

The background features a vibrant blue gradient with dynamic, flowing lines in shades of red, orange, and purple. A large white circle on the right side frames a portion of these lines. The Nokia logo is positioned in the upper left corner.

NOKIA

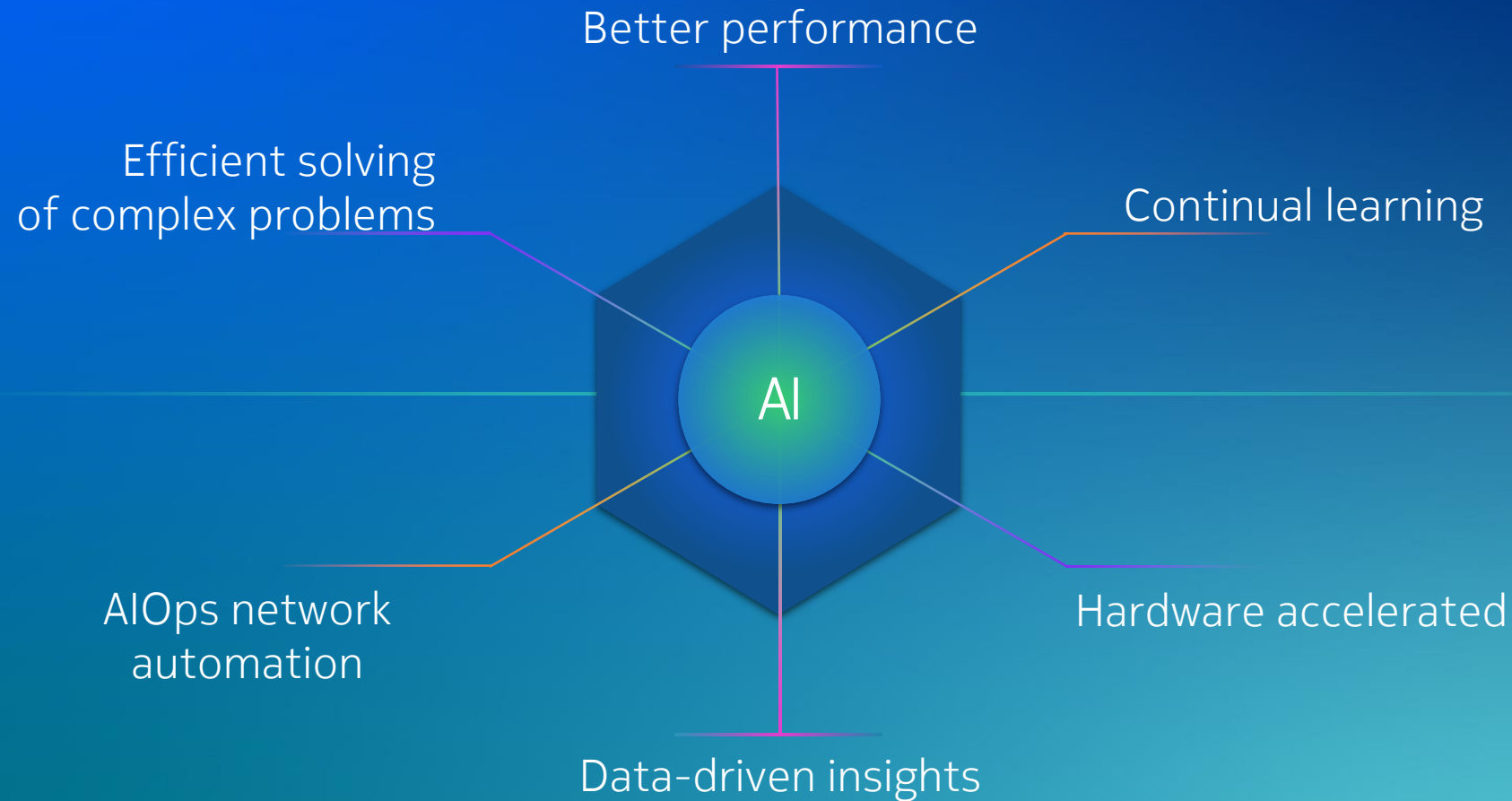
Trustworthy AI in Telecom

Dr. Andreas Mäder, Head of AI/ML
Nokia Standards

ETSI AI Conference

5th to 7th of February 2024

The promise of AI-Native Networks

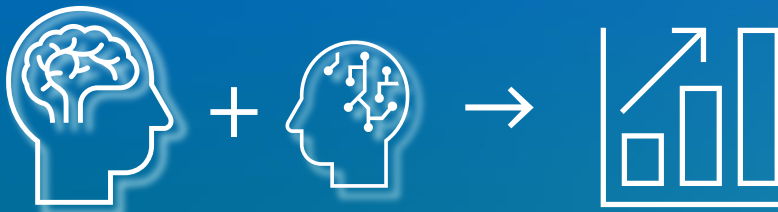


AI: more than a tool.

Transformative impact on the way we work and build products

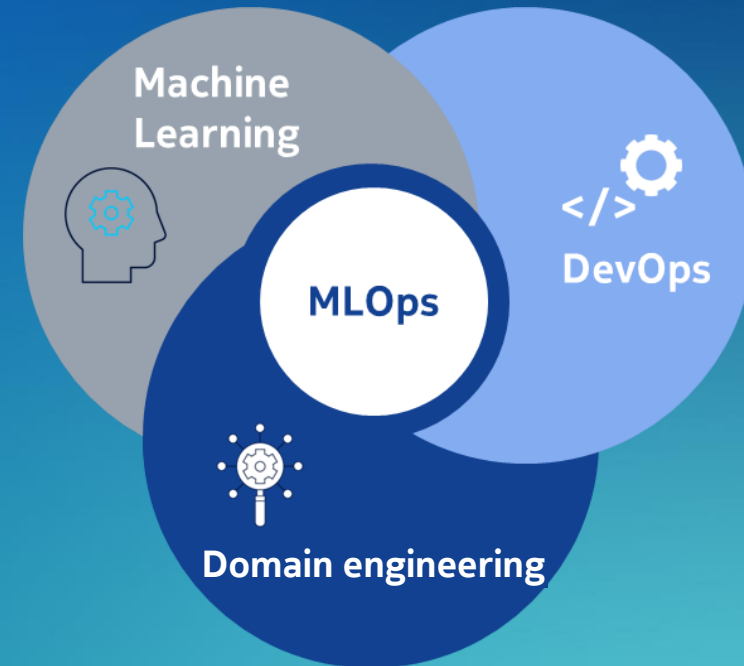
①

GenAI transforms the daily work routines



②

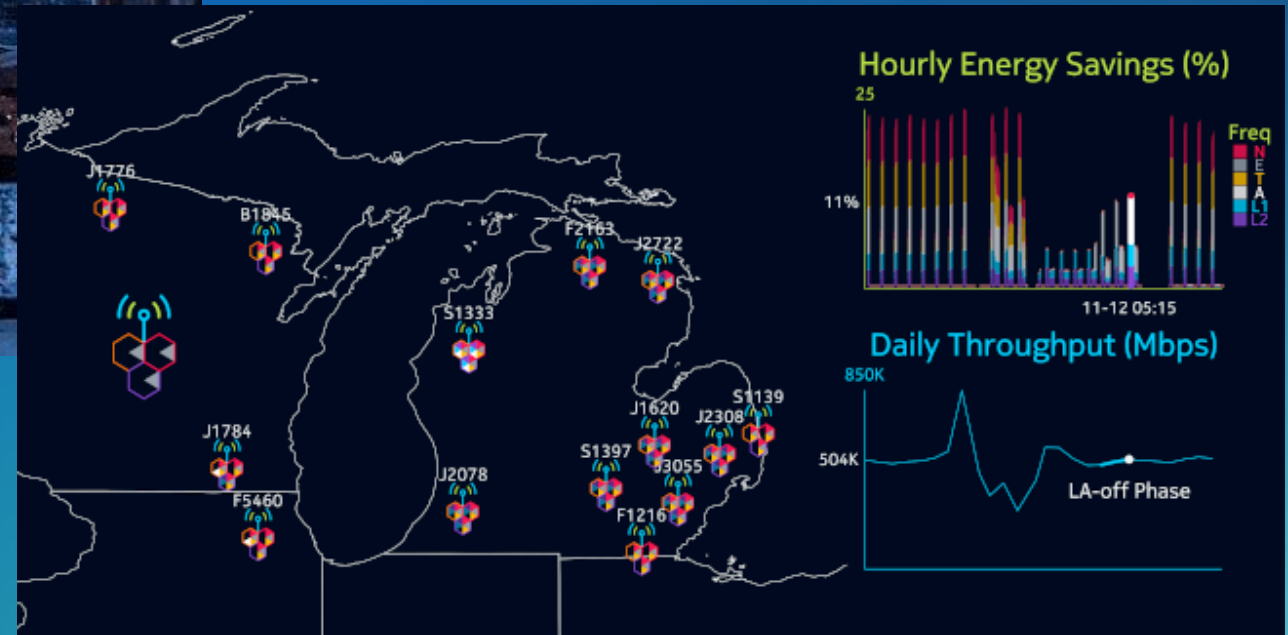
Data-driven R&D



Typical telco AI use cases



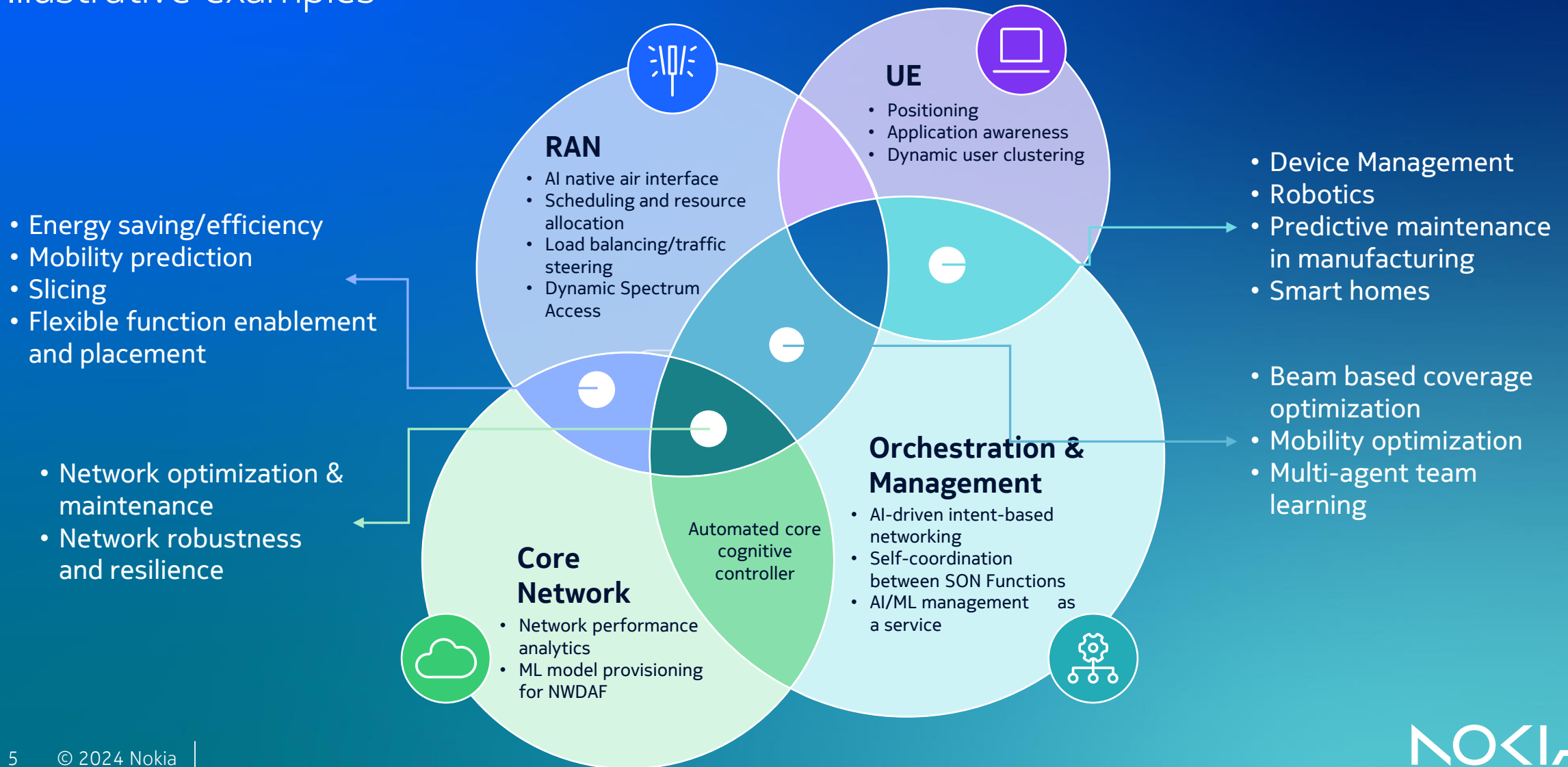
Beam management



Energy saving

AI nativeness, at all device and network layers

Illustrative examples



AI-Native Mobile Network Architecture

AI in all parts of the network, inter-operable, and end-to-end



Mobile devices



Radio Network



Core Network

Privacy-preserving data collection framework

Telecom MLOps

Intent-based management and orchestration

Do we have an AI trust issue?



TIME

IDEAS • TECHNOLOGY

An AI Pause Is Humanity's Best Bet For Preventing Extinction

OCTOBER 2, 2023 | 7 MIN READ

'AI Anxiety' Is on the Rise—Here's How to Manage It

Rapid advances in generative artificial intelligence have prompted big questions about the future of work and even human creativity. Experts have suggestions for how to manage all these unknowns

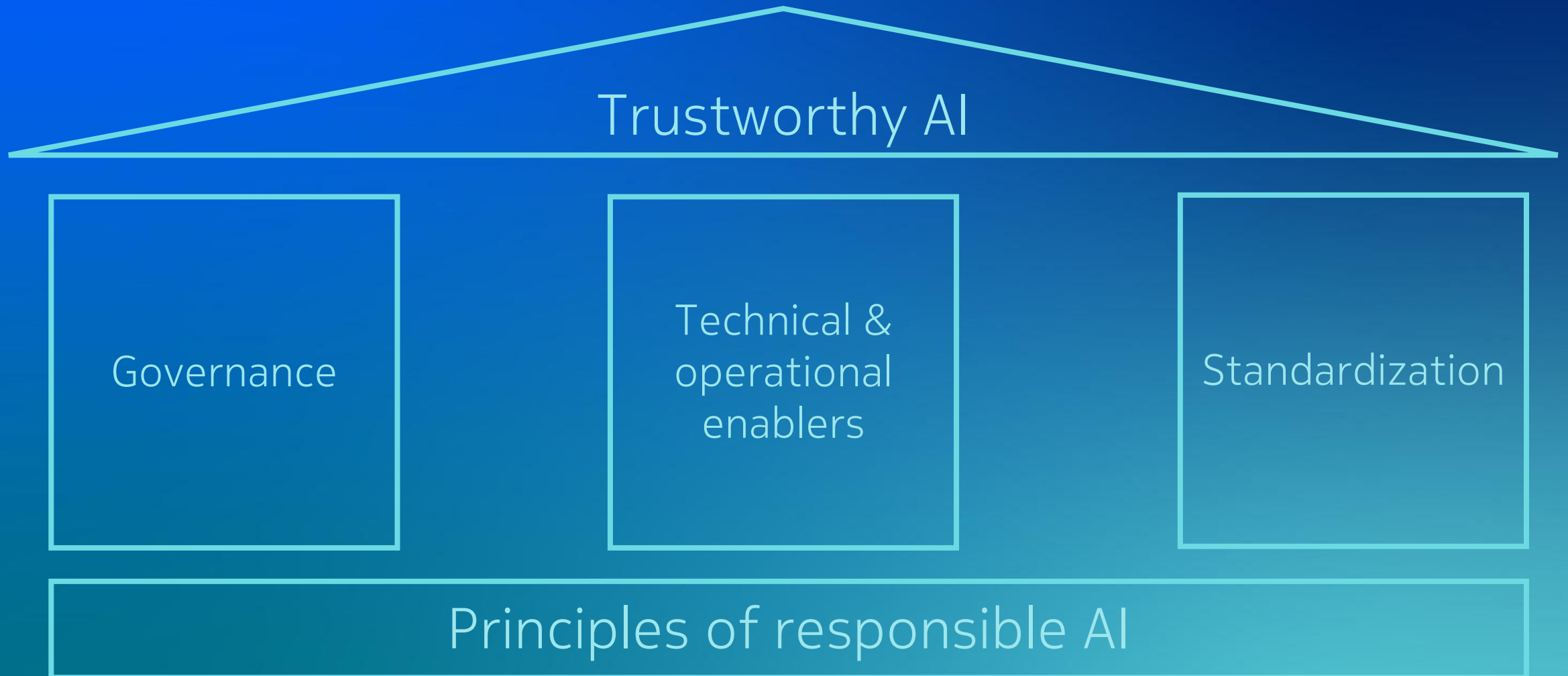
SCI
AM

Erling Haaland supposedly dead: AI from newspaper in Norway makes nasty mistakes

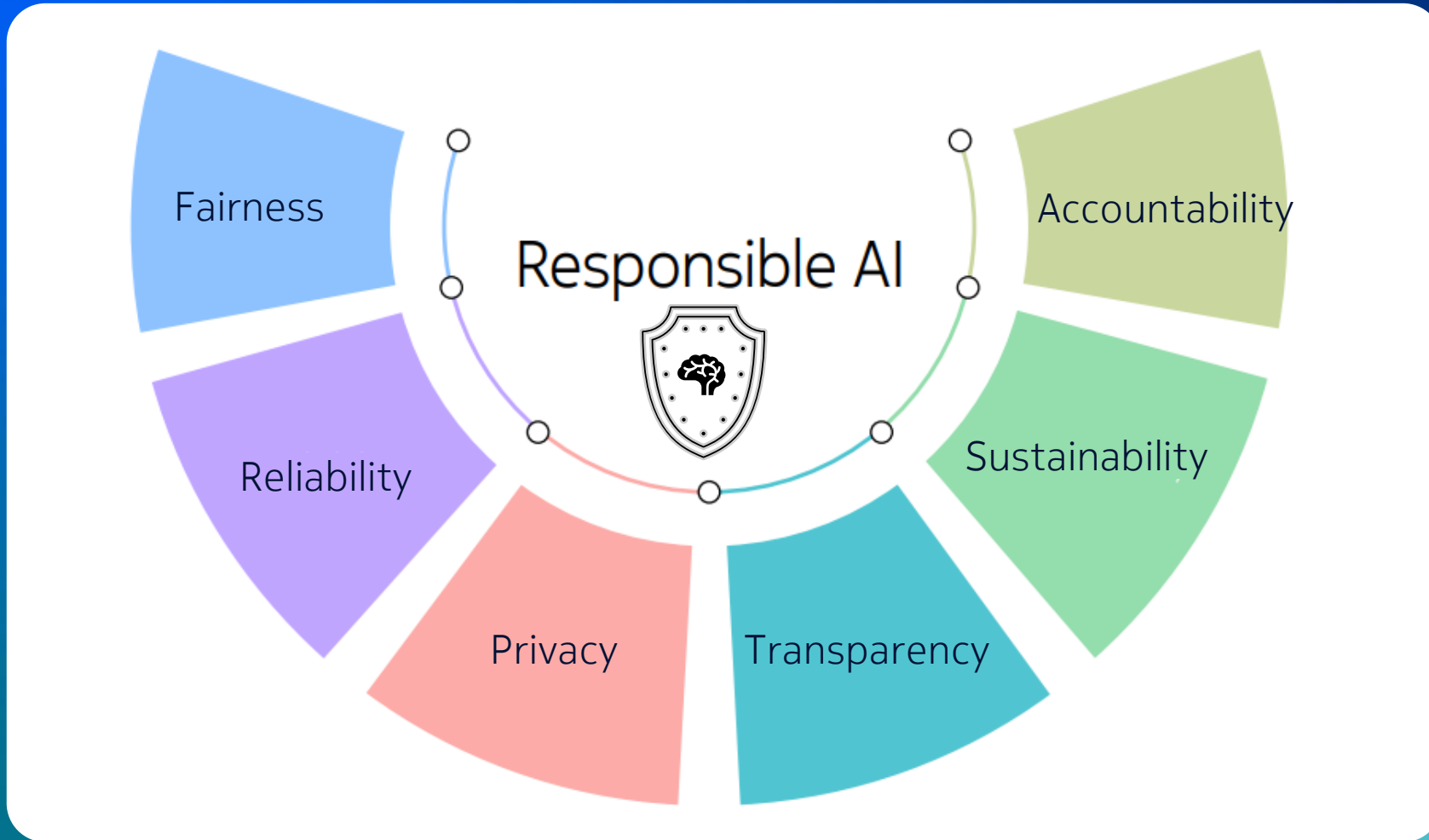
29 September 2023



How to create trust.



Principles of Responsible AI



Regulatory initiatives on artificial intelligence

Canada bill BLL C-27 “Artificial Intelligence and Data Act” (AIDA)

UK code of practice in preparation

EU AI act
– Risk based approach
– Target to come into effect 2025

Japan
Regulation in preparation

China
Set of regulations in effect addressing GenAI, ethical review, online services

US Blueprint for AI bill of rights
– Guidance for regulation of AI applications
– No regulations in effect yet

India
Regulation in preparation (Digital India Act)

South America
– Ongoing in Brazil, Chile, Columbia
– Aligned mostly with EU approach

Africa
National AI strategies for Rwanda, Tunisia, Ghana

Australia Artificial Intelligence Ethics Framework

Certified responsibility

Examples of conformity certificates (planned or already existing)



Draft EU AI Act mandates CE conformity for high-risk systems



US-based Responsible AI Institute offers certification

Technical enablers



Explainability

- Explain output of AI/ML solutions in a comprehensible manner
- Online and offline methods
- Various software frameworks available



Reliability

- Security against AI-specific attacks (e.g. data poisoning)
- Testing and requirement frameworks
- Monitoring



Fairness

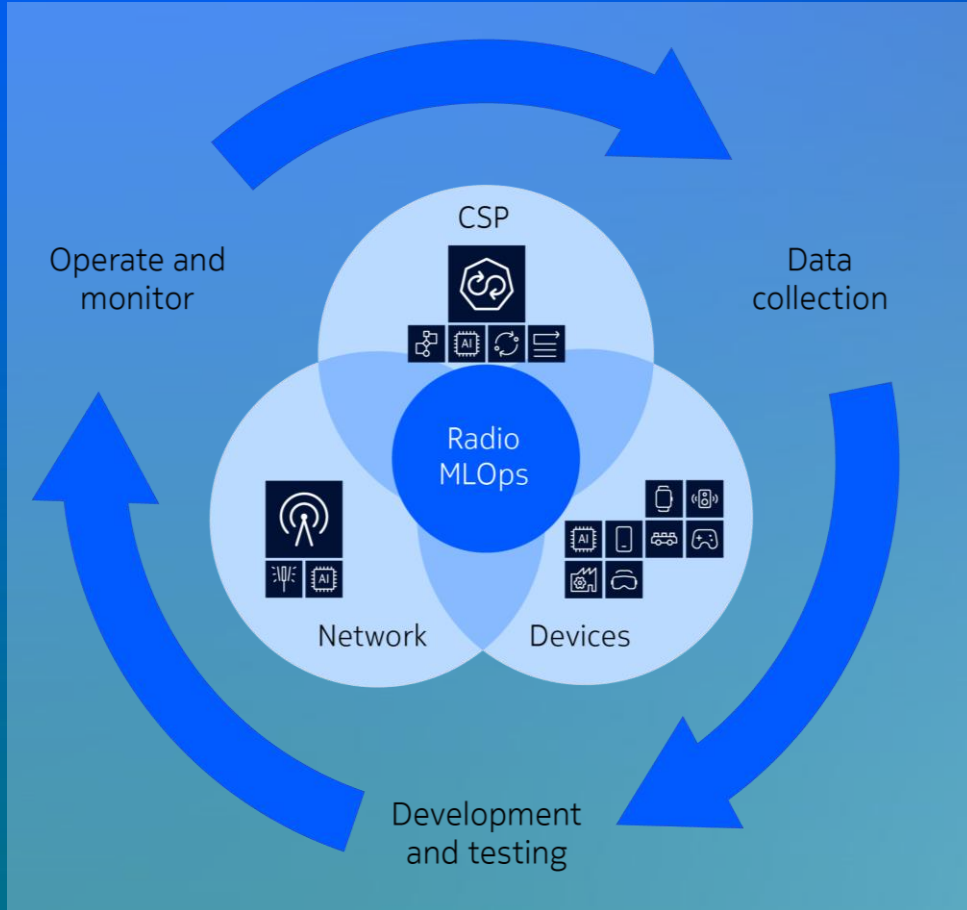
- Data & model bias detection and mitigation
- Reinforcement learning (from human feedback)



Privacy

- Privacy-preserving data collection
- Transfer-/federated learning
- Differential Privacy

Standardization enablers: Testing, verification, & validation



Specified performance requirements*

- Test requirements and procedures for Functionality based LCM

Test cases for pre-deployment validation

- For minimum and generalization performance

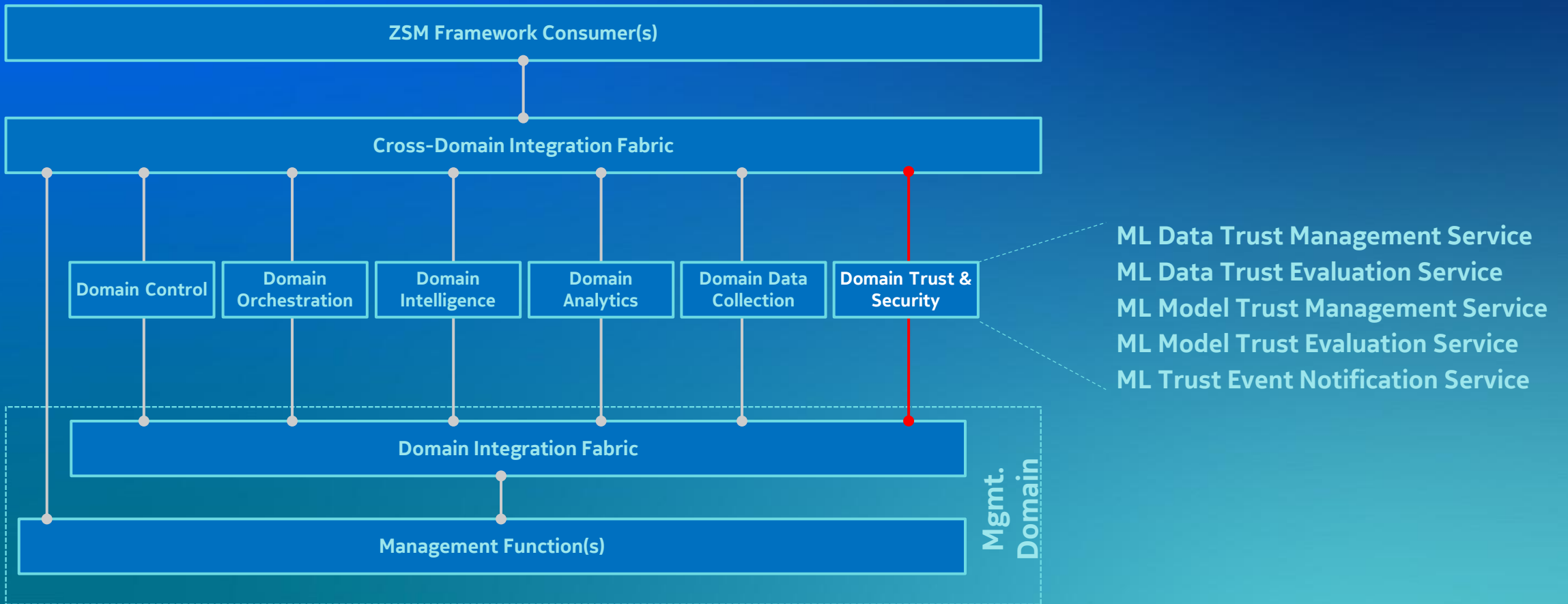
Post-deployment validation

- In-field performance validation based on functionality monitoring

*as discussed in 3GPP TSG RAN4

Standardization enablers: Network & Service Automation

ETSI ZSM 012



Concluding remarks

How do we create trust?

- Consider the full picture
- Enable innovation in a safe framework
- Standardized enablers



NOVA

