



FIIF event · Defence & dual-use technologies

Digitalization beyond SaaS and digital twins

Antti Vikman · Chief Technical Officer, ProVerse Interactive Ltd.

Helsinki · 7 October 2026

SaaS vs. cloud

A BUSINESS MODEL

SaaS

- Software you rent by subscription
- Operated and updated by the vendor
- Shared, multi-tenant platform
- Data lives where the vendor decides

A COMPUTING MODEL

Cloud

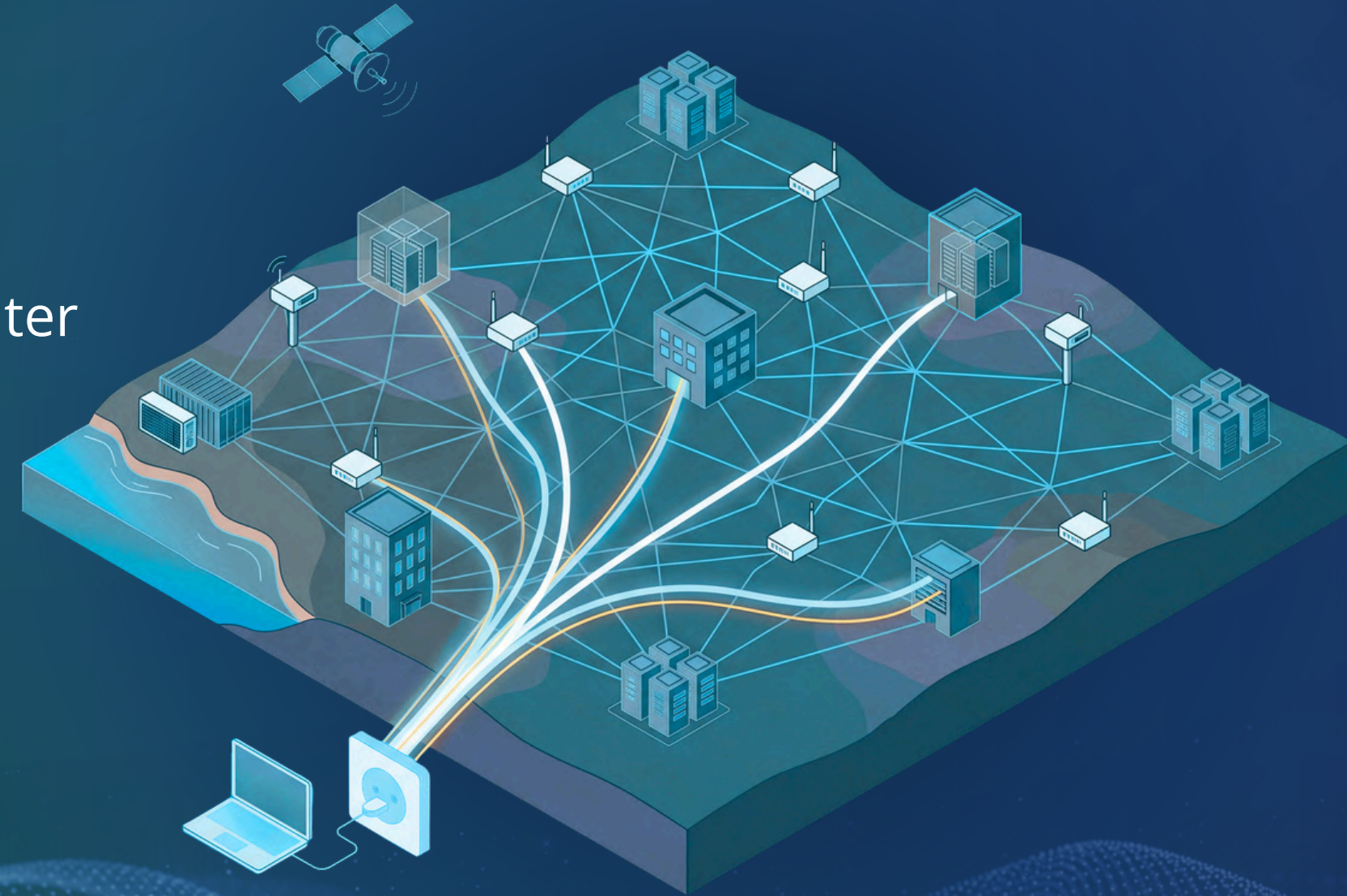
- On-demand compute, storage, network
- Elastic capacity, scaled as needed
- Public, private, on-prem or edge
- Can run software you own

Even cloud is usually not cloud.

What cloud was supposed to be

- A distributed network of data storage and computation
- The resources you need, when you need them
- Without caring where they physically are
- Computing and storage as a utility, like electricity or water

But then we started calling everything on the internet “cloud”.



Welcome data fabrics

Where it runs

- On the device
- Local gateway
- On-premises
- Network edge
- Cloud
- Satellite

Where it makes sense

- Latency and physics
- Bandwidth and cost
- Scale on demand
- Closeness to the data

Where it has to be

- Sovereignty and law
- Classified networks
- Air-gapped operation
- Contested connectivity

One fabric, a mix of deployments: each part where it makes sense, or where it has to be.

Spatially aware data fabrics

THE WHERE

Space

- Every data point anchored in space
- One coordinate frame across twins
- Physics and proximity are computable
- What people and machines both read
- Distance decides latency and reach

THE WHEN

Time

- Order of events gives cause and effect
- Disconnected nodes resync by time
- Replay the past, simulate the future
- One clock across the whole fabric
- Stale data: the world has moved on

Time is distance, and vice versa.

From 3D model to virtual twin

VISUALISE

3D model

A static visual representation: geometry and appearance only. No data, no behaviour.



MONITOR

Digital twin

A live replica of a real asset, connected to sensors and operational data. Shows current state and history.



ACT

Bi-directional twin

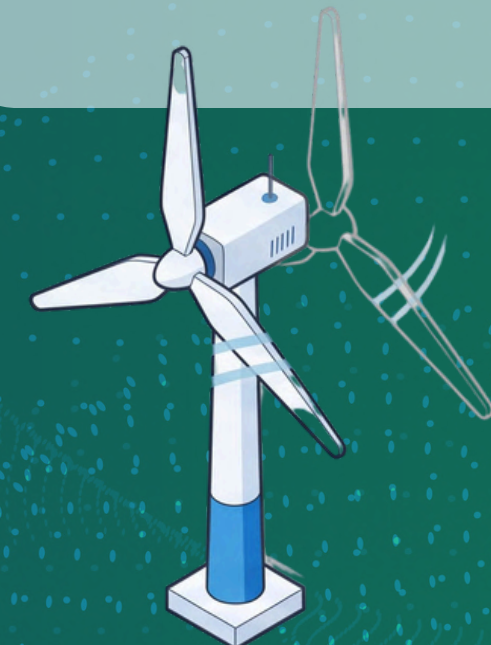
A digital twin that also acts on the physical world: sense, analyse and command back, like adjusting a valve.



SIMULATE

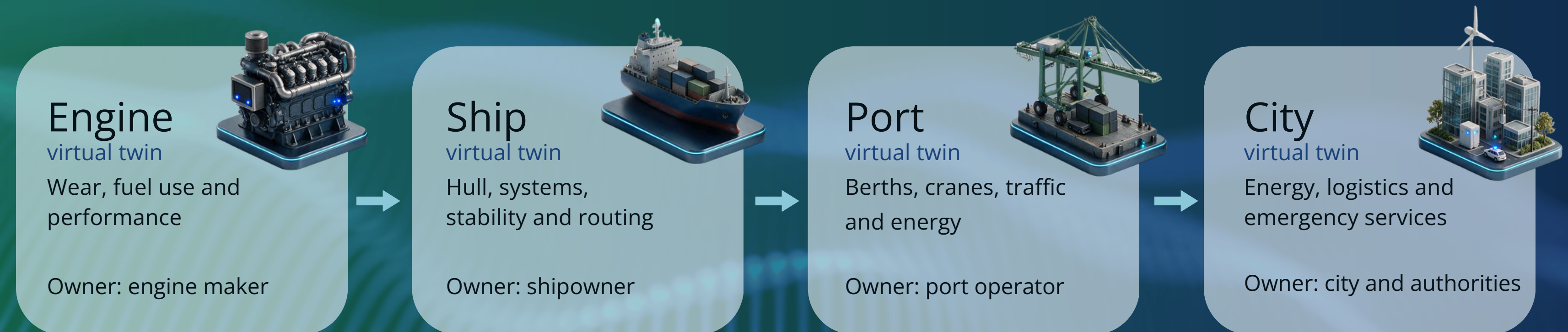
Virtual twin

A behaviour-rich simulation of physics, processes and what-if scenarios. Tests the future, not just the present.



Federated virtual twins

Each twin stays with its owner and plugs into the larger system around it, keeping its own governance and data control.



From “my twin” to a shared operational picture.

THE OPERATIONAL LAYER

Many interfaces, one layer

VR headset

Full immersion for training, planning and rehearsal

Browser

On any laptop, wherever you are

Tablet or phone

In the field, right at the asset

Augmented reality

Contextual overlays on the physical world

Voice

Natural, hands-free interaction

APIs and agents

Machine-to-machine and AI-agent operations

The interface changes.
The operational layer
remains the same.



DUAL USE

Same platform, same data fabric, different missions.

One capability, two missions

Immersive Training

CIVILIAN - Operator and maintenance training on a virtual site

DEFENCE & CRISIS - Mission rehearsal and joint crisis exercises

Predictive Simulation

CIVILIAN - What-if scenarios for production, energy, logistics

DEFENCE & CRISIS - Course-of-action and vulnerability analysis

Situational Awareness

CIVILIAN - Live operational picture of a plant, port or grid

DEFENCE & CRISIS - Common operational picture across authorities

Remote Operations

CIVILIAN - Operating machines and robots from a distance

DEFENCE & CRISIS - Uncrewed systems in hazardous or denied areas

What becomes possible

- 01 Critical infrastructure that keeps working when networks are disrupted
- 02 Systems that anticipate disruptions instead of reacting to them
- 03 One shared picture of the physical world, each party keeping its own data
- 04 Decisions rehearsed and trained in the environment they will be made in
- 05 The same capability serving everyday life and national crises

THE SHIFT

Observing to acting

Centralised to federated

Rented to owned

Reacting to shaping

The physical and digital are no longer two worlds.

Digitalization beyond SaaS and digital twins

When people, machines, infrastructure and AI share one sovereign, federated operational layer, critical systems stop being machines we operate and become systems we work with.

The background of the slide is a stylized image of the Earth from space, showing the Western Hemisphere. It is overlaid with a network of glowing blue lines representing satellite connections, with several bright nodes indicating major hubs. A satellite with solar panels is visible in the lower right quadrant.

PROVERSE

Thank you

Antti Vikman

Chief Technical Officer, ProVerse Interactive

antti.vikman@proverse.ai · +358 40 743 5826

www.proverse.ai