API synchronizer for OCC and third party ASolutions

The main goal is to allow clients to use the application developed by OCC to communicate with a third party, namely ASolutions.

Our technology aims to smooth out the data differences and allow for seamless sharing of information.

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Technology Impact Cycle Tool

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Impact on society

What impact is expected from your technology?

What is exactly the problem? Is it really a problem? Are you sure?

The challenge involves synchronizing data between OCC and a third party, namely ASolutions, while also improving data flow.

The problem it resolves is the difficulty of connection between two different IT systems.

Are you sure that this technology is solving the RIGHT problem?

This technology is solving the right problem by optimizing the information flow. As a direct result, communication between the two systems will become quicker and more efficient.

How is this technology going to solve the problem?

It will establish a link between OCC and a third party by means of organizing data to ensure that it is compatible with both.

What negative effects do you expect from this technology?

No negative effects are currently expected as a direct result of this technology.

In what way is this technology contributing to a world you want to live in?

By improving the speed of information flow in a medical context, patient quality of life can be improved. I.e, receiving an important diagnosis even a day quicker could save a patients life.

On the other hand, as a whole this project will reduce the hassle of medical and care professionals, who are essential to our society. Less hassle for a traditionally overworked group is always a good thing.

Now that you have thought hard about the impact of this technology on society (by filling out the questions above), what improvements would you like to make to the technology? List them below.

As it has only one main purpose, which is improving information flow, the exchange of information can always be done in a more efficient and scalable manner.

Hateful and criminal actors

What can bad actors do with your technology?

In which way can the technology be used to break the law or avoid the consequences of breaking the law?

We were unable to identify a manner in which this technology can be used for nefarious purposes.

Can fakers, thieves or scammers abuse the technology?

Doubtful. Only if a security vulnerability in the OCC app in general would be exploited, medical data could be accessed by persons not permitted to see it.

Otherwise it simply facilitates the exchange of patient medical data between qualified health professionals, an information flow which already exists even without our technology.

In that vein, a nurse or caretaker could purposefully enter incorrect data about a patient, which could result in an incorrect diagnosis (which then has a plethora of side effects).

Can the technology be used against certain (ethnic) groups or (social) classes?

No such use has been identified. This technology does not interact or collect data regarding social standing or ethnicity.

In which way can bad actors use this technology to pit certain groups against each other? These groups can be, but are not constrained to, ethnic, social, political or religious groups.

No such case has been identified. The technology does not work or store any of these information points.

How could bad actors use this technology to subvert or attack the truth?

Perhaps by altering medical data maliciously.

Now that you have thought hard about how bad actors can impact this technology, what improvements would you like to make? List them below.

As security is an ever-evolving domain, the technology in question can always be made more secure by following the latest developments. Other than that, we believe execution of malicious intent through our technology

alone is next to impossible.

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Privacy

Are you considering the privacy & personal data of the users of your technology?

Does the technology register personal data? If yes, what personal data?

Yes, personal healthcare and medical data.

Do you think the technology invades the privacy of the stakeholders? If yes, in what way?

No, only authorized caretakers and medical professionals are permitted to see and use this data.

Is the technology is compliant with prevailing privacy and data protection law? Can you indicate why?

It is compliant to the extent as the system it provides integration support to.

Does the technology mitigate privacy and data protection risks/concerns (privacy by design)? Please indicate how.

No private data is stored or otherwise dealt with.

In which way can you imagine a future impact of the collection of personal data?

The data collected and generated is strictly medical and won't impact the freedoms and reputation of individuals.

Now that you have thought hard about privacy and data protection, what improvements would you like to make? List them below.

None at the moment.

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Human values

How does the technology affect your human values?

How is the identity of the (intended) users affected by the technology?

The technology exposes healthcare and medical information of the patient to qualified healthcare professionals.

As there is seldom any situation wherein, in good faith, one would wish to hide medical history from those administering medical care, we do not believe our technology poses a concern for the identity of the user.

How does the technology influence the users' autonomy?

The patient whose data in question is being transferred does relinquish a certain level of control over their medical data.

The technology itself serves more as a communication channel and does not alter or modify data in any shape, way or form. It only 'takes control' of the data (i.e, altering the format from one datatype to another) to the minimal extent needed in order to transfer the information.

What is the effect of the technology on the health and/or well-being of users?

The technology improves response time for sending medical test results, an in turn, receiving a diagnosis. This affects the well being of three groups of people:
1) Patient caretakers, who will have less hassle sending medical testing data remotely
2) Medical professionals who in turn gain access to the data quicker, while also being able to send a diagnosis with less hassle
3)The patients, whose quality of life will be improved via a quicker medical testing->diagnosis cycle.

Now that you have thought hard about the impact of your technology on human values, what improvements would you like to make to the technology? List them below.

Data accuracy and depth can always be improved to make it as useful as possible to medical professionals, and in turn, improve the healthcare process for the patients.

Stakeholders
Have you considered all stakeholders?

Who are the main users/targetgroups/stakeholders for this technology? Think about the intended context by answering these questions.

Name of the stakeholder
Eurocom

How is this stakeholder affected?
They are the client of the project. Namely, our project is a subset of a greater project they're building.

Did you consult the stakeholder?
Yes

Are you going to take this stakeholder into account?
Yes

Name of the stakeholder
Fontys

How is this stakeholder affected?
Facilitated and provided all the materials for the project.

Did you consult the stakeholder?
Yes

Are you going to take this stakeholder into account?
Yes

Did you consider all stakeholders, even the ones that might not be a user or target group, but still might be of interest?

Name of the stakeholder
ASolutions

How is this stakeholder affected?
As a third party company that is collaborating with Eurocom, our result affects their collaboration.

Did you consult the stakeholder?
Yes

Are you going to take this stakeholder into account?
Yes

Name of the stakeholder
Healthcare professionals, clients who will make use of OCC

How is this stakeholder affected?
Our technology would improve the functionality of the OCC app that they would use.

Did you consult the stakeholder?
Yes

Are you going to take this stakeholder into account?
Yes

Now that you have thought hard about all stakeholders, what improvements would you like to make? List them below.
Perhaps it would be nice to facilitate more conversations with ASolutions or healthcare professionals who will directly benefit from our technology within the OCC app. This could give insight and potentially ideas for additional features that would be of benefit.

Data
Is data in your technology properly used?

Are you familiar with the fundamental shortcomings and pitfalls of data and do you take this sufficiently into account in the technology?
We try to deliver data as it is given by the caretakers and medical professionals who enter this data. We are not qualified to govern the data they use.

We try to make sure the given data can be transferred as efficiently and accurately as possible.

How does the technology organize continuous improvement when it comes to the use of data?
The technology is meant to be updated regularly by it's users, with a log/ medical history log that can showcase the changes and trends in data.

The technology does not deal or alter the contents of the data received.

How will the technology keep the insights that it identifies with data sustainable over time?
This technology will only temporarily persist data to get it from one point to another. There is no permanent or even remotely long term persistence.

In what way do you consider the fact that data is collected from the users?
The technology does not collect data.

Now that you have thought hard about the impact of data on this technology, what improvements would you like to make? List them below.
This technology does not persist, predict or otherwise store data.

The frequency and relevancy of the data is entirely up to it's users, to whom our technology will serve as a channel to transfer it between relevant actors.

Inclusivity
Is your technology fair for everyone?

Will everyone have access to the technology?
No, only Eurocom will have access to the technology. It could be argued that companies who don't have access to this type of technology as a whole may suffer performance issues compared to those who do have it.

Does this technology have a built-in bias?
No.

Does this technology make automatic decisions and how do you account for them?
It doesn't make automatic decisions.

Is everyone benefitting from the technology or only a a small group? Do you see this as a problem? Why/why not?
Only people with certain medical issues and their caretakers will benefit from this technology.

We do not see this as a problem, as the technology was made for these people specifically in mind.

It does not reduce economic activities, only removes some of the unnecessary hassle when it comes to data transference for an already overworked and understaffed medical workforce.

Does the team that creates the technology represent the diversity of our society?
Yes, the group is rather diverse.

Now that you have thought hard about the inclusivity of the technology, what improvements would you like to make? List them below.
The inclusivity is an acceptable level.

Transparency

Are you transparent about how your technology works?

Is it explained to the users/stakeholders how the technology works and how the business model works?

There is currently no specific user manual from our side regarding the technology.

The inner workings, however, are available and are constantly being updated in the project documentation, to which Eurocom has access to. Should the need arise, they may make the decision to share it with the users as they are the ones who will be interacting with the users.

If the technology makes an (algorithmic) decision, is it explained to the users/stakeholders how the decision was reached?

The technology currently does not make any algorithmic decisions.

Is it possible to file a complaint or ask questions/get answers about this technology?

It should be possible, but it is at large a responsibility of Eurocom to give the correct level of details. All details should be findable within the PID.

Is the technology (company) clear about possible negative consequences or shortcomings of the technology?

We have been unable to identify any negative consequences. If we are able to find any or any come up, all stakeholders we have a direct communication channel with (Eurocom) will be notified.

Now that you have thought hard about the transparency of this technology, what improvements would you like to make? List them below.

We believe we have been as transparent as possible about this product to all the relevant stakeholders, who may then pass the information along to those who need it.

Sustainability
Is your technology environmentally sustainable?

In what way is the direct and indirect energy use of this technology taken into account?
The energy usage is negligible, equivalent to a single process running on a moderately powerful server. The energy consumption may increase slightly with the scale, but it should not be particularly high at any point.

Do you think alternative materials could have been considered in the technology?
No.

Do you think the lifespan of the technology is realistic?
Yes. Until the other technologies that make use of it change the type of data they process, or a significant security breakthrough/vulnerability is discovered, the technology should serve fine.

What is the hidden impact of the technology in the whole chain?
The hidden impact could be the optimization of the data flow between system, therefore reducing the energy requirements of the computing systems.

Now that you have thought hard about the sustainability of this technology, what improvements would you like to make? List them below.
Although the consumption is minimal, making sure the electricity comes from renewable sources would be a good step.

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Future

Did you consider future impact?

What could possibly happen with this technology in the future?

The technology could be replaced in the future, given the rate at which new technologies and innovations develop.

Sketch a or some future scenario (s) (20-50 years up front) regarding the technology with the help of storytelling. Start with at least one utopian scenario.

Twenty years from now, Eurocom could have attained a larger market share, sharing our technology with more child or partner companies in the process.

This would ideally lead to our technology helping more people and medical organizations, which would provide more people with a better quality of life and quicker access to crucial medical test diagnosis.

Sketch a or some future scenario (s) (20-50 years up front) regarding the technology with the help of storytelling. Start with at least one dystopian scenario.

20 years in the future, a malicious actor purchases Eurocom. They subsequently get access to all of the medical data stored by them, and under their guise request more medical data that they wish to falsify or misconstrue to push an agenda.

In this scenario, our technology helps them gain access to data more efficiently and quickly.

Would you like to live in one of this scenario's? Why? Why not?

The utopian scenario would be nice, as many people would receive more up-to-date care and diagnosis, and our technology would have played a big part, which evokes a nice feeling of pride and content.

What happens if the technology (which you have thought of as ethically well-considered) is bought or taken over by another party?

Our technology specifically would not have other applications other than optimizing data-flow between Eurocom and a third party medical company. If it is bought out, we doubt that it can be used in a malicious manner.

We have not made a scenario for a buyout, as this technology is being developed for Eurocom and will belong to them (and be part of their larger OCC platform/app) once it is complete. Therefore, it is their jurisdiction what

they do with it in the future.

Impact Improvement: Now that you have thought hard about the future impact of the technology, what improvements would you like to make? List them below.

We believe we have done all that we can to ensure that our technology will be used in an ethical manner. As it is being developed for a different party, however, all we can do is hope that they continue to use it in good faith and according to the promises of good-will made.