SUSECON digital 22
Future Forward.

TUT-1172

# Edge, are you ready?

Juan Herrera

Andrés Valero

SUSE

# Introducing the speakers


## Andrés Valero

Technical Marketing Manager

andres.valero@suse.com




## Juan Herrera

Technical Marketing Manager

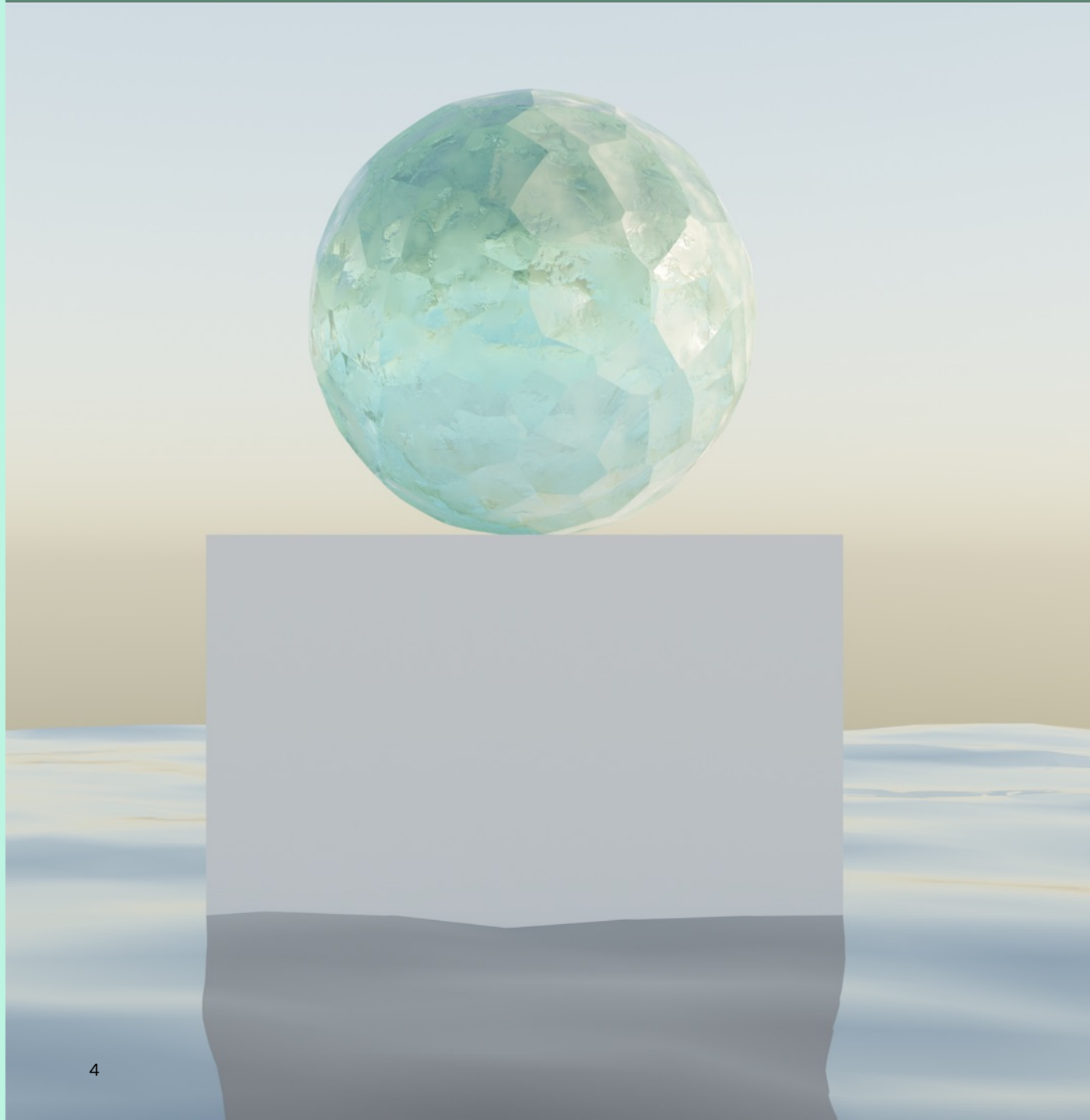
juan.herrera@suse.com

# Agenda:

1. Introduction to Edge
2. Types of Edge & use cases
3. SUSE solutions for Edge
4. Conclusions
5. Q&A

SUSECON digital 22
Future Forward.

# Introduction to Edge



# Introduction to Edge computing

## What is Edge computing?

- Techtarget defines Edge computing as a distributed information technology (IT) architecture in which client data is processed at the periphery of the network, as close to the originating source as possible.
- Edge refers to computing done at the location closest to a system's data but far from the data center. Edge architecture improves data flow since the data is processed as close as posible to the source improving latency and avoids sending big amounts of information from the source to the data centers or the cloud.

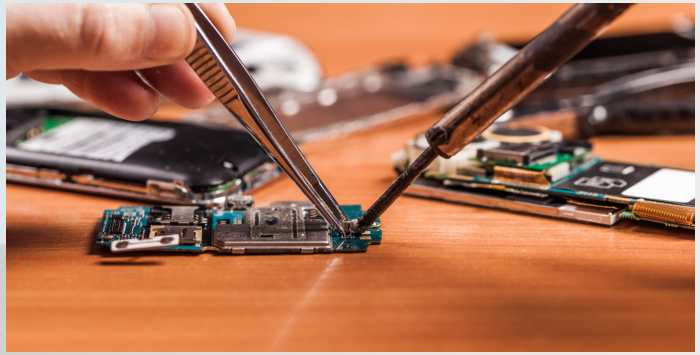
# Introduction to Edge computing

## Why Edge matters?

- Worldwide spending on Edge computing is expected to be $176 billion in 2022, an increase of 14.8% over 2021. Enterprise and service provider spending on hardware, software, and services for edge solutions is forecast to sustain this pace of growth through 2025 when spending will reach nearly $274 billion - IDC Worldwide Edge Spending Guide -
- Gartner's IoT forecast is showing that, by 2029, more than 15 billion IoT devices Will attach to the enterprise infrastructure - Gartner Predicts 2021: Cloud and Edge Infrastructure -

# Introduction to Edge computing

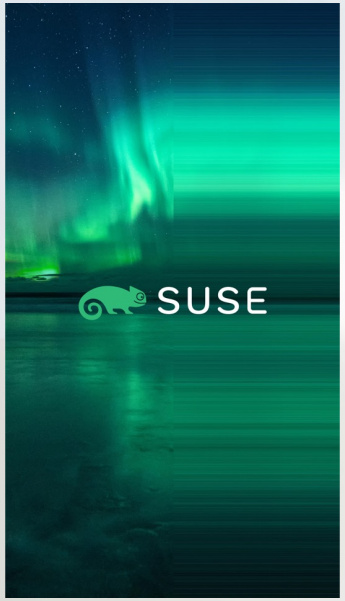
## Why Edge matters?



- In today's world, potentially Edge devices are everywhere, cars which usually have from 25 to 50 CPUS, personal devices like smartwatches, factories sensors, smart grids, city cameras, etc.  Generating large amounts of data.
- The potential market for Edge will grow alongside the actual society because Edge is more and more present in our life.
- The potential grow in Edge is almost endless in the actual world.

# Introduction to Edge computing

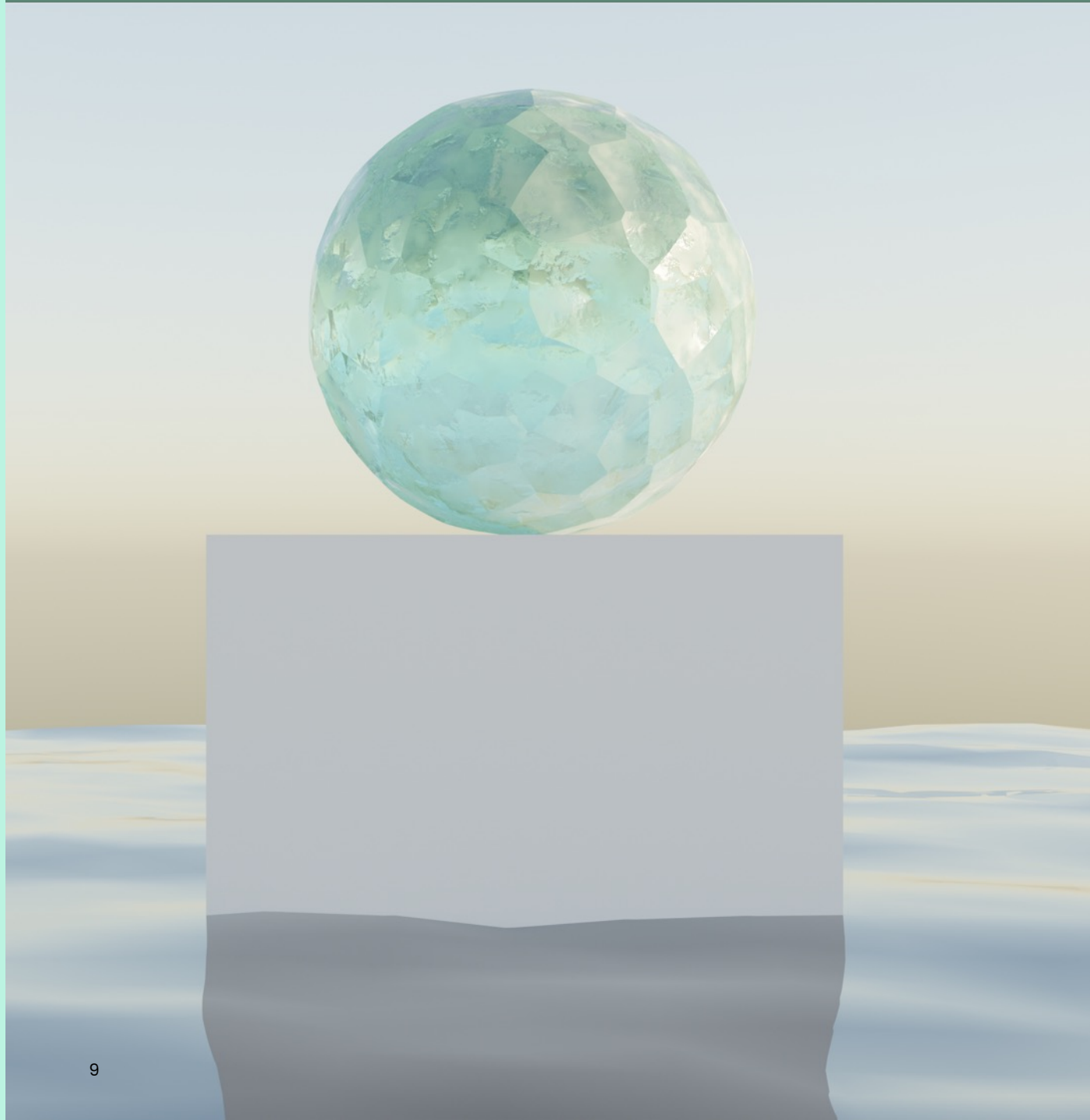
## SUSE & Edge




- Most of IoT and Edge devices use Linux since they need a lightweight, secure, and reliable OS to run. Who better than SUSE and our experience on Linux to provide Edge solutions.
- Edge is about data and distributed computing. Today distributed computing means Kubernetes and containers. With Rancher portfolio SUSE is a strong player in the Kubernetes market.

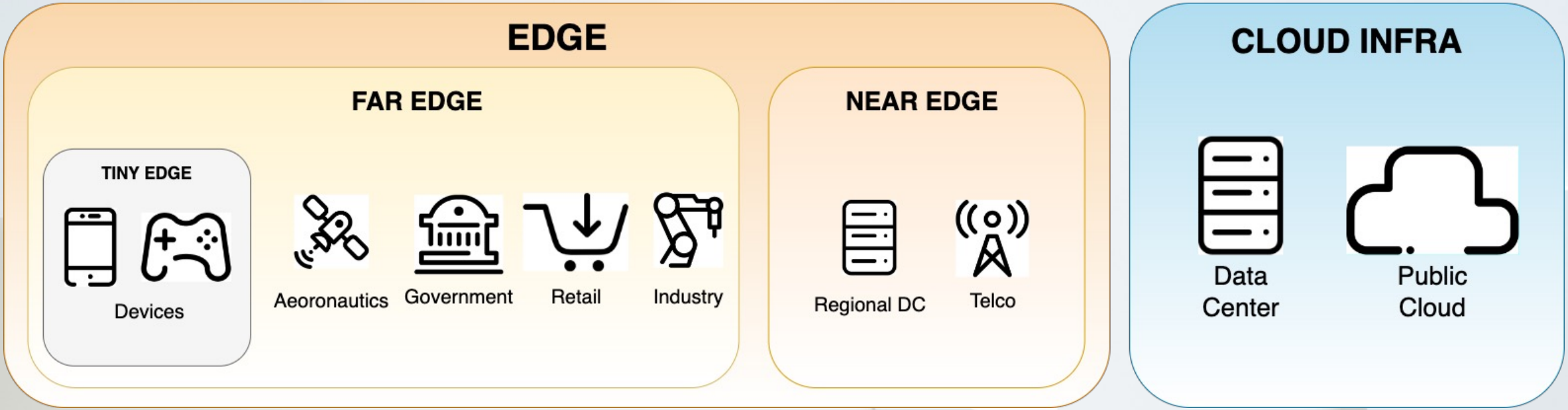
SUSECON digital 22
Future Forward.

# Types of edge & use cases



# Edge types

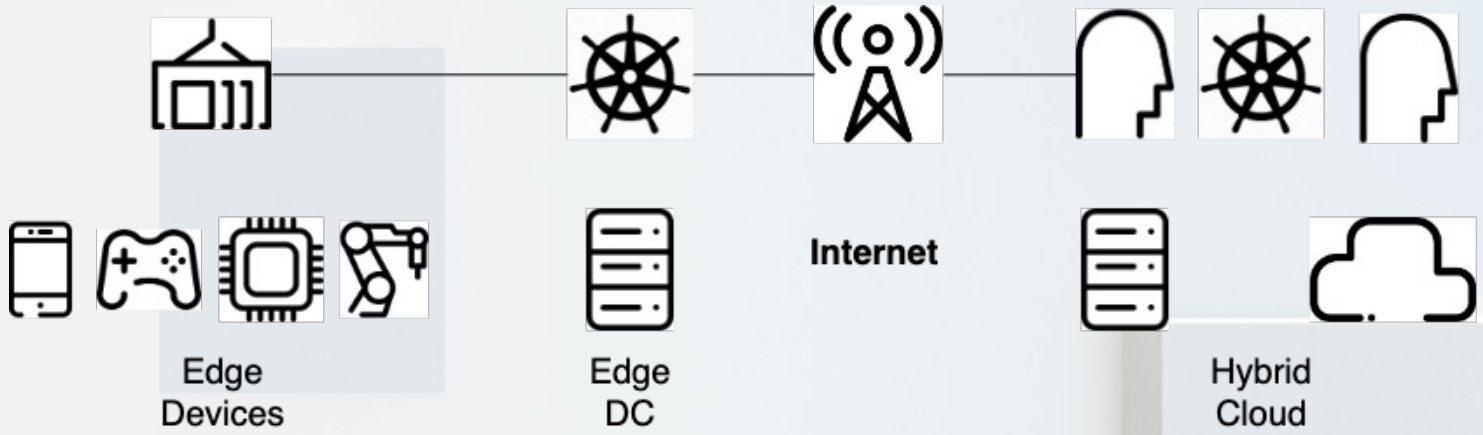
- The Edge is classified in using the distance to the data centers, finding two big categories:
  - Near Edge
  - Far Edge



# Architecture

The most common Edge architecture is the one that places computing power close to the edge location. This model facilitates the processing of the data nearby to the data generation.

Architectures are defined by the concrete use cases.



# Edge use cases

## Near and far Edge

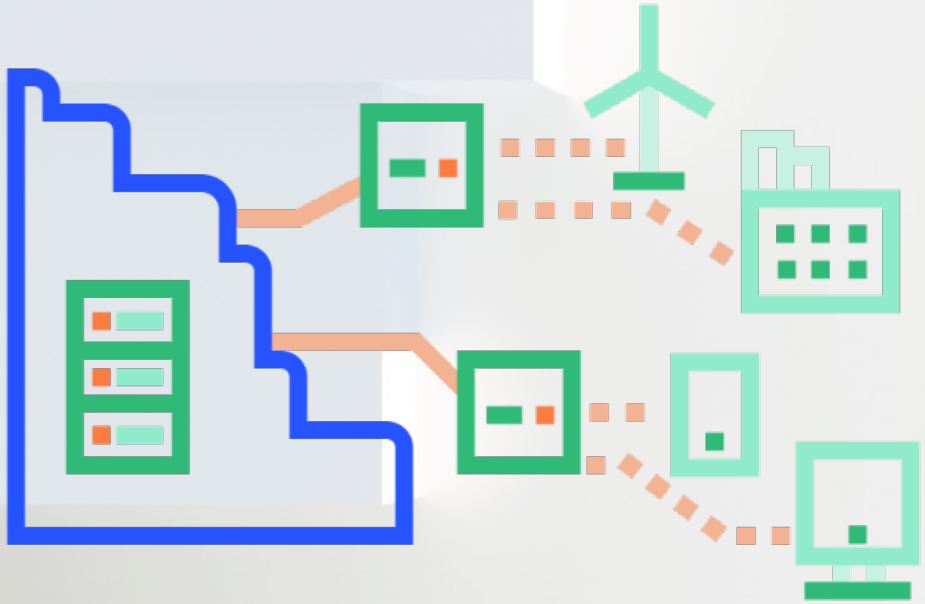
### NEAR EDGE

- Telco – Virtual Radio Access Network (vRAN)
- Telco - Private LTE/5G Networks
- Media – Virtual Content Delivery Networks (vCDN)

### FAR EDGE

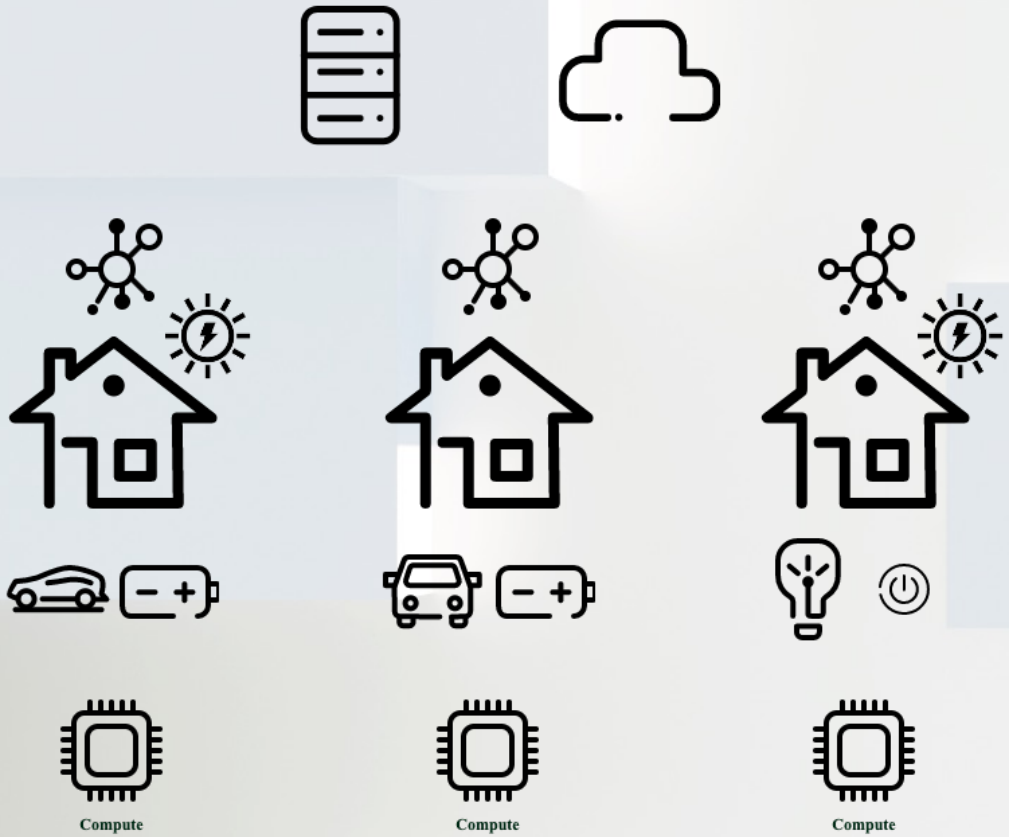
- Commercial – Retail
- Commercial – Healthcare
- Industrial – Industry 4.0
- **Industrial – Smart Grids**
- Public sector – Defense
- Tiny Edge – IoT, Mobile phones

# Edge use case – Smart Grids



- A new use case for Edge are Smart Grids. Smart Grids are the future of energy distribution and will play an important role to achieve a more sustainable future. But over on top, will be the key to ensure electric distribution in an efficient manner with great quality and low energy loss.

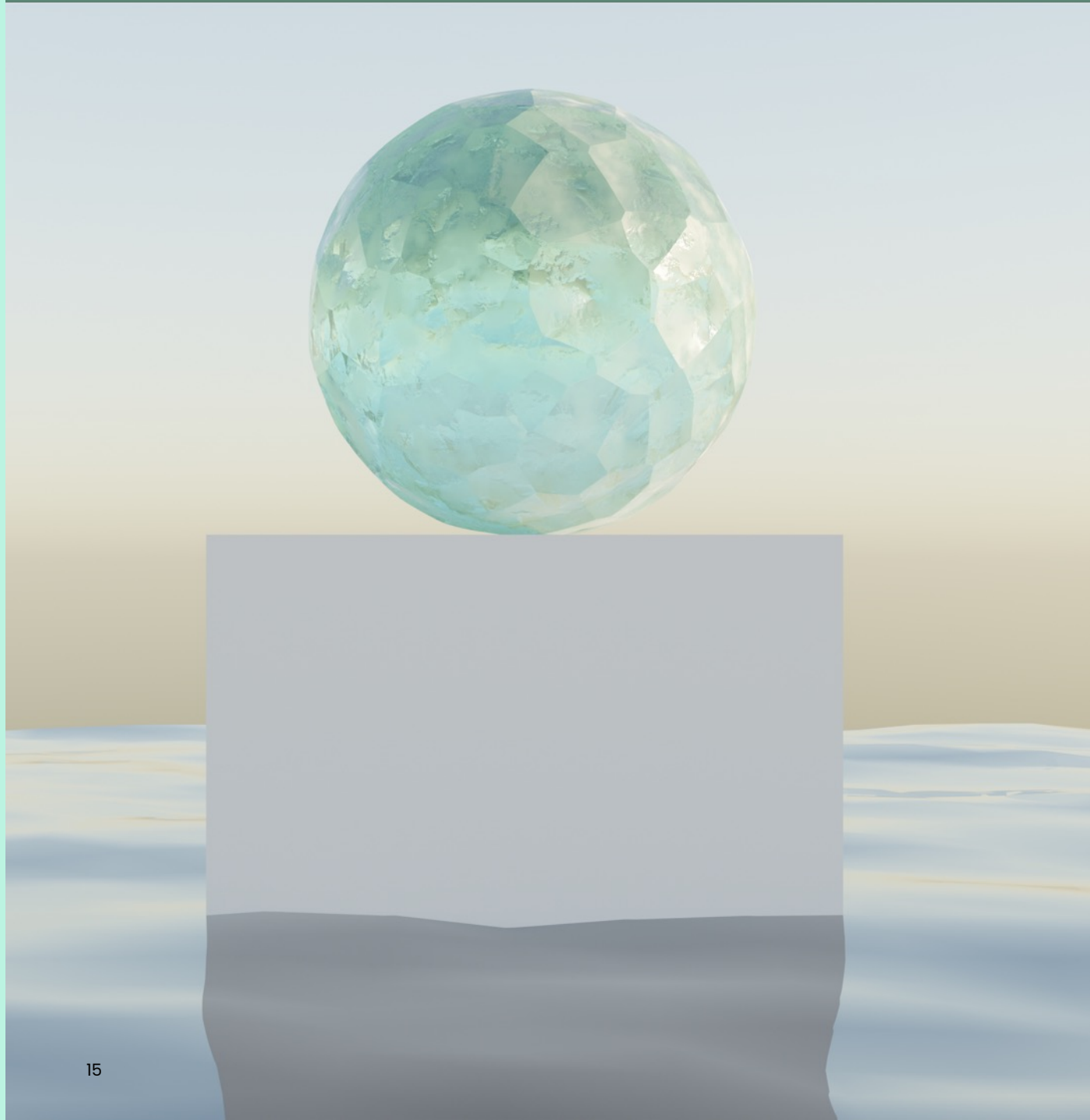
# What are Smart Grids



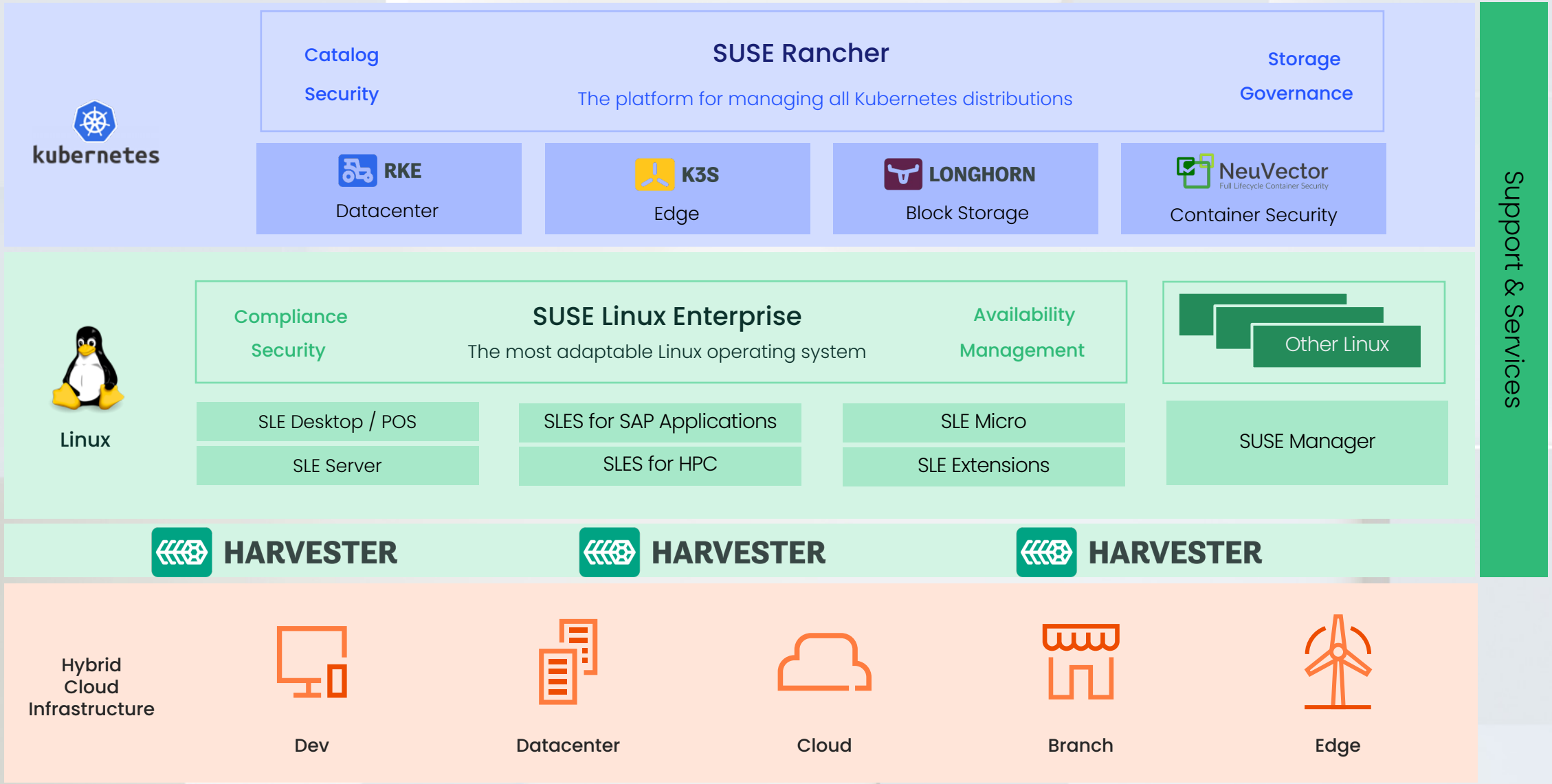

- What is a Smart Grid? Is an energy distribution grid that is able to integrate efficiently the behavior and actions of all the users connected to such grid. The grid is aware of who is consuming energy, who is generating or can generate energy and exchange energy in a bidirectional way.
- Today the electricity distribution grids have certain level of “intelligence” but until certain limits. There is no way to track what’s happening exactly.
- New power plants like the Virtual Power Plants (VPP) will be possible thanks to smart grids. A VPP is a cloud-based distributed plant that aggregates the capacities of heterogeneous distributed energy resources.

SUSECON digital 22
Future Forward.

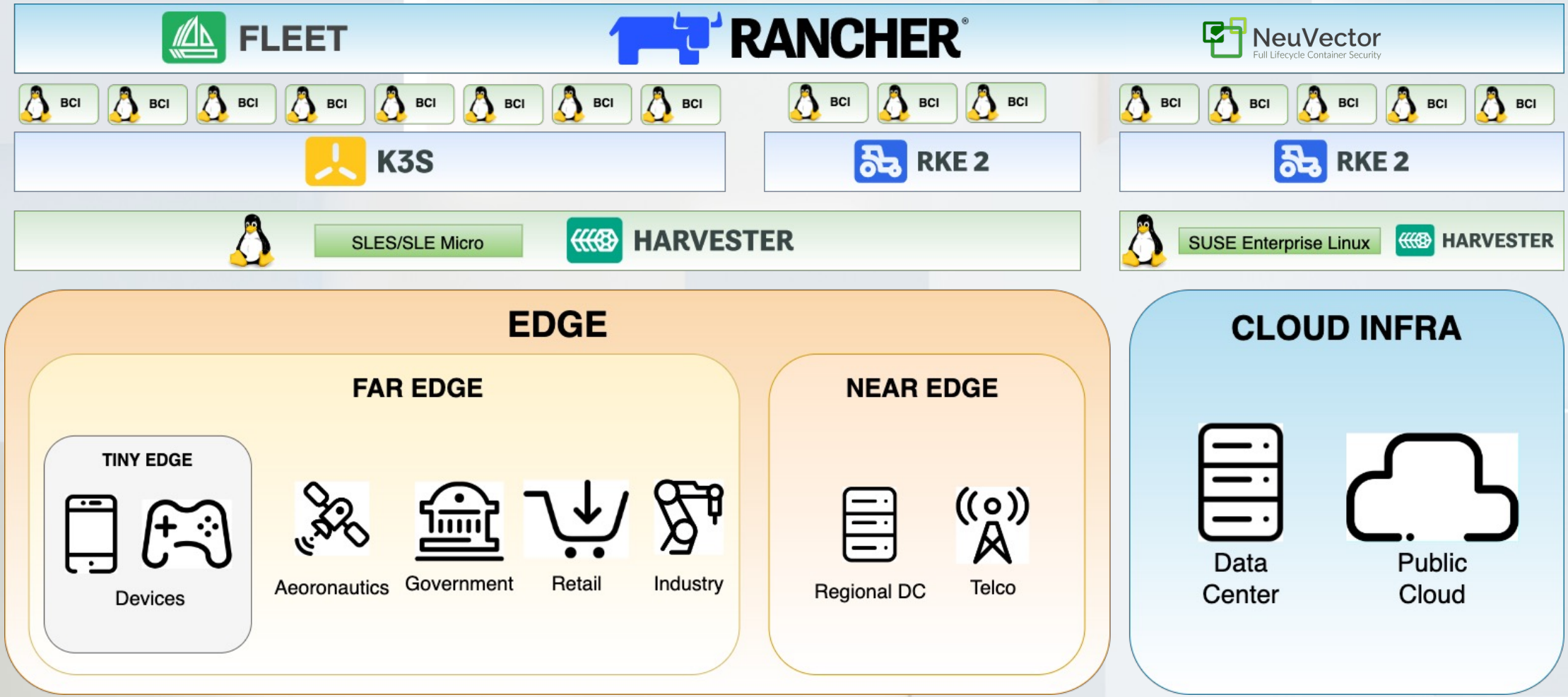
# SUSE solutions for Edge



# SUSE stack

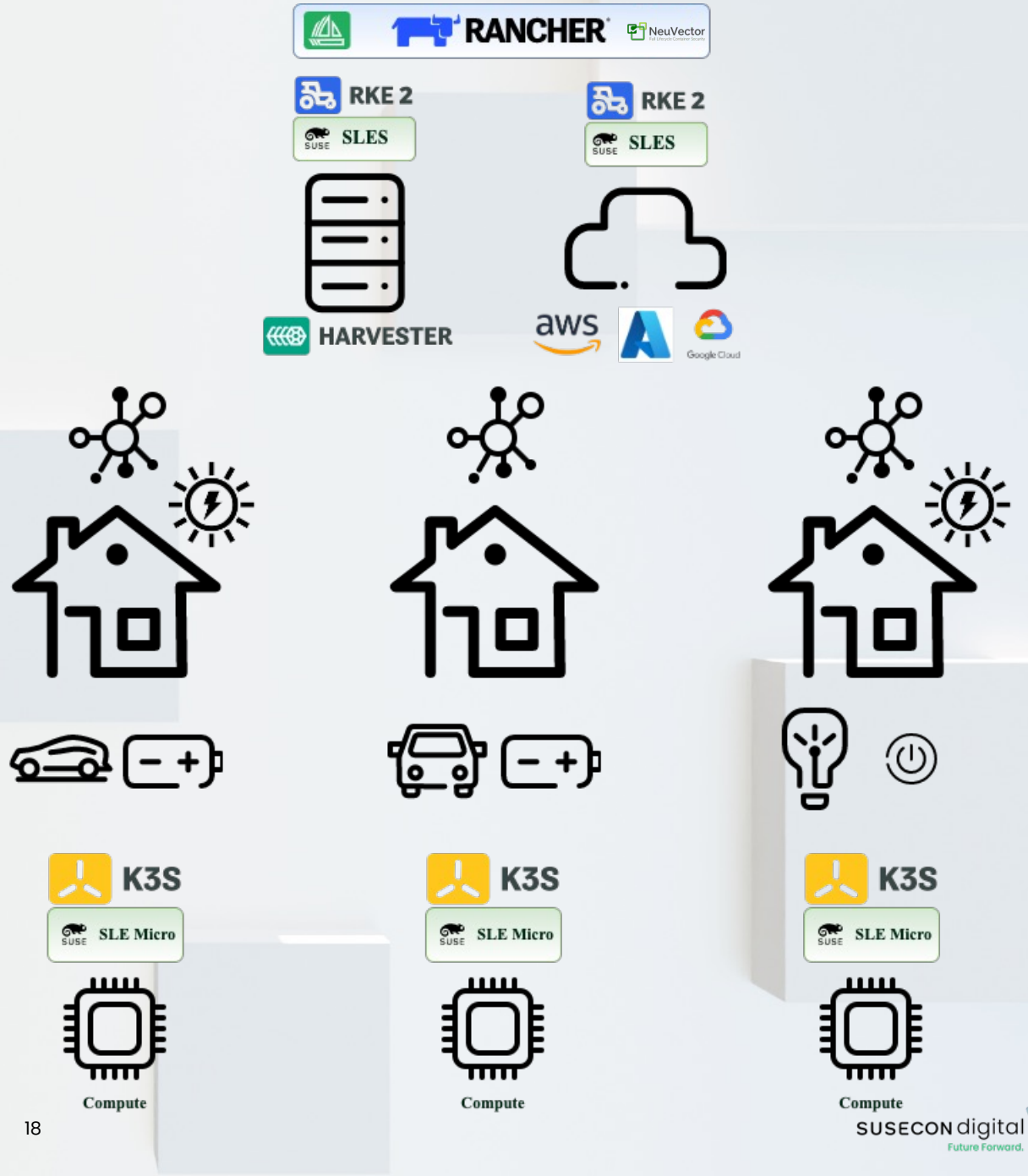


# SUSE Edge solutions



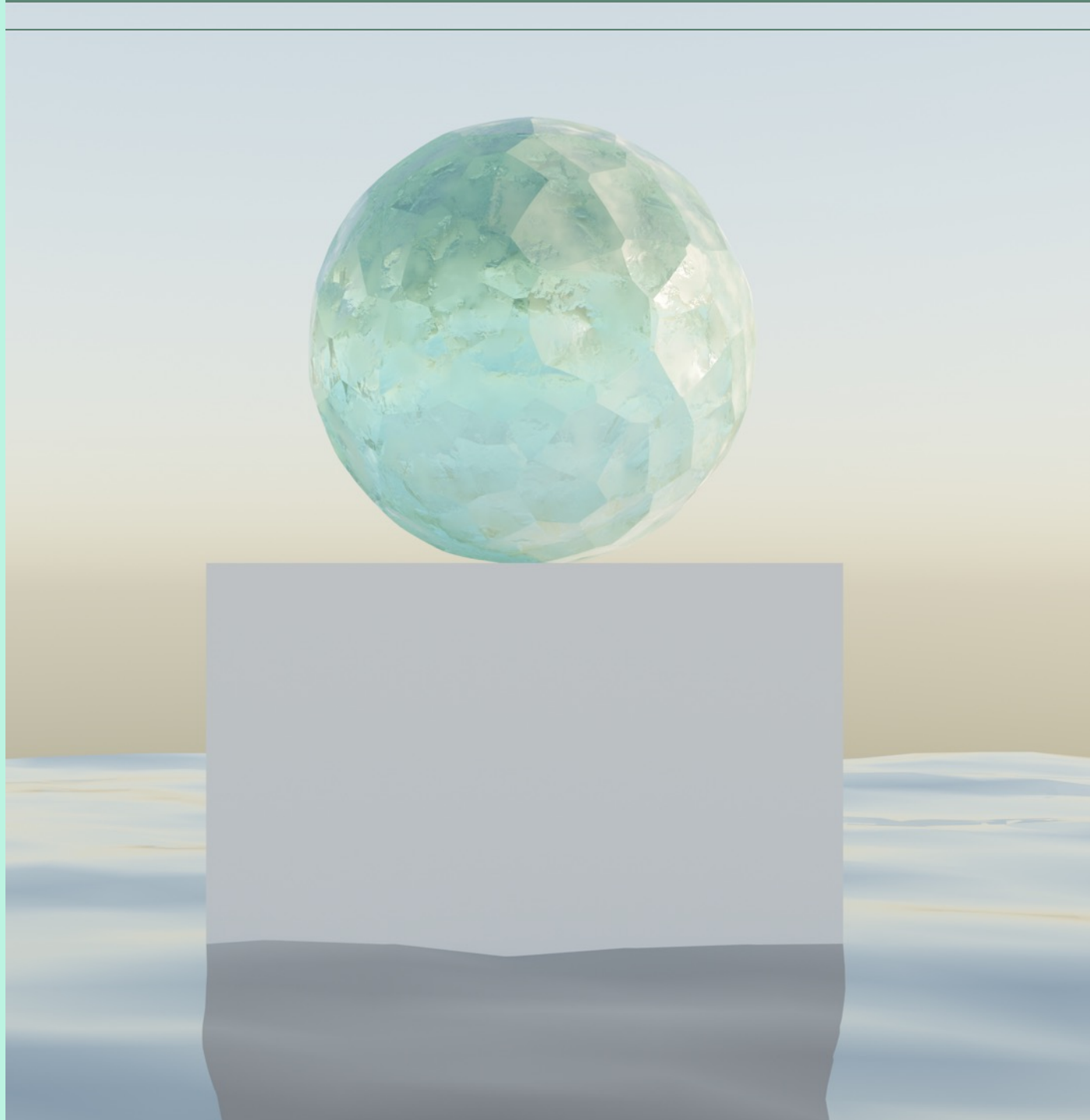
# SUSE - Smart Grids

- SUSE has the tools for this kind of complex scenarios, where data, security and distributed resources are the key to be successful.
- Secure and lightweight Linux operating systems.
- Different Kubernetes distributions designed for different purposes.
- Management tools that can control all your containers, clusters and OS.



SUSECON digital 22
Future Forward.

# Conclusions



# Conclusions

## Edge computing

- Edge is everywhere, the amount of devices and the applications for Edge devices is growing exponentially. The market will grow fast in the next years.
- Our conception of Hybrid Cloud needs to adapt to the actual situation. Edge computing is becoming more strategic for the organizations. The compute power at the Edge will be part of what we consider today Hybrid Cloud becoming distributed DCs.
- With the growing amount of devices and small Edge servers connecting back to the Cloud and DCs, the exposure is huge, making compliance and security more important than ever.
- Management capabilities will be crucial to be successful managing devices at the Edge.

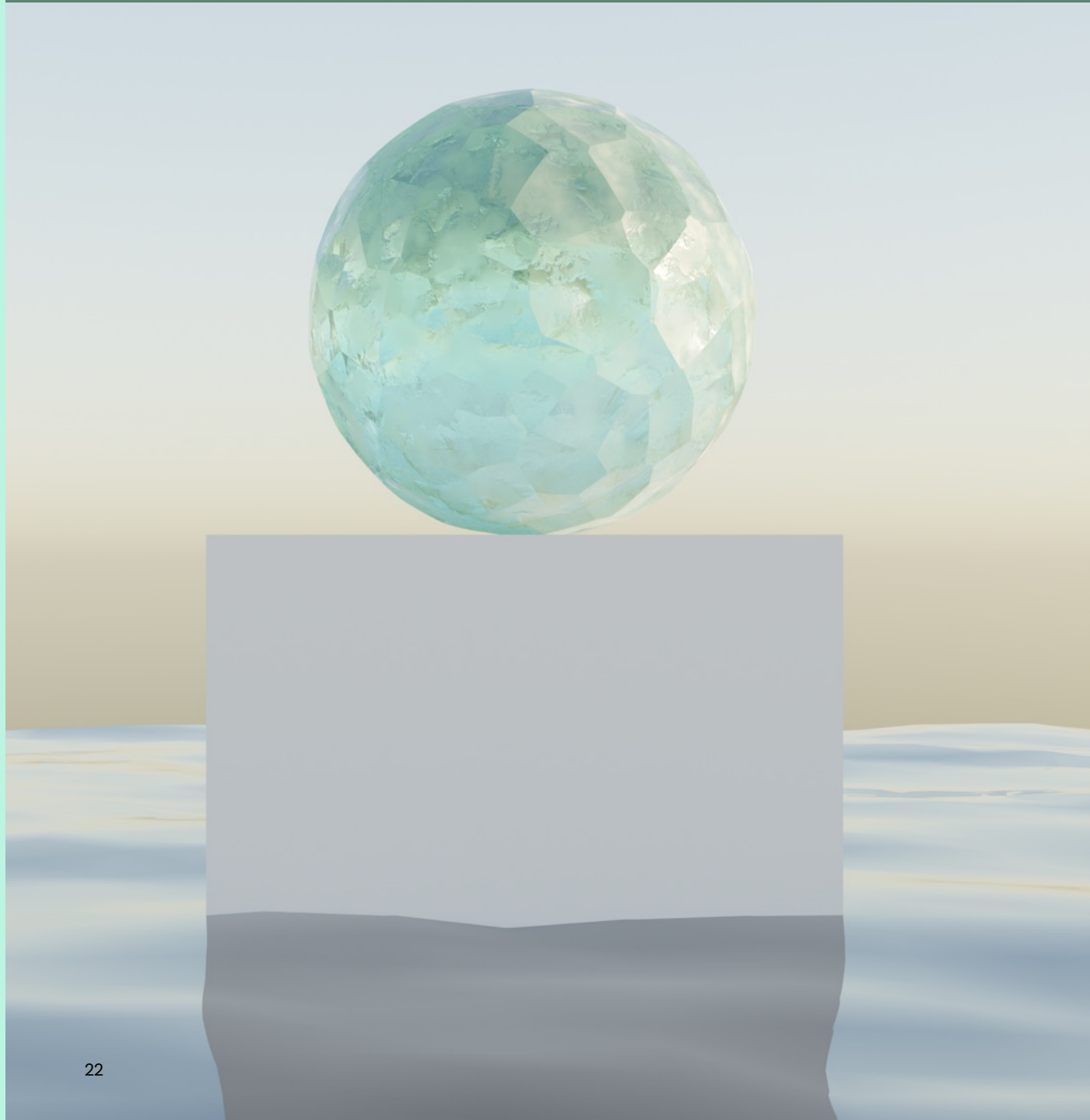
# Conclusions

## SUSE & Edge

- For this complicated and fast growing environment, having a partner with the right solutions and skills to help you is key. SUSE can help you to achieve your goals with its experience in security, Linux, Kubernetes and management.
- Open Source software provides the flexibility, Independence and neutral tools that the organizations needs for this new complex scenario.
- Solutions like SLES, SLE micro, BCI, K3s, RKE, RKE2, NeuVector and Rancher can help you to make a difference and be succesful on your Edge journey
- .

SUSECON digital 22
Future Forward.

# Q&A



# Links & information

## SUSE

- K3s: Lightweight Kubernetes
- RKE2 - Rancher's Next Generation Kubernetes Distribution
- Enterprise Kubernetes Management | Rancher
- SUSE Linux Enterprise Base Container Images | SUSE
- Harvester - Open-source hyperconverged infrastructure
- Fleet - GitOps at Scale
- Home - Akri

SUSECON digital 22
Future Forward.

# Thank you


For more information, contact SUSE at:

+1 800 796 3700 (U.S./Canada)

+49 (0)911-740 53-0 (Worldwide)

Maxfeldstrasse 5

90409 Nuremberg

www.suse.com


SUSE