

Blockchain for Democratic Justice: Innovating the Service of Judicial Documents to Uphold the Rule of Law: Open Review

Ioannis Revolidis,^{*} Marica Ciantar,[†] Joshua Ellul[‡]

Reviewers: Reviewer A, Reviewer B

Abstract. The final version of the paper “Blockchain for Democratic Justice: Innovating the Service of Judicial Documents to Uphold the Rule of Law” can be found in Ledger Vol. 10 (2025) 77-94, DOI 10.5195/LEDGER.2025.392. There were two reviewers involved in the review process, neither of whom has requested to waive their anonymity at present, and are thus listed as Reviewers A and B. After initial review by Reviewers A and B, the submission was returned to the authors with feedback for revision (1A). The authors resubmitted their work and responded to reviewer comments (1B). These changes were accepted by the editors, thus ending the peer-review process. Author responses have been bulleted for reader clarity.

1A. First Round of Review

Reviewer A

Does this paper represent a novel contribution to cryptocurrency or blockchain scholarship?

Yes, incremental contribution(s)

Please briefly explain why you think the paper makes or does not make a novel contribution.

The paper addresses some of the most challenging legal aspects related to the use of blockchain to protect and exchange legal documents

^{*} I.Revolidis (ioannis.revolidis@um.edu.mt) is a resident academic within the Faculty of Laws and the Centre for DLT at the University of Malta, Malta.

[†] M.Ciantar (marica.ciantar.17@um.edu.mt) is an MSc graduate in Blockchain and Distributed Ledger Technologies from the University of Malta’s Centre for DLT and an Independent Legal Practitioner.

[‡] J.Ellul (joshua.ellul@um.edu.mt) is an Associate Professor within the Department of Computer Science and the Centre for DLT at the University of Malta, Malta.

Is the research framed within its scholarly context and does the paper cite appropriate prior works?

Yes

Please assess the article's level of academic rigor.

Good (not excellent but a long way from poor)

Please assess the article's quality of presentation.

Excellent (the motivation for the work is clear, the prose is fluid and correct grammar is used, the main ideas are communicated concisely, and highly-technical details are relegated to appendixes).

How does the quality of this paper compare to other papers in this field?

The paper ranks highly but it may not be among the most authoritative references in the field.

Please provide your free-form review for the author in this section.

From my point of view, this paper is of high interest for the scholars and practitioners involved in the creation of cross-national judiciary frameworks. The paper is very well organized and it favours an easy read and understanding of the underpinnings involved in the proper collaboration between different jurisdictions involved in the evaluation of legal and liability documents. The paper is also very useful to bear digitalisation in the judicial system.

Maybe it would be useful if the authors comment on some of the current limitations of blockchain and distributed ledger as qualified trust service:

<https://dl.gi.de/server/api/core/bitstreams/bc6c9e3f-caee-4961-8477-5a5d71bca181/content>

In this regard, it would be also advisable to comment on the lack of standards for incident response for distributed ledger technologies. This comment could discuss some of the limitations of ISO/IEC 27001 and ISO/IEC 27035 in regards to DLT and its certification/validation as qualified trust service.

Reviewer B

Does this paper represent a novel contribution to cryptocurrency or blockchain scholarship?

Yes, important contribution(s)

Please briefly explain why you think the paper makes or does not make a novel contribution.

Yes, the paper makes a novel contribution by exploring the use of blockchain technology for the service of documents in the framework of the Service Recast Regulation.

Is the research framed within its scholarly context and does the paper cite appropriate prior works?

Yes

Please assess the article's level of academic rigor.

Good (not excellent but a long way from poor)

Please assess the article's quality of presentation.

Good (not excellent but a long way from poor)

How does the quality of this paper compare to other papers in this field?

This is a good or average paper.

Please provide your free-form review for the author in this section.

The level of the paper is good; there are some language issues that can be easily addressed. This should not be problematic for the authors.

The analysis is interesting but there are some additional points that it would be desirable to reflect on and that would further improve the paper. Subsection 3.2 is a bit too thin; some effort should be made by the authors to further develop it in view also of the implementation regulations for the EUDIW.

I will upload a copy of the article with punctual comments in the text of the paper.

[Editor's note: See 1B for compiled comments and responses from the authors]

1B. Author Response to First Round of Review

Reviewer B

Marked passage (p.2): “which traditionally protects the procedural rights of EU citizens”
Reviewer comment: “not convinced this is the most appropriate formulation; it is not only EU citizens but any person resident in the EU regardless of the citizenship”

- Text rephrased as follows: “which traditionally protects the procedural rights of litigant parties in cross-border proceedings within the common judicial area” the new wording adopts a more neutral tone and mentions litigant parties without specifying their nationality or country of origin

Marked passage (p.3): “The most traditional method of service” Reviewer comment: “not most desirable formulation; better it could be identified as one of the most often used method/traditional method of service or some similar formulation”

- Text rephrased as follows: “The traditional method of service” the suggestion of the reviewer was adopted

Marked passage (p.5): “is only permissible if electronic service is provided for under the national procedural law of the Member State of the person or authority responsible for such Service” Reviewer comment: “forum Member State” is the terminology used by the regulation; it may be that the person who is responsible to carry out the service is not resident in the forum Member State (this can be the case in Member States where the claimant has the duty to serve the documents in order to initiate court procedures, but the claimant is resident of another Member State).

- Text rephrased as follows: “is only permissible if electronic service is provided for under the national procedural law of the Member State of the forum where proceedings have been initiated by the person or authority responsible for such service” The revised formulation enhances clarity and appropriately addresses the reviewer's valid comment regarding the precision of the sentence. With this revision, the text explicitly refers to the national procedural law of the Member State where proceedings have been initiated. This clarification ensures that Article 19 is interpreted in a manner that does not reference the forum of the party responsible for service. As the reviewer rightly pointed out, the claimant's home Member State and the Member State where proceedings have been initiated may not necessarily be the same.

Marked passage (p.6): “Despite these assurances, QERDS face strong limitations, especially if the goal is to expand and popularise electronic service methods. They are not accessible on an EU-wide basis, as most QERDS providers operate locally within specific Member States, limiting their usefulness in cross-border situations. Additionally, QERDS have a limited user base, which undermines their viability. Experience in certain Member States shows that they have generally failed to attract enough interest to remain a viable option.³¹ Reviewer comment: “possibly to verify QERDS providers certification is in line with eIDAS as well as verifying the trust services in the EU via the EU Trust Services Dashboard. Practitioners in EU MS are being trained by the EJTN for example to work with digital developments, including the recast of eIDAS Reviewer comment: “efforts are made to change this considering that from May 2025 electronic transmission of documents between authorities will be mandatory and will involve the e-CODEX system”

- Text rephrased as follows: “Despite these assurances, QERDS face strong limitations, especially if the goal is to expand and popularise electronic service methods. Despite

the fact that QERDS providers can obtain a trusted service certification in line with the eIDAS Regulation, they are not accessible on an EU-wide basis, as most QERDS providers operate locally within specific Member States, limiting their usefulness in cross-border situations.³¹ Additionally, QERDS have a limited user base, which undermines their viability. Experience in certain Member States shows that they have generally failed to attract enough interest to remain a viable option.³² While this trend may change in the long term—particularly as broader EU initiatives in the digitisation of justice advance, including the ongoing training of legal professionals on digital solutions—the current limitations of QERDS make them a rather impractical option.” The revised formulation adopts a more neutral tone while still advocating for a solution beyond QERDS. Additionally, endnote 31 provides further evidence supporting the argument made in the main text by highlighting the current limitations in the adoption of QERDS.

Marked text (p.7): “judicial documents” Reviewer comment: “It would be good to clarify which forms would need to be provided with the documents that have to be served and the information that the addressee should receive in order to know whether he/she should accept or refuse the service

- Text rephrased as follows: “judicial documents and other necessary forms” The new formulation reflects more the reality of having to provide the addressee certain necessary forms next to the documents to be served. In addition, endnote 37 was added to provide more context with regards to the right of refusal and thus complement the main text and explain what the necessary forms are

Marked text (p.7): “of the address” Reviewer comment: “addressee”

- Typo corrected; text changed from “address” to “addressee” as noted by the reviewer

Marked text (p.7): “the email address input by the person responsible for service”
Reviewer comment: “There seems to be a formulation issue here”

- Text rephrased as follows: “the email address provided by the party responsible for service” The new formulation improves clarity and adopts the “party responsible for service” terminology to reflect the term used in the text of the Recast Service Regulation

Marked text (p.9): “could fake the event” Reviewer comment: give some example

- Text rephrased as follows: “It is important to note that the platform provider could attempt to fake the event that the addressee has requested the consent form and still write the log onto a blockchain” The new formulation specifies the event to be faked for more clarity, as suggested by the reviewer

Marked Text (p.9): “gas” Reviewer comment: “explain the terminology, not all readers might be familiar with its meaning”

- Text rephrases as follows: “When users interact with blockchain systems, they are (on most platforms) required to pay for that interaction — this payment is referred to as ‘gas’ in the blockchain domain.³⁸” In addition, footnote 38 was added to explain the notion of “gas” in more detail

Marked Text (p.9): “log to be paid by the platform and not by the addressee” Reviewer comment: “explain why this is; your readers may not be familiar with these technology arrangements”

- Text rephrased as follows: “to be paid by the platform and not by the addressee — since paying for gas may be non-trivial for non-crypto natives as it involves: (i) setting up a cryptocurrency wallet; (ii) purchasing cryptocurrency; (iii) transferring the purchased cryptocurrency to the wallet; and (iv) interacting with the platform in question whilst making use of the wallet (typically through a browser extension).” The new formulation provides a full explanation of why the platform is a more suitable stakeholder for the payment of gas fees

Marked Text (p.9): “addressee withdraws the gas fees” Reviewer comment: “what would that mean in terms of the steps that you describe in Figure 1?”

- Text rephrased as follows: “they may withdraw the gas fees if a private key containing the said gas fees is exposed, however in and of itself that may be supporting evidence that the addressee has viewed the webpage in question — though the addressee may argue that they were not responsible for withdrawing the said fees (yet again corroboration through IP logs could be sought)” The new formulation offers more background and explanation

Marked Text (p.9): “such as IOTA (which is implemented as a distributed acyclic graph)” Reviewer comment: Explain this for readers that are not specialist in Blockchain

- Endnote 40 added, offering a clear explanation of directed acyclic graphs and how they improve scalability and speed, while lowering transaction costs for the non-expert reader

Marked Text (p.9): “salt” Reviewer comment: “explain the terminology for readers that are not specialists in blockchain”

- Text rephrased as follows: “salt (i.e. random data added to input data used to make it harder to decipher the input data)” The new version of the text adds a short and simple explanation of the term “salt” for the non-expert reader

Marked Text (p.10): “addressee accepts or refuses the judicial documents (as is their legal right)” Reviewer comment: “would be good to reflect here also on the information that has to be provided to the addressee in order to guarantee that the acceptance or refusal is in line with the requirements of the Service Recast Regulation in terms of forms used and

information that the addressee has to receive in order to exercise his/her right to accept/refuse”

- Endnote 43 added; the endnote specifies how form L of the Recast Service Regulation will be made available to the addressee via the platform

Marked Text (p.10): “if they originally accept the judicial documents and then claim that they never did” Reviewer comment: you could also have situations in which the addressee accepts the judicial document but then decides to refuse them for language reasons; the addressee can do this within a period of 2 weeks. It would be good to address this situation as well; how would the system work in this case.

- A new paragraph before the one where the marked text is located was added. The new paragraph reads as follows: “As per the \textit{addressee}'s right of refusal according to Article 12 of the Recast Service of Documents Regulation, the \textit{addressee} may, after downloading the documents, choose to refuse them on linguistic grounds (as per Article 12) either at the time of service or promptly there after, but in any case, no later than two weeks after service has been effected via the platform. The proposed system will also allow for the exercise of the right of refusal within two weeks of service being effected and will register logs on the blockchain when such refusals are initiated.” The new paragraph and the accompanying end note 44, now take into account a possible refusal on linguistic grounds as suggested by the reviewer

Marked Text (p.10): “hem” Reviewer comment: One additional point to consider is how would the court have access to all the information of the platform; how would this information be delivered to the court and how would the court need to store this information in a case file; are there any technical considerations that should be made/be aware of?

- New subsection 3.2 titled “ Court access to logs generated” added. The section discusses in detail the various technical ways that can ensure easy and efficient access of the court to the service logs created by the platform

Marked Text (p.10): “3.2 Augmentation” Reviewer comment: it would be good to expend (sic) a bit the analysis here on how could this work with the platforms providing the blockchained service; this sub-section’s analysis is too thin

- New subsection 3.3 titled “Augmentation with Supra/National Infrastructure” added. The new subsection expands, as suggested by the reviewer, more on how the EU Digital Identity Wallet can ensure identification and authentication of the interactions of the addressee with the platform



Pitt Open
Library
Publishing

Ledger is published by Pitt Open Library Publishing, an imprint of the University Library System, University of Pittsburgh. Articles in the journal are licensed under a Creative Commons Attribution 4.0 License.