

Revisiting Trust Management in the Data Economy: A Roadmap Supplemental Material

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The following table extends Table 1 in the original manuscript pointing to the related work in the field.

Research direction	Challenge	Shortage	Timeline	Preliminary Works	Related techniques
RD1: Requirements	C1.1: Multi-party data sharing	S1, S2	Short	[28, 36, 40, 47]	Role-based access control, encryption, QoS
	C2.1: Trustworthiness	S2, S3	Short	[3, 7, 11, 13, 14, 15, 18, 21, 23, 31, 34, 41, 46]	Service selection and composition, SLAs, identity management, authorization protocols
	C2.3: Derivation	S1, S2, S3	Medium	[4, 10, 33, 39, 42, 43]	Trust scores and reputation, certifications
RD2: Protocol	C1.2: Non-binary outcome	S1	Short	[12, 25, 27]	Partial trust, incremental trust, trust building
	C3.1: Flexible execution	S4	Short	[20, 35, 37]	Credentials exchange, SLAs, trustworthiness and risk assessment, privacy
	C3.2: Best-effort solution	S1	Short	[2, 9, 19, 32, 45]	Multi-criteria decision analysis, adaptive trust negotiation and management, risk-adaptive access control
RD3: History	C1.3: Decentralized environment	S4	Short	[1]	Cyber-physical systems interaction, decentralized trust management
	C4.2: History-based trust	S3	Medium	[22]	Behavior prediction, version control
	C4.3: Management of historical interactions	S3, S4	Medium	[6, 24, 30, 48]	Blockchain, Bayesian inference
RD4: Conflicts	C3.2: Best-effort solution	S1	Short	[32, 45]	Multi-Criteria Decision Analysis
	C3.3: Conflict resolution	S1, S3	Medium, Long	[17, 26]	Policy reconciliation and negotiation, (AI-based) conflict resolution
	C4.1: Reliability	S3, S4	Medium, Long	[6, 8, 16, 24, 29, 30, 38, 48]	Version control, blockchain, consensus
RD5: Assurance	C2.2: Secure management	S1, S4	Short, Medium, Long	[4, 5, 17, 44]	Credential management, Consensus mechanism, selective release, certification, risk management
	C2.3: Derivation	S1, S2, S3	Medium	[4, 10, 33, 39, 42, 43]	Trust scores and reputation, certifications

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