Author’s response to reviews

Title: TASKA: A modular task management system to support health research studies

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Author’s response to reviews:

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Dear Editor Dirk Krüger,

Thank you for considering a revised version of our manuscript MIDM-D-19-00004.

We have given the reviewers’ comments careful consideration and have revised the manuscript to address each comment. An explanation of each revision is described in the reviewer reports (in blue), and the final revised manuscript with highlighted changes is included separately.

We hope that you find these revisions acceptable and that the revised manuscript is suitable for publication in the MIDM. We look forward to hearing from you in due course.

Yours sincerely,

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Reviewer reports:
Reviewer 1:

This paper presents a system to create, organize and manage workflows on top of biomedical databases to perform observational studies. First and Foremost, I want to highlight that the paper presents some meritorious work, as the authors have correctly presented, nowadays it is very difficult to find a suitable software which has not been developed specifically for a particular organization or, in the worst scenario, for an specific project.

Another interesting point about this paper is the fact that the authors present a practical application case of their tool in a real-life problem within the frame of an European project where up to 11 users were able to collaborate from the data recollection to the latter analysis everything with a strong pipeline fixed inside the tool.

However, there are some issues in the paper that has to be tackled in order to recommend its publication.

First, There are some Figures which presents little information, i.e., Figures 1 and 6 could be erased.

** Response: We are grateful for your positive comments and for your pertinent remarks which helped us enrich the manuscript.

Regarding this comment, we agree. These figures were removed in the current version.

Instead, for example, I miss an architectural diagram and a deployment diagram which would be more interesting in order to understand the development of the software and some technical details.

** R: This was a good suggestion. We added two new figures, representing the system’s architecture (Figure 2), with the various modules and the main components, and the system deployment (Figure 3).

We have also described how these components are used.

Additionally, on page 7 and 8 is a long list of functional requirements which could be better described in reference to diagrams of examples.

** R: We agree with this remark. In the current version, we have used just a few examples to illustrate the architectural design (section 2.2).

Second, I miss some homogeneity in the presentation, for example, on page 4 were the authors discussed the alternative tools that are already in the market, some of them present the webpage with a footnote while others only present a reference to a publication. On the readers better understanding, I suggest to make a complete review of the formats to homogenize the presentation.
** R: Indeed, this was inconsistent. All tools are now linked to a footnote.

Another example is the long list of functional requirements while in page 10 a list of different task types is given on the same line.

** R: We changed this to an enumerated list, and have also detailed its description.

Finally, a deep review of the grammar and language in general has to be made in order to elude different problems and strange expression. For example, "i.e." and "e.g." are expressions which must be surrounded in commas because by themselves are a sentence "This is" and " For example". Therefore, a native speaker review is absolutely mandatory.

** R: We reviewed these and other typos. The manuscript was revised by a native speaker.

In a nutshell, I think this work presents could be published in the journal when the authors solve the little problems that I have pointed out previously in this review.

Reviewer 2:

The manuscript describes a task management system "TASKA", built with health research studies in mind. A comparison to other workflow management systems is provided; this adequately demonstrates the necessity of building TASKA.

The system that authors have built is described well.

The only missing information for me is related to the types of tasks supported in the system. While 'simple' task type is clear, I would recommend authors to briefly describe how complex the 'form' tasks can be; e.g., is conditional form possible (some questions are asked only depending on the answer on a certain 'conditional' question)?

Also, what 'processing' tasks are possible - how can external services be invoked, and what can be passed to and from those services? I think it is essential for the readers of this manuscript who are potential TASKA users to get some understanding about this before attempting to install the system and explore details.

** R: We are grateful for your review and remarks.

Following your suggestion, we added more information about both tasks. The form task works in a similar way to “Google Forms”, while the processing task executes a web-service and presents the result, as a file, to the next task. Conditional paths are not provided in the current version, but indeed it is an important feature that we will incorporate in the future.

Some language notes:
- Abstract: 'complementary roles', not 'complimentary'

- Abstract: 'TASKA has being used' - please fix

- Section 2.2: 2nd and 3rd sentences are incomplete, please rephrase

  ** R: We thank you for this comment. The manuscript was revised to remove these typos.

Reviewer 3:

This paper was submitted as a paper software. The manuscript shows a platform named TASKA which has been developed within the context of an European project (EMIF). The aim of the platform is to provide a task/workflow management systems, mainly focused on settings related with clinical settings. The authors mentioned that the main differences between their approach and other existing ones such as Galaxy or Taverna is mainly based on the scope of the software.

The paper is well written and the software presented is more than a prototype, being fully available online. This is something very interesting because not always is easy to find a real implementation of some works in this context. Also the authors are providing access to the source code, which gives even more value to it.

In terms of technical aspects, I don't have any deep comment. The authors mentioned HTML5 and RESTful as some technologies, but I imagine that some others might be used. If this is the case, I suggest to provide them within the manuscript.

  ** R: We are very grateful for your review. The intention when we mentioned these technologies was not to go deeply into each one, but only to highlight the use of state-of-the-art methodologies. However, your comment was compelling, and we decide to extend and enrich this description in the manuscript.

The figures provided are ok, but they have a low resolution. Maybe is because of PDF generation. Please check and try to provide figures with a higher quality.

  ** R: We have now exported the figures with higher resolution, but this can indeed be originated by the PDF generation, in the manuscript submission, since the original JPG files have good resolution.

Finally, my only questions is about precisely the use of well-known vocabularies in the setting of the project. What kind of coding terminologies are specifically supported by TASKA? Maybe a table provided this information might be useful.

  ** R: TASKA was designed to avoid formal vocabularies during the project setup. The workflow editor allows any user to create the study (the composition of tasks) just using drag-and-drop in a visual workspace. Vocabularies can be used during the definition of the execution
of a task, such as data extraction and analysis in our example. In this case, data and vocabularies are study-specific and are managed by the workflow team.

On the other hand, have the authors perform any usability test? If so, probably it is interesting to provide also some details.

** R: We considered this observation very important.

During the system’s development, several iterative cycles were conducted, joining developers and users, a methodology adopted inside the EMIF project. In each cycle, a demo was provided for testing and to gather users’ feedback. This continuous process led to the current version of Taska.

This strategy was clarified in the current version of the manuscript. We have also acknowledged these contributions, “We are grateful to the many EMIF colleagues that helped in the definition and implementation of the current version of this software.”