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Physical AI: One Robot, Many Rules

Integrated Legal Advisory for Autonomous Systems, Humanoid Robots and Intelligent Machines

The Challenge

A deployed physical AI system engages multiple European regulatory regimes simultaneously – and these regimes interact rather than operate in isolation. From humanoid robots on factory floors to autonomous mobile platforms securing critical infrastructure, physical AI presents a distinct regulatory problem. Every company developing, manufacturing, deploying or investing in these systems faces a convergence of overlapping legal obligations with staggered compliance deadlines – sequencing is a commercial rather than purely legal question.

Our Offering

Simmons & Simmons has assembled a dedicated, multidisciplinary Physical AI practice that navigates the full regulatory landscape for autonomous and AI-enabled machines. We advise developers, manufacturers, deployers and investors across the entire product lifecycle – from design and market access through deployment, data governance and liability allocation.

Physical AI - Six Core Legal Domains: We Provide Holistic Advice

Domain	What We Advise On (example)
AI Regulation	Risk classification, transparency and documentation duties, and conformity assessment for AI-enabled systems – including where AI conformity intersects with product conformity
Data Protection	Legia basis for processing personal data, intra-group data transfers, cross-border data transfers / access to data
Cybersecurity & Resilience	Security-by-design, vulnerability handling, incident detection and notification obligations, and supply-chain component security exposure in a robotics stack; incident reporting, data breach response
Machinery & Market Access	Recast machinery framework for AI-enabled and autonomous equipment, conformity assessment, CE marking, and obligations for non-EU manufacturers including EU-side representation
Data Access & Sharing	Data sharing obligations and access rights to machine-generated, non-personal data, and machine design obligations, data licensing arrangements, advice on trade secret / GDPR handbrake
Liability	Strict product-liability versus fault-based claims for self-learning systems, liability allocation across the value chain, and evidential requirements for logging, traceability and defensibility

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Phyiscal AI -- Additional Legal Specialist Capabilities We Offer, e.g.

- **Sector overlays** – industry-specific compliance for life sciences (Medical Device Regulation), manufacturing, automotive, and logistics
- **Private equity investments** – buy-side and sell-side due diligence for Physical AI transactions
- **IP rights** – design, trademark and copyright protection for robotic systems and AI-generated outputs
- **Commercial contracts** – drafting & negotiation customer as well as supplier agreements
- **Customs –** ensuring that CE marking complies with national customs - requirements

How We Work With You (Examples)

Service	Description
Regulatory Landscape Mapping	Comprehensive assessment of every applicable regime for your specific product and deployment scenario
Classification Workshops	Scoped classification workshops to determine your risk category and compliance obligations under the EU AI Act
Market-Access Readiness	Practical route-to-market planning: conformity assessment, technical documentation, CE marking and notified body strategy
Liability & Contractual Structuring	Allocation of liability between developer, manufacturer, deployer and component supplier – and identification of where contracts can and cannot shift it
Investment Due Diligence	Regulatory and risk assessment for private equity and venture capital investments in Physical AI companies
Incident Readiness	Incident detection, response and notification planning, including where multiple regimes require parallel reporting
Deployment Agreements	Contracting for data rights, security obligations and liability in deployment agreements
Disputes	Advise on legal disputes – both arbitration and regular court proceedings.

Physical AI

Why Simmons & Simmons

- **Integrated, not siloed**. We map which regimes a deployed physical AI system engages and how they interact – delivering a single, coordinated compliance strategy rather than piecemeal advice across separate practice areas.
- **Pan-European and transatlantic reach**. We advise non-EU manufacturers as well as mode providers on what they must have in place.
- **Commercially focused**. We reframe regulation as risk allocation, advising boards, compliance teams and investors alike on how to turn regulatory complexity into competitive advantage.
- **Sector depth**. We identify sector-specific regimes layering over the general framework – in manufacturing, automotive and logistics – and show how sector rules alter the compliance analysis rather than simply adding to it.

Our Team

Our Physical AI practice brings together specialists from across the firm's technology, regulatory, IP, data, disputes and corporate teams, led by:

- Christopher Goetz and Minesh Tanna – Practice leads

- Supported by a deep bench including experts in AI regulation, data protection, cybersecurity, machinery safety, product liability, IP rights, and private equity

Get in touch

Physical AI is moving from laboratory to deployment. The regulatory framework is live and the compliance deadlines are near. Whether you are bringing a humanoid robot to the EU market, deploying autonomous systems in your operations, or investing in the next generation of robotics companies – we are ready to help you navigate the rulebook convergence.

Contact: Christopher Goetz | Simmons & Simmons

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