

# GreX: A Decentralized Hive Mind: Open Review

Authors: Alex Khawalid,<sup>†</sup> Dan Acristinii,<sup>‡</sup> Hans van Toor,<sup>§</sup>  
Eduardo Castelló Ferrer,<sup>¶</sup>

Reviewer: Reviewer A

**Abstract.** The final version of the paper “GreX: A Decentralized Hive Mind” can be found in Ledger Vol. 4, S1 (2019) 42-55, DOI 10.5915/LEDGER.2019.176. There was one reviewer involved in the review process, who has not requested to waive their anonymity at present, and is thus listed as Reviewer A. After initial review (1A), the author submitted a revised submission and response (1B) after which the editors determined that the author had adequately addressed the reviewer concerns, completing the peer-review process. Authors’ responses are in bullet form.

## 1A. Review

### Reviewer A:

This paper introduces GREX: a decentralized mind. The paper introduces several technical challenges of the combination between swarm robotic systems (SR) and distributed ledger technologies (DLT). The paper then focuses on one of these challenges (number 5): implementation of a SR with a DLT. One of the main differences with previous works and this research is the implementation of BigChainDB as the main blockchain solution (instead of Ethereum).

This reviewer thinks this manuscript is new and interesting. Definitely, relevant for the Symposium. However, this paper does not show any meaningful results about their proposed application. Authors just state that their experiments were successful. However, in a scientific publication graphs, tables and other material need to accompany and illustrate the experiments. It is crucial that authors conduct real-world experiments or simulations about the proposed approach and through tuning several parameters (number of agents, number of

---

<sup>†</sup> A. Khawalid (alex@kryha.io) is a blockchain engineer at Kryha, in Amsterdam, Netherlands: <https://kryha.io>.

<sup>‡</sup> D. Acristinii (dan@kryha.io) is head of research and development at Kryha.

<sup>§</sup> H. van Toor (hans@tesnetwork.io) is the founder of TES Network, in Amsterdam, Netherlands: <https://tesnetwork.io>.

<sup>¶</sup> E. Castelló Ferrer (ecstll@media.mit.edu) is post-doctoral researcher at MIT Media Lab, MIT, Cambridge, USA.

transactions, speed of transactions, etc.) they illustrate the behavior of their proposed system. In addition, the paper needs to remove the colloquial language used, for instance, “it would be interesting to find out how ...” is not appropriate for a scientific paper. Please refer to mainstream publications in the field of SR and DLT (IEEE, ACM, etc.) and see how they write introductions, methodologies, results, discussions, etc. My final recommendation is to accept this manuscript once authors have fixed all the points mentioned previously.

## 1B. Authors’ Response

### Reviewer A:

This paper introduces GREX: a decentralized mind. The paper introduces several technical challenges of the combination between swarm robotic systems (SR) and distributed ledger technologies (DLT). The paper then focuses on one of these challenges (number 5): implementation of a SR with a DLT. One of the main differences with previous works and this research is the implementation of BigChainDB as the main blockchain solution (instead of Ethereum).

This reviewer thinks this manuscript is new and interesting. Definitely, relevant for the Symposium. However, this paper does not show any meaningful results about their proposed application. Authors just state that their experiments were successful. However, in a scientific publication graphs, tables and other material need to accompany and illustrate the experiments. It is crucial that authors conduct real-world experiments or simulations about the proposed approach and through tuning several parameters (number of agents, number of transactions, speed of transactions, *etc.*) they illustrate the behavior of their proposed system. In addition, the paper needs to remove the colloquial language used, for instance, “it would be interesting to find out how ...” is not appropriate for a scientific paper. Please refer to mainstream publications in the field of SR and DLT (IEEE, ACM, etc.) and see how they write introductions, methodologies, results, discussions, etc. My final recommendation is to accept this manuscript once authors have fixed all the points mentioned previously.

- The authors have reviewed mainstream publications in the field of SR and DLT (IEEE, ACM, *etc.*). In response,
  - The authors have changed and/or removed the colloquial language where needed.
  - The authors have adjusted the order of 2. Relevant Research and 3. Method to improve the structure and readability of the overall paper.
- The following results have been generated, added and discussed,
  - Data showing the maximum rate at which transactions per second (tx / s) occurred during the experiment, varying the number of agents. These results were obtained from the simulated configuration.

- Data showing the time to converge to the objective from the moment they were initialized, varying the number of agents. These results were obtained from the simulated configuration.
- Data showing a comparison between the time the agents took to converge on the simulated configuration and the real configuration.



Articles in this journal are licensed under a Creative Commons Attribution 4.0 License.

Ledger is published by the University Library System of the University of Pittsburgh as part of its D-Scribe Digital Publishing Program and is cosponsored by the University of Pittsburgh Press.