



RUNNING CASE

After the **ACF-11** governance audit of 09/30/2027, rated 3.1 out of 5, **Rhena** checks that accountability for the “ANNA” agent holds at design time and not only in litigation. Review led by **Dr Katrin Ostermann** (DDAO).

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1 DOCTRINAL LINEAGE

Responsibility-by-design (Frank Pasquale, *New Laws of Robotics*, Harvard, 2020) extends two established principles of responsible design:

CONCEPT	ORIGIN	LEGAL FRAMEWORK
Privacy by Design	Ann Cavoukian (Canada, 1995)	GDPR art. 25 (2018)
Security by Design	NIST · OWASP (2000s)	ISO 27001 · NIS2
Responsibility by Design	Frank Pasquale (Harvard, 2020)	AI Act art. 9 & 14 · DORA art. 5-8

2 THE FIVE OPERATIONAL PILLARS

IDENTIFICATION

Creators, controllers and owners publicly identifiable · an enforceable chain of accountability.

AUDIT LOGS

Append-only, timestamped and signed records · impossible for the operator to erase.

REDRESS

Users can always challenge decisions before a named human · timeframe and process defined in the code.

ANTICIPATION

Ex-ante mapping of drift scenarios : controls embedded in design, not bolted on post-incident.

REVERSIBILITY

Capability to disable, correct or withdraw the system : organizational and temporal cost defined upfront.



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An insurer does not get to choose its pillar 3: the Ombudsmann's decision binds it up to €10,000 and § 14 VVG sets the deadline. Redress is therefore the best-held pillar, and it owes nothing to the project.

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3 INTEGRATION WITH THE ACF TOOLKIT

Responsibility-by-design does not create an isolated mechanism · it **integrates** the toolkit's existing cards within a unified and enforceable framework:

PILLAR	ACF CARDS MOBILIZED	OPERATIONAL PRACTICE
Identification	ACF-04 · ACF-13	4 accountable signatures (business, technical, compliance, DDAO · Delegated Decision Agent Officer)
Audit Logs	ACF-09	Agentic Decision Register · append-only, timestamped, signed
Redress	ACF-06 · ACF-10	Review procedure + documented corrective action plan
Anticipation	ACF-03 · ACF-12	Criticality matrix + agentic risk assessment
Reversibility	ACF-07	Kill switch - 5-step shutdown procedure with defined SLA

4 ≡ PASQUALE'S FOUR LAWS · DOCTRINAL RECAP

NEW LAWS OF ROBOTICS · HARVARD, 2020

- 1 AI must **COMPLEMENT** professionals, not replace them.
- 2 AI must not **COUNTERFEIT HUMANITY** · no agent passing itself off as a human.
- 3 AI must not **INTENSIFY ZERO-SUM ARMS RACES**.
- 4 AI must always **DISCLOSE THE IDENTITY** of its creators, controllers and owners.

The **4th law** directly grounds the **Identification** pillar: without transparency on accountable parties, no chain of responsibility is enforceable. It is the foundation of all responsibility-by-design.



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SELF-ASSESSMENT CHECKLIST

Self-assessment carried out on 10/15/2027 by Dr Katrin Ostermann (DDAO) with Bernd Kessler (claims) and Andreas Voll (systems). **The pillars inherited from insurance law hold on their own; the one Rhena had to build is the one that is missing.**

QUESTION	YES	PART.	NO
PILLAR 1 · IDENTIFICATION			
Does the system publicly disclose its creators, controllers and owners?	☒	☐	☐
Are the accountable parties legally enforceable (4 ACF-04 Constitution signatures)?	☒	☐	☐
PILLAR 2 · AUDIT LOGS			
Are decisions traced in an append-only and signed register (ACF-09)?	☒	☐	☐
Can the system operator modify or erase these records? (<i>expected answer: NO</i>)	☐	☐	☒
PILLAR 3 · REDRESS			
Can the user challenge a decision before a named human?	☒	☐	☐
Are the timeframe and redress process defined from inception?	☒	☐	☐
PILLAR 4 · ANTICIPATION			
Have drift scenarios been mapped ex-ante (ACF-03 + ACF-12)?	☐	☐	☒
Are countermeasures embedded in the design, not bolted on post-incident?	☐	☒	☐
PILLAR 5 · REVERSIBILITY			
Does a Kill switch (ACF-07) exist and is it tested periodically?	☒	☐	☐
Are the organizational and temporal costs of rollback documented?	☐	☒	☐

Verdict. Not compliant on pillar 4. On 11 March the depreciation schedule moved from the 2026 edition to the 2027 edition with the change recorded nowhere: 430 files computed on the old grid, €180 apart each, €77,400 put right. No risk map carried “a third-party reference changes version without notice”, because it only looked at the agent. **ACF-10 plan:** R1 opened in ACF-12, schedule version logged since 03/31/2027, 4-week notice imposed on the vendor.



6 BEST PRACTICES & WARNING SIGNS

✓ BEST PRACTICES

- ✓ Have the ACF-04 Constitution signed by 4 named accountable parties
- ✓ Weekly audit of the ACF-09 Register for 90 days post-deployment
- ✓ Quarterly Kill switch testing (ACF-07) with report to the Board
- ✓ Documented redress pathway accessible within the product
- ✓ Update the ACF-12 risk assessment at every major evolution

⚠ WARNING SIGNS

- ! DDAO role combined with AI product owner (conflict of loyalty)
- ! Logs auditable only by the operator (breaks Pillar 2)
- ! Redress only buried in the T&Cs, not within the product
- ! Anticipation treated as a formality rather than as design
- ! Kill switch never tested · fictional practice, not enforceable

7 THE DDAO'S ROLE IN RBD

The **DDAO** organizationally embodies responsibility-by-design. They uphold the 5 pillars as non-negotiable requirements and hold a **reasoned right of objection** over any deployment that fails to meet them. Their reporting line preserves their independence.

RBD PILLAR	CONCRETE DDAO ACTION
1 · Identification	Verifies that the ACF-04 Constitution and the ACF-13 Mandate are signed before any deployment.
2 · Audit Logs	Audits the ACF-09 Register monthly : detects anomalies, suspends operations if needed.
3 · Redress	Safeguards the user challenge procedure and personally handles escalations.
4 · Anticipation	Validates the ACF-03 criticality matrix and the ACF-12 risk assessment ex-ante.
5 · Reversibility	Tests the ACF-07 Kill switch quarterly and reports to the Board or Audit Committee.



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The cost of rollback is quantified for Europe, where the stop takes 3 minutes, and not yet for the US subsidiary, where it takes 43.

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VALIDATION & SIGNATURES

ROLE	NAME	DATE	SIGNATURE
Business lead	Bernd Kessler - Head of claims	10/15/2027	B. Kessler
Technical lead	Andreas Voll - Head of systems	10/15/2027	A. Voll
Compliance Officer	Sofia Lindqvist - Group DPO	10/15/2027	S. Lindqvist
DDAO	Dr Katrin Ostermann - Head of compliance	10/15/2027	K. Ostermann

Related cards : ACF-03 Criticality matrix · ACF-04 Agentic Constitution · ACF-06 Supervision & governance · ACF-07 Kill switch · ACF-09 Agentic Decision Register · ACF-10 Action plan & improvement · ACF-12 Agentic risk assessment · ACF-13 Agent Mandate.

"Regulators are going to have to demand responsibility by design. That will entail mandating certain audit logs to be hardcoded, or licensing practices that explicitly contemplate problematic outcomes."

· Frank Pasquale, *New Laws of Robotics*, Harvard, 2020