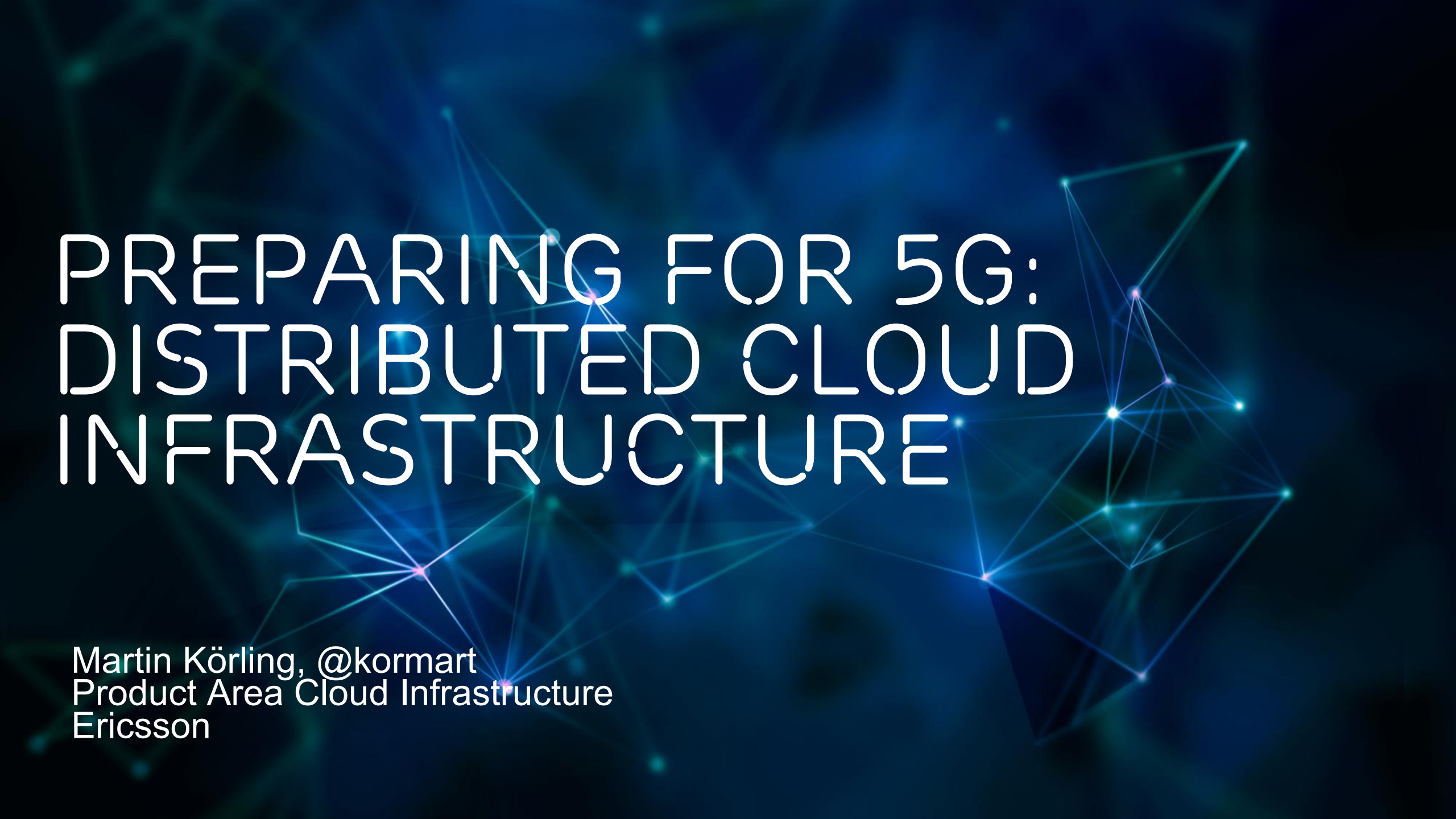

Martin Körling, @kormart
Product Area Cloud Infrastructure
Ericsson

READING MATERIAL

ERICSSON WHITE PAPER
UEN 284 23-3251 rev B | January 2017

ERICSSON

5G SYSTEMS

ENABLING THE TRANSFORMATION OF INDUSTRY AND SOCIETY

A digital transformation is taking place in almost every industry, disrupting and making us rethink our ways of working. Through an unprecedented ability to share information, people and industries are collaborating more, creating solutions that combine many different areas of expertise and overturning traditional business models. This cross-industry transformation has created a need to evolve wireless connectivity for the fifth generation of mobile technology. The goal is to expand the broadband capability of mobile networks, and to provide specific capabilities for consumers and for various industries and society at large unleashing the potential of the Internet of Things.

Use cases	Requirements	Desired value
Autonomous vehicle control	Latency	5ms
	Availability	99.999 percent
	Reliability	99.999 percent
Emergency communication	Availability	99.9 percent victim discovery rate
	Energy efficiency	One-week battery life
Factory cell automation	Latency	Down to below 1ms
	Reliability	Down to packet loss of less than 10^{-9}
High-speed train	Traffic density	Downlink (DL): 100Gbps/km², uplink (UL): 50 Gbps/km²
	User throughput	DL: 50Mbps, UL: 25Mbps
	Mobility	500kmph
	Latency	10ms
Large outdoor event	User throughput	30Mbps
	Traffic density	900Gbps/km²
	Connection density	Four devices/m²
	Reliability	Outage probability < 1 percent
Massive numbers of geographically dispersed devices	Connection density	1,000,000 devices/km²
	Availability	99.9 percent coverage
	Energy efficiency	10-year battery life
Media on demand	User throughput	15Mbps
	Latency	5s (start application), 200ms (after link interruptions)
	Connection density	4,000 devices/km²
	Traffic density	60Gbps/km²
	Availability	95 percent coverage
Remote surgery and examination	Latency	Down to 1ms
	Reliability	99.999 percent
Shopping mall	User throughput	DL: 300Mbps UL: 60Mbps
	Availability	95 percent for all applications, and 99 percent for safety-related applications

DISTRIBUTED CLOUD
INFRASTRUCTURE PAPER
Martin Körling
Strategic Portfolio Management PA Cloud Infrastructure

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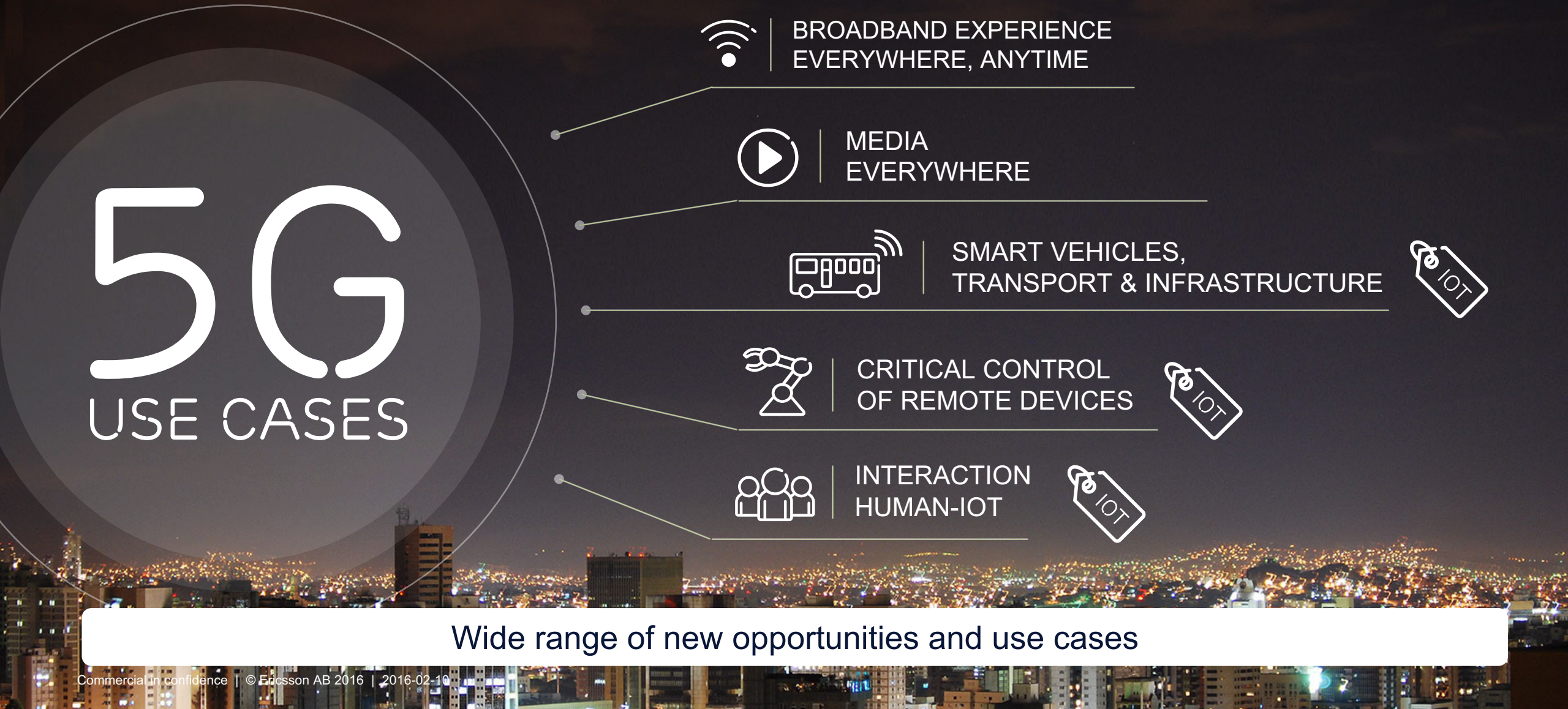
DISTRIBUTED CLOUD INFRASTRUCTURE

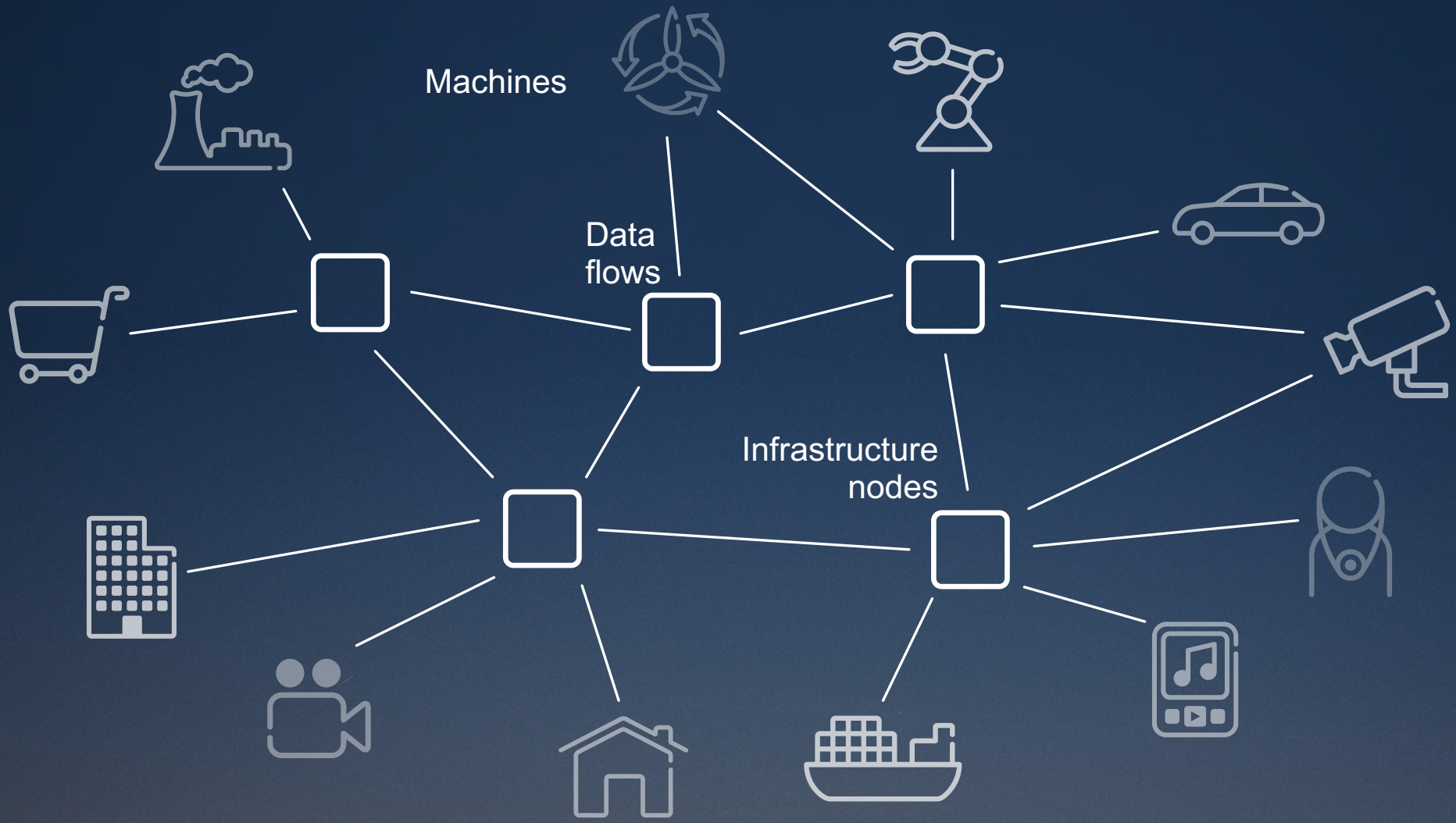
5G – BEYOND MOBILE BROADBAND



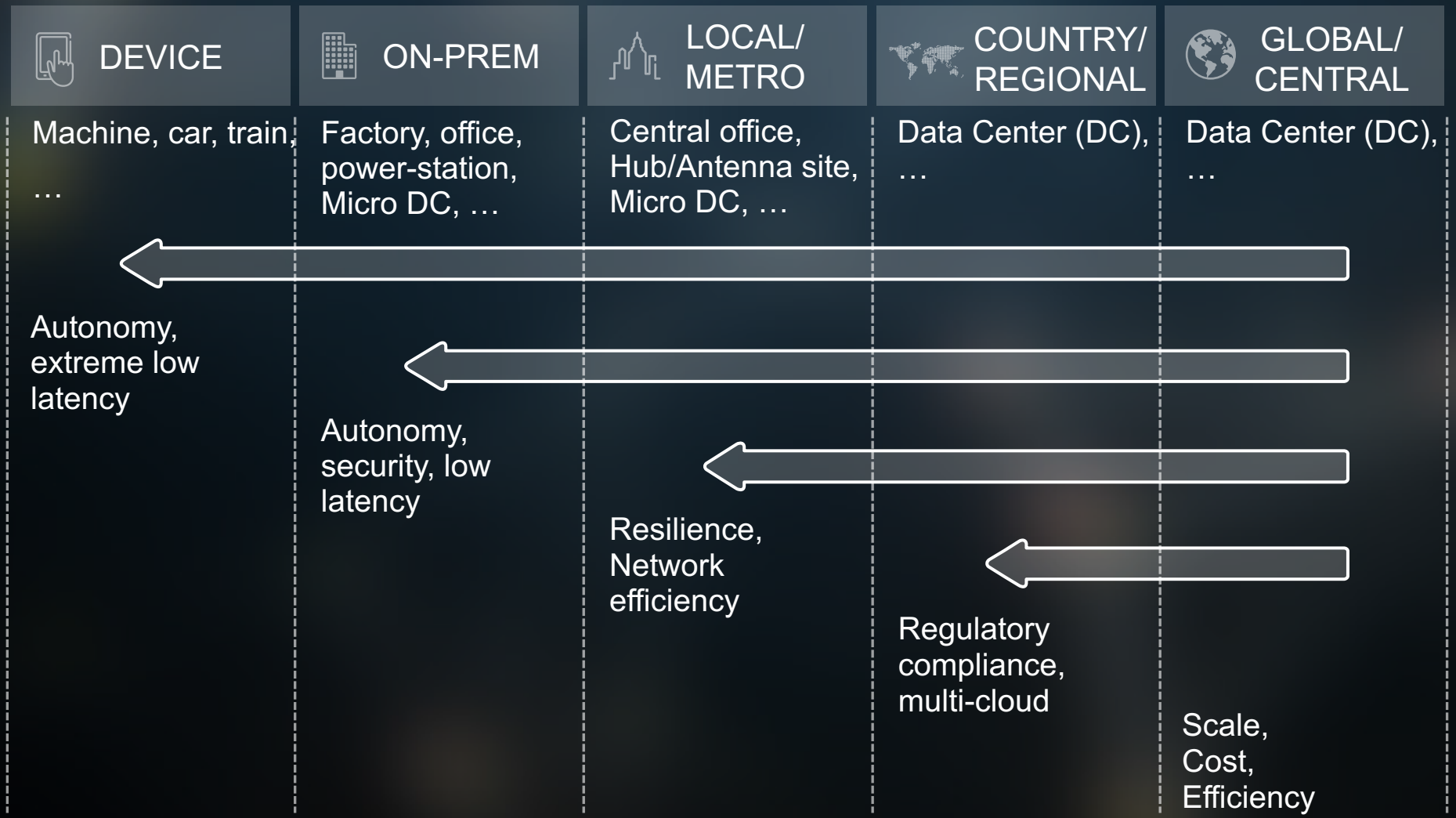
Wide range of new opportunities and use cases

Commercial in confidence | © Ericsson AB 2016 | 2016-02-10

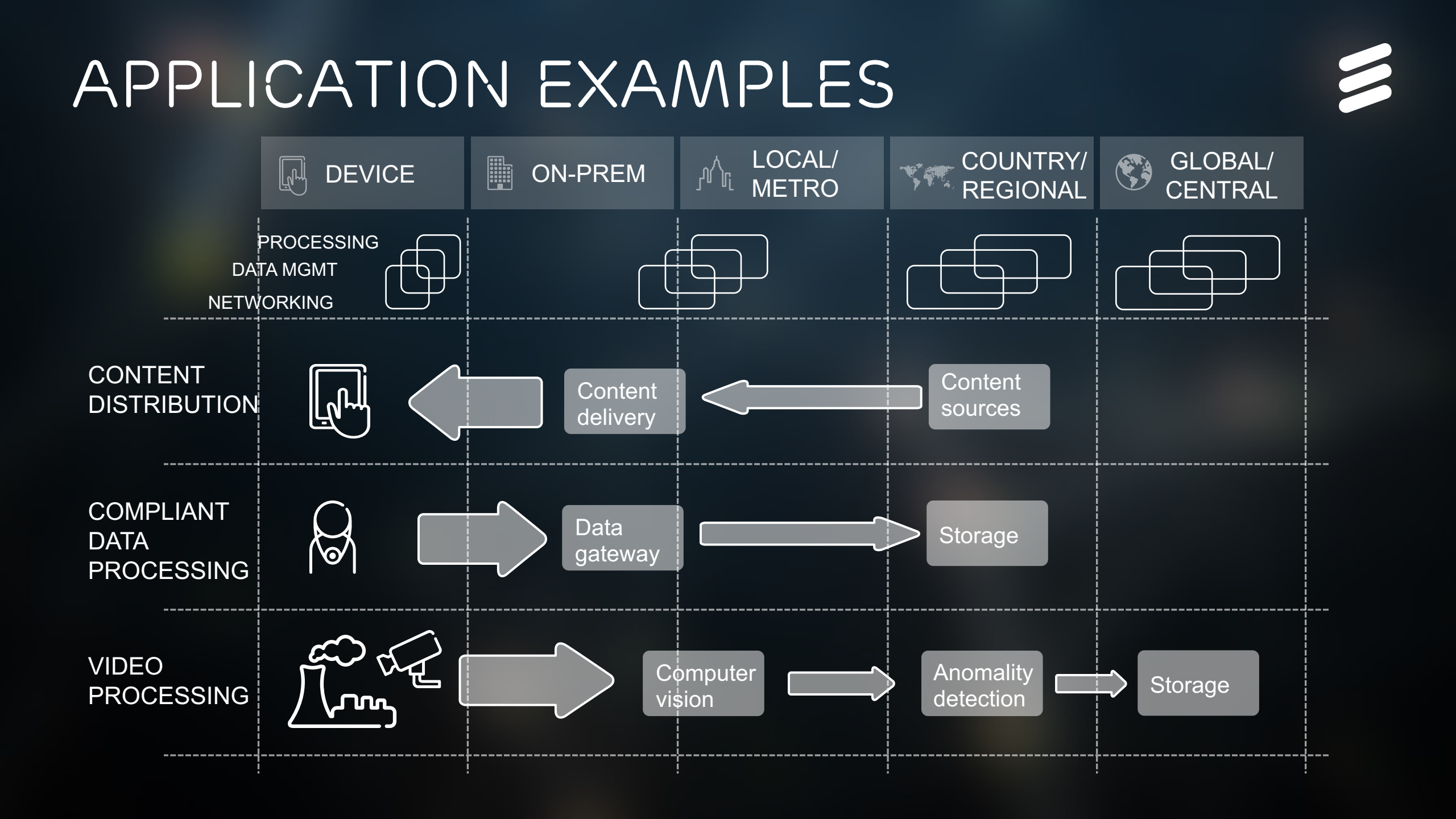
DISTRIBUTED CLOUD INFRASTRUCTURE



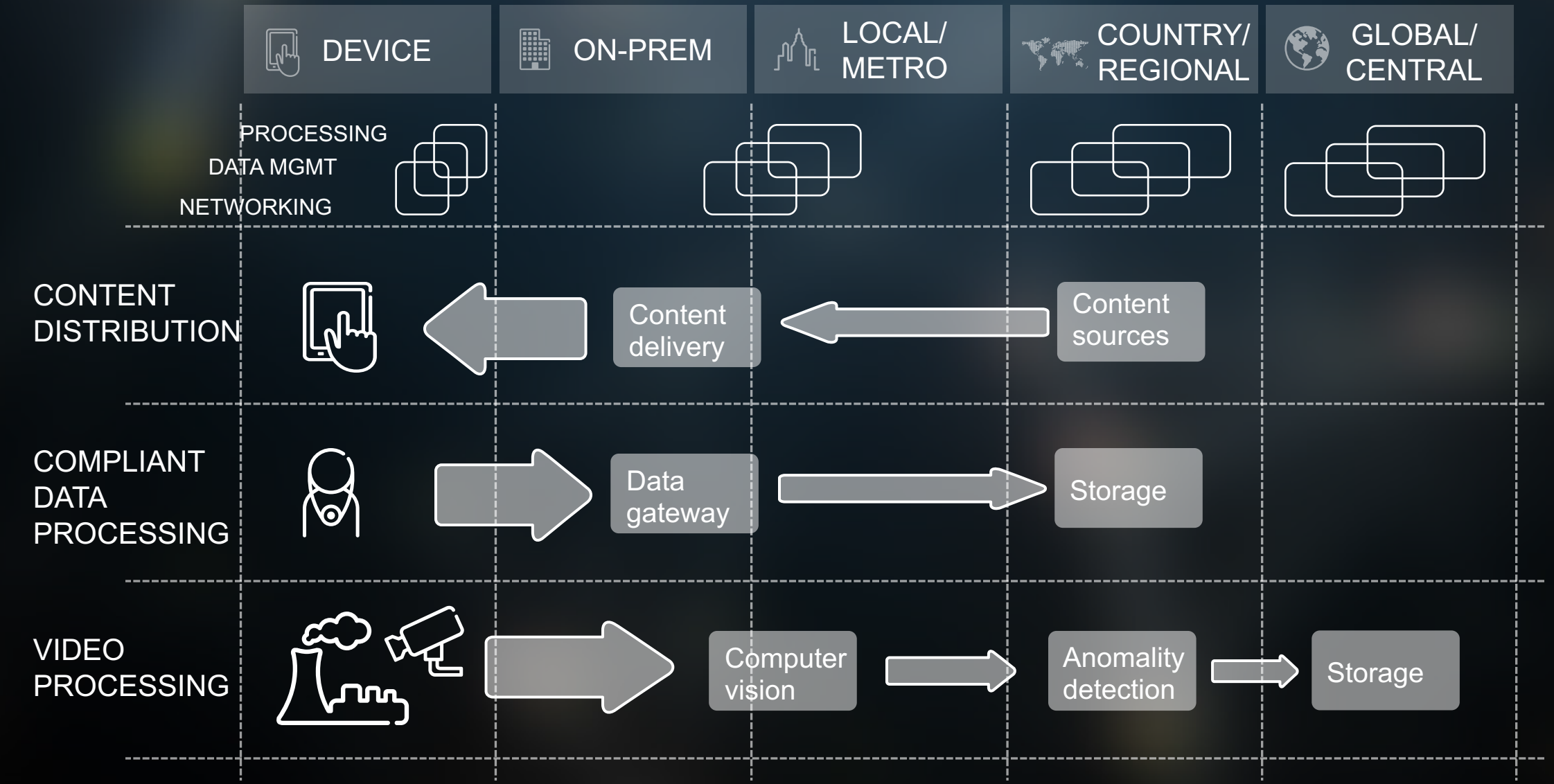
DRIVING FORCES FOR DECENTRALIZATION



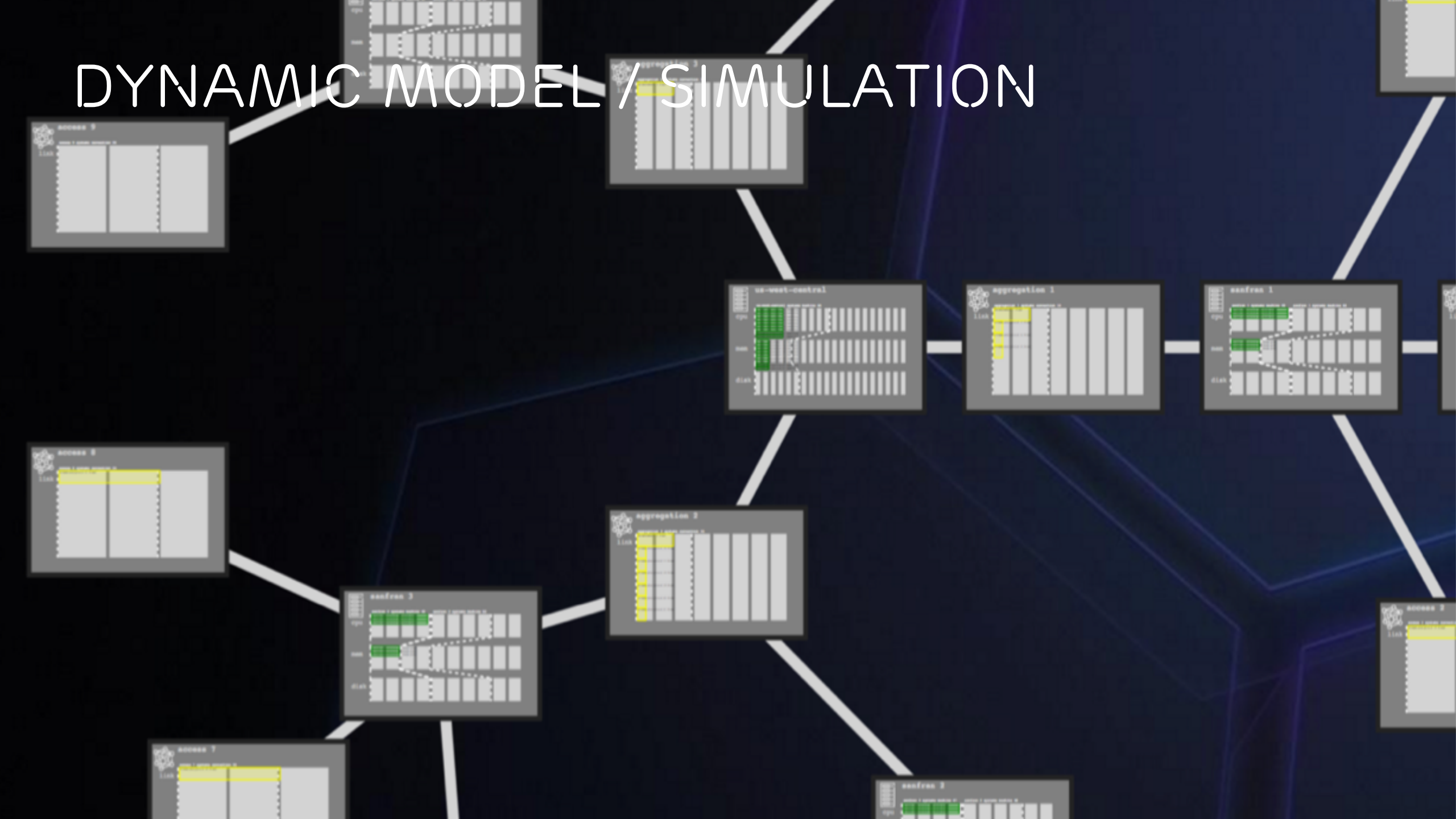
APPLICATION EXAMPLES



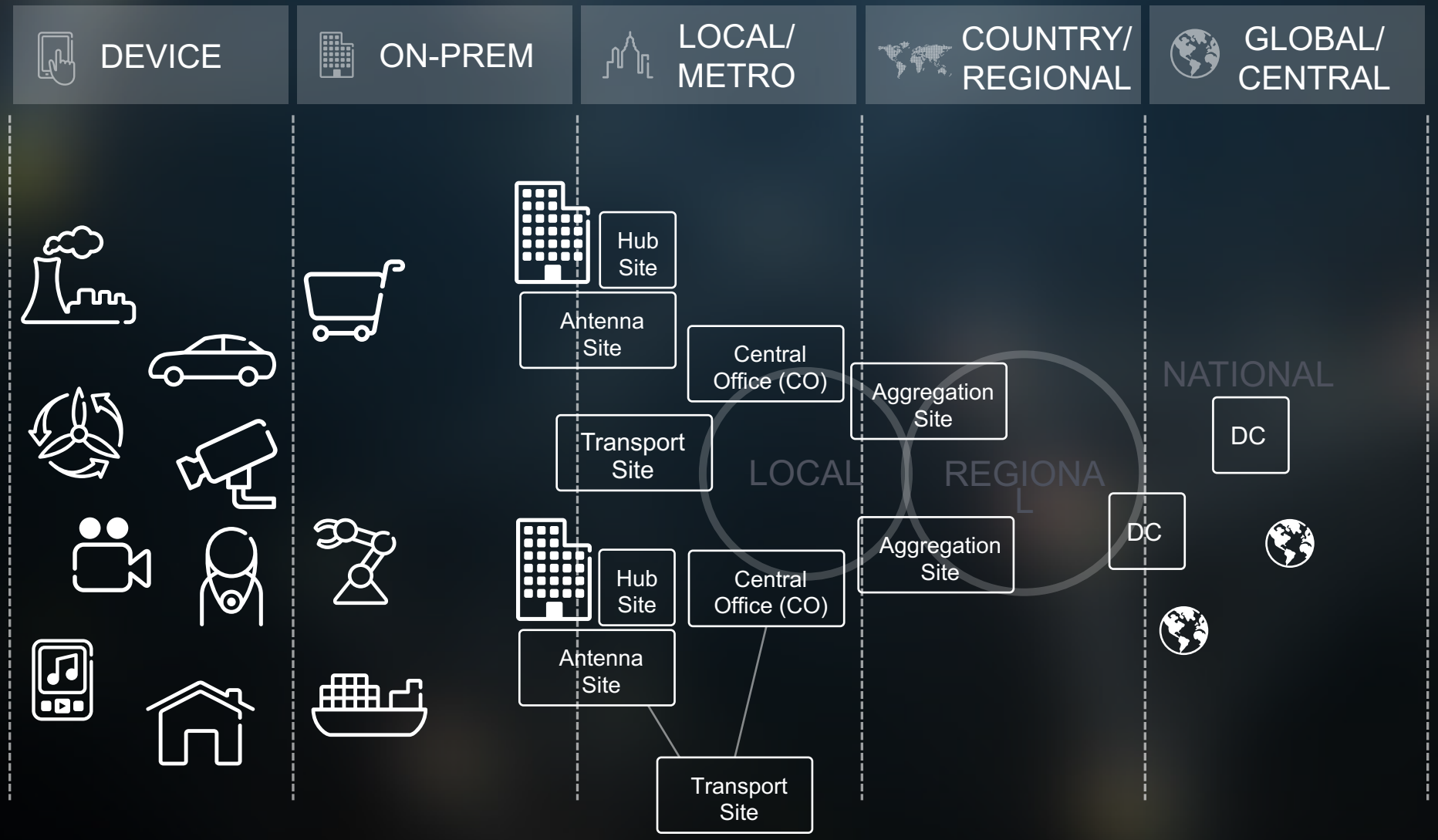
APPLICATION REQUIREMENTS



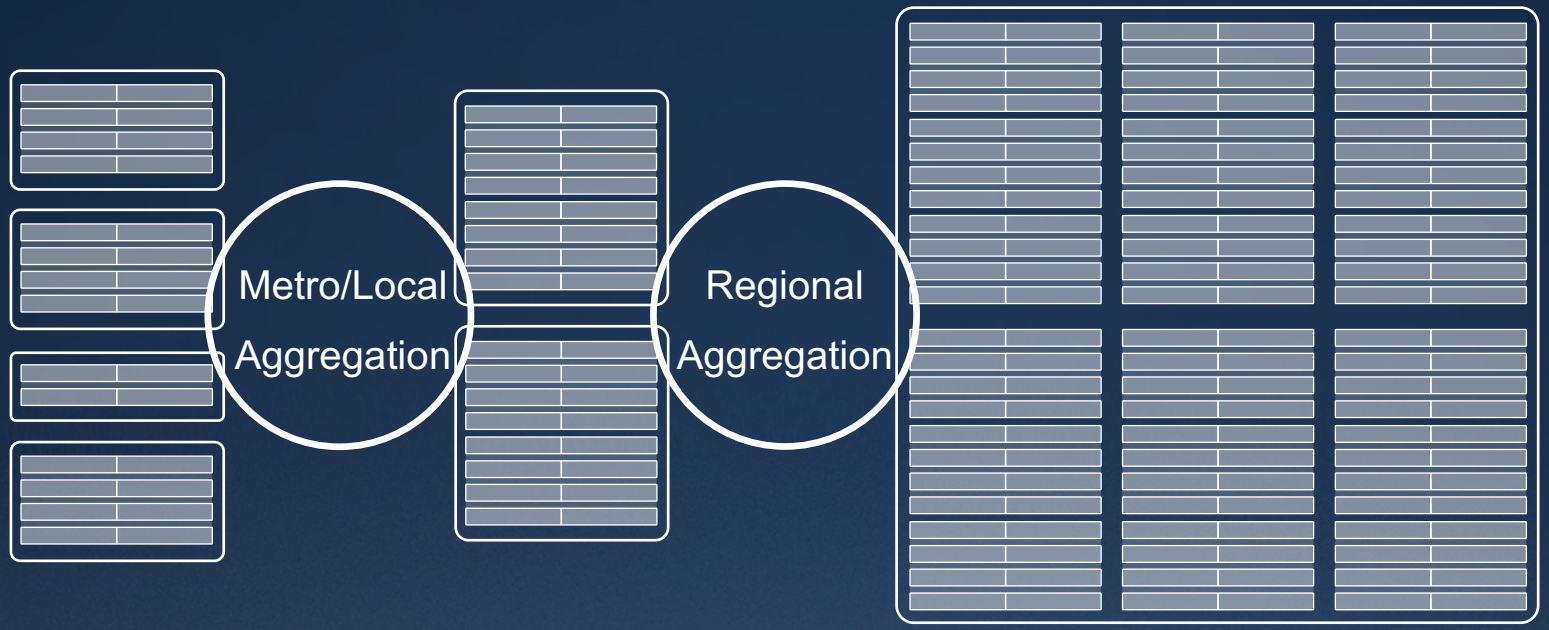
DYNAMIC MODEL / SIMULATION



OPERATOR NETWORK TOPOLOGY



SITE TYPES, HARDWARE PROFILES



Software Defined Infrastructure (SDI)

Small Site	Medium Datacenter	Large Datacenter
Edge Optimized	Hardware Pool	Hardware Pool
High Density	NEBS/Small Footprint/High Capacity	RDS/Disaggregation/Accelerators

Optical Interconnect

OPEN SOURCING SDI CLIENT

Ericsson / ericsson-hds-agent

Watch 10 | Star 10 | Fork 3

Code | Issues 0 | Pull requests 0 | Projects 0 | Pulse | Graphs

Open Source HDS Agent

ocp | ocp-platform | data-center | ericsson | server-management

4 commits | 1 branch | 0 releases | 1 contributor | Apache-2.0

Branch: master | New pull request | Find file | Clone or download

ironfugu committed on GitHub Merge pull request #2 from NodePrime/fixup_readme ... Latest commit 2b44270 5 days ago

agent	Initial commit	10 days ago
docs	Merge pull request #2 from NodePrime/fixup_readme	5 days ago
examples	Initial commit	10 days ago
release	Initial commit	10 days ago
user-scripts	Initial commit	10 days ago
LICENSE	Initial commit	10 days ago
README.md	update README	5 days ago

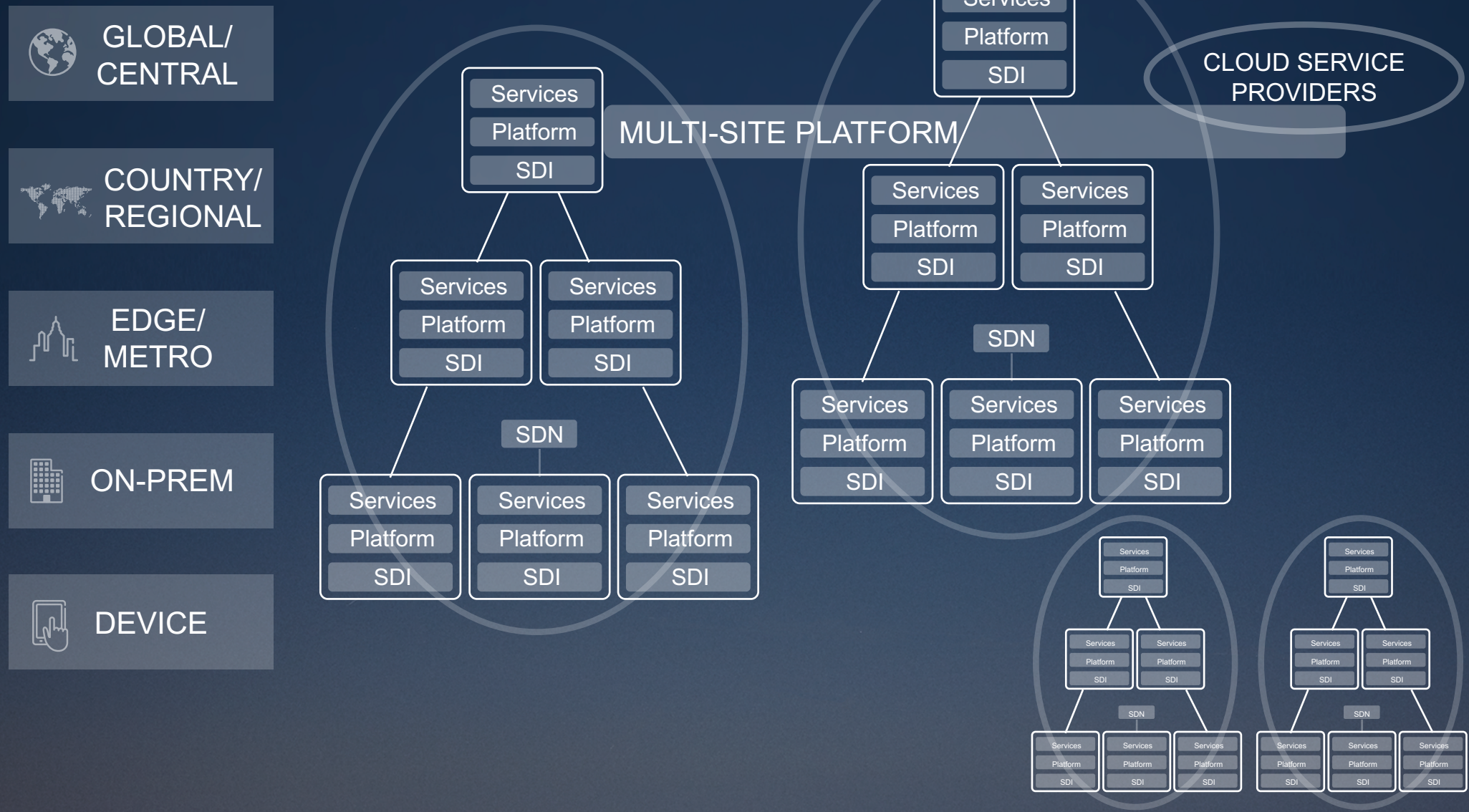
README.md

Ericsson HDS Agent

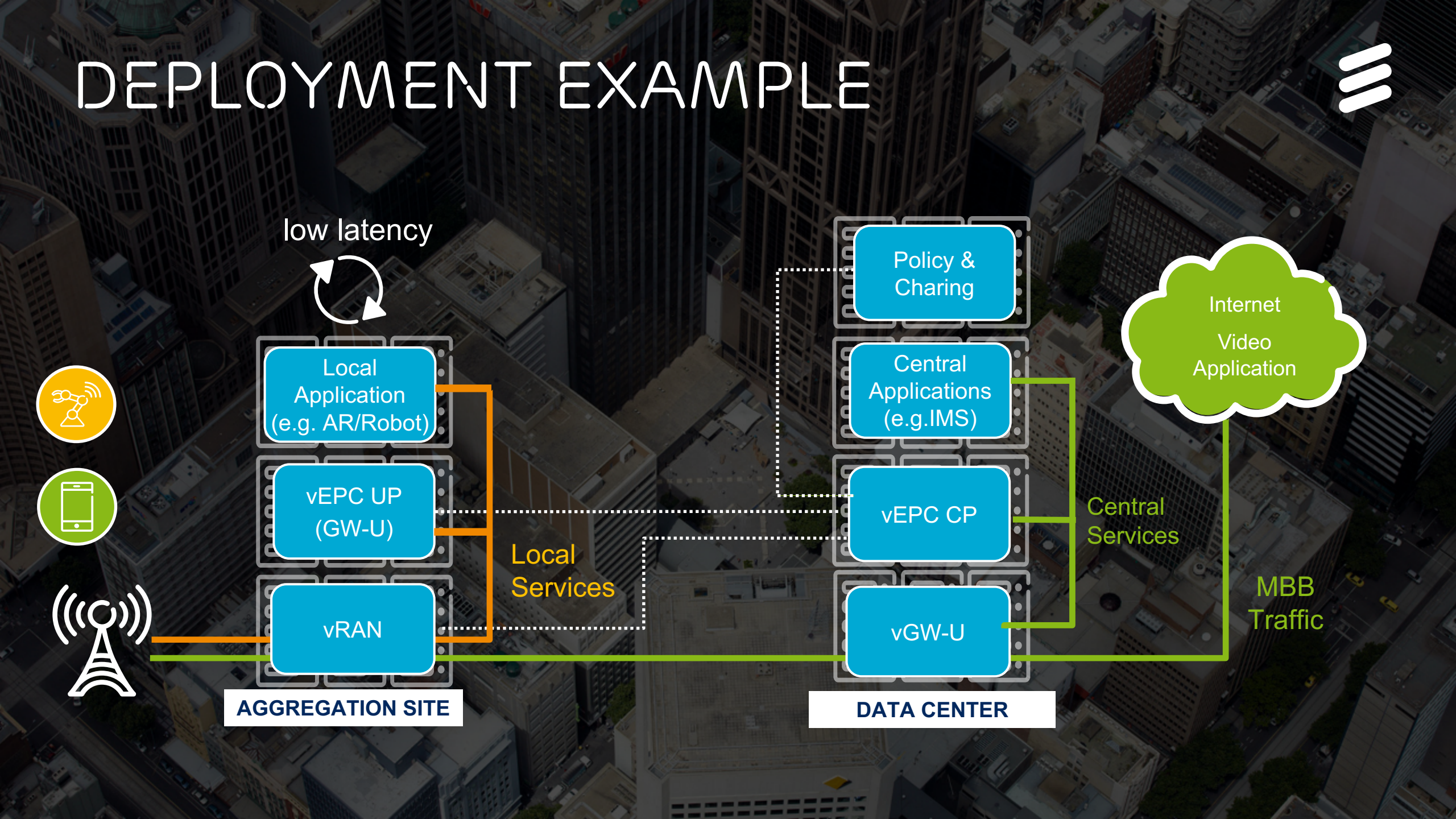
What is Ericsson HDS Agent?

Ericsson HDS (Hyperscale Datacenter Systems) Agent is a Linux based program designed to run on any Linux System. It collects an inventory of the host machine's hardware inventory and runtime system metrics. It is composed of many built-in collectors, formatters and a forwarder.

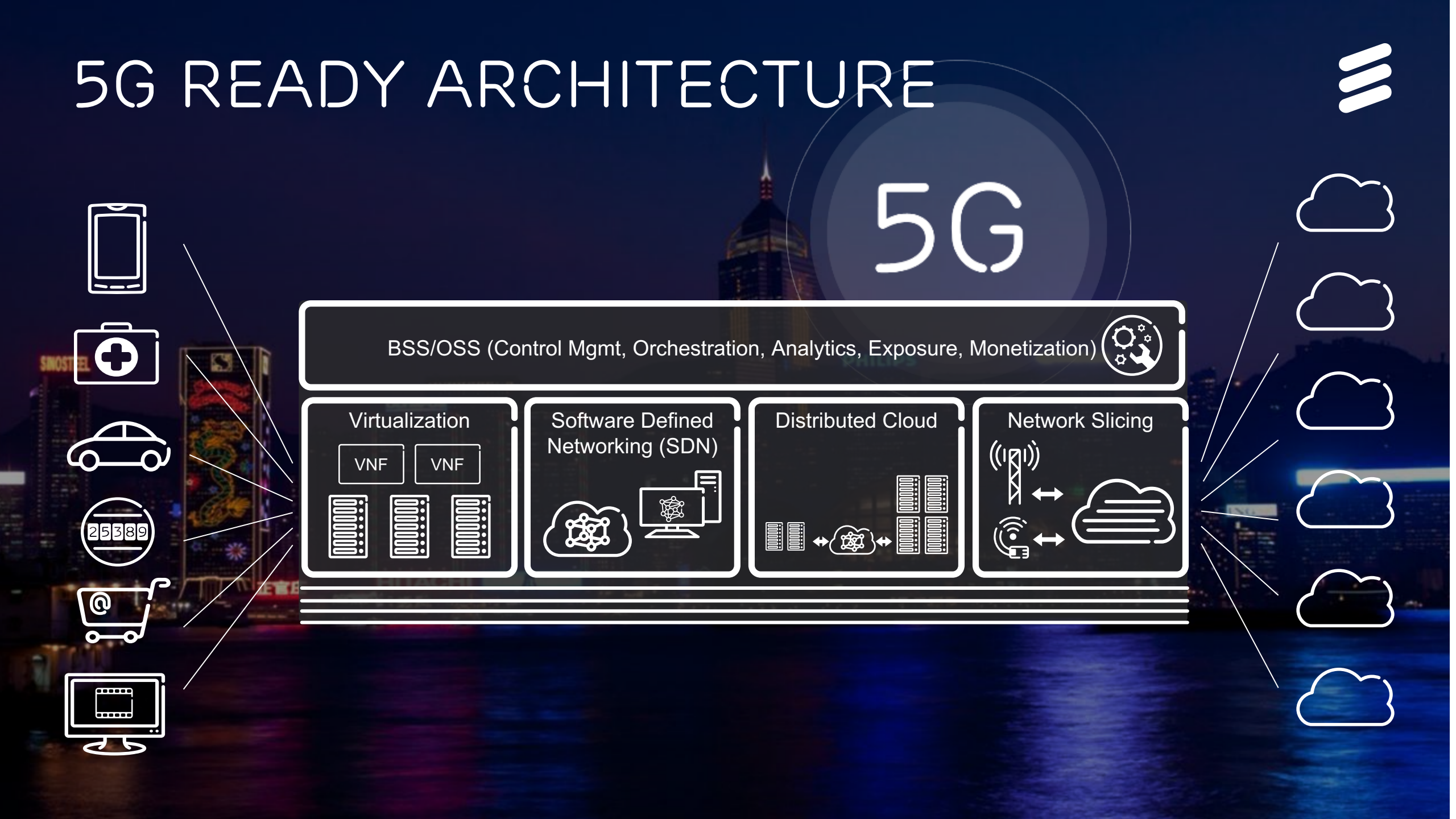
HIERARCHICAL SYSTEM STRUCTURE



DEPLOYMENT EXAMPLE



5G READY ARCHITECTURE



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