

Vision to Value STRATEGIC PLAN Summary

2026 — 2036

European Union & Türkiye | 10-Year Horizon

Market Scenarios · PESTLE Strategies · Competition Analysis · Parametric Futures · Backcasting
Value Streams · Sustainability · Capabilities · Dynamic SWOT · Vision · OKRs · Risk Register

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02 PESTLE Strategy Integration

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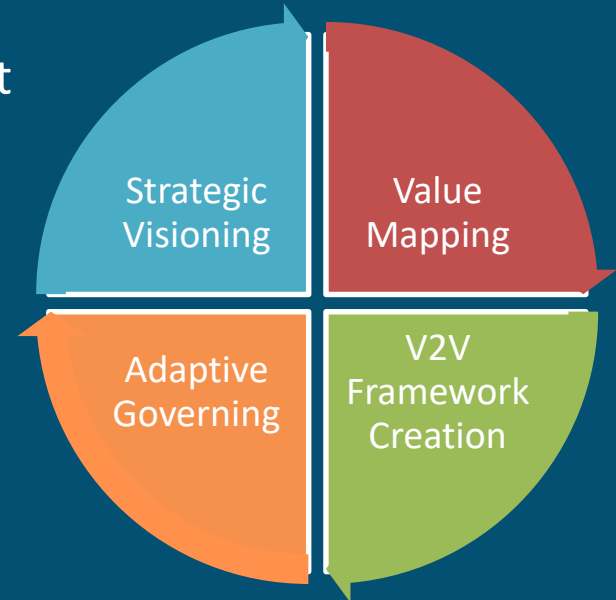
12 Main Strategies, OKRs & Commercial Products

13 Strategic Risk Register

14 Governance, Roadmap & Next Steps

INNODARE Vision to Value Framework

1. Parametric-Scenario-Based Strategic Visioning
2. Value Mapping & Synthesis
3. Vision to Value Roadmap(Framework) Development
4. Activation and Adaptive Governance Framework



STRATEGIC POSITION

Compliance-first CCAM validation platform delivering accredited hybrid testing, certified governed datasets and certification-ready services for OEMs, suppliers and municipalities.

MARKET LOGIC

EU AI Act (Aug 2026), Data Act (Sep 2025) and ADS Type-Approval Reg. 2022/1426 create urgent demand for traceable, auditable validation evidence — OPINA's core offering.

TOP PRIORITIES (Next 90 Days)

Financial pack (30d) · DPO + DSA templates (60d) · Compliance-Ready Package v1 (90d) · Cloud Simulation MoU (90d) · EU Capture pipeline (120d)

TOP RISKS NOW

Data governance failure (GDPR/KVKK/Data Act) · Unknown financial runway · Competitive encroachment by cloud platforms and OEM in-house labs

SECTION 1

Strategic Context & OPINA Baseline

What OPINA really sells · Regulatory drivers · Service portfolio

OPINA's Core Offerings — An Evidence Factory

- Trust & Compliance Evidence (EU AI Act)
- SIM Facilities — MIL/SIL/HIL/DIL
- Scenario Coverage & Traceability
- Reliable Data Governance (DSAs)
- Lower Validation Uncertainty
- Certification-Ready Documentation
- City Pilot Suite (ESG + social acceptance)
- Cluster & Consortium Building
- AUTOSAR Support
- R&D & CCAM Software Development
- Training — 12+ technical domains

Not primarily test days — an evidence factory for CCAM deployment

EU AI Act

Aug 2026

High-risk AI → mandatory compliance docs

Data Act

Sep 2025

Connected product data access rules

ADS Reg. 2022/1426

Now

Type-approval evidence for automated vehicles

GDPR / KVKK

Ongoing

DPO is non-negotiable; DPIA required

UNECE R155 / ISO 21434

Now

Mandatory cybersecurity CSMS testing

VMAD / NATM

Now–2029

Multi-pillar ADS scenario + simulation evidence

Turkish AV Law

Est. 2028

Sandbox designation — first national test centre

SECTION 2

PESTLE Strategy Integration

Strategies from PESTLE analysis embedded into the plan

Factor	Key Opportunity	Key Risk	OPINA Strategic Response
Political	€500M CCAM Partnership; TOGG 175k EVs/yr; Vision Zero mandate	Horizon calls favour large EU leads; geopolitical volatility	Secure 2–3 Horizon WPs + national AV sandbox designation
Economic	\$250–400B CASE value pools; Turkey 4th auto producer in EU	31% inflation; FX erodes TRY margins; semiconductor supply risk	EUR pricing >50% by 2028; FX indexation; TUBITAK bridge grants
Social	EU 65+ → 20% by 2026; 64% Gen-Z sustainability premium; smart city MOUs	Brain drain (~80k eng/yr but talent exodus); AV safety incidents	OPINA Academy + MSc AV + PhD TÜBİTAK 2244 retention; safety dossiers
Technological	AI, digital twins, 6G convergence; 205 automotive R&D centres in Turkey	Simulation vendors (dSPACE, IPG) may commoditise; ISO 17025 gap	Integrate platforms + local governed data; partner for ISO/IEC 17025
Legal	AI Act + R155 + VMAD + Reg. 2022/1426 = direct compliance revenue	Turkish AV law delayed beyond 2028; overclaiming 'certification'	Launch compliance pack immediately; always say 'pre-cert support'
Environmental	Sim-first eliminates 60–80% test km; EV-AV integration 2027 service; V2G	Physical track carbon liability; BEPA battery delays may slow EV-AV launch	GHG baseline → ESG report; EV-AV service launch 2027; V2G test protocol

PESTLE Analysis — Opportunities & Risks (1/2)

Factor	Opportunities	Risks
Political	▶ CCAM Partnership: €500M EU + €500M industry (2021–2030) ▶ Vision Zero 2050: zero road fatalities → validation mandate ▶ EU Green Deal: 90% transport emission cuts → sim-first demand ▶ TOGG ramp-up 175k+ EVs/year; national AV sandbox in progress ▶ Germany AV Round Table · UK CAM Roadmap · UAE 25% driverless by 2030	⚠ EU data residency rules may limit acceptance ⚠ Horizon calls favour large EU consortium leads ⚠ Geopolitical volatility (NATO / EU candidacy uncertainty)
Economic	▶ CASE value pools: \$250–400B by 2030 across 38 use cases (McKinsey) ▶ Turkey: 4th largest auto producer in Europe; 14th globally (2022) ▶ AV software/electronics: 8% → 12% of auto market 2020–2030 ▶ VC mobility: \$20–25B/year; \$214B AV market by 2030 (19.9% CAGR)	⚠ Turkey inflation min.31% (Mar 2026); FX erodes TRY margins ⚠ Semiconductor supply still fragile → OEM budget cuts possible ⚠ Post-IPA-II revenue gap if commercial pipeline not ready
Social	▶ EU 65+ population → 20% by 2026; accessible AV = differentiated service ▶ 64% Gen-Z pays premium for sustainable products (Deloitte 2022) ▶ Smart city investment: Istanbul, Bursa, Ankara → municipality MOUs ▶ Public validation dossiers build trust chain → procurement gate	⚠ Brain drain: ~80k eng. graduates/year but talent exodus to EU labs ⚠ AV safety incidents can trigger procurement moratoriums

PESTLE Analysis — Opportunities & Risks (2/2)

Factor	Opportunities	Risks
Technological	▶ Turkey: 184 automotive R&D/design centres (OEM + suppliers, 2022) ▶ Automotive = 34% of total EU R&D investment (EU Scoreboard 2022) ▶ AI, digital twins, 6G convergence → simulation-first advantage ▶ TUBITAK 1501/1509/1511, EU HORIZON , CHIPS programmes fund CCAM R&D	⚠ Simulation vendors (dSPACE, IPG, CARLA) may commoditise workflows ⚠ ISO/IEC 17025 accreditation gap limits EU acceptance of results
Legal	▶ EU AI Act (Aug 2026): high-risk AI compliance docs → OPINA service ▶ R155/ISO 21434: mandatory cybersecurity CSMS → testing revenue ▶ EU Reg. 2022/1426: ADS type-approval → pre-cert evidence packages ▶ VMAD/NATM: scenario + simulation + track evidence → core OPINA method	⚠ Turkish AV law est. 2028 — sandbox timeline may slip ⚠ Overclaiming 'certification' (vs pre-cert support) — reputational risk
Environmental	▶ Simulation-first eliminates 60–80% of physical test km per program ▶ EV-AV integration testing (regen, thermal, battery-ADAS): 2027 service line ▶ V2G(Vehicle to Grid) testing as EV fleets scale → energy grid operator demand ▶ ESG reporting mandatory for EU public procurement by 2028	⚠ Physical track investment creates carbon liability if sim-ratio stays low ⚠ BEPA/battery project delays could slow EV-AV service launch

POLITICAL — Key Strategic Actions

- Secure 2–3 Horizon Europe WPs (2026–2028) as co-lead
- Formalise EU testbed MoU with AstaZero, HORIBA MIRA or CARISSMA
- Pursue Turkish national AV sandbox designation (target: 2028)
- Leverage ERTICO + EGVIA + CCAM memberships as EU-bridge credential
- Target OEM partnerships (TOGG + EU OEMs) within 6 months

SOCIAL — Key Strategic Actions

- OPINA Academy + MSc AV to counter brain drain
- TÜBİTAK 2244 PhD retention programme
- City Pilot Suite: Istanbul/Bursa/Ankara municipality MOUs
- Accessible AV evaluation for EU 65+ ageing population

ECONOMIC — Key Strategic Actions

- EUR pricing architecture: >50% revenue in EUR by 2028
- FX indexation clauses on all TRY contracts immediately
- TÜBİTAK bridge grants (1501/1509/1511) as IPA-II successor
- Target \$214B AV market entry via CASE value pools
- Build 3-yr P&L + unit economics (CFO — 30 days)

ENVIRONMENTAL — Key Strategic Actions

- GHG baseline: Scope 1/2 by end of month 2
- Publish carbon savings vs. physical test track
- EV-AV integration testing service: launch 2027
- ESG reporting suite for EU public procurement by 2028

TECHNOLOGICAL — Key Strategic Actions

- Integrate CARLA simulation into OPINA-SIM hybrid pipeline
- Partner for ISO/IEC 17025 accreditation — close the lab certification gap
- Build CCAM digital twin (MIL/SIL/HIL/DIL) as differentiator vs. cloud-only vendors
- 6G V2X testbed roadmap: MoU with telecom partner ≤18m
- Govern local ODD data against dSPACE/AURELION/NVIDIA Drive Sim commoditisation

LEGAL — Key Strategic Actions

- Launch EU AI Act compliance package ≤90d — binding enforcement Aug 2, 2026
- R155 / ISO 21434 cybersecurity evidence pack: no domestic Turkish competitor
- VMAD + ADS Reg. 2022/1426: always position as 'pre-certification support' not 'certification'
- Monitor Turkish AV law (est. 2028): first to register as national AV test sandbox
- GDPR/KVKK/Data Act DPO appointed ≤60d — DSA framework as compliance moat

AI & Digital Twin

AI-driven scenario generation reduces test cycles by ~70% vs. manual scripting. Digital twin integration (physical ↔ SIM) is CCAM SRIA Phase 2 core deliverable. OPINA must position here as credible evidence producer.

Platform Integration Strategy

Autoware (open-source, Japan/TIER IV) + Apollo (Baidu, China) operate their own simulation pipelines. OPINA's counter: use them as scenario inputs while holding the governed data + physical validation layer above.

Standards Authority

ISO 17025 gap is the single most limiting credibility factor. AUTOSAR + ASAM OpenSCENARIO WG active contributions turn OPINA from a user of standards into a shaper of them.

SECTION 3

Market Scenarios 2026–2036

Three growth trajectories · Triggers · Revenue projections

The Market Opportunity

MARKET

\$214B

Global AV Market by 2030

19.9% CAGR

\$9.9B

ADAS Simulation by 2035

13.6% CAGR

\$22B

Auto Simulation SW 2033

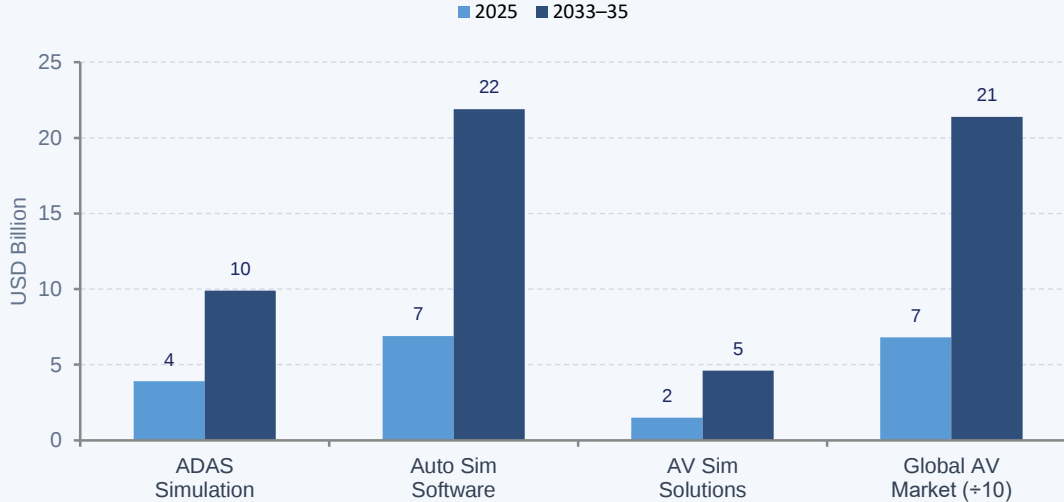
15.8% CAGR

€1B+

EU CCAM R&I Committed

2021–2030

Global CCAM & AV Simulation Markets (USD Billion)



CASE Value Pools — 2030 Outlook

CASE = Connected · Autonomous · Shared · Electrified

McKinsey tanımladığı 4 eksen: yeni yazılım, veri & hizmet gelir havuzları.
Geleneksel OEM gelirinin ötesinde yaratılan değer.

\$250–400B

38 use case · 9 cluster · 2030 toplam değer havuzu

35% Veri & Bağlantı

28% Otonom Sürüş

22% Paylaşımlı Mob.

15% Elektrifikasyon

Sources: ¹MarketsandMarkets / Grand View Research (AV/ADAS market sizing) ²McKinsey & Co. — Monetising car data (2021) ³McKinsey — Automotive software & electronics 2030 ⁴CCAM Partnership SRIA 2021–2030

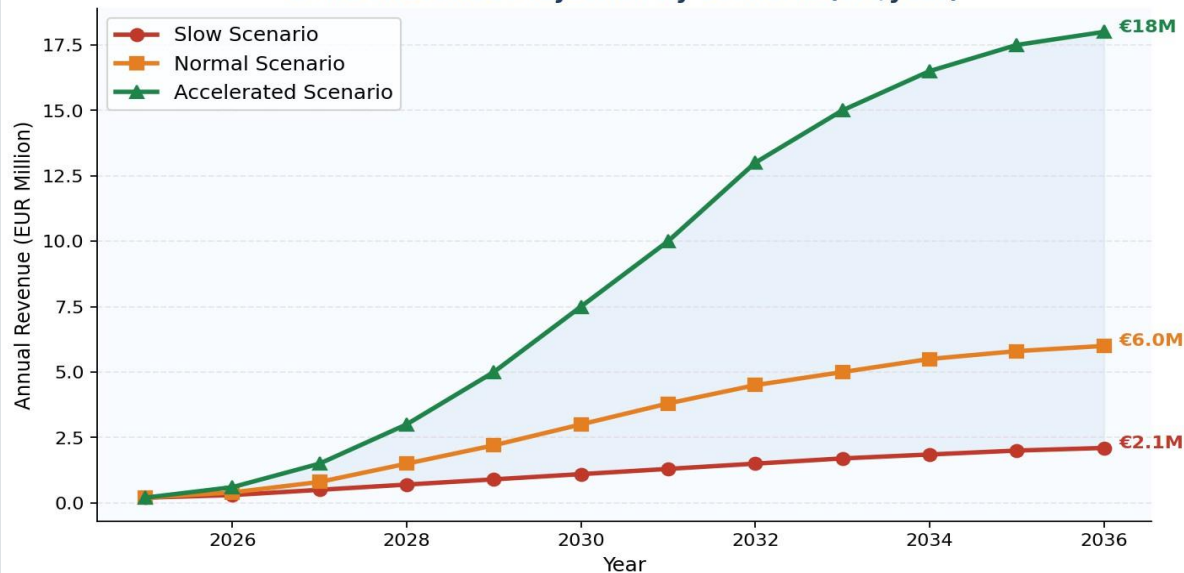
Three Strategic Scenarios — 2026–2036

SECTION 3

No IPA-III funding assumed · Based on Horizon Europe + CCAM Partnership + Commercial Revenue

SLOW ~6% CAGR	NORMAL ~17% CAGR	ACCELERATED ~30% CAGR
30 cluster members <€2M/yr commercial - Domestic focus - Grant-dependent TRIGGERS Horizon sub-partner only · FX volatility · Turkish AV law delayed post-2030 · Simulation vendors commoditise early STRATEGY Light capex · Simulation-first · Maintain EU memberships · TUBITAK bridge · At least 1 EU testbed MoU for credibility	70 cluster members €6M/yr commercial - EU-linked node - Self-sustaining 2029 TRIGGERS Horizon WPs ✓ · OEM contract ✓ · OPINA-SIM MVP ✓ · EU testbed MoU ✓ · Turkish AV sandbox ✓ STRATEGY Productize SIM · Cybersecurity workstream · City Pilot Suite · 50+ members by 2030 · EUR revenue majority	150 cluster members €18M/yr commercial - EU CCAM hub status - MENA expansion TRIGGERS Gen-AI testing (~70% test cycles) · AV sandbox unique moat · EU co-validation recognition STRATEGY Digital homologation · 6G V2X testbed · MENA satellite ops (UAE/Saudi) · CCAM Partnership leadership

OPINA Revenue Projection by Scenario (€M/year)



~31%

Turkey Inflation
(March 2026)

3.4%

Turkey GDP
Growth 2026

2.6%

EU HICP
Inflation 2026

€1B+

CCAM R&I
Funding Pool

16

⚠ IPA-III is NOT in OPINA's plan. Revenue must come from: Horizon Europe · CCAM Partnership · Commercial services · TUBITAK grants · Turkish MoIT incentives.

SECTION 4

Competition Scenarios

Competitor archetypes · OPINA advantages · Gaps to close

Competitor Landscape: Archetypes & CCAM Platforms

SECTION 4

A — Competitor Archetypes

National Testbeds

STRENGTH: Physical scale + national funding

COUNTER

Hybrid evidence; local Istanbul/Bursa ODD OPINA uniquely holds

University Labs

STRENGTH: Research depth + grant access

COUNTER

Industrialization + certification layer; named products with SLAs

Private Validators

STRENGTH: Commercial packages + speed

COUNTER

Named products + evidence templates; open-innovation neutral

Cloud Simulation

STRENGTH: Compute at massive scale

COUNTER

Partner → add physical validation + local ODD + governed data

OEM In-House Labs

STRENGTH: Proprietary test data

COUNTER

Independent evidence for regulators; local ODD co-development

B — CCAM Software Platforms (new)

Autoware

OPEN

Japan · TIER IV (OSS)

► World's #1 open-source AV stack · ROS 2 based · Full perception/planning/control · Cloud-native OTA pipeline

OPINA-SIM can ingest Autoware scenarios; OPINA adds physical validation + ISO evidence on top

Baidu Apollo

COMMERCIAL

China · Baidu (OSS/commercial)

► Apollo 10.0 (2024) · ASIL-D certified · 170M+ km test data · 5,000+ patent families · L4 deployment in Wuhan

Zero direct competition in EU-TR space; Apollo's ASIL-D certification model is a roadmap benchmark for OPINA

CARLA

OPEN SIM

Barcelona · Intel/Toyota (OSS)

► Leading open-source AV simulator (Unreal Engine 4) · Sensor suite + OpenDRIVE maps · ROS/Autoware/Apollo bridges

OPINA-SIM integrates CARLA scenarios; OPINA wraps CARLA with governing ODD data + evidence trail

Project ASLAN

OPEN

UK · Street Drone (OSS)

► Low-speed urban/campus AV · ROS-based · Open-source · CarMaker integration · UK-focused deployment

Overlapping low-speed urban ODD is OPINA's city pilot sweet spot; not a threat but a potential integration target

dSPACE AURELION

COMMERCIAL SIM

Germany · dSPACE (commercial)

► High-fidelity commercial simulator · SIL/HIL support · ISO 17025-compatible workflows · OEM-grade toolchain

Key threat: commoditisation of simulation. OPINA must differentiate with physical validation layer + local ODD that dSPACE cannot replicate

NVIDIA DRIVE Sim

COMMERCIAL SIM

USA · NVIDIA (commercial)

► Omniverse-based · Photorealistic · AI/ML training at scale · AWS/Azure integration · DRIVE Thor compute

Partnership target, not competitor — OPINA adds EU regulatory evidence + physical validation layer on top of NVIDIA compute

SECTION 5

Parametric Futures & Backcasting

Six parameters · Observable signals · From 2036 vision to 90-day actions

Six Observable Parameters → Pre-agreed Management Responses

PARAM 1

EU-TR Regulatory Alignment

→ Accelerate compliance packages + accreditation pathway

PARAM 2

Data Act Enforcement Speed

→ Strengthen DSA templates + provenance tracking

PARAM 3

OEM Internalization of Labs

→ Pivot to municipal, suppliers, co-development

PARAM 4

CCAM / Horizon Call Cadence

→ Activate capture team in ≤2 weeks per call

PARAM 5

Cloud Simulation Expansion

→ Differentiate with physical validation + ODD data

PARAM 6

Financial Runway < 12 Months

→ Freeze CAPEX · Activate bridge funding

Backcasting: 2036 Desired State → Now

NOW	90 Days	2026–27	2027–29	2029–33	2036
Authorize plan · Assign owners · Financial pack · DPO retained	Compliance v1 · Cloud MoU · Capture pipeline · GHG baseline	First paid pilots · Municipal launch · Simulation subscriptions	Scale: EU wins · Case studies · AUTOSAR authority · Platform growth	Platform: Accreditation · Enterprise SLAs · Federated data	Trusted EU-TR CCAM Platform · VaaS · Recurring ARR · MENA ops

Value Stream Mapping

Current streams · KPIs · Improvement levers

Physical Testbed

Simulation / Digital Twin

Governed Data

Regulatory Advisory

Municipal Pilots

Research & Training

Reviewed quarterly against Early Warning Indicators · Updates fed into OKR dashboard

STRENGTHS

- Turkey's first & only open-innovation AV platform (zero direct domestic competition)
- ERTICO + EGVA + CCAM + BEPA + ASAM + AUTOSAR memberships simultaneously
- SAE Level 4 test vehicle + ASIL-D HIL capability
- Full-stack: SW dev → SIM → HIL/DIL → vehicle → pre-cert → training
- EUR cost advantage: Turkish engineering base, EU-quality output
- University base enables pre-commercial R&D corporate labs cannot pursue

OPPORTUNITIES

- EU AI Act + Data Act + VMAD = urgent compliance revenue NOW
- \$214B AV market by 2030 (19.9% CAGR); €1B+ EU CCAM R&I
- Turkish AV law (est. 2028) → sandbox designation
- TOGG + EU OEM partnerships for AV/ADAS validation
- EV-AV integration testing — no Turkish competitor in 2027

OPINA · Istanbul Okan University · UTAS-TTIS · opina.org.tr

WEAKNESSES

- No ISO/IEC 17025 accreditation yet
- EU brand recognition limited — needs testbed MoU
- Data governance not formalised (GDPR/KVKK/Data Act)
- Unknown financial runway — P&L not built
- Cybersecurity workstream (R155/21434) still nascent
- EU data residency not formalised (ISO 27001 in progress)

THREATS

- dSPACE/IPG/CARLA may commoditise simulation workflows
- Cloud simulation vendors integrate full validation pipeline
- OEM in-house labs reduce addressable market
- FX/inflation erodes TRY-priced margins (31% Turkey inflation)
- Brain drain: talent exodus to EU labs

Our Vision for 2036

1- "By 2036, OPINA will be the trusted EU-Türkiye compliance-first CCAM validation platform — delivering accredited hybrid physical and digital-twin testing, certified governed datasets and certification-ready services that enable safe, regulation-aligned deployment across OEMs, suppliers, innovators and municipalities.«

2- "By 2036, OPINA will be the trusted EU-Türkiye compliance-first CCAM validation platform and **research & training centre** — delivering accredited hybrid physical and digital-twin testing, certified governed datasets, certification-ready services and **CCAM sustainability intelligence** that enable safe, regulation-aligned and **environmentally responsible** deployment across OEMs, suppliers, innovators, **researchers** and municipalities

Trust & Compliance

Every service linked to audit evidence and safety argumentation

Hybrid by Default

Physical testbed + digital twin — expand coverage, reduce cost

Governed Data Asset

DSAs, provenance, anonymization — data as monetizable product

Municipal Integration

Public-sector pilots as proof of safety, inclusion & sustainability

Vision in Business Plan of OPINA

“To be one of the leading smart green mobility clusters and research centers to support development of advanced solutions worldwide.”



Physical Testbed

Core credibility anchor · Test-day revenue · EU evidence baseline

- ▶ HIL/DIL/SIL + vehicle-level testing — physical evidence for certification
- ▶ Utilization >55% sustains break-even; >70% generates surplus
- ▶ Essential for Type-Approval dossiers — cannot be replaced by simulation alone
- ▶ Revenue model: day-rate + retainer + dedicated-access packages

🔊 Testbed utilization >55% · Rev/test-day tracked monthly



Simulation / Digital Twin

Scalable · EUR-priced subscriptions · CCAM Phase 2 data supply

- ▶ MIL/SIL/HIL + cloud SIM — scalable to unlimited test cycles
- ▶ OPINA-SIM Sandbox: subscription tiers, EUR-priced, SLA-backed
- ▶ ODD scenario coverage drives dataset value (link to stream 3)
- ▶ Revenue model: compute credits + managed-validation retainer

🔊 ≥20 sim runs/week · 2 paying subscribers ≤6m



Governed Data & Scenarios

Network effects · DSA framework · Monetizable data product

- ▶ ODD-tagged ASAM OpenSCENARIO library — 100+ scenarios ≤6m
- ▶ Data Sharing Agreements (DSAs) + provenance + anonymization
- ▶ Membership-based access: dataset subscribers pay per tier
- ▶ Revenue model: annual subscription + bespoke scenario generation

🔊 5 DSA templates ≤3m · 3 paying members ≤12m



Regulatory Advisory

High-margin · Buyer urgency — AI Act Aug 2026 · R155 · VMAD

- ▶ EU AI Act compliance package (Aug 2026 binding deadline) — launch NOW
- ▶ R155/ISO 21434 cybersecurity evidence pack
- ▶ Pre-certification readiness gap analysis + safety argumentation
- ▶ Revenue model: fixed-fee diagnostic + advisory retainer

🔊 Lead-to-contract ≤30d · Compliance pkg live ≤90d



Municipal Pilots

Public proof · ESG data · Social acceptance · Grant multiplier

- ▶ Istanbul / Bursa / Ankara MoU pipeline — 2 pilots active ≤12m
- ▶ CCAM-EU-CEM evaluation: safety, accessibility, social acceptance
- ▶ Sustainability KPIs published with each pilot (Scope 1+2 link)
- ▶ Revenue model: municipality contract + EU co-funding + case study IP

🔊 2 pilots active ≤12m · Published case study ≤9m



Research & Training Leadership

IP pipeline · Horizon multiplier · Talent retention · CCAM SRIA aligned

- ▶ CCAM Training Curriculum: 12+ technical domains, certified delivery ≤18m
- ▶ MSc AV + TÜBİTAK 2244 PhD pipeline — talent retention and IP creation
- ▶ Horizon Europe multiplier: academic-industry collaboration increases grant success
- ▶ Revenue model: course fees + corporate training packages + research contracts

🔊 2 corporate training packages ≤6m · Research Lead hired ≤12m

TARGET KPIs:

▶ Testbed Util >55%

▶ SIM ≥20/wk · 2 subs ≤6m

▶ 3 data members ≤12m

▶ Compliance pkg ≤90d

▶ 2 pilots ≤12m

▶ Training pkg ≤6m · Rec. Rev ≥25% Yr5

Horizon Value Streams: H1 · H2 · H3

SECTION 8

H1

Stabilize & Productize

0–24 Months

Compliance-Ready Package v1

Named, priced product · Evidence standards · Target OEM safety teams

DPO + DSA Templates Active

Retain DPO ≤60 days · 5 templates · TAT ≤30 days

Cloud Simulation PoC MoU

Sign MoU ≤90 days · ≥20 runs/week by month 6

1–2 Municipal Pilots

Acceptance + sustainability KPIs · Published case study

EU Capture Capability

Capture Manager hired · 2 bids in 6 months

GHG Baseline Established

Scope 1/2 metered · Compute energy tracked

Research Lead Appointed

Post role ≤30d · Academic advisory board formed ≤12m · ECCP registration ≤30d

R&T

CCAM Research Programme Drafted

Aligned to Horizon Europe SRIA · ≥3 academic partnership targets mapped

R&T

R&T

= Research & Training Leadership actions

H2

Scale & Transform

2–5 Years

Simulation Subscription Tiers

Live pricing tiers · Recurring platform revenue

Governed Dataset Service

DSA-backed data product launch

Accreditation Pathway

ISO/IEC 17025 + partner MoU underway

Multi-year OEM Contracts

Enterprise SLAs with major OEMs and municipalities

3rd-Party Audits Complete

Independent evidence for regulatory acceptance

Training Curriculum Live

12+ domain curriculum with certified delivery partner ≤18m · Course fees + corporate packages

R&T

≥3 Academic Partnerships Signed

MSc AV + TÜBİTAK 2244 PhD pipeline · Talent retention · IP creation

R&T

ESCA Bronze Label + Cluster Growth

ESCA Bronze applied ≤18m · ≥10 active cluster member organizations

R&T

GATE: GATE 1: 2 paying SIM subscribers OR 1 anchor OEM/municipal MoU + cloud MoU + active DSA framework

H3

Platform & Breakthrough

5–10 Years

Validation-as-a-Service (VaaS)

Full platform delivery model

Federated Dataset Marketplace

Governed, monetizable data ecosystem

Enterprise SLAs — Major OEMs

Binding multi-year agreements

Multi-Country Presence

MENA satellite ops (UAE/Saudi Arabia)

ARR at Scale

€6M–€18M/yr recurring annual revenue

PhD Programme & Patent Pipeline

≥1 PhD on CCAM validation/sustainability co-supervised · First OPINA patent filed

R&T

ESCA Gold Label Achieved

2-day on-site assessment · 31 quality indicators · ≥20 member organizations

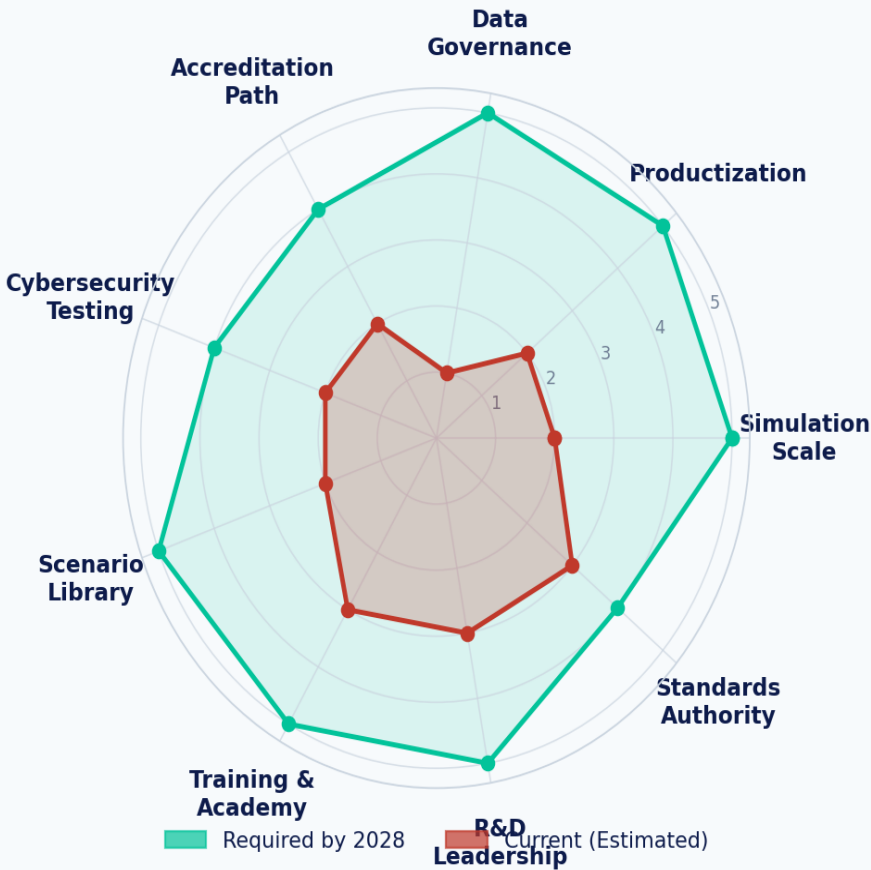
R&T

EU-Türkiye CCAM Research Hub

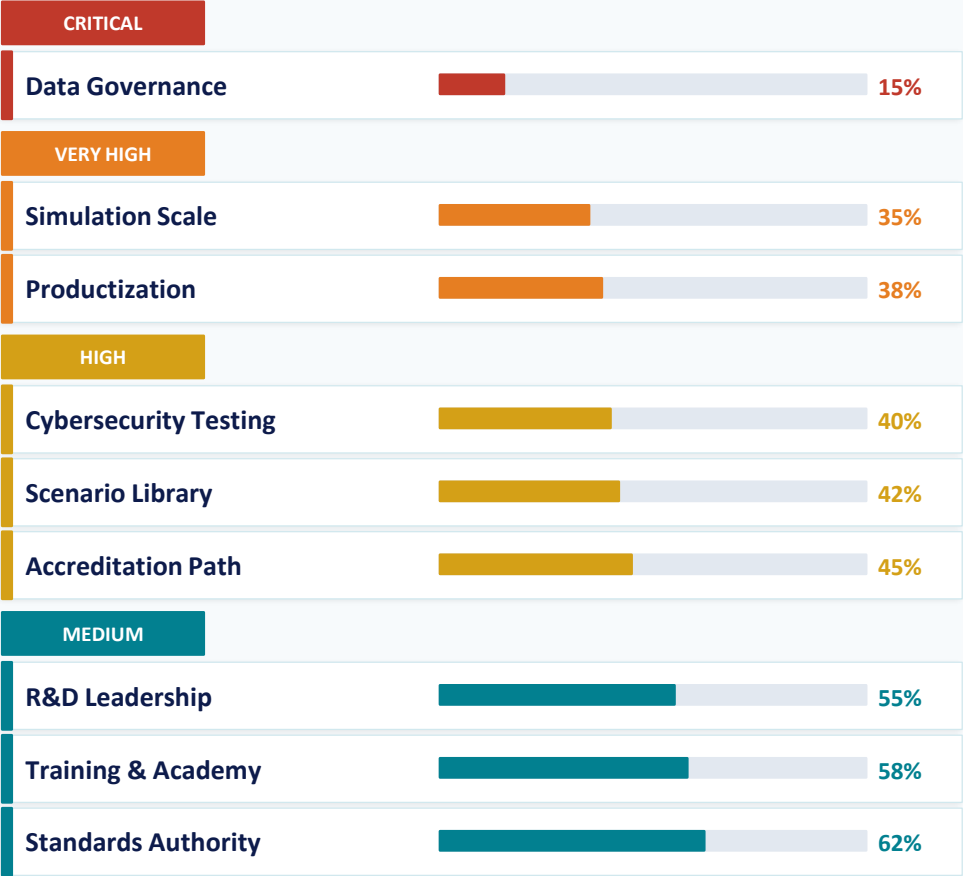
Recognized in EC partnerships · CCAM SRIA contributor · ERTRAC WG member

R&T

GATE: GATE 2: Accreditation launched + recurring revenue > threshold + multi-year enterprise contracts



1 = Critical gap · 5 = World class · Scores are indicative — require OPINA internal validation



Seven Main Strategic Themes

SECTION 10 — STRATEGY

S1

Compliance & Accreditation Leadership

Audit-grade evidence and certification-readiness as the core spine of market positioning. Every service linkable to a regulatory requirement or evidence standard.

S2

Hybrid Validation Platform

Productize physical and digital-twin validation into repeatable, priced packages and subscription offerings. Shift from project billing to product revenue.

S3

Trusted Data & Scenario Governance

Transform DSAs, provenance, anonymization and scenario libraries into a governed, monetizable data product. DPO appointed, federated dataset marketplace by H3.

S4

CCAM Sustainability Intelligence

OPINA as the platform measuring and certifying CCAM sustainability outcomes — traffic flow, lifecycle carbon, air quality and social inclusion — beyond just electrification.

S5

Sustainable Municipal Integration

Use municipal pilots to prove CCAM-enabled safety, acceptance, inclusiveness and sustainability. Municipal references are grant-multipliers and differentiate OPINA from commercial-only testbeds.

S6

Research & Training Leadership

Position OPINA as the premier EU-Türkiye research and training hub for CCAM — publishing, PhD programmes, training curricula and academic partnerships aligned to the CCAM SRIA.

S7

Commercialization, Financial Resilience & European Cluster Excellence

Shift from project/grant dependence to recurring subscription and membership revenue. Build OPINA as the Best European CCAM Cluster delivering measurable value to all members.

Eight Strategic Objectives — Linked to Strategic Themes

Strategic Objective		Theme	Level	Key Results (Summary)	Owner / Window
01	Audit-Grade Data Governance	S1	CRITICAL	▸ DPO retained ≤2 wks · 5 DSA templates ≤3m ▸ DPIA completed ≤3m · DSA TAT ≤30d	CEO + Legal 0–4m
02	Compliance & Accreditation Pathway	S1	HIGH	▸ EU AI Act package ≤90d (Aug 2026 deadline) ▸ Partner lab MoU ≤6m · Audit ≤9m · QMS ≤12m	Head Testing 0–18m
03	Hybrid Validation Product Launch	S2	NOW	▸ Compliance Pkg v1 ≤90d · Cloud MoU ≤90d ▸ 2 paying SIM subscribers ≤6m · Cybersec pack ≤6m	CTO + Head Testing 0–9m
04	Governed Dataset Monetization	S3	SCALE	▸ ODD gap report ≤3m · Dataset pilot ≤6m ▸ 100+ scenarios ≤6m · 3 paying members ≤12m	CTO + Data Lead 0–12m
05	Municipal Pilots & Sustainability Baseline	S4+S5	HIGH	▸ GHG baseline ≤6m · 2 municipal pilots ≤12m ▸ Sust. KPIs + social acceptance published ≤6m	Head Municipal + Sust. Lead 0–12m
06	Financial Stability & Recurring Revenue	S7	CRITICAL	▸ P&L + runway ≤30d · EUR >50% revenue ≤24m ▸ 2 Horizon WPs won ≤18m · ≥25% rec. rev ≤36m	CFO + Capture Mgr 0–36m
07	Research & Training Leadership	S6	INVEST	▸ Research Lead + advisory board ≤12m ▸ Training curriculum ≤18m · ≥3 academic partnerships ≤24m	Research Lead + Partnerships 0–36m
08	Best European CCAM Cluster — Member Value	S7	BUILD	▸ Cluster Charter + Member Value Report ≤12m ▸ ESCA Gold Label application ≤36m · ≥20 members ≤36m	CEO + Cluster Manager 0–36m

S1=Compliance · S2=Hybrid Validation · S3=Data Governance · S4=Sustainability Intelligence · S5=Municipal Integration · S6=Research & Training · S7=Commercialization & Cluster

GOVERNANCE RHYTHM

MONTHLY

Executive dashboard · OKR traffic lights · Runway check

QUARTERLY

Full OKR review · EWI assessment · Corrective actions · SWOT update

ANNUALLY

Strategy recalibration · Horizon gate review · Advisory board · Scenario reassessment

EARLY WARNING INDICATORS

⚡ **AI Act / ADS milestones accelerate**

→ Accelerate compliance packages + accreditation

⚡ **Data Act enforcement spikes**

→ Strengthen DSA templates + provenance

⚡ **OEMs announce in-house validation labs**

→ Pivot to municipal, suppliers, co-development

⚡ **Large CCAM / Horizon / CEF calls open**

→ Activate capture team in ≤2 weeks

⚡ **Cloud simulation expands regionally**

→ Differentiate with physical validation + ODD

⚡ **Runway < 12 months OR utilization < 40%**

→ Freeze CAPEX · Activate bridge funding

Implementation Roadmap — All Periods Overview

SECTION 12 — NEXT STEPS

All 8 Strategic Objectives · All 7 Themes active every period · CCAM SRIA Phases 1–3 · ERTRAC Agenda 2030 · Horizon Europe 2025–2027

Period 10–90 Days No-Regret Actions	S1S2S3S4S5S6S7	SRIA Phase 1 close-out (2021–2024) · Horizon CL5-2026 deadline Jan 2026
Period 23–18 Months Build & First Revenue	S1S2S3S4S5S6S7	SRIA Phase 2 entry (2025–2027) · Test & validate in operational environments
Period 318–48 Months Scale & Transform	S1S2S3S4S5S6S7	SRIA Phase 2 full · Phase 3 entry (2028–2030) · ERTRAC Agenda 2030
Period 448–120 Months Platform & Leadership	S1S2S3S4S5S6S7	SRIA Phase 3 Living Labs Europe · ERTRAC Outlook 2040 · MENA expansion
Vision 2036–2050 CCAM Hub & VaaS	S1S2S3S4S5S6S7	ERTRAC Vision 2050 · Zero-accident · Climate-neutral · Inclusive mobility

NOW-0–90d

3–18m

18–48m

48–120m

VISION

Period 1: 0–90 Day Action Plan

0–90 DAYS

No-regret actions · CCAM SRIA Phase 1 close-out · EU AI Act Aug 2026 window opens NOW · All 7 themes activated immediately

S1

O1+O2

Data Governance & AI Act Compliance

- ▶ Retain external DPO ≤2wks (DPO-as-a-service)
- ▶ Draft 5 DSA templates + DPIA + anonymization policy
- ▶ Launch EU AI Act Compliance Package v1 — EUR-priced, named product
- ▶ AI Act enforcement: Aug 2, 2026 — window is NOW

CEO + Head Legal · 🕒DPO live ≤2wks · Compliance pkg ≤90d

S2

O3

Hybrid Validation Product Launch

- ▶ Sign Cloud Simulation MoU ≤90d
- ▶ Run SIM PoC: ≥20 runs/week target by month 6
- ▶ Launch Compliance-Ready Test Package v1 (SLA-backed)
- ▶ First paying pilot secured ≤90d

CTO + Head Testing · 🕒Cloud MoU ≤90d · 1 paid pilot ≤90d

S3

O4

Data & Scenario Governance Foundations

- ▶ ODD coverage gap analysis — key input to ASAM OpenSCENARIO library
- ▶ DSA framework activated with DPO (O1 is gate)
- ▶ Initiate 100+ scenario cataloguing (ASAM format)
- ▶ Identify first dataset pilot partner

CTO + Data Lead · 🕒ODD gap report ≤3m · DSA framework ≤3m

S4

O5

CCAM Sustainability Intelligence — Baseline

- ▶ Define Scope 1+2 GHG boundary (4–8 wk task, GHG Protocol)
- ▶ Install smart meters: kWh/test + compute energy tracking
- ▶ Publish 1-page sustainability evidence template for all projects
- ▶ Identify first CCAM sustainability metric to track (traffic flow / carbon)

Sustainability Lead · 🕒Scope 1+2 boundary ≤2m · Template published ≤90d

S5

O5

Municipal Pilot Pipeline Activation

- ▶ Initiate MoU conversations: Istanbul / Bursa / Ankara municipalities
- ▶ Appoint Municipal Programme Lead or assign to Head Testing
- ▶ Map city pilot candidate sites against CCAM ODD requirements
- ▶ Draft city pilot scope template (safety + acceptance + sustainability KPIs)

Head Municipal · 🕒Municipality MoU pipeline open ≤90d · Site map ≤90d

S6

O7

Research & Training Leadership — Foundation

- ▶ Post Research Lead role (academic-industry bridge hire)
- ▶ Register OPINA on EU Cluster Collaboration Platform (ECCP) — prerequisite for ESCA Gold
- ▶ Draft CCAM Research Programme outline aligned to Horizon Europe SRIA
- ▶ Map ≥3 academic partnership targets (universities + research institutes)

CEO + Research Lead · 🕒Research Lead posted ≤30d · ECCP registration ≤30d

S7

O6+O8

Financial Architecture & Cluster Foundations

- ▶ CFO delivers 3-yr P&L + runway model ≤30d (no-regret)
- ▶ EUR pricing on all new contracts · FX indexing on TRY contracts
- ▶ Hire Capture Manager · Map Horizon CL5 2026 call calendar
- ▶ Draft Cluster Charter outline + identify first 5 member organizations

CFO + CEO · 🕒P&L ≤30d · Call calendar ≤90d · Charter draft ≤90d

🔗 CCAM SRIA: Phase 1 close-out (2021–2024) — Building Blocks. ERTRAC Agenda 2030: Establish methodology validation frameworks. Horizon CL5-2026-01 deadline: 20 Jan 2026 — begin consortia formation now.

NOW-0–90d

3–18m

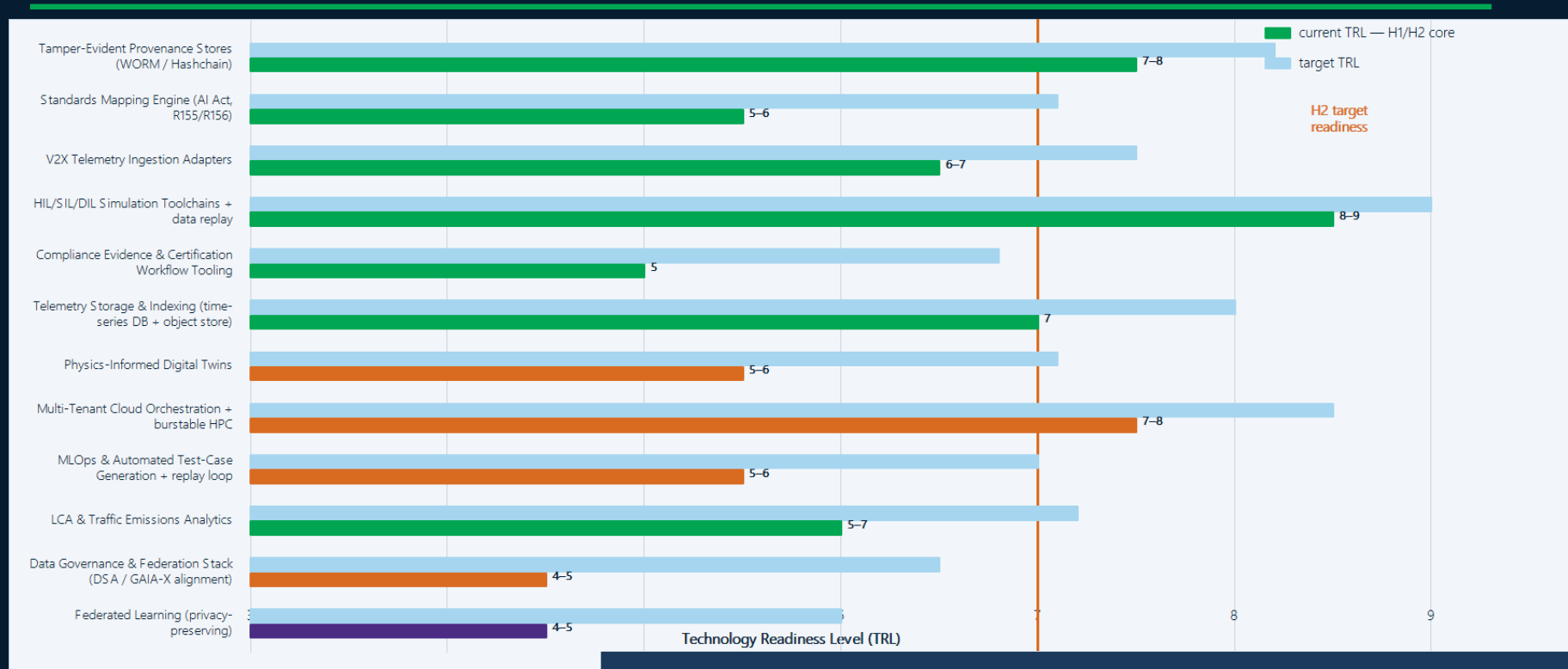
18–48m

48–120m

VISION

10 Core Technology Platform — TRL Assessment

Current vs target readiness levels



Priority POC Actions:

T-CORE-001

License 1 commercial + 1 open-source sim engine; build 10 canonical scenarios; measure €/run by Q1 2027

T-CORE-002

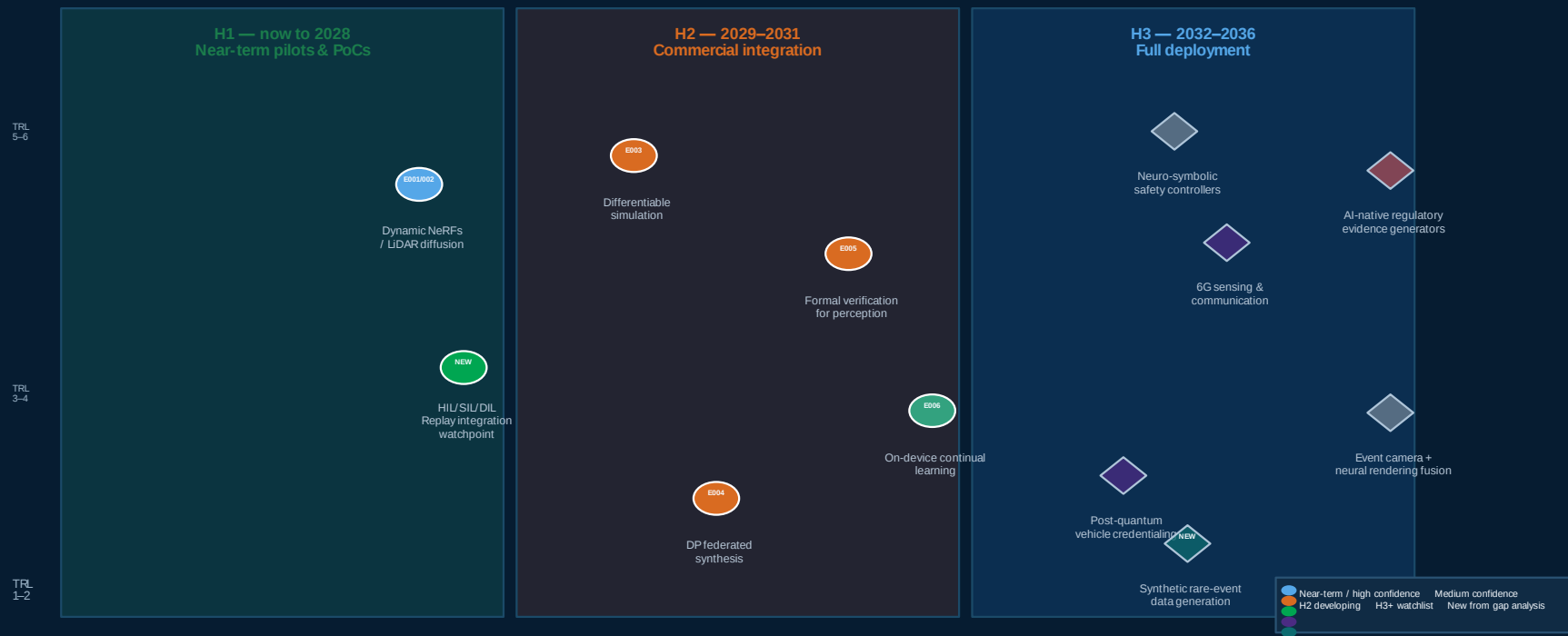
Telemetry ingestion pipeline + schema + SLA <24h by Q4 2026

T-ENAB-002

Orchestration POC with cloud partner; cost/run + latency by Q2 2027

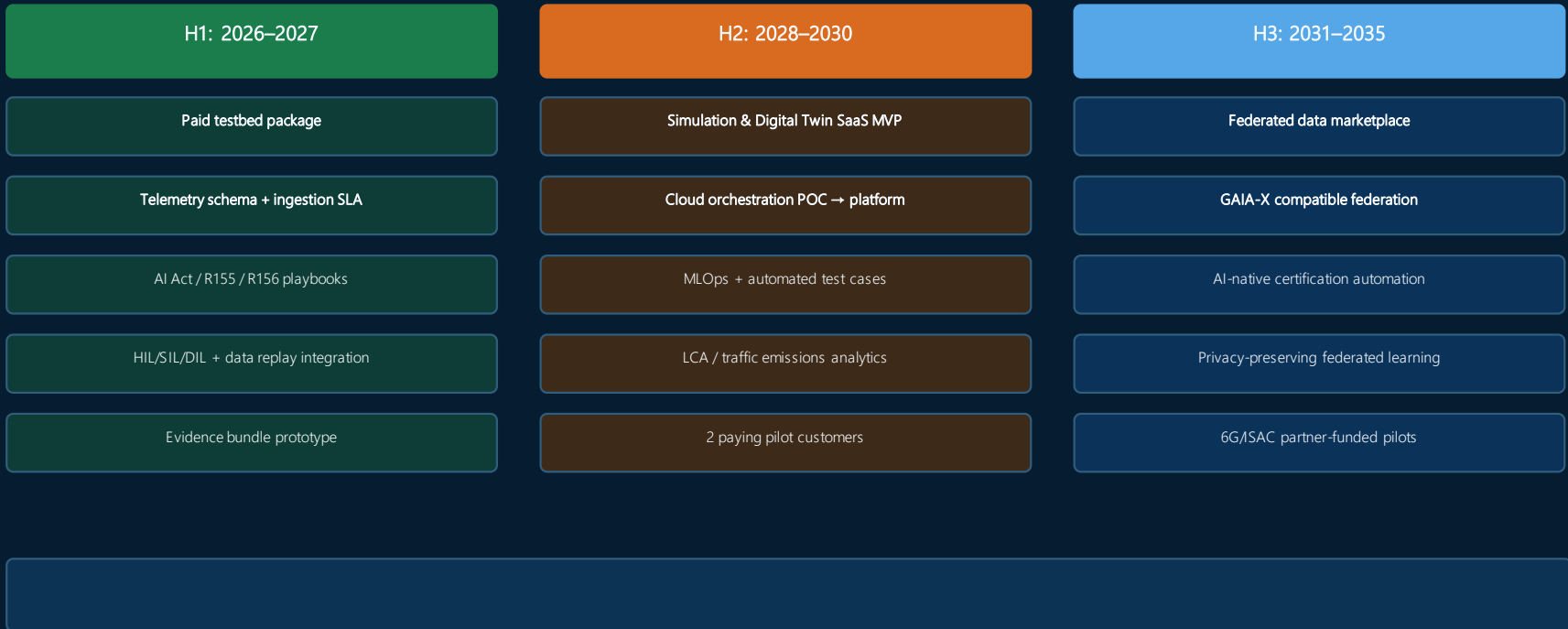
Emerging Technologies — Research Stage (TRL 3–4)

Active research signals; mature H1/H2 platform technologies are now covered separately in the updated core-platform slides



Technology-to-Value Linkage

Technology deck onnects core technologies to OPINA product/service platforms and near-term implementation gates



Inferred Technology Domains

8 domains derived from value streams, tech roadmap and company overview

Simulation & Digital Twin

Scenario engines, vehicle dynamics, sensor models, ODD templates, curated scenario libraries for repeatable validation

Cloud Orchestration & Multi-tenant Compute

GPU/CPU bursting, SLA-capable scheduling, autoscaling, cost controls — critical for Simulation SaaS unit economics

Telemetry Ingestion & Evidence Pipelines

Secure pipelines from physical testbeds to digital twin environment; time-series, logs, sensor fusion outputs

Data Governance & Secure Federation

DSA templates, policy engines, GAIA-X alignment, GDPR/KVKK compliance — enables cross-organisation data sharing

AI Assurance & Continuous Testing

Compliance evidence tooling, automated evidence-to-certification mapping, AI Act & R155/R156 checklists

Marketplace & Federation Platforms

Scenario and data exchange, membership billing, metering, GAIA-X-aligned catalogues — H2/H3 play

V2X / Vehicle Sensor Integration

Test hardware interface, OEM telemetry APIs, low-latency edge nodes for real-world validation

Sustainability & Emissions Analytics

Traffic digital twin, GHG baseline, emissions KPIs, municipal pilot packages for sustainability procurement

Innovation Platforms (Alt 2)

Three core platforms from POC to full deployment across horizons

P-PLAT-001

OPINA Simulation & Digital Twin Platform

Description:

Internal SaaS: Scenario API v1 · Orchestration prototype · Telemetry ingestion · Evidence packaging.

KPIs:

KPIs: 2 paying pilots · Cost/run within $\pm 20\%$ · Ingestion $\geq 95\%$ · Evidence bundle $< 48h$.

POC Target: Q1 2027 | H2: Full SaaS MVP | H3: Federated platform

P-PLAT-002

Governed Data Marketplace & Membership Platform

Description:

DSA-enabled pilot: OPINA + 1 municipality + 1 OEM. Data sovereignty via DSA/GAIA-X.

KPIs:

KPIs: 3 DSAs signed · Membership contracts · Data query latency SLO.

Pilot: Q2 2027 | H2: Full marketplace | H3: GAIA-X federation

P-PLAT-003

Certification-as-a-Service Toolkit

Description:

Quick-to-market, high-margin compliance toolkit. AI Act & R155/R156 evidence packaging.

KPIs:

KPIs: 2 advisory engagements · Compliance playbooks published · Cert pathway documented.

POC Target: Q4 2026 | H1: MVP | H2: SaaS subscription

Enabling Technologies (T-ENAB-001 to T-ENAB-004)

Supporting infrastructure — required but not sufficient alone for product delivery

T-ENAB-001 Data Governance & Federation Stack

TRL: **4** Invest: **Medium** Confidence: **Medium**

Appoint DPO immediately; produce DSA & policy templates by Q3 2026; GAIA-X partner discovery for H2. Without this cross-border data and marketplace are blocked.

T-ENAB-002 Cloud Orchestration & Multi-tenant Compute

TRL: **7** Invest: **Very High** Confidence: **High**

Run orchestration POC with 1 cloud partner by Q2 2027; track cost/run and latency SLOs. This single technology determines SaaS pricing, margins and scalability.

T-ENAB-003 Identity, Access & Security (Zero-Trust)

TRL: **7** Invest: **Medium** Confidence: **High**

Implement baseline security controls for H1 pilots; audit-ready logging for certification evidence. Required for DSAs, customer trust and municipal deployments.

T-ENAB-004 Telemetry Storage & Indexing (Time-series DB)

TRL: **7** Invest: **Medium** Confidence: **High**

Design hot/cold retention tiering and cost-per-GB targets; implement pilot storage pipeline by Q4 2026. Enables evidence replay and analytics products.

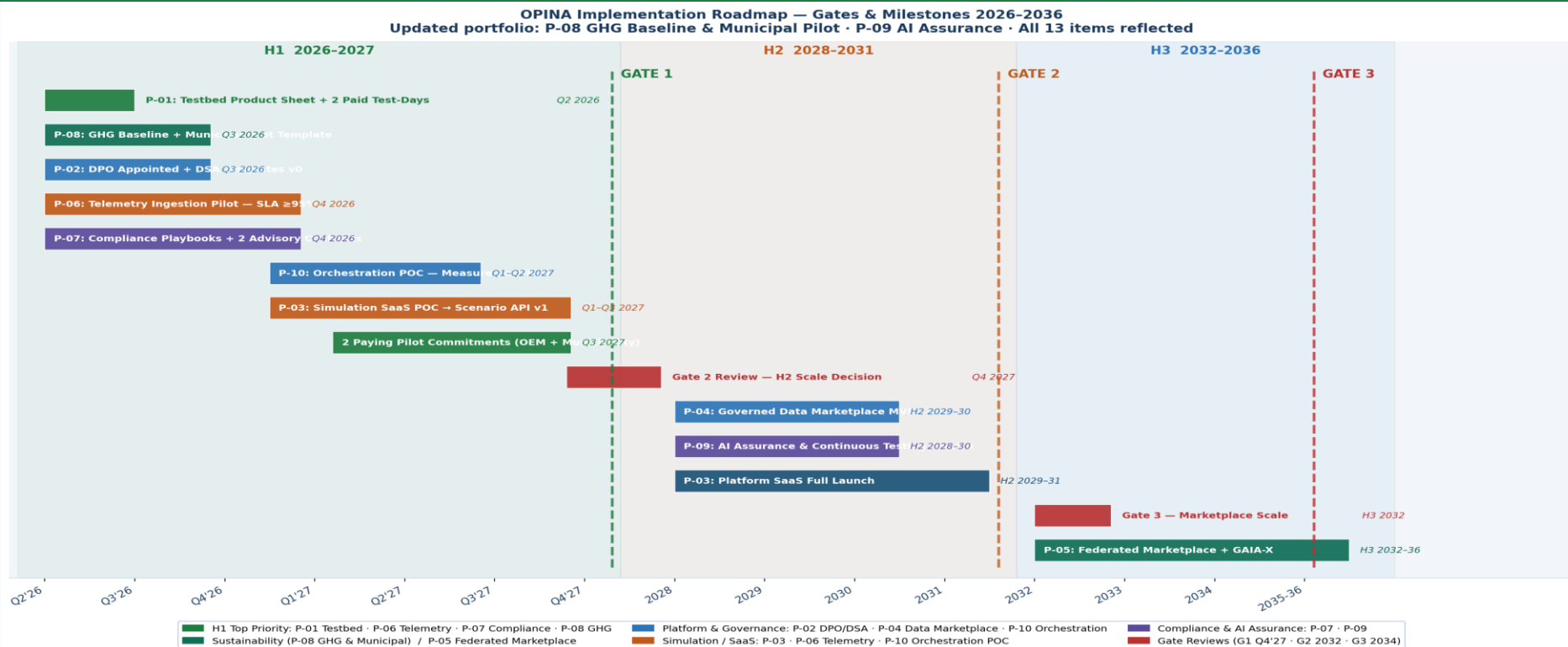
Technology / Product Portfolio — 13 Items Scored & Prioritised

Scoring: Strategic Fit · Value Creation · Tech Feasibility · Investment Intensity · Time to Impact · Risk Level

ID	Product / Service	Strat Fit	Value Creat	Tech Feas	Invest Intens	Time Impact	Risk Level	Horizon	Priority
P-01	Testbed Commercial Package	5	4	5	4↑	5	4	H1	Top Priority
P-02	Certification-as-a-Service Toolkit	5	4	4	5↑	4	4	H1	Top Priority
P-06	Telemetry Ingestion Pipelines	5	4	5	4↑	5	4	H1	Top Priority
P-07	Evidence Packaging & Cert Automation	5	4	4	4↑	4	4	H1	High
P-08	GHG Baseline & Municipal Pilot Template	4	3	5	4↑	5	5	H1	High
P-03	Simulation & Digital Twin SaaS	5	5	3	2↓	3	2	H1→H2	High (POC)
P-10	Compute Orchestration & PaaS	5	5	3	1↓	3	2	H1→H2	High (POC)
P-04	Governed Data Products & Membership	4	4	3	3	2	3	H2→H3	Planned
P-09	AI Assurance & Continuous Testing	4	4	3	3	3	3	H2	Planned
P-11	Synthetic Data Augmentation	3	3	3	3	3	3	H2	Experiment
P-12	Edge Compute for V2X	2	2	4	3	2	3	H2	Watchlist
P-05	Scenario & Data Marketplace	4	5	2	1↓	1	1	H3	H3 Platform
P-13	Web3 Experiments	1	1	2	5	1	1	H3	Experimental

Implementation Roadmap — Gates & Milestones 2026–2036

H1: Foundation · H2: Scale · H3: Federation | Updated: P-08 GHG Baseline & Municipal Pilot + P-09 AI Assurance added



Technology-to-Product Linkage Map

Each technology enables multiple products — T-CORE-002 Telemetry is the most foundational

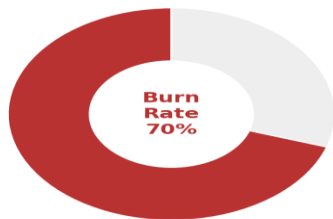
Full Technology × Product Cross-Reference Matrix (● = linked)														
Tech ID	Technology	H1	H1	H1	H1	H1	H1→H2	H1→H2	H2→H3	H2	H2	H2	H3	H3
		P-01	P-02	P-06	P-07	P-08	P-03	P-10	P-04	P-09	P-11	P-12	P-05	P-13
T-CORE-001	Simulation Engines & Scenario Library						●				●			
T-CORE-002	Telemetry Ingestion & Evidence Pipelines	●		●		●								
T-CORE-003	Compliance Evidence & Certification Tooling		●		●					●				
T-ENAB-001	Data Governance & Federation (GAIA-X/DSA)					●			●				●	
T-ENAB-002	Cloud Orchestration & Multi-tenant Compute						●	●				●	●	
T-ENAB-003	Identity, Access & Security (Zero-Trust)	●	●		●					●		●		
T-ENAB-004	Telemetry Storage & Indexing (Time-series DB)	●		●		●	●		●					
P-PLAT-001	Simulation & Digital Twin Platform (SaaS)						●	●			●			
P-PLAT-002	Governed Data Marketplace & Membership Platform								●				●	●
P-PLAT-003	Certification-as-a-Service Toolkit	●	●							●				
Count	Total tech links per product:	4	3	2	2	3	4	2	3	3	2	2	3	1

KPI & Monitoring Dashboard

Executive · Tech-Ops · Commercial · Compliance dashboards with Early Warning Indicators

OPINA V2V KPI & Monitoring Dashboard

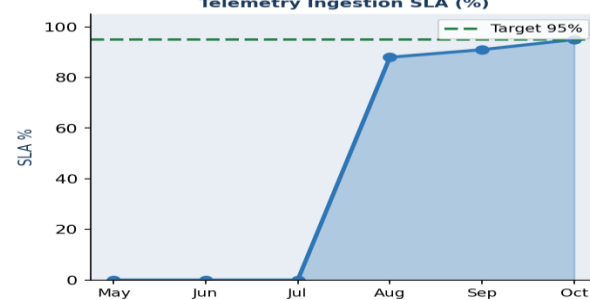
H1 Budget Utilisation



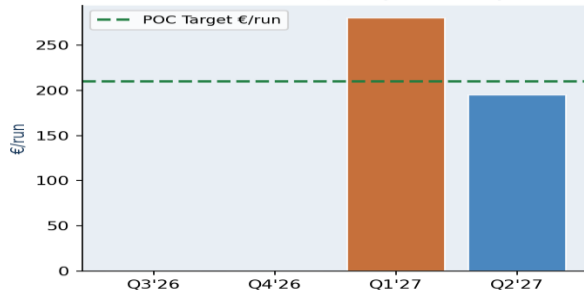
Paid Pilots (Gate 1 Target: ≥ 2)



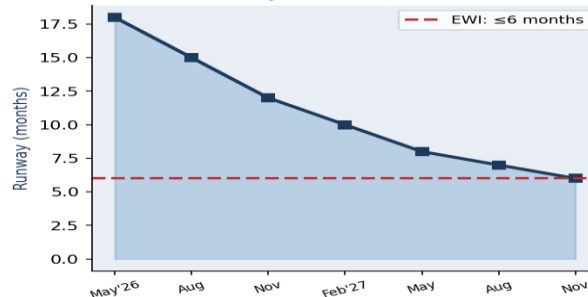
Telemetry Ingestion SLA (%)



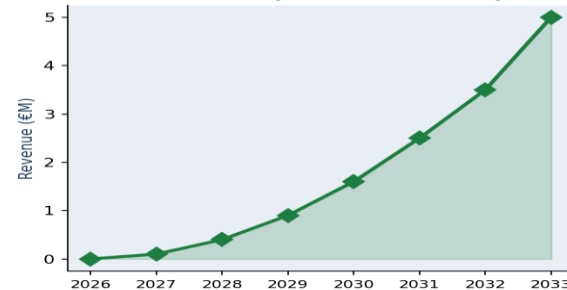
Simulation Cost/Run (Gate 2 KPI)



Runway Forecast (Balanced)



Revenue Ramp — Balanced Pathway



EWI-1: Paid pilots <2 by H1 end → Sales Lead escalation

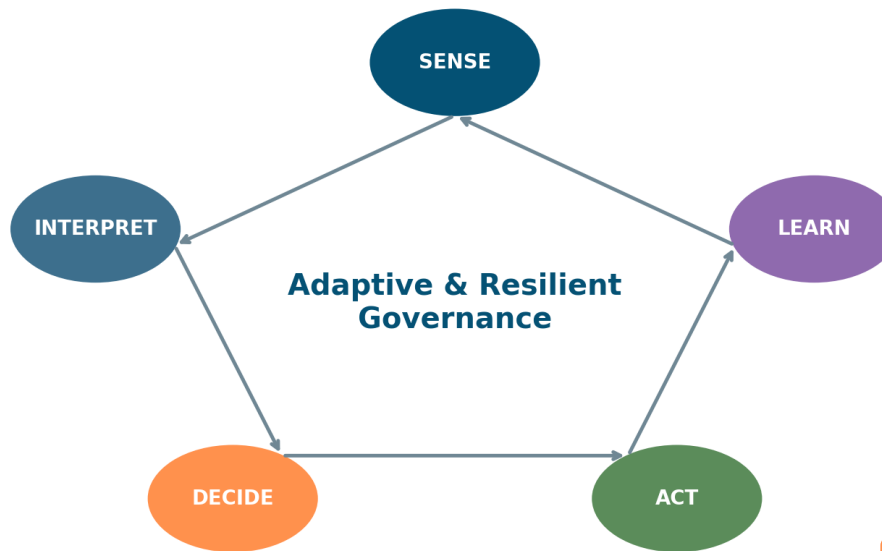
EWI-3: Cost/run >30% breach → CTO + CFO immediate review

EWI-4: Runway ≤ 6 months → CEO/Finance contingency

EWI-5: Ingestion SLA <95% → Hotfix + fallback

Adaptive and Resilient Governance Model

The adaptive operating loop: Sense → Interpret → Decide → Act → Learn

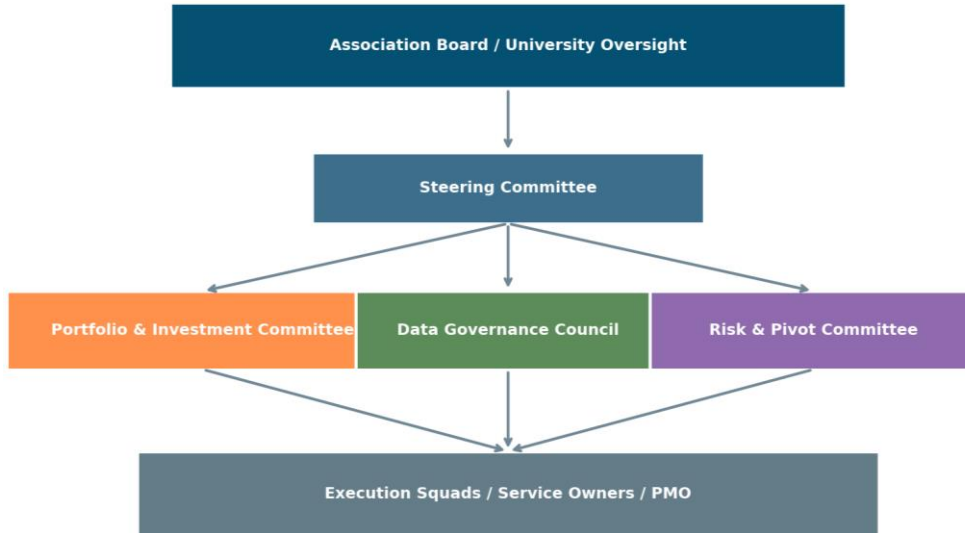


Stage	Main output	Typical cadence
Sense	Validated signal pack	Daily to monthly
Interpret	Interpretation memo	Weekly / monthly / quarterly
Decide	Decision record	Monthly / quarterly / ad hoc
Act	Action plan + backlog	Immediate / weekly
Learn	Learning log + revised roadmap	Monthly / quarterly / annual

Operating principle

No decision should be made without evidence, owner, threshold, decision record and learning feedback.

Governance architecture: decision forums and execution squads



Association Board / University Oversight retains strategic and institutional control.

Steering Committee integrates strategy, performance, assumptions and execution.

PIC, DGC and RPC are specialized decision councils for gates, data and pivots.

Execution squads / service owners / PMO close actions and maintain evidence.

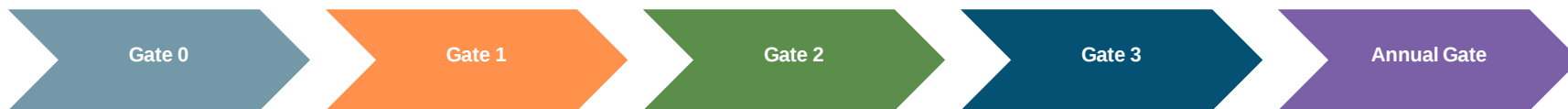
Cluster member interface

Specific Interest Groups and member forums should feed requirements, validation feedback and pilot evidence into the Steering Committee and Portfolio & Investment Committee.

Governance bodies: purpose, outputs and cadence

Body	Purpose	Key output	Cadence
Board / University Oversight	Legal, institutional and strategic oversight	Resolutions, annual envelope, major approvals	Quarterly / ad hoc
Steering Committee	Integrate strategy, assumptions and execution	Monthly decisions and escalations	Monthly
Portfolio & Investment Committee	Evaluate gates and release tranches	Gate decision records	Monthly / gate-based
Data Governance Council	Govern data-sharing, DPIA/DSA and provenance	Data approvals and exception register	Bi-weekly → monthly
Risk & Pivot Committee	Monitor EWIs and activate playbooks	Risk decisions and pivot recommendations	Monthly / emergency
Technical Advisory Board	Independent technical review	Technical assurance and recommendations	Quarterly
Execution Squads / PMO	Deliver work packages and close actions	Backlogs, KPI updates, decision packs	Daily / weekly

Gate framework: from activation to federation and scale



Gate	Purpose	Decision set
Gate 0	Governance activation & intake	Accept to backlog / request minimal evidence
Gate 1	Proof, readiness & early commercial validation	Go / conditional go / pause / service-first / stop
Gate 2	Scale decision	Scale / limited scale / pivot / defer / stop
Gate 3	Federation, accreditation & platform expansion	Expand / partner / license / regionalize / stop
Annual Gate	Portfolio rebalance & strategic re-embedding	Refresh roadmap and annual envelope

Gate 1 operating checklist: stop premature scale

Criterion	Validator	If not met
Privacy/data role assigned; DSA/DPIA workflow approved	DGC	Data-involving initiative cannot proceed
Commercial package documented	Product Owner	Return to preparation
Paid demand evidence	Commercial Lead	Service-first recovery or stop
Telemetry/evidence process reliable	Technology/Ops	Hotfix, partner fallback, conditional hold
Compliance/evidence playbooks ready	Compliance Lead	Conditional approval only after closure
POC economics established	CTO + Finance	Partner-hosted or redesign
Risk and contingency accepted	Risk Owner	Escalate or reject
Decision dossier complete	PMO	No decision until complete

Risk governance: EWIs convert risk into action

Risk	EWI	Immediate response	Pivot if unresolved
Data governance / privacy failure	DPO/DSA/DPIA missing; data incident	Hold data sharing; remediation	Regulatory localization / service-only
Financial runway shortfall	Runway ≤ 6 months	CAPEX freeze; bridge funding; hiring pause	Service-first / portfolio contraction
Compute economics failure	Cost/run $> 30\%$ above forecast	Cloud credits; optimize; fixed-price partner option	Build-to-partner
Telemetry/evidence reliability failure	SLA $< 95\%$; turnaround breach	Hotfix; manual fallback; root-cause	Partner-hosted / scope reduction
Commercial conversion weakness	Pilot-to-paid $< 30\%$	Repackage, reprice, bundle advisory	Product-to-advisory / service-first
Talent/capability shortage	Critical vacancy > 90 days	Contractors, university pipeline, partner support	Outsource / partner

Pre-agreed pivots make resilience executable

Pivot	Trigger	Immediate action
Build-to-Partner	Cost/run or delivery outside target	Stop internal CAPEX; secure partner terms; preserve data/evidence internally
Platform-to-Service-First	Paid proof insufficient or runway critical	Prioritize advisory, testbed, compliance and pilots; defer platform scale
Product-to-Advisory-Bundle	Conversion below threshold	Bundle diagnosis, compliance and validation with subscription path
Controlled Acceleration	Gate evidence strong, funding committed	Advance H2 hiring/investment with capped acceleration tranche
Regulatory Localization	Cross-border obligations block data use	Localize pilots/data flows; use domestic-first compliance route
CAPEX Freeze / Bridge Funding	Runway red or grant delay	Freeze discretionary spend; bridge funding and paid service focus

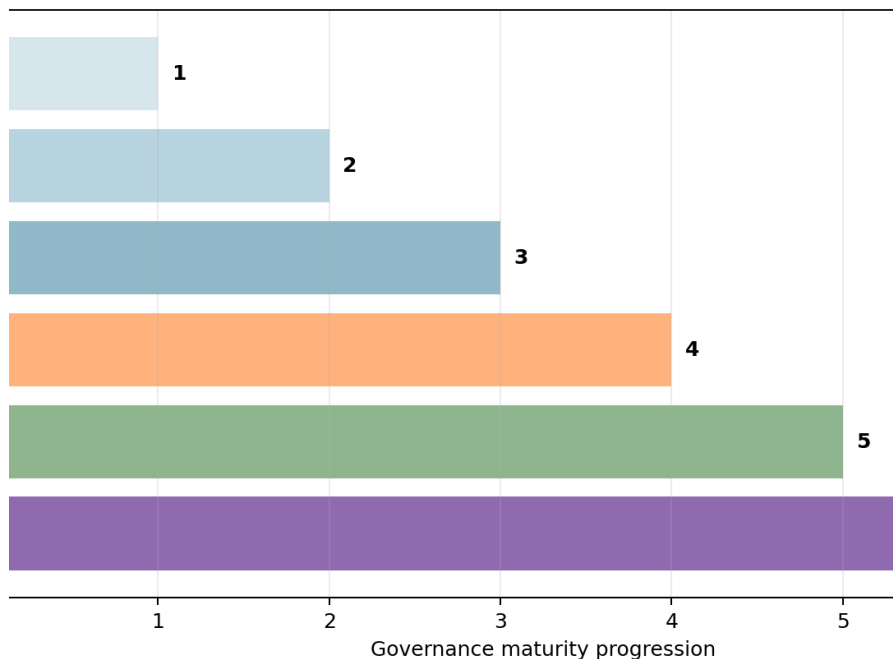
Agile accountability: squads deliver, governance learns

Squad	Mission	Escalation
Gate 1 Execution Squad	Complete near-term evidence and commercial proof	Weekly review → Steering
Data Governance Squad	Operationalize privacy, data sharing and provenance controls	DGC
Telemetry & Evidence Squad	Achieve reliable ingestion and evidence turnaround	Tech-Ops → PIC
Compliance & Advisory Squad	Productize regulatory evidence services	Steering
Commercial/Pilot Squad	Secure paid commitments and validate propositions	PIC / Steering
Risk Response Squad	Run playbooks and recover red EWIs	RPC
Cluster/Member Value Squad	Translate member needs into SIGs and service value	Cluster Forum / Steering

Learning artifacts

Decision log · Assumption log · KPI drift log · Risk playbook log · Lessons repository · Roadmap change log

Governance maturity roadmap: from manual control to AI-assisted adaptation



Level	Exit criteria	Indicative timing
L0 Document-based	Approved governance architecture and evidence inventory	Baseline
L1 Dashboard + manual gates	Two complete review cycles and reliable action closure	0–6 months
L2 Evidence-based gates	Gate decisions repeatable; audit trail complete	6–18 months
L3 Scenario/pivot governance	Evidence-based pathway adjustments with measured outcomes	12–30 months
L4 Digital-twin readiness	Event data, process mining and calibrated processes	18–36 months
L5 AI-assisted governance	AI-supported alerts, scenarios and decision support validated	36+ months

Working Groups on Strategy Development and Governance

Group	Responsibilities	Methodology
Dynamic Strategy Visioning	• PESTLE Analysis • Parametric Future Scenario Development and backcasting • Value stream mapping and analysis • Internal capability analysis • Dynamic SWOT • Vision Statement • Main Strategies and Key Objectives and Results	• Analyse and check the related presentations • Improve and correct • Design next actions
Value Mapping and Synthesis	• Product evolution forecast including emerging technologies • Possible services evolution/revolution • External technology ecosystem including emerging solutions • Technology and value creation navigation plan • Value stream optimization with pivoting points • Key Opportunities Identification with business and technology perspectives	• Analyse and check the related presentations • Improve and correct • Design next actions
Vision to Value	• Core Technologies • Innovation Platforms • Technology/Product Portfolio • Implementation Roadmaps • Resource and Investment Requirement Models • Investment Triggers and Decision Points • Risk and Mitigation Plan • Dynamic Pivoting options	• Analyse and check the related presentations • Improve and correct • Design next actions

Working Groups on Strategy Development and Governance

Group	Responsibilities	Methodology
Adaptive Governance Framework	• Dynamic and Adaptive Governance and Innovation Model • Decision Frameworks • Organization capabilities for adaptive proaction • Mechanisms to learn from technology and market signals • Process for regular refreshment of roadmaps(framework) • Digital Twin Development • Agile teams and accountability frameworks	• Analyse and check the related presentations • Improve and correct • Design next actions

Thank You