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(57) Abstract :

A privacy-enhanced data backup system (100) integrates a context-aware encryption engine (102), metadata sanitization unit (103), and AI-driven anomaly detection engine (108) for secure and intelligent data protection. Data is encrypted based on sensitivity, anonymized, and monitored in real time for abnormal activities. The system ensures privacy, integrity, and early threat mitigation during backup operations, with alerting mechanisms (109) and audit trails enhancing transparency and compliance.

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