

# Brain Computer Interfacing

A braincomputer interface (BCI), sometimes called a neural control interface (NCI), mindmachine interface (MMI), direct neural interface (DNI), or brainmachine interface (BMI), is a direct communication pathway between an enhanced or wired brain and an external device. BCIs are often directed at researching, mapping, assisting, augmenting, or repairing human cognitive or sensory-motor functions

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# Technology Impact Cycle Tool

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## Impact on society

What impact is expected from your technology?

*This category is only partial filled.*

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

Medical issues such as paralysis or people who can control prosthetics with their thoughts.

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

*This question has not been answered yet.*

## How is this technology going to solve the problem?

*This question has not been answered yet.*

## What negative effects do you expect from this technology?

*This question has not been answered yet.*

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

*This question has not been answered yet.*

## 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.

*This question has not been answered yet.*

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## Hateful and criminal actors

What can bad actors do with your technology?

*This category is only partial filled.*

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

Hackers could manipulate the technology, Privacy and spying could also be a big issue.

### **Can fakers, thieves or scammers abuse the technology?**

*This question has not been answered yet.*

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

*This question has not been answered yet.*

### **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.**

*This question has not been answered yet.*

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

*This question has not been answered yet.*

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

*This question has not been answered yet.*

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## Privacy

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

*This category is only partial filled.*

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

Yes, thoughts. Which can result in extreme amounts of information about the person.

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

*This question has not been answered yet.*

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

*This question has not been answered yet.*

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

*This question has not been answered yet.*

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

*This question has not been answered yet.*

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

*This question has not been answered yet.*

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## Human values

How does the technology affect your human values?

*This category is only partial filled.*

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

It is expected to be able to return input to the user as well so it might eventually be able to control people

## How does the technology influence the users' autonomy?

*This question has not been answered yet.*

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

*This question has not been answered yet.*

## 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.

*This question has not been answered yet.*

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## Stakeholders

Have you considered all stakeholders?

*This category is only partial filled.*

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

**Name of the stakeholder**

Investors

**How is this stakeholder affected?**

-

**Did you consult the stakeholder?**

Yes

**Are you going to take this stakeholder into account?**

Yes

**Name of the stakeholder**

Doctors

**How is this stakeholder affected?**

-

**Did you consult the stakeholder?**

Yes

**Are you going to take this stakeholder into account?**

Yes

**Name of the stakeholder**

Psychologists

**How is this stakeholder affected?**

-

**Did you consult the stakeholder?**

Yes

**Are you going to take this stakeholder into account?**

Yes

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Name of the stakeholder

People with disabilities

**How is this stakeholder affected?**

-

**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?**

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**Now that you have thought hard about all stakeholders, what improvements would you like to make? List them below.**

*This question has not been answered yet.*

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## Data

Is data in your technology properly used?

*This category has not been filled yet.*

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## Inclusivity

Is your technology fair for everyone?

*This category is only partial filled.*

**Will everyone have access to the technology?**

*This question has not been answered yet.*

**Does this technology have a built-in bias?**

Probably, yes.

**Does this technology make automatic decisions and how do you account for them?**

*This question has not been answered yet.*

**Is everyone benefitting from the technology or only a a small group?**

**Do you see this as a problem? Why/why not?**

*This question has not been answered yet.*

**Does the team that creates the technology represent the diversity of our society?**

*This question has not been answered yet.*

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

*This question has not been answered yet.*

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## Transparency

Are you transparent about how your technology works?

*This category is only partial filled.*

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

Its still too early to tell.

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

*This question has not been answered yet.*

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

*This question has not been answered yet.*

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

*This question has not been answered yet.*

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

*This question has not been answered yet.*

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## Sustainability

Is your technology environmentally sustainable?

*This category is only partial filled.*

**In what way is the direct and indirect energy use of this technology taken into account?**

Its still too early to tell.

**Do you think alternative materials could have been considered in the technology?**

*This question has not been answered yet.*

**Do you think the lifespan of the technology is realistic?**

*This question has not been answered yet.*

**What is the hidden impact of the technology in the whole chain?**

*This question has not been answered yet.*

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

*This question has not been answered yet.*

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## Future

Did you consider future impact?

*This category has not been filled yet.*