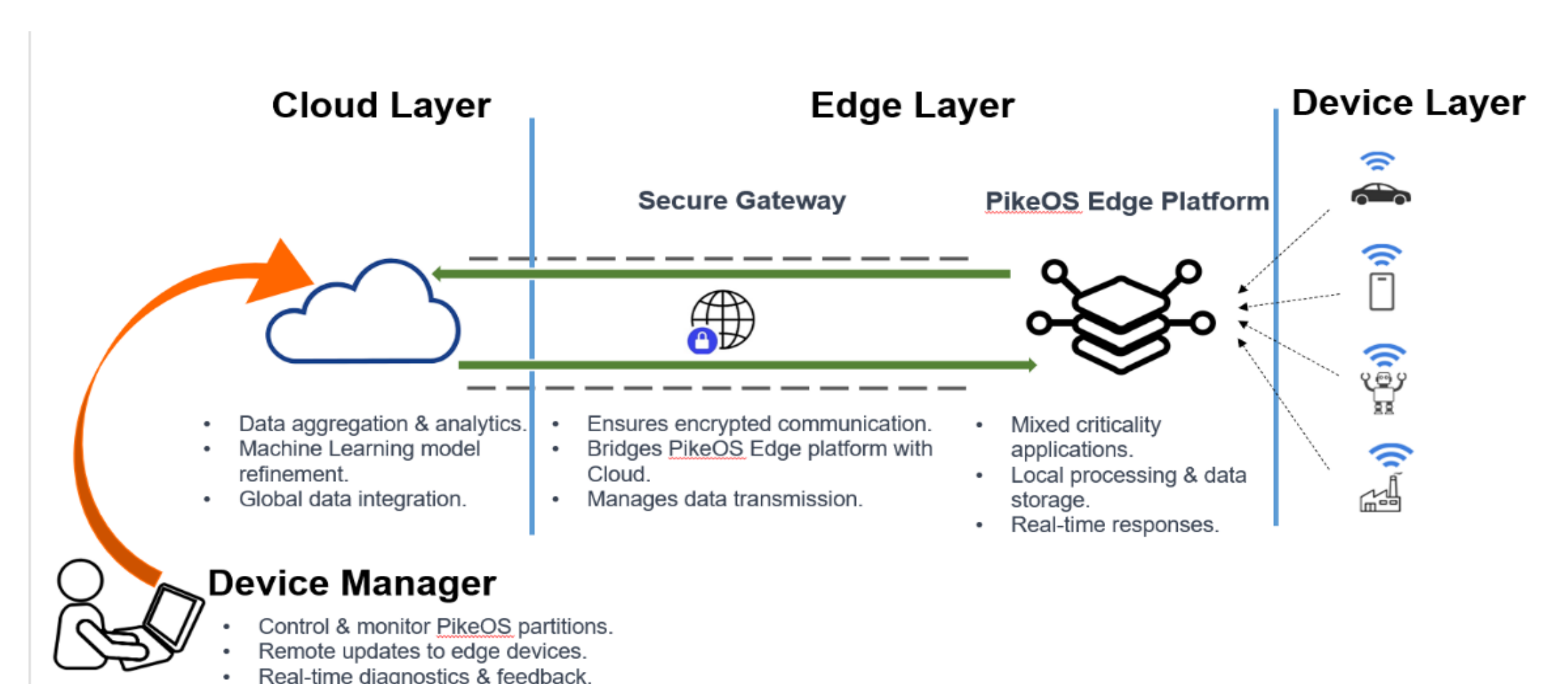
Optimal error handling in distributed systems



Next Steps

Increasing maturity by field demonstration in 2026

Integration into edge-cloud platform for safety-critical systems



Contact

George Violettas
george.violettas@sysgo.com

Mario Brotz
mario.brotz@sysgo.com



Let's connect on...

Modular platforms for safety, Kubernetes on embedded systems.