Ready for the AI-age?

Internet Exchange based Connectivity as a key to success

Kaj Kjellgren
Senior Peering Consultant, Global and Nordics
kaj.kjellgren@de-cix.net

30 YEARS DE-CIX

connecting the now.
innovating the next.

DE-CIX

We make interconnection easy. **Anywhere.**

Take **the shortcut** to the Cloud

Americas

Chicago, Dallas, New York, Phoenix, Richmond, Seattle, Queretaro, Mexico City, Huston, Sao Paulo, Rio de Janeiro

EMEA

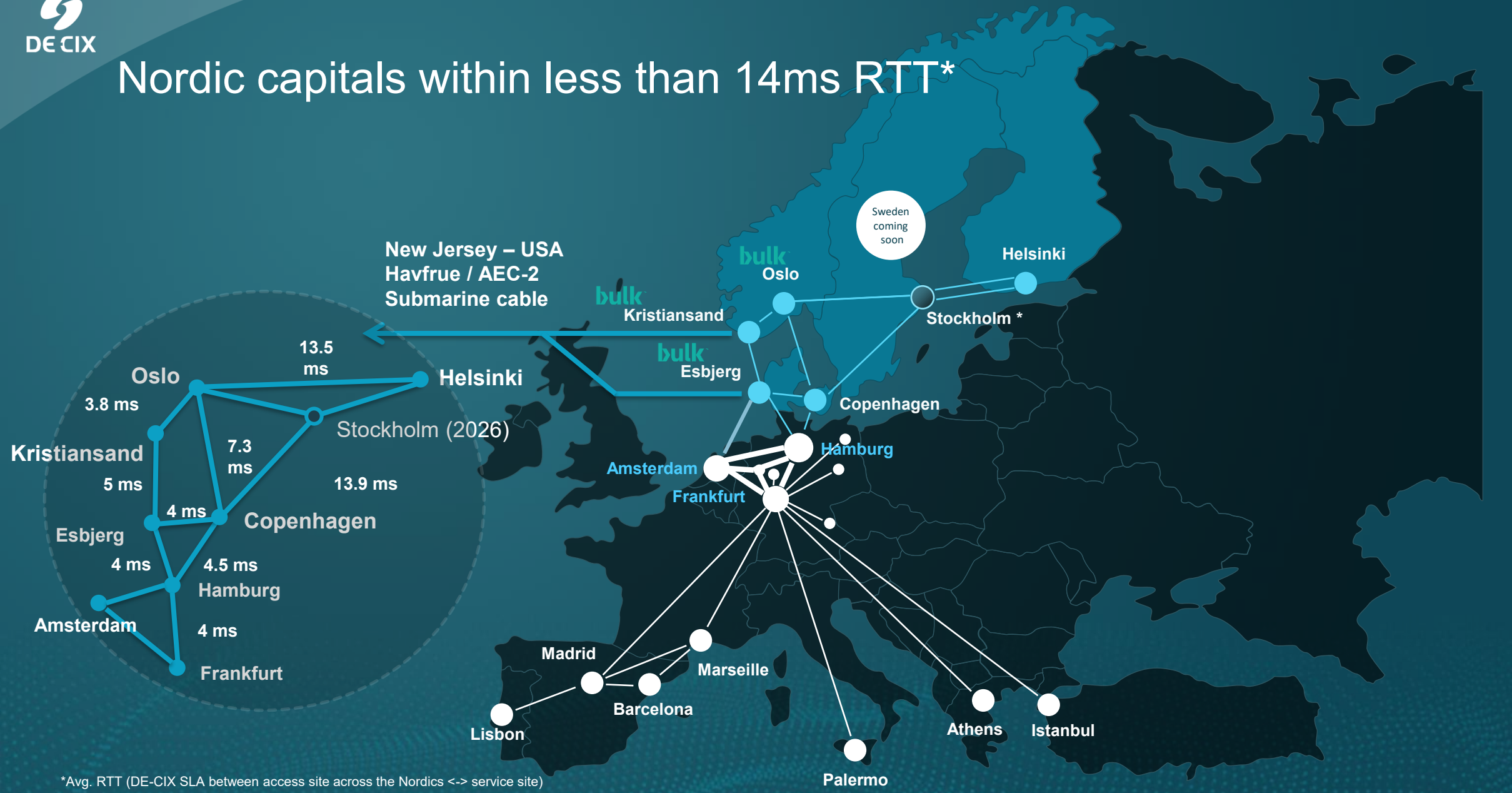
Amsterdam, Aqaba, Athens, Baghdad, Barcelona, Berlin, Bucharest, Copenhagen, Dubai, Dusseldorf, Esbjerg, Frankfurt, Hamburg, Helsinki, Istanbul, Kinshasa, Kristiansand, Lagos, Leipzig, Lisbon, Madrid, Marseille, Munich, Oslo, Palermo, Prague, Riyadh, Ruhr region, Sofia, Stockholm*, Tripoli, Warsaw

Asia Pacific

Brunei, Chennai, Delhi, Hyderabad, Jakarta, Johor Bahru, Karachi, Kolkata, Kuala Lumpur, Manila, Mumbai, Osaka, Penang, Singapore, Tokyo

*coming

Nordic capitals within less than 14ms RTT*



*Avg. RTT (DE-CIX SLA between access site across the Nordics <-> service site)

DE-CIX

Our belief & the strategy we pursue…

60+
Internet & Cloud Exchanges

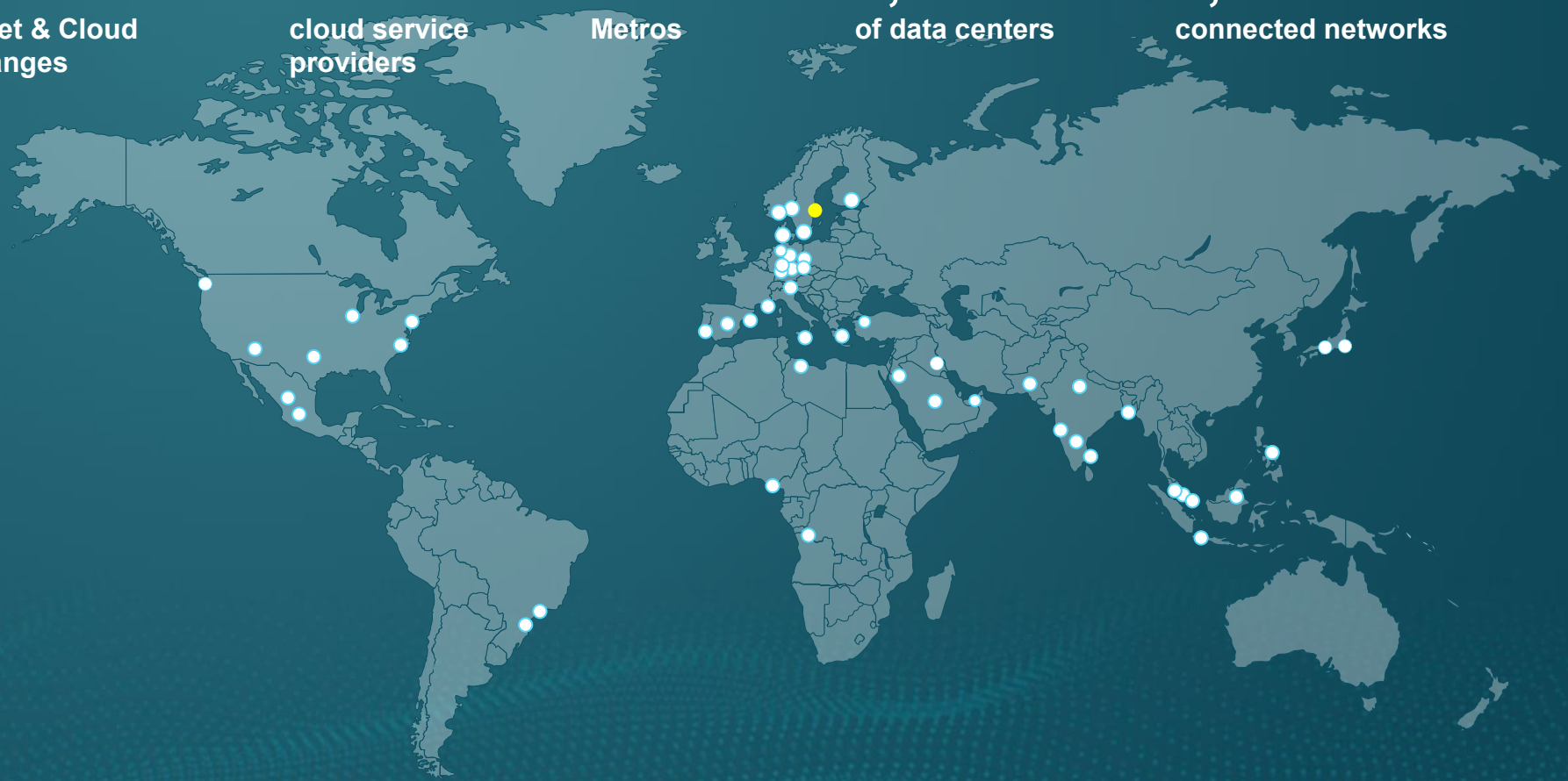
50+
cloud service providers

600+
Metros

1,000s
of data centers

4,000+
connected networks

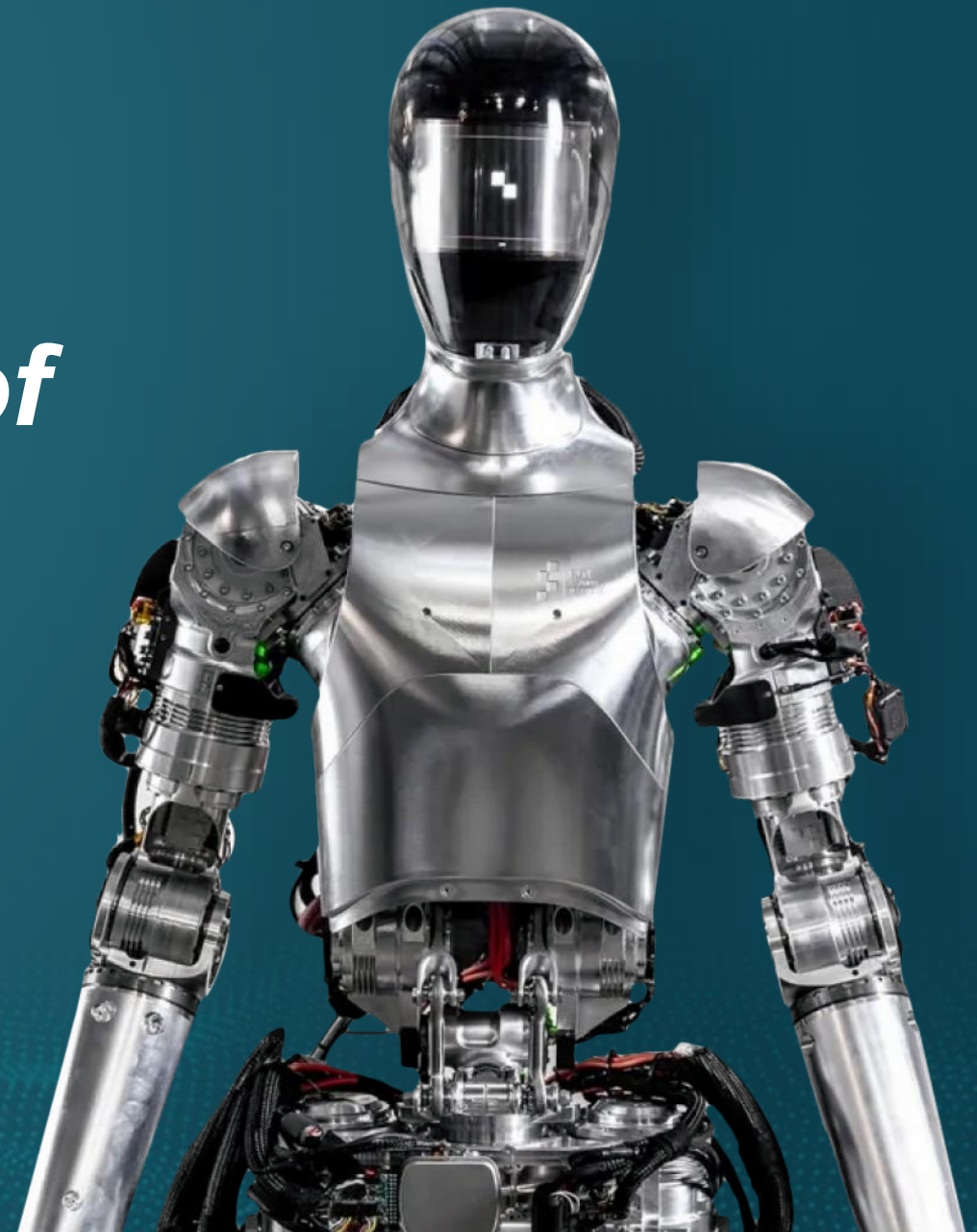
220+
Tbits capacity



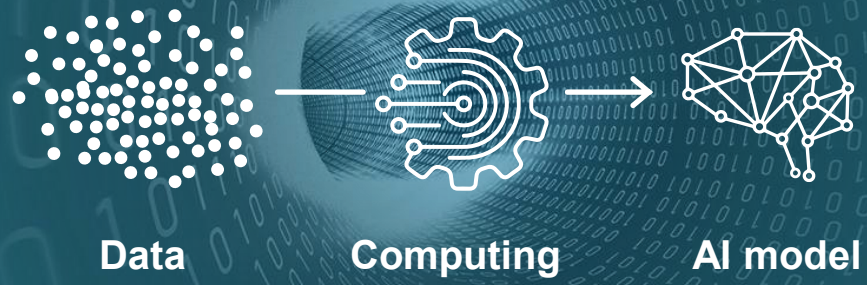
DE CIX

AI as a benchmark to set the borders of a new Internet

What does it take to run AI on digital infrastructure?



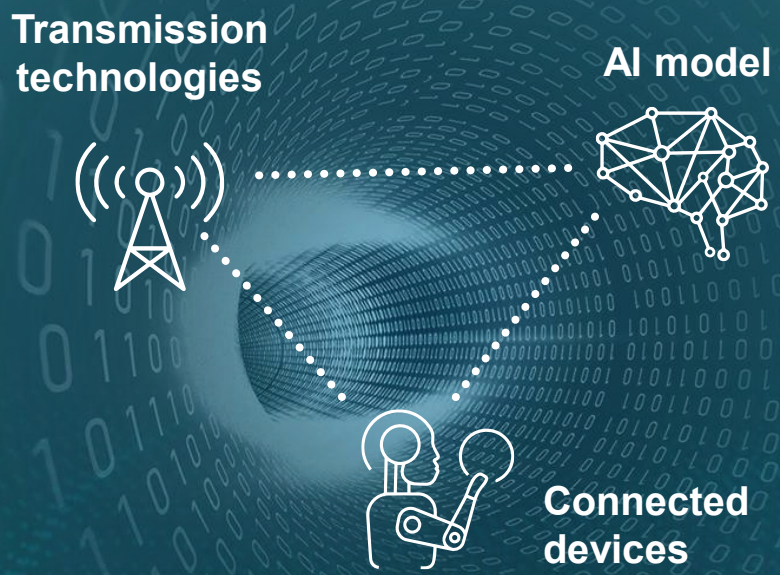
DE-CIX



AI Training

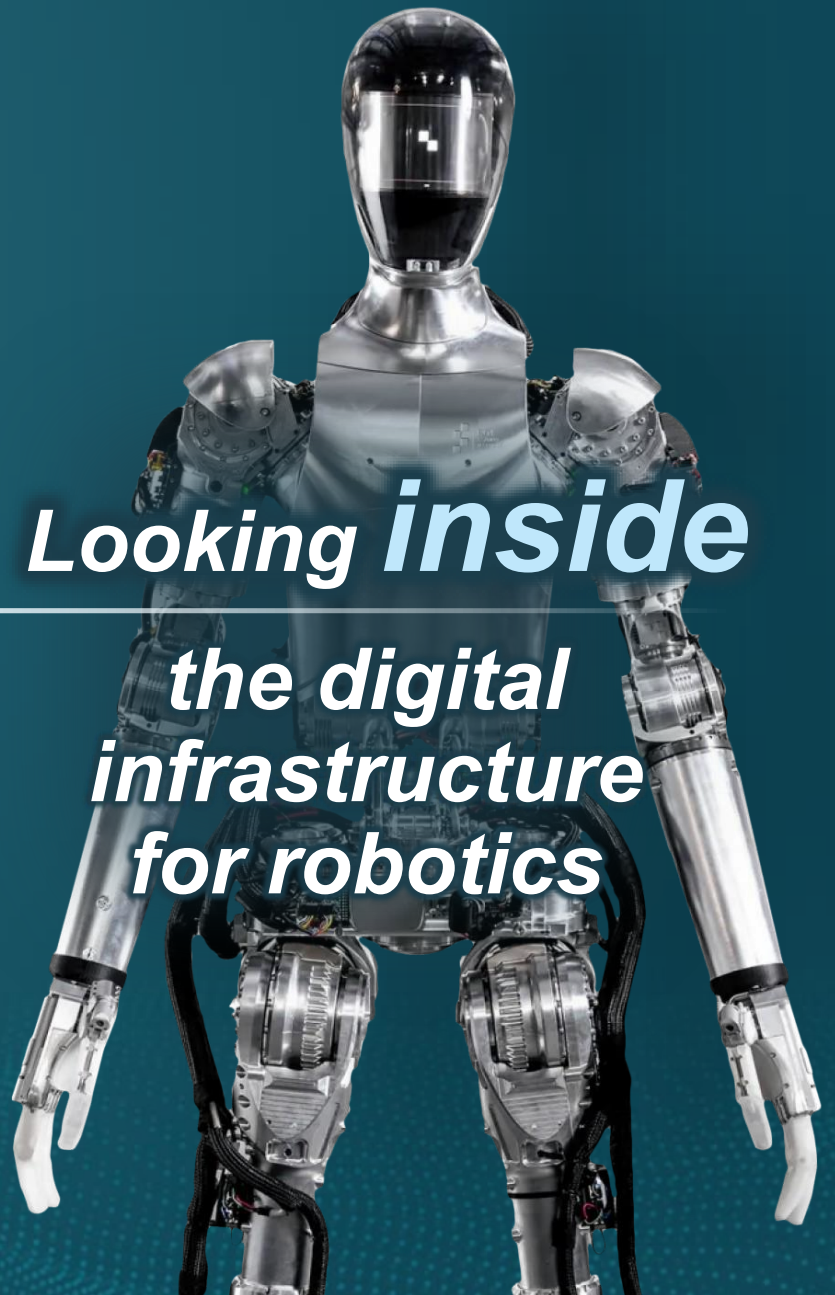
Develop the model in the first place, periodic retraining of the model

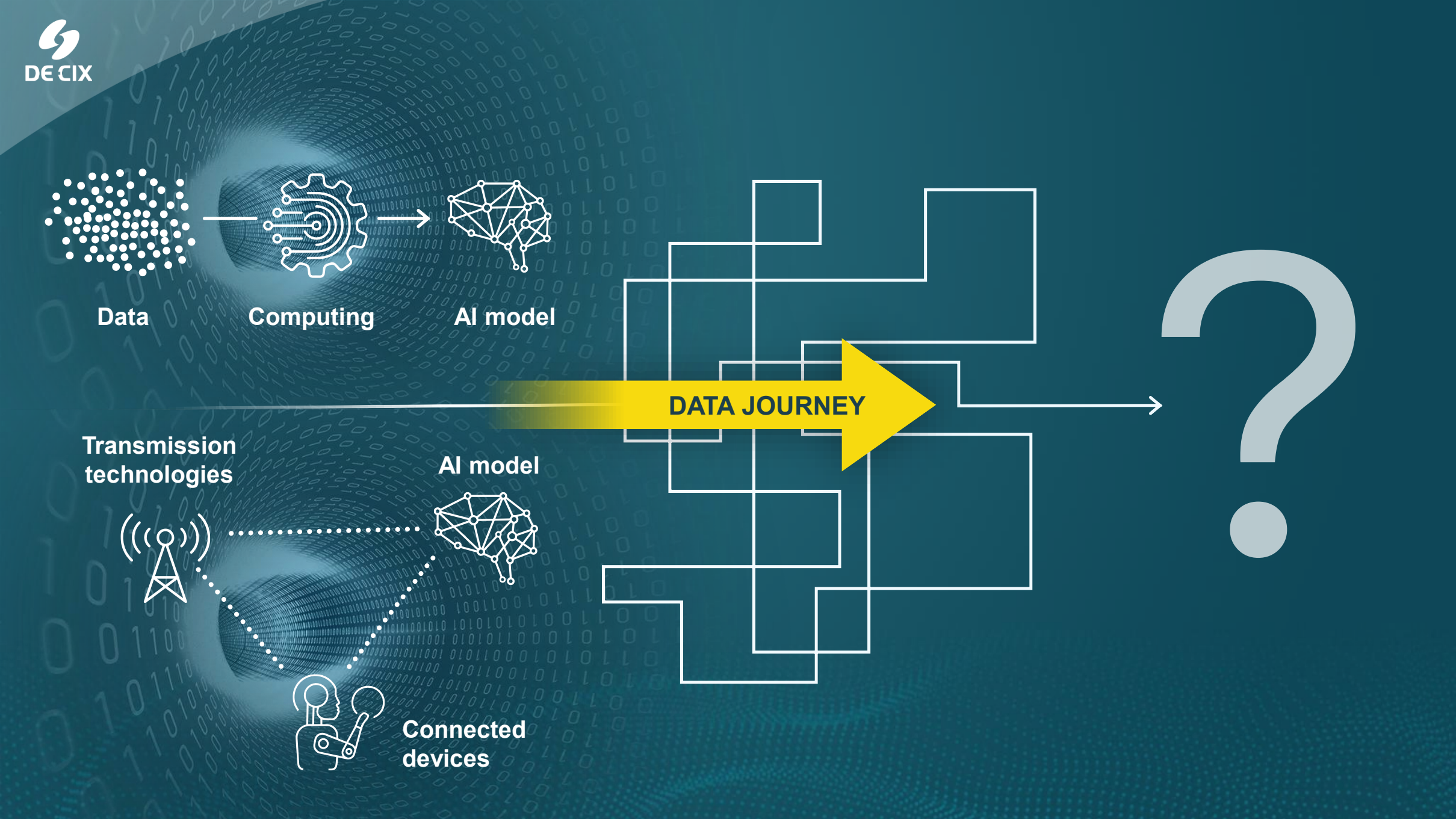
Looking inside the digital infrastructure for robotics



AI Inference ("AI in action")

AI-based diagnostics, simulate, predict, pilot



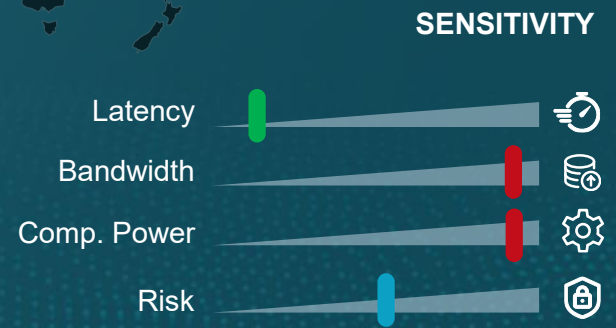

DE CIX
Data
Computing
AI model
DATA JOURNEY
Transmission technologies
AI model
Connected devices
?

DE CIX

AI Training
requires manageability of multi-cloud data sourcing & computing

Data
everywhere.

Computing power
somewhere.



Average time to transfer 500 Terabyte

- 500 Terabyte is the rough amount of data of 2000 Users
- Certain datasets require large amount of storage (eg. ADAS data, medical data, simulation data)
- Only one-time transfer
- Changes in source data are not taken into account

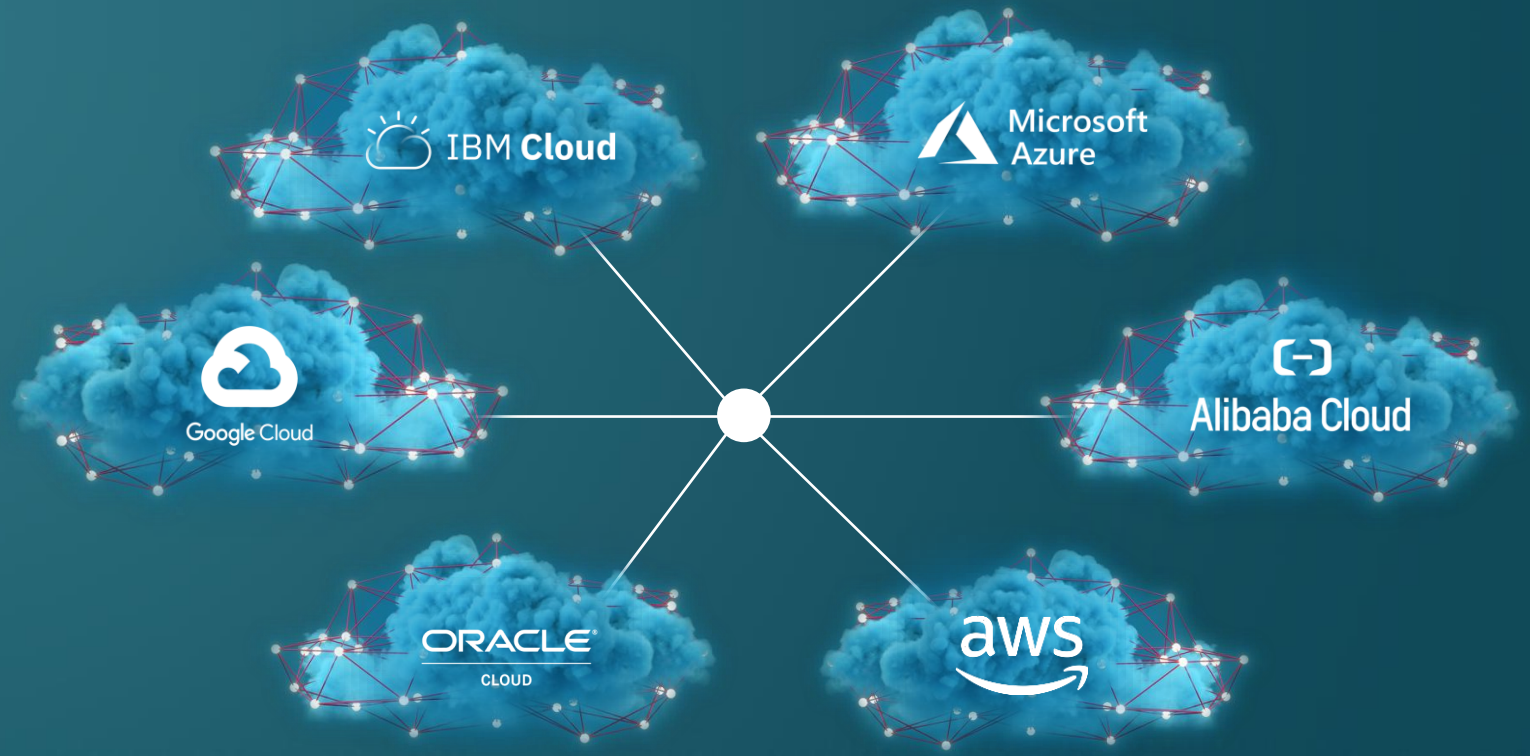
Notes:
- Not in scale
- Protocol overhead not calculated
- Latency not considered

DE-CIX

AI Training
requires manageability of multi-cloud data sourcing & computing

Agile, scalable, affordable, secure

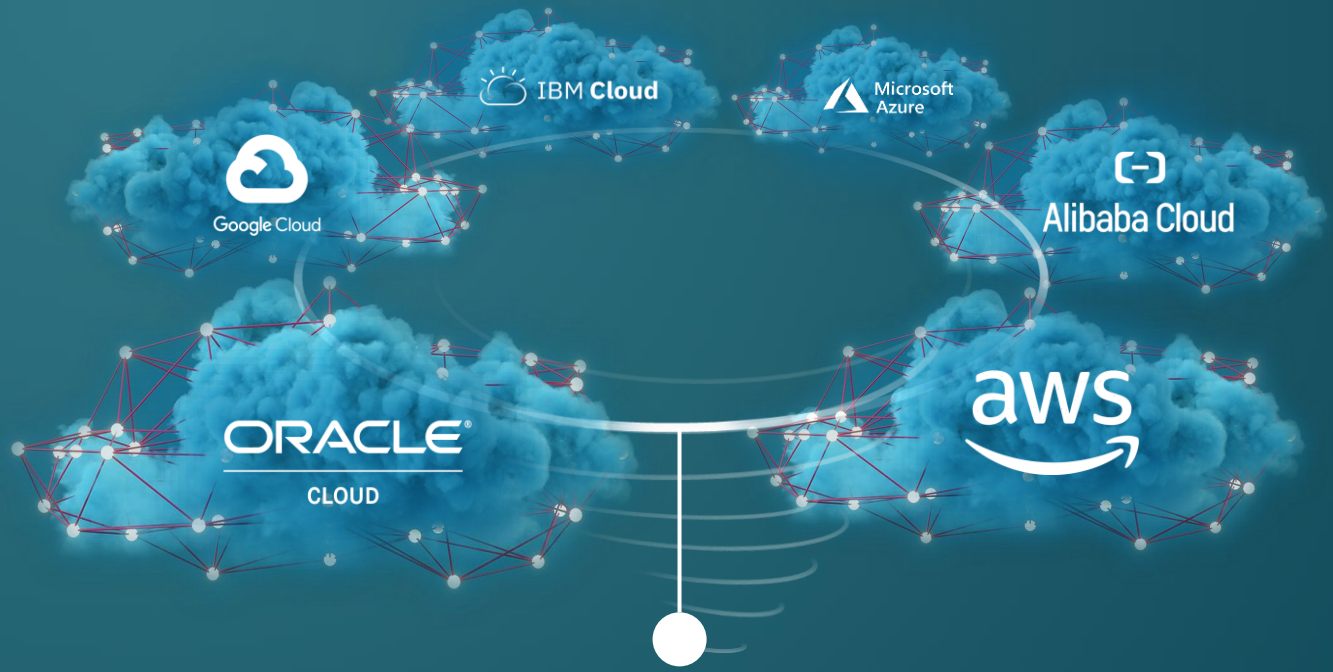
- Single access
- Low-risk & low-cost experiment
- Data sovereignty & integrity



Reaching *all* cloud service providers with 1 access

DE-CIX

AI Training
requires the interoperability of digital applications



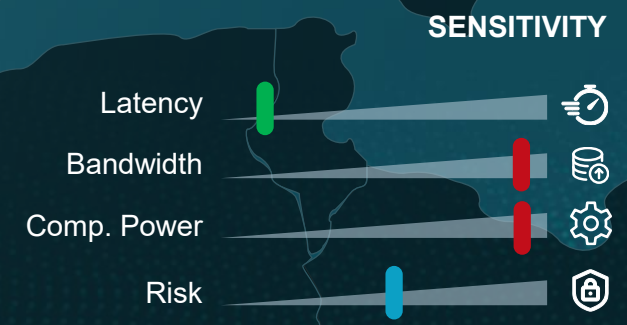
Cloud-to-Cloud
&
Hybrid-Cloud connectivity

DE CIX

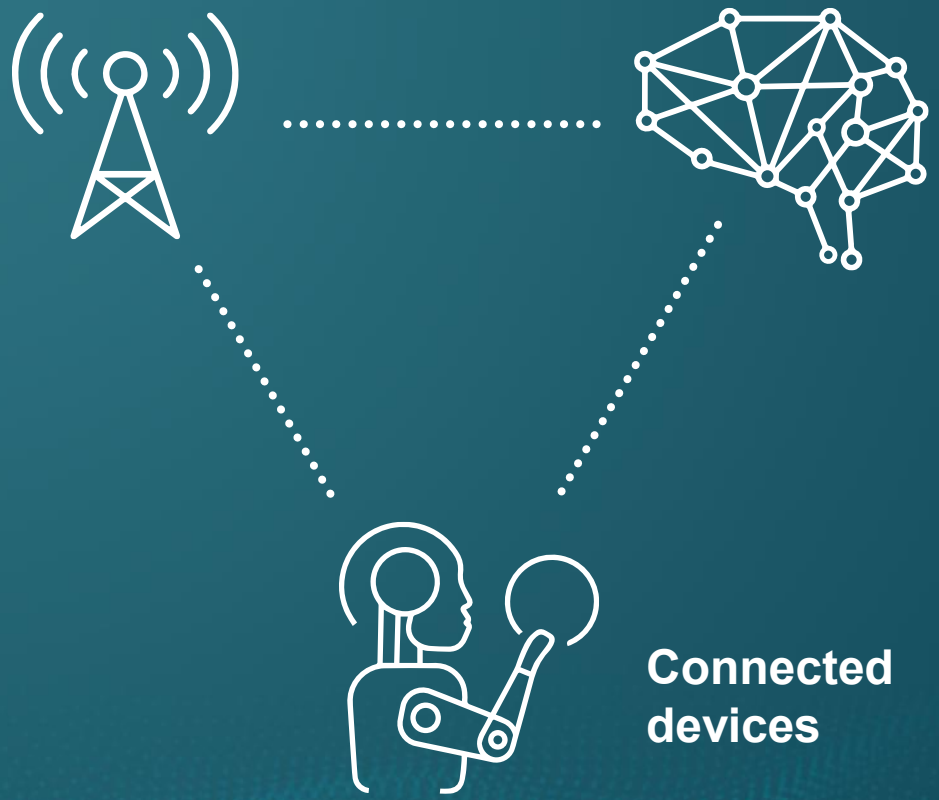
AI Training
requires the interoperability of digital applications

Get the data wherever
Direct access to cloud providers,
short data pathways (cloud router)

Get the computing power somewhere
Direct connectivity to hyperscalers for AI training



AI Inference Triangle

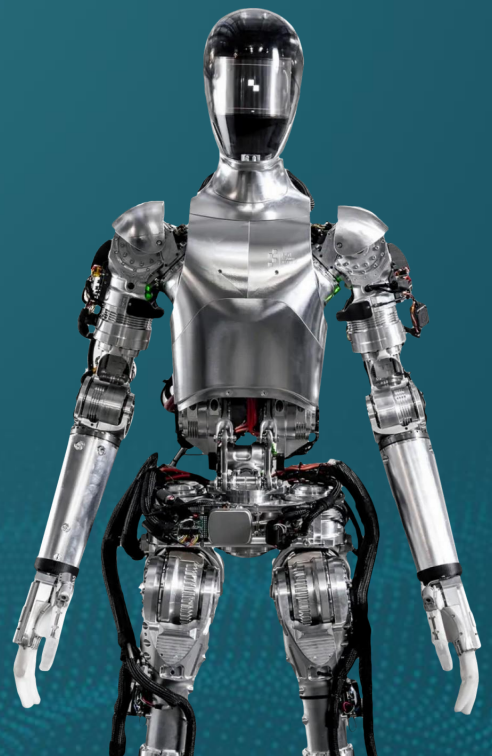


DE-CIX

AI Inference
requires manageability of multi-AI models

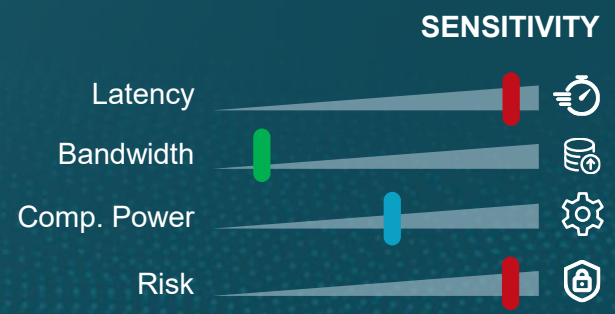
Perception models

Learning model



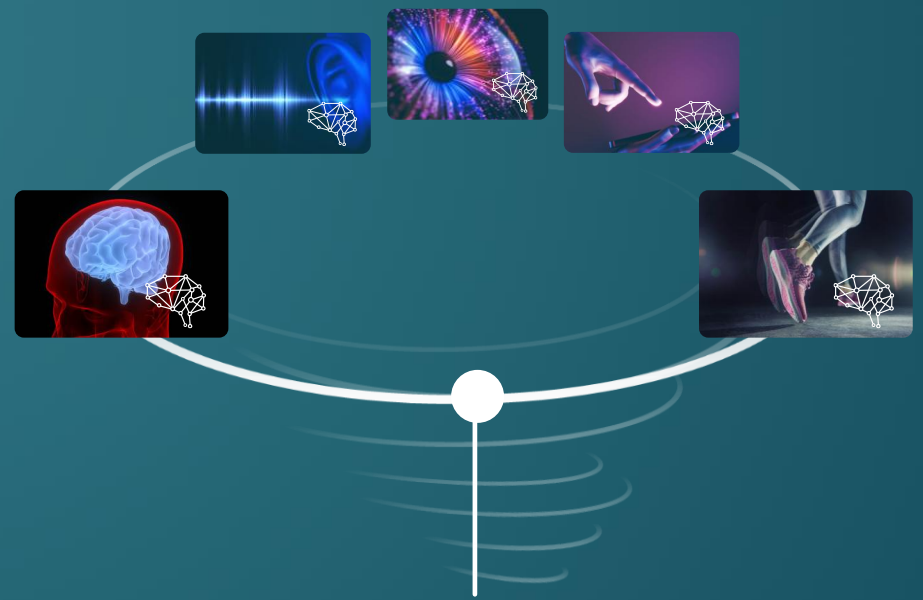
Movement model

Multi-AI models.
At **the speed of human perception**. **Anywhere**.

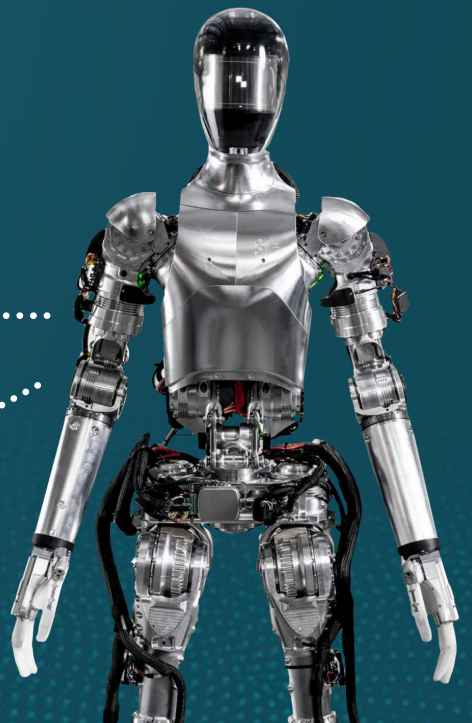


DE-CIX

AI Inference
requires manageability of multi-AI models

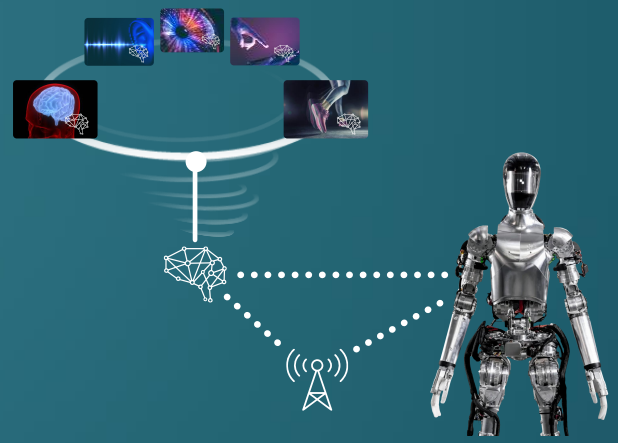


Synchronize multi-AI models
Interoperability, towards real time



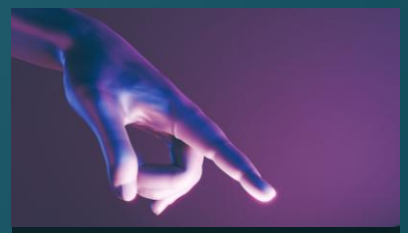
DE CIX

AI Inference
requires the speed of human perception



0.5 ms

13 ms



20 ms

65 ms

Towards real time

< 1 ms	< 13 ms	< 20 ms	< 65 ms
< 80 km	< 1,200 km	< 1,800 km	< 5,200 km

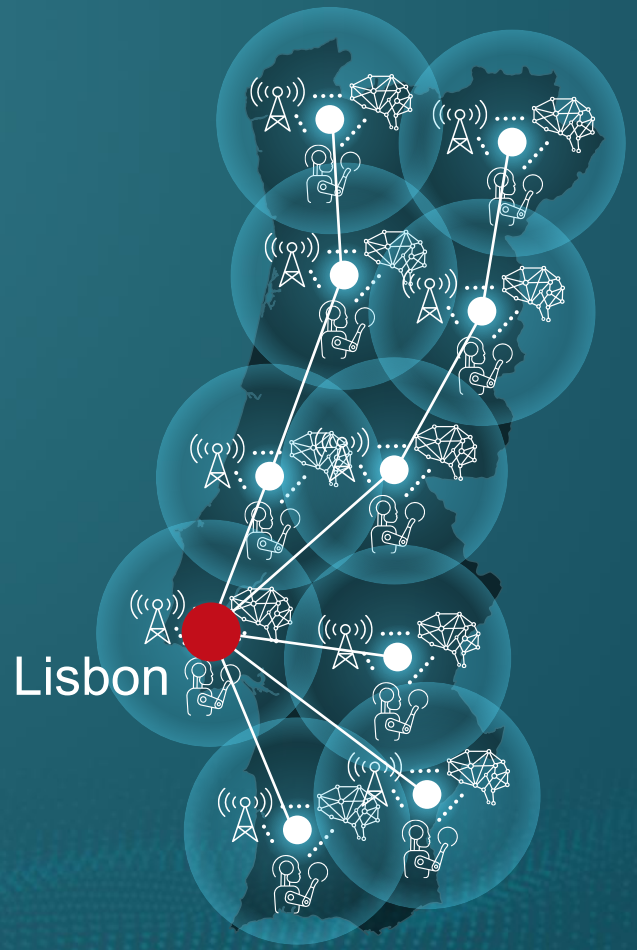
DE CIX

AI Inference
requires the speed of human perception

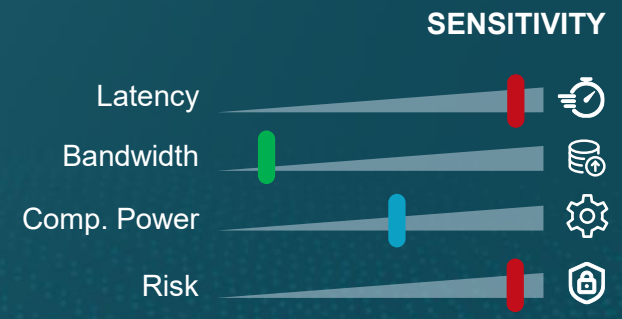
AI Inference
requires an infrastructure closer to the edge

Get the speed & reach:
XXS Everywhere

- Hyper-localization & distribution of the AI Infrastructure
- Operated by AI exchanges
- Integration with all other close IXs and AI exchanges
- Integration of latest technologies (AI exchanges powered by AI!)



< 1 ms
< 80 km



DE CIX

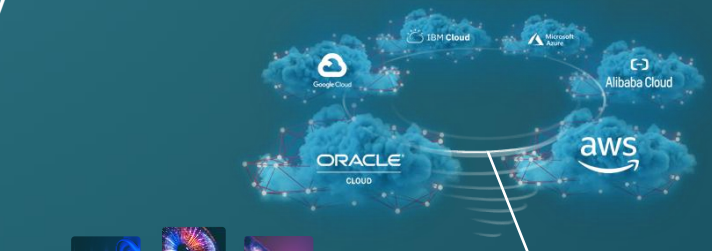
AI Inference
requires integration into the corporate ecosystem

Wherever end-users &
corporate operations are

AI Inference
requires integration into the corporate ecosystem

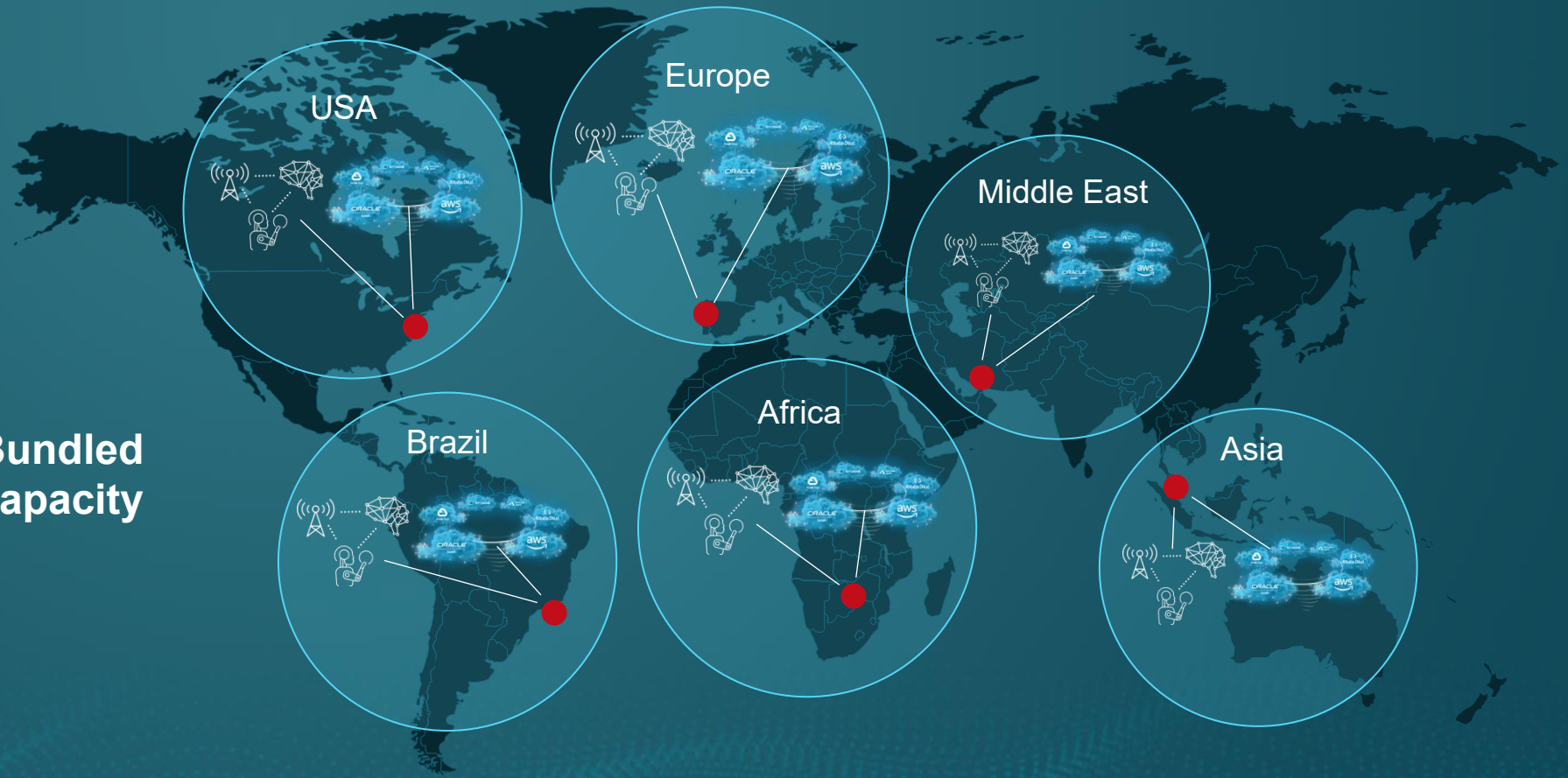
XXL & integrated where needed

- Multi-cloud & multi-AI interconnection ecosystem
- With direct connectivity, independent of the public Internet: closed / private, redundant
- Bundled capacity, dynamically adaptable
- Easy to operate



DE CIX

AI Inference
requires integration into the corporate ecosystem



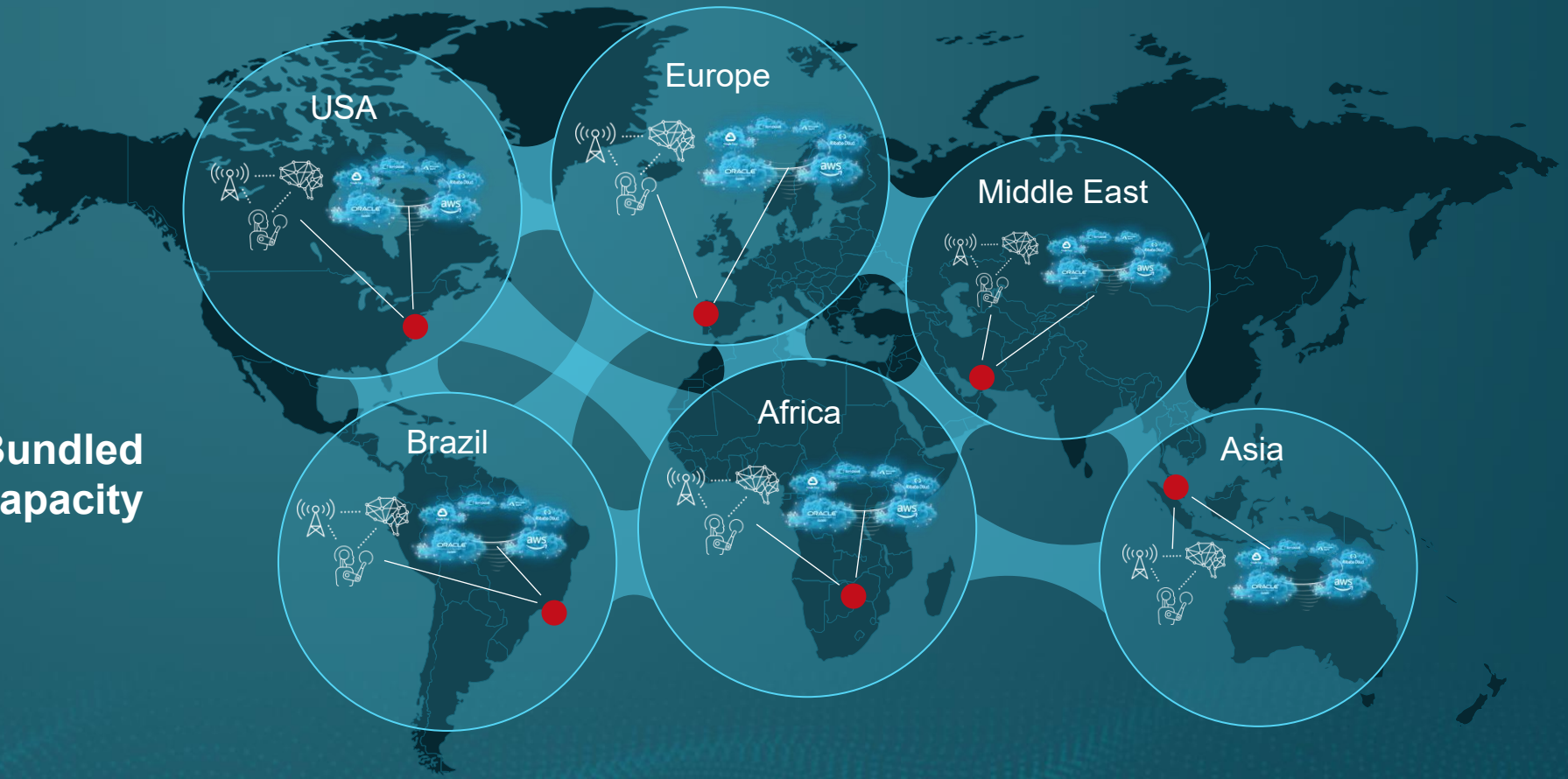
Bundled capacity

Build your own ecosystem – Control the end-to-end data journey, everywhere.

Data center & carrier neutral | Multi-locations, glocal | Bundled capacity | Multi-cloud

DE CIX

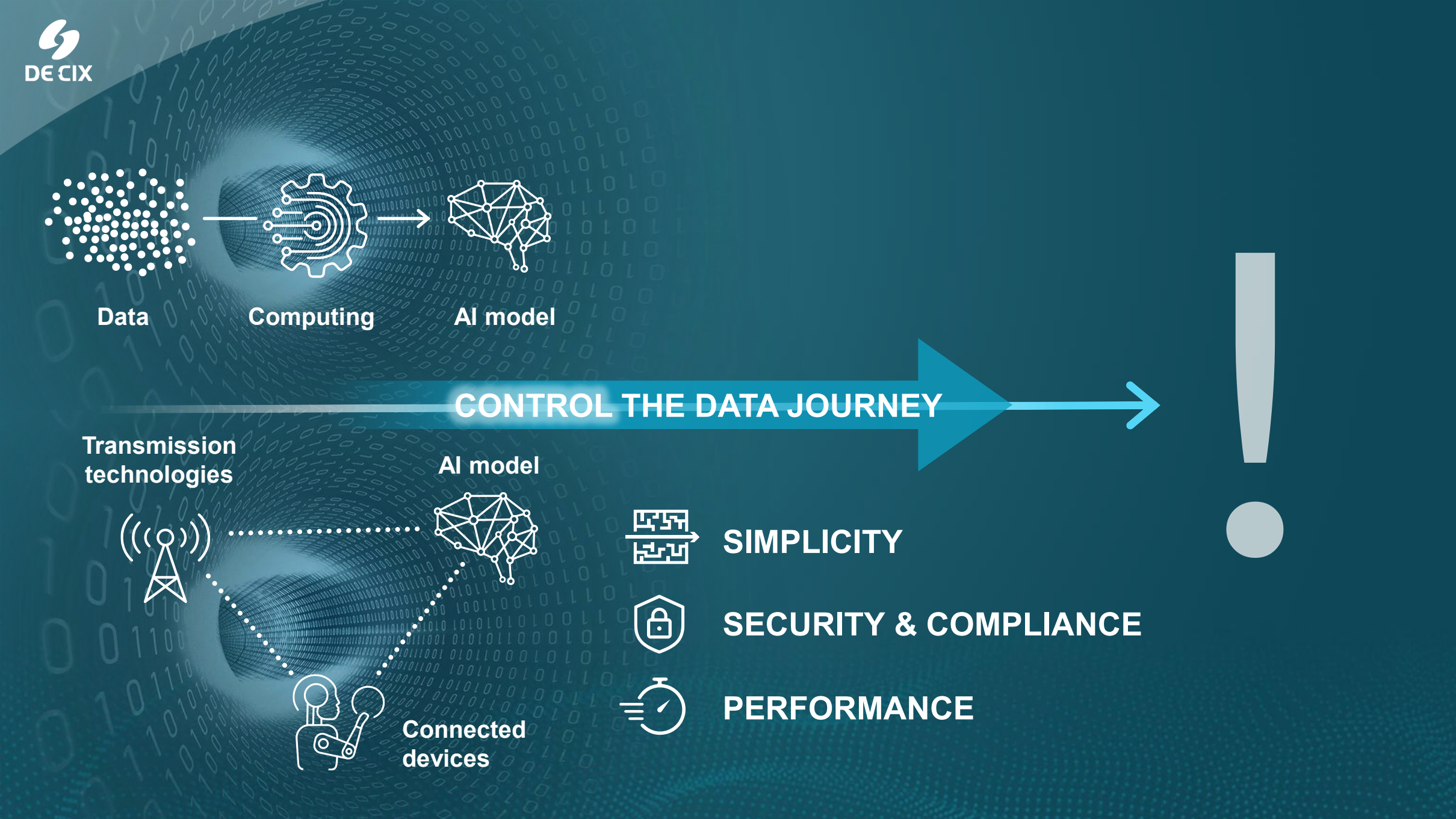
AI Inference
requires integration into the corporate ecosystem



Bundled capacity

Build your own ecosystem – Control the end-to-end data journey, everywhere.

Data center & carrier neutral | Multi-locations, glocal | Bundled capacity | Multi-cloud


DE CIX
Data
Computing
AI model
CONTROL THE DATA JOURNEY
Transmission technologies
AI model
Connected devices
SIMPLICITY
SECURITY & COMPLIANCE
PERFORMANCE

DE-CIX

AI ready digital infrastructure

AI-enabled. Edge. Densified. Distributed. Interconnected.

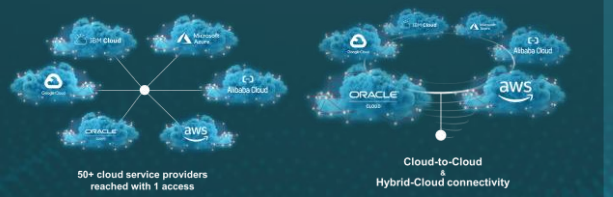
- ☑ **Control of the end-to-end journey of your data: performance**
- ☑ **High speed, capacity & reach infrastructure**

New borders set by AI – **Time for a new Internet!**

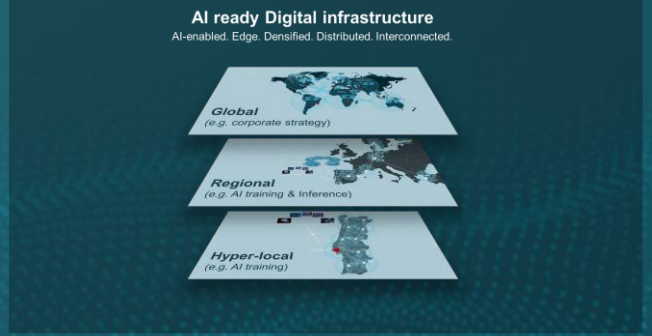
AI training

AI Inference

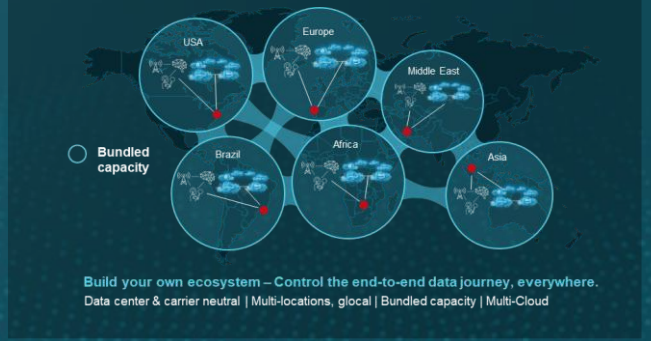
interoperability of digital applications



closer to the edge, distributed & integrated



build your own interconnection ecosystem



New borders set by AI – **Time for a new Internet!**

AI training

AI Inference

interoperability of digital applications

closer to the edge, distributed & integrated

build your own interconnection ecosystem

SIMPLICITY

SECURITY & COMPLIANCE

PERFORMANCE

Build your own ecosystem – Control the end-to-end data journey, everywhere.
Data center & carrier neutral | Multi-locations, glocal | Bundled capacity | Multi-Cloud

Thank you!

Kaj Kjellgren,
Global Peering, DE-CIX