

Towards automation in cloud-native mobile networks

Johannes Zerwas

Johannes.Zerwas@tum.de

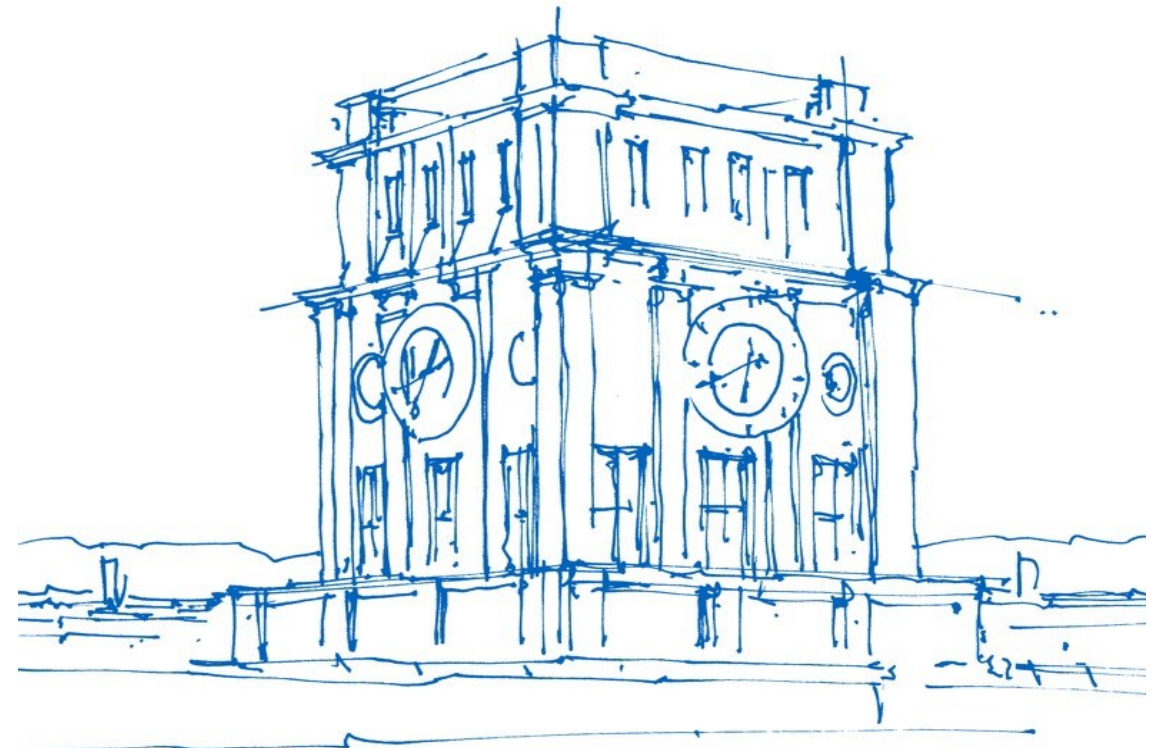
Patrick Krämer

Patrick.Kraemer@tum.de

ITU-T Focus Group on Autonomous Networks

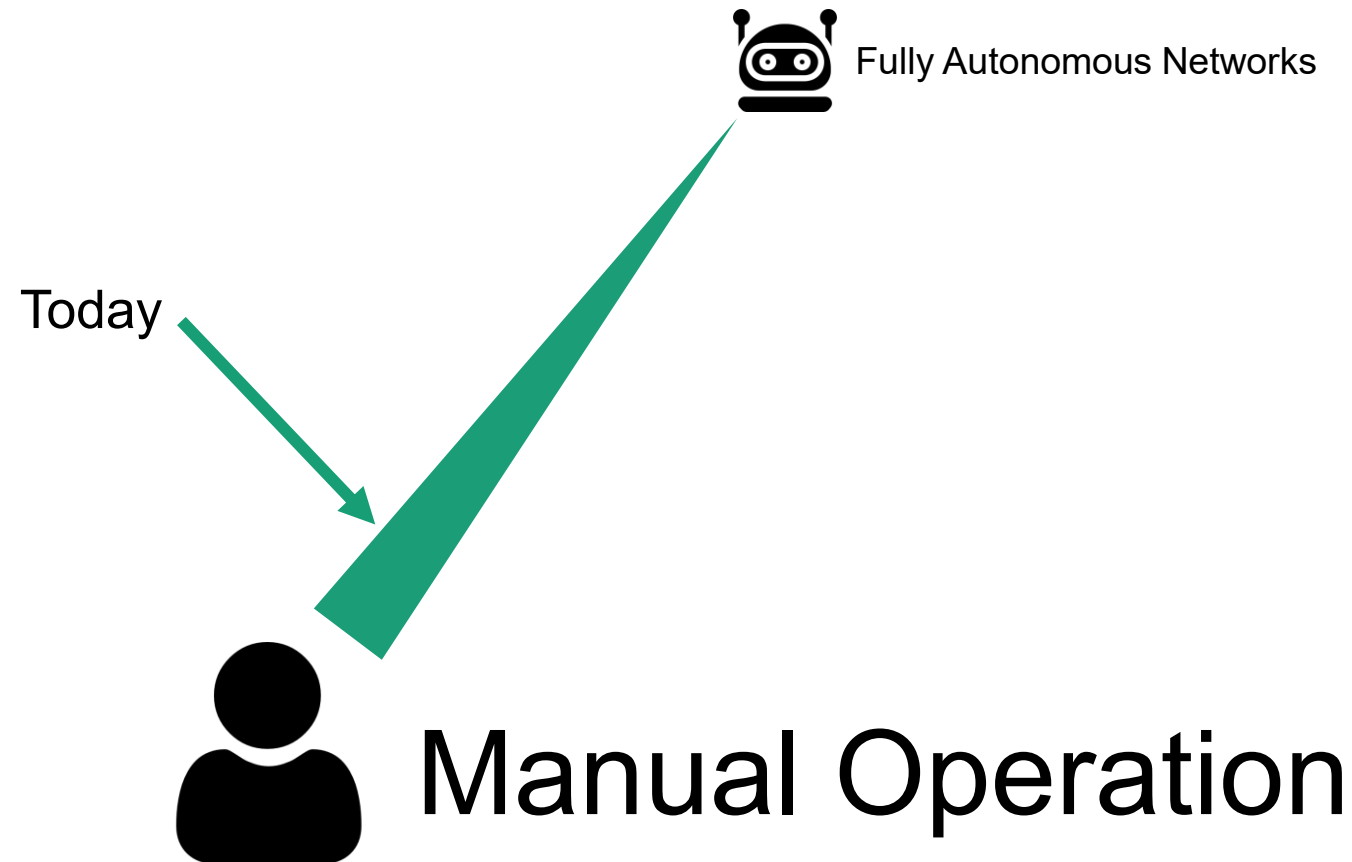
February 1-2, 2023

Virtual

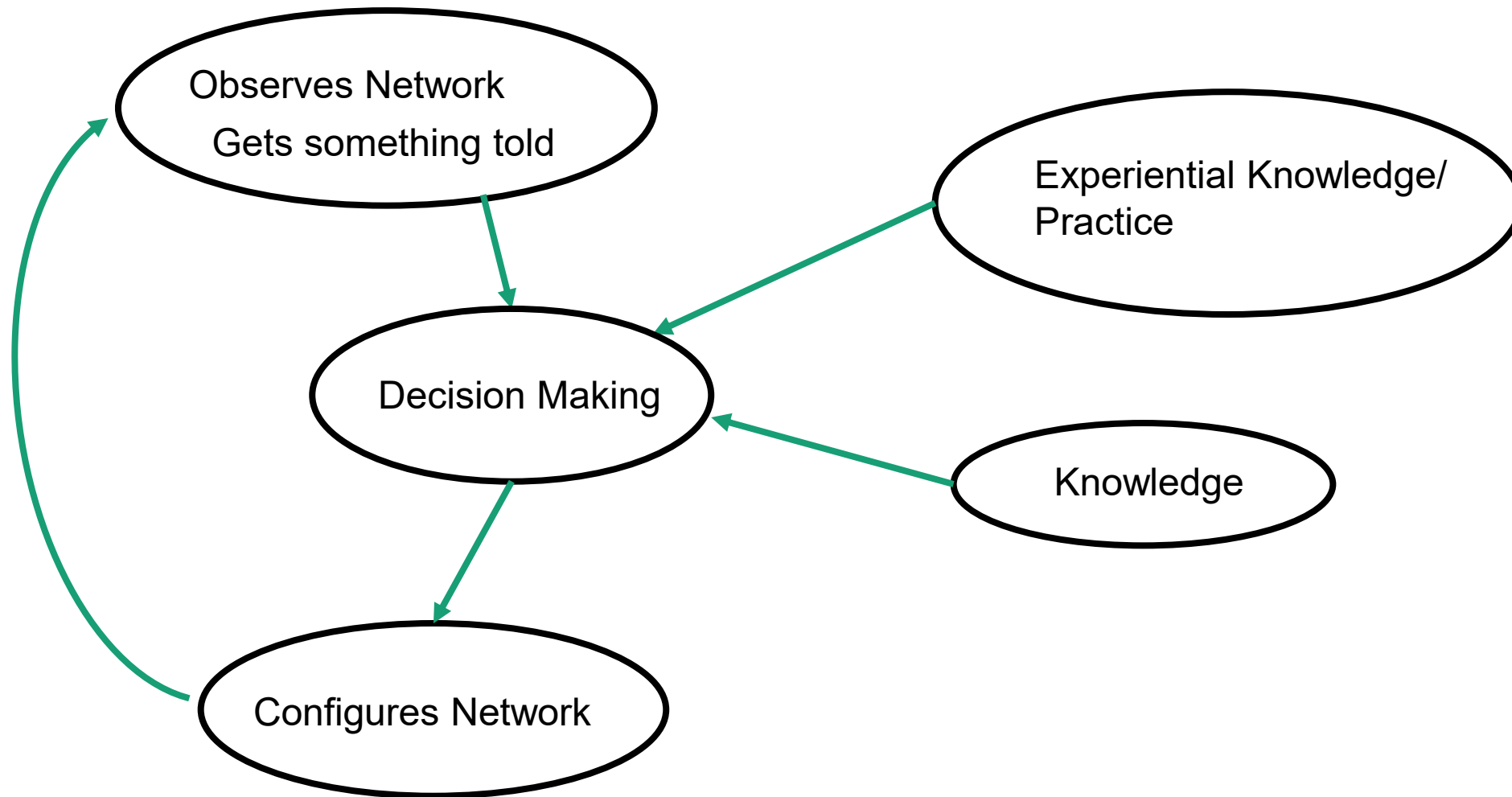


Uhrenturm der TUM

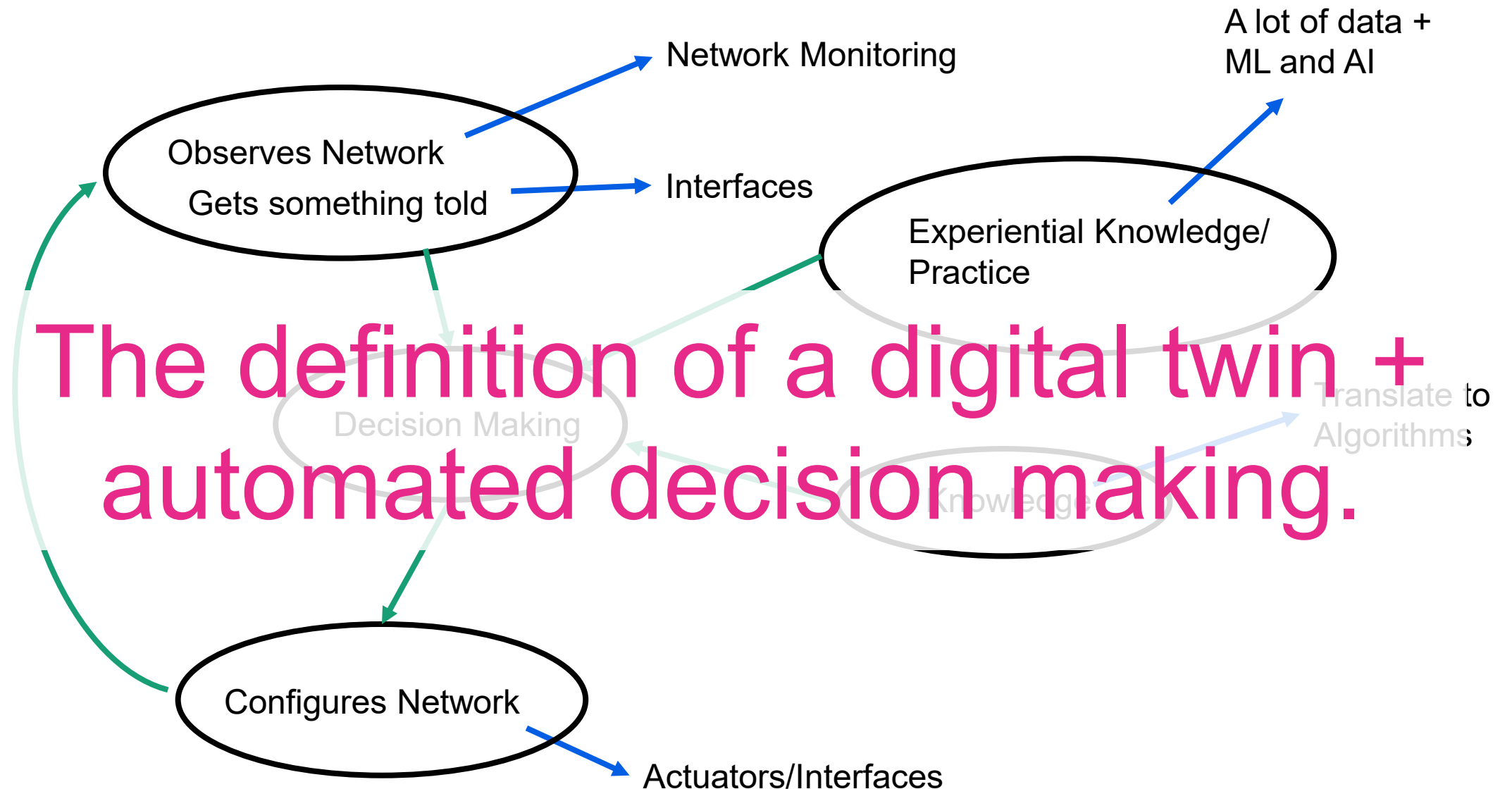
Present and Future networks require a high level of automation for effective operation.



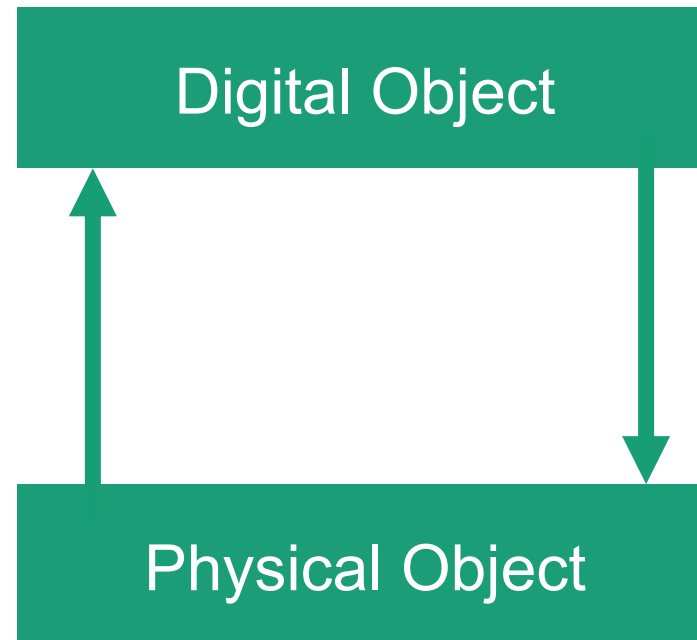
Human administrators possess a wealth of experiential knowledge that is hard to transport to machines.



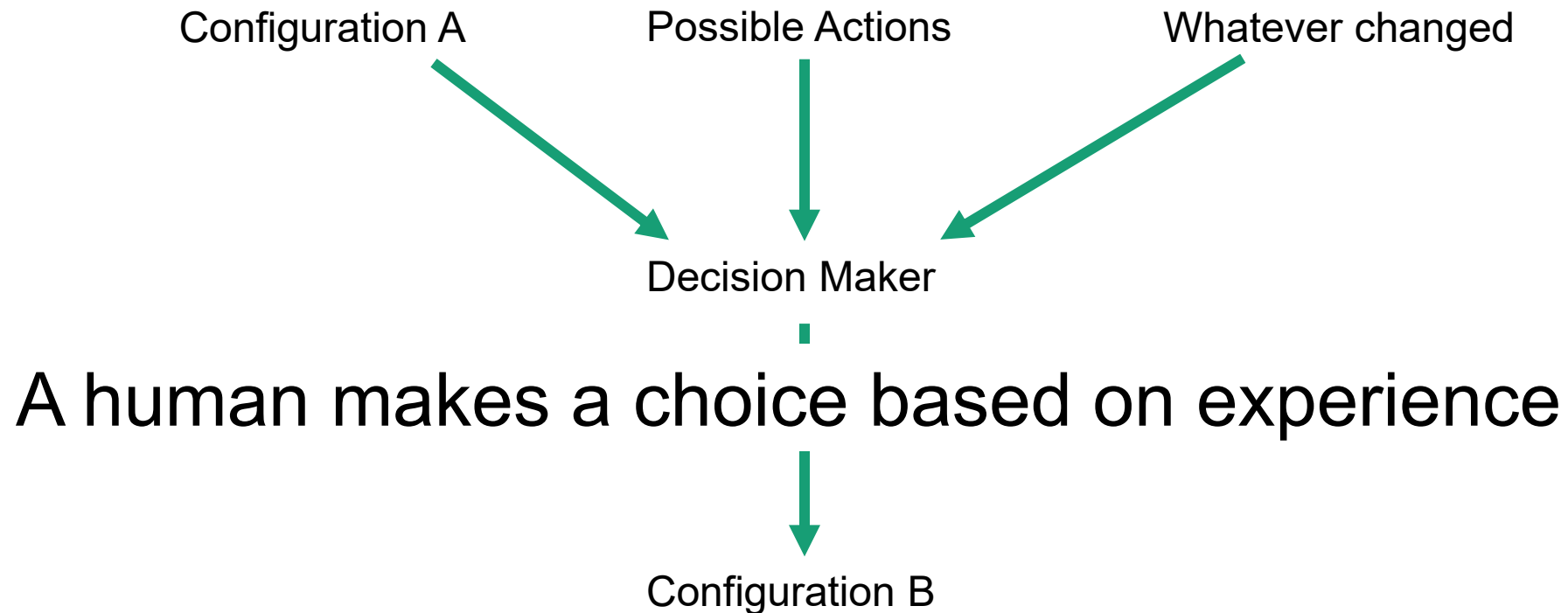
How could a network obtain similar skills?



A change to the physical object automatically leads to a change in the digital twin and vice versa.

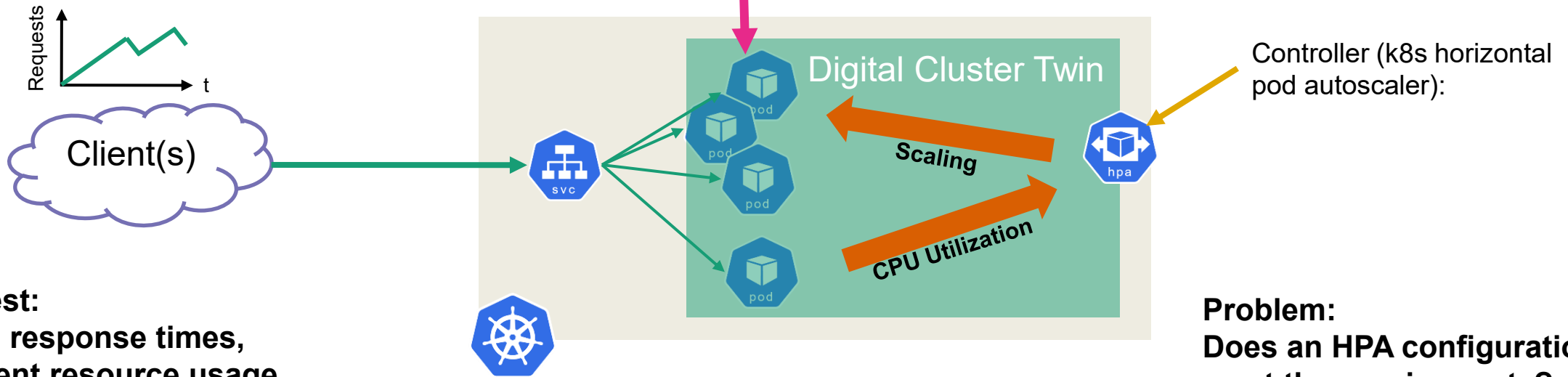


Already adapting the network to small changes can be a challenging problem.



Enter Kapetánios – use case

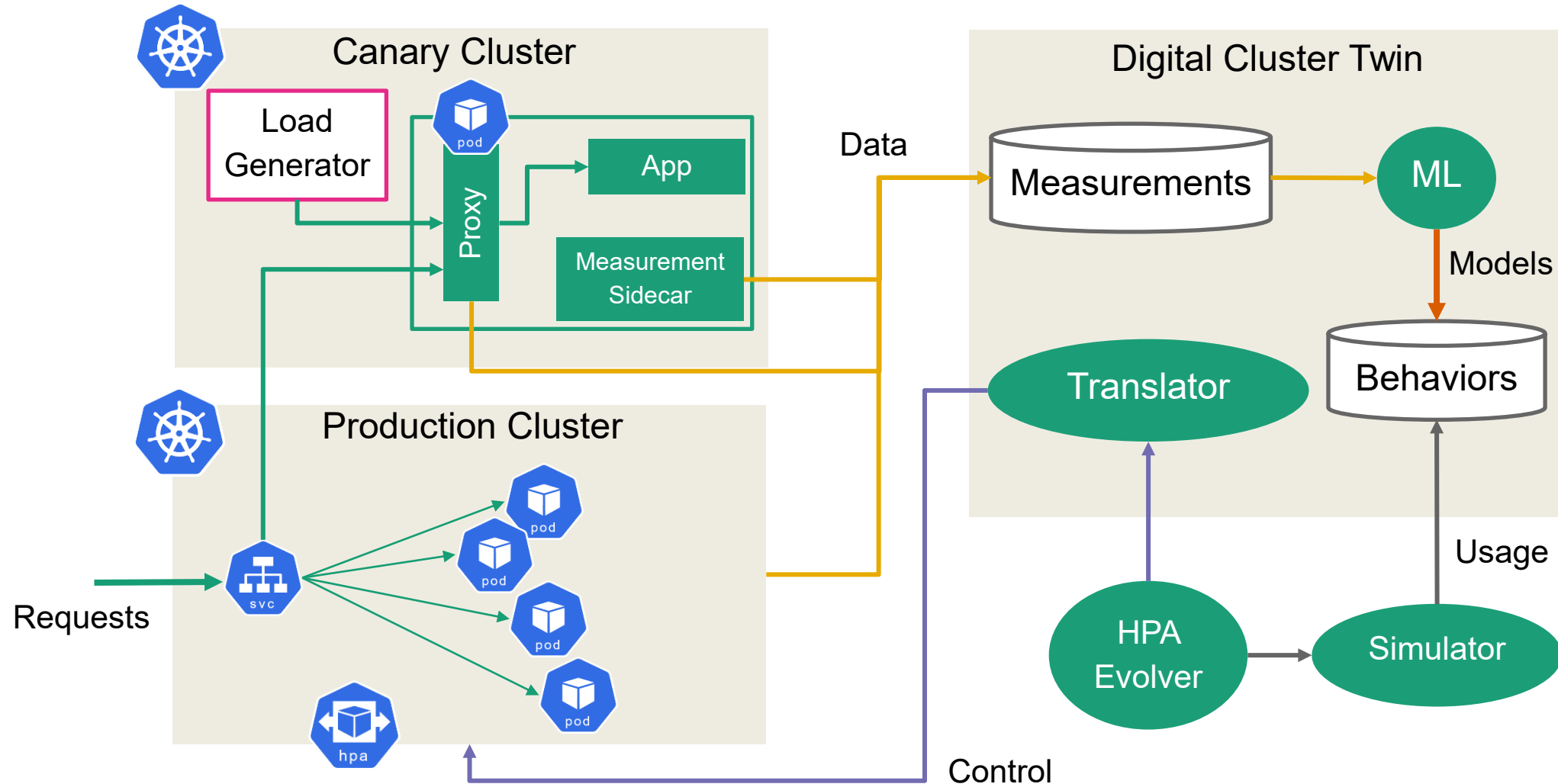
Application update



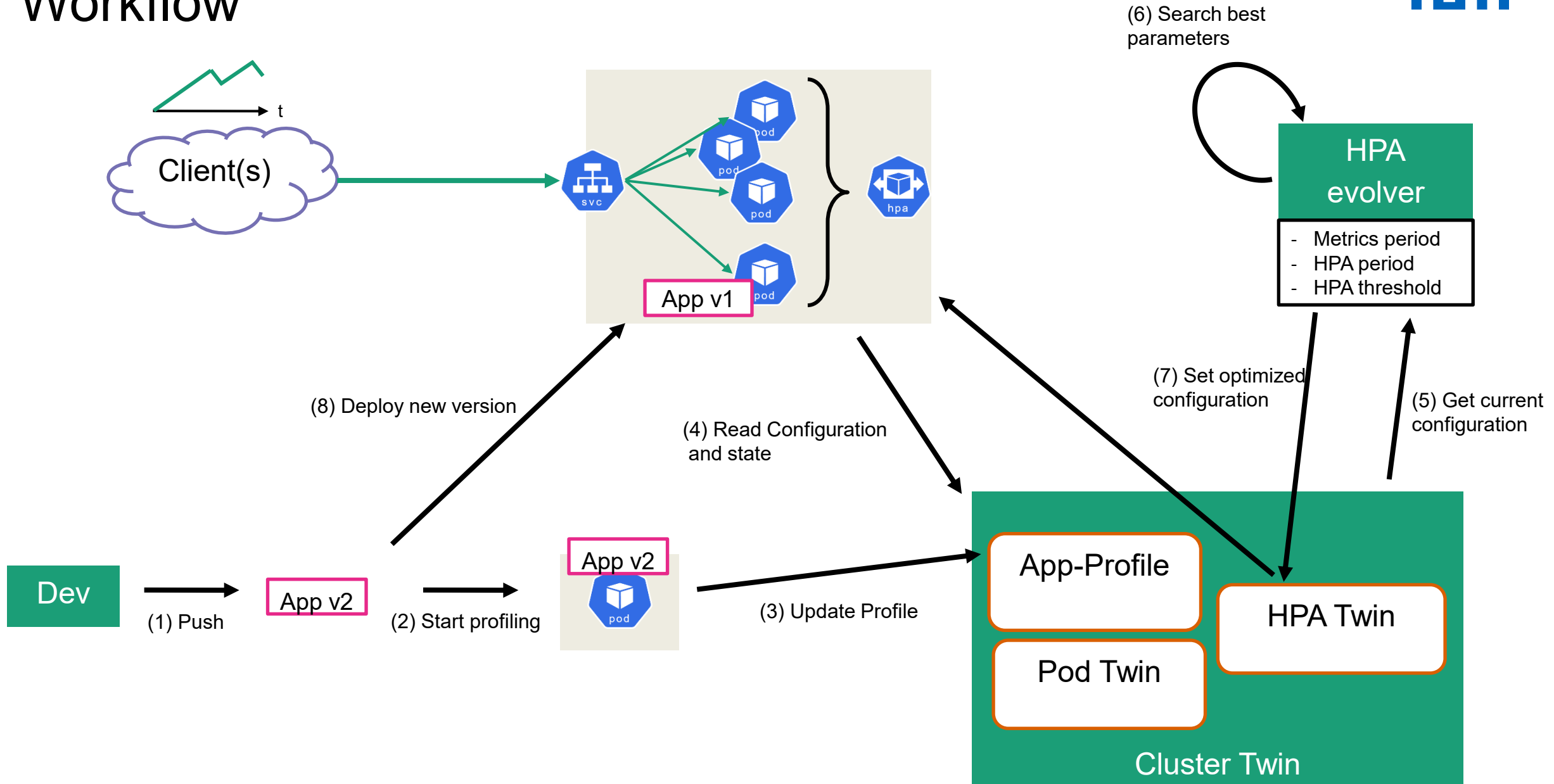
Interest:
Small response times,
Efficient resource usage

Problem:
Does an HPA configuration
meet the requirements?

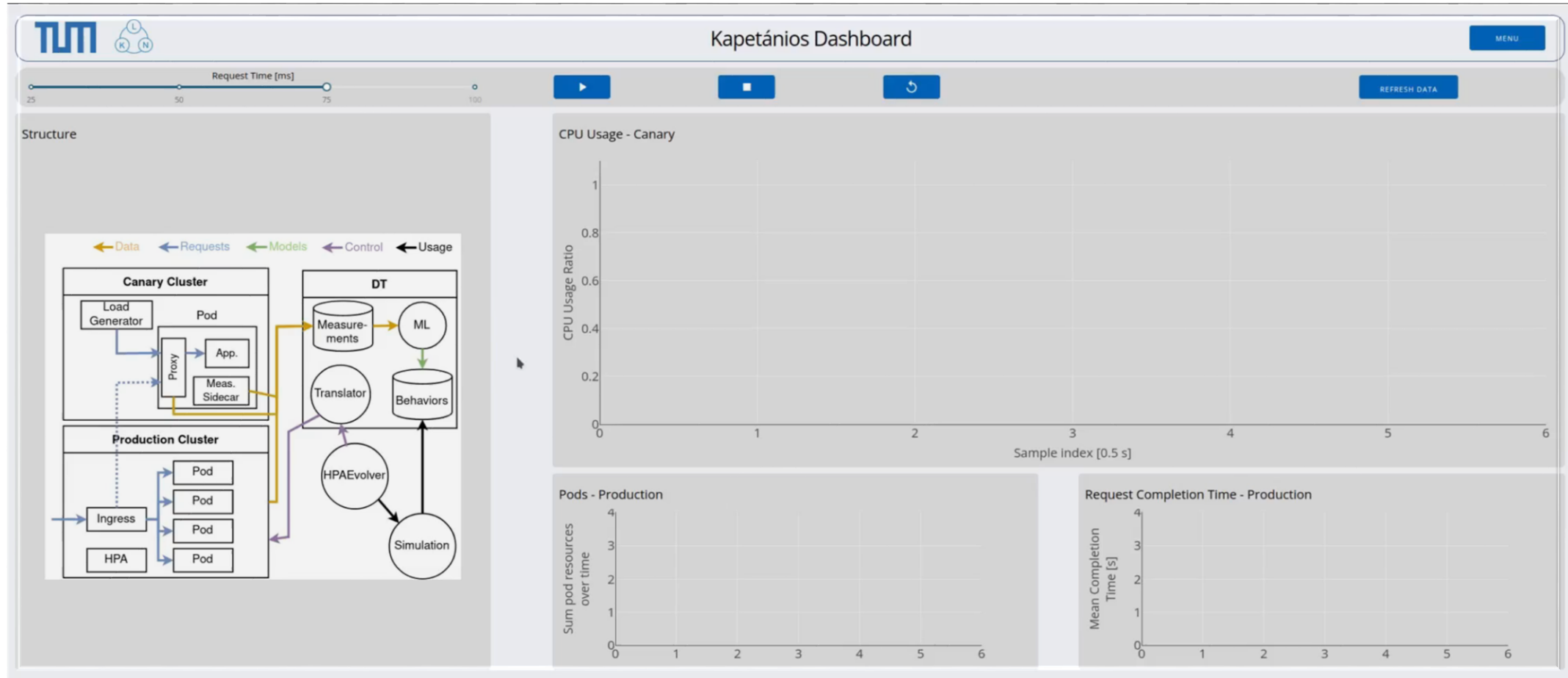
System overview



Workflow



Demo



Summary

- Kapetánios...
 - ... automatically tunes HPA parameters to minimize costs while keeping QoS
 - ... demonstrates how Digital Twins can be used in automated network operation

