Short report about ethical requirements

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To obtain the ethical requirements stated in this document, we played the TICT ICT game and answered a number of questions which are listed below:

## Questions covered

**What if your product becomes wildly successful?**

* **How would a large community of your passionate users change the world?**

Productivity and safety at DAF factories all around the world would be increased. Not only in the factory plant at Eindhoven. Costs would be reduced due to constant monitoring and alerting and employees would be quick to respond to failures of the machines.

* **What if eighty percent of your friends use this product?**

My friends would not use this product because they do not have a CNC machine at home which they want to monitor. But **if they did**, they would take all the monitoring benefits of it.

* **What if your product is bought by Facebook, Google, or Amazon?**

The current product is relevant to the production processes. They would be able to obtain data on how their equipment works and react quickly to failures and anomalies in their factories.

**What happens if we do not solve this problem?**

* **Does your product solve a problem that is worth solving?**

The solution solves the critical problem of informing all relevant departments of the company if there are any anomalies in the current state of any of their machines. Furthermore, one of the goals of the solution is to reduce the machine's amortization and higher volume production which can cause later issues with the machines.

* **Is your product solving the real problem or fighting symptoms?**

The product is solving a real problem that DAF faces - they want to monitor the state of their machines and receive alerts when something goes wrong. However, it also fights symptoms that come from not-so-optimal constraints that DAF set for this product.

* **Can you prove that your product is a working (effective) solution?**

We can prove that it is a working solution by performance testing the queries and usability testing the graphs on Grafana.

**Is your product using the right data?**

* **Does your product take into account that all data (used) is subjective?**

Our product takes into account that some data is subjective - the sensors that read the data might be faulty or the machine might be at fault.

* **Does your product take into account that an algorithm is an opinion embedded in code?**

This question is not applicable to our scenario. Our product is transparent about what it does.

* **Will using your product create a self-fulfilling prophecy?**

Our product does not have any algorithms that can create such a scenario.

**What could a bad actor do with your technology?**

* **What’s the worst headline about your product you can imagine?**

Below is a draft news headline:

“***An explosion in the engine plant at DAF Eindhoven leaves 3 casualties******and 5 injured.***

*It is suspected that the explosion is a result of a faulty monitoring system at the engine plant. It should have notified the relevant departments on time.”*

* **How can fakers, thieves, or scammers abuse your technology?**

We cannot imagine a scenario where a rogue actor can abuse the technology. At worst, they can see which machines have what sensors and if they are currently working.

* **Can your technology be used against certain (ethnic) groups?**

Absolutely not.

**If the environment was your client how would your product change?**

* **What’s the most unsustainable behavior your product encounters?**

The most unsustainable behavior that our product can even improve is the process of amortization of the parts of the machines and reducing emissions from the production process. In the future, life-data monitoring on the best regimes on which each machine should work regarding reducing worn-out and environmental pollution could be implemented.

* **How does mother nature feel about the energy use of your product?**

Mother nature isn’t happy. The product itself does not consume lots of energy since it works on demand - whenever somebody needs a chart, they can generate it. However, the side effects of this product are not good - this would increase the uptime of factory machines which in turn would mean more electricity used and more engines produced. Which in turn means more cars on the road.

* **Could you have used alternative materials?**

No! The project is very constrained.

## Irrelevant questions

**Can your product be experienced as addictive?**

* **Justification:** It is barely possible for such a monitoring system to engage the attention of the user to that extent, so that is considered addictive. The information is based on a strict process and is not biased at all.

**Are you honest about how your product works?**

* **Justification:** Essentially, the process that our product covers is pretty straightforward with specific operational data, which is why it is impossible to implement a solution that can mislead the users of the initial behavior of the system.

**Does your product invade the privacy of users?**

* **Justification:** Our product is not storing any user or organizational information, which is why personal privacy of the users cannot be invaded in any way.

**When you picture your user base who is excluded?**

* **Justification:** People who do not have access to it - people who are not employees of DAF.

## Results

One of the biggest concerns that we have after answering all these questions is ensuring that the product works. The worst-scenario headline that we came up with is not impossible to happen though it is very unrealistic. Security is not our concern since a security configuration for Grafana is not part of the product that is expected to be delivered.