Natural Hazards
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Discussions

Interactive comment on "USAR simulation system: presenting spatial strategies in agents' task allocation under uncertainties" *by* Navid Hooshangi et al.

Anonymous Referee #1

Received and published: 20 November 2020

Dear Editor Thank you so much for considering me to review the mentioned article

This paper proposes an agent-based simulation model to investigate uncertainty in tasks allocations in urban search and rescue (USAR) operation. The paper has an interesting and relevant topic to this journal. Although, the paper provides a clear image of the performed research and has a sound experimental work, my concern lays in its profession English writing even by a large effort that went into this study. It is believed by this reviewer that the manuscript deserves publication once the following minor comments are observed.

1- The innovation of the article should be explicitly stated in the abstract, as well as in

the introduction, the volume of the article can be reduced by deleting the general and repetitive sentences.

2- In the abstract, the numerical results should be expressed as percentages to make them more understandable.

3- Authors are requested to elaborate on how their proposed method can be used in the real disaster environment? Do rescuers need to use mobile phones and tablets as an assistant agent?

4- In the text, either uses the word reallocation or replanning.

5- State the references used for the following sentence or argue on its reasons.

"Methods such as simulated annealing (SA) and the ant colony optimization algorithm cannot find a global optimization of the problem and provide local solutions instead."

6- In the implemented method, express what happened if a task is not executed, are the new values definitely considered or re-entered into the cycle with uncertainty?

7- State the units used in Equation 1 for distance, etc.

8- More explanation of Figure 3 is needed.

9- How did you create the real numbers in step 5 of the proposed method? Discuss more.

10- Correct Equations numbering.! Equation 1 exists in two parts.

Please also note the supplement to this comment:
https://nhess.copernicus.org/preprints/nhess-2020-277/nhess-2020-277-RC1-supplement.pdf