ACES

Autopoietic Cognitive Edge-cloud Service

ACES will develop a System based on open common architecture, device and platform agnostic and fit on the largest Edge MicroDataCenter down to the smallest server cluster.

Context and problems

The rapidly increasing quantity and capabilities of connected and interacting edge devices exchanging vast amounts of data are the root cause of the growing demand for cloud services at the edge (edge–services).

Cloud computing architectures at the edge face a number of difficulties as a result, such as: the capacity to provide transaction resiliency; ensuring the stability; AI and transparency.

Solution

By integrating autopoiesis and cognition at various cloud management levels, ACES will be able to address these issues and provide AI with a variety of capabilities, including:

- allocation of workload, management of services and resources, and management of data and policies
- intelligent networking
- UIX-based transparency of autonomous decision making
- cognitive frameworks for supporting workload placement, service and resource

Uses Cases

ACES envisions three use-cases:

Market place and asset distribution (UC1),

Distributed process management (UC2),

IoT based asset monitoring and management (UC3).

Goal

- Improved European leadership in the global data economy
- Reinforced Europe's ability to manage urgent societal challenges
- Maximised social and economic benefits from the wider and more effective use of data

Value Proposition

AI/ML supported edge-cloud service deployment

Efficient operations of distributed infrastructure for edge-services for data- dense environment

Functions optimized for Edge distributed infrastructure regarding energy consumption, data transfers, security bandwidth, GDPR

hiro MICRODATACENTERS · inesc id lisboa · MARTEL innovate · DATAPOWER CONSULTING · sixsq · Lakeside Labs SELF-ORGANIZING NETWORKED SYSTEMS · POLITÉCNICA · TECHNISCHE UNIVERSITÄT DARMSTADT · IDSIA SUPSI · ipto INDEPENDENT POWER TRANSMISSION OPERATOR · University of Ljubljana Faculty of Computer and Information Science

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