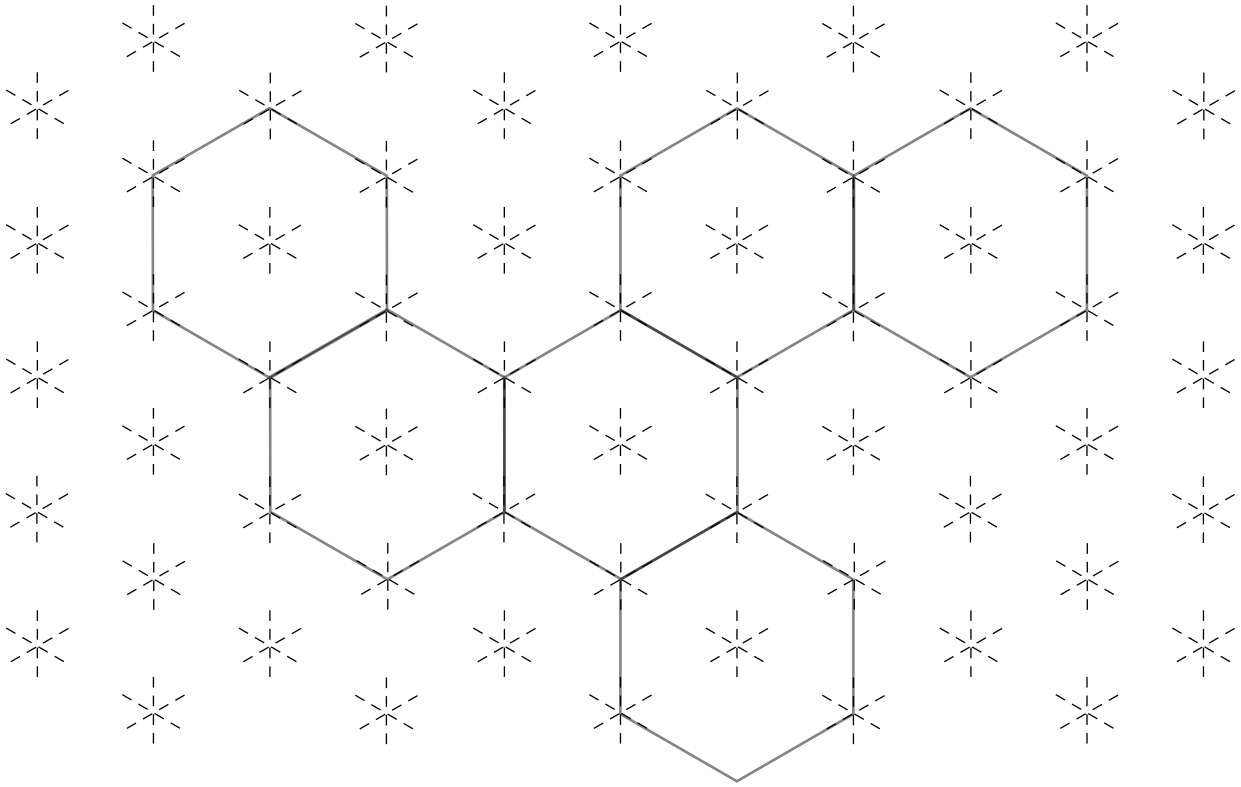
KENNO



KENNO - A TOOL FOR RESPONSIBLE ALGORITHMIC AUTOMATION

Kenno
Versio 1.0
September 2026

Kenno was developed by
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Kelly Yen.

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brokers

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WHAT IS KENNO?

WHAT IS KENNO?

Kenno is a tool for working through questions of responsibility when data, digital technology, AI or algorithms are used to automate work, services, decision-making or the operations of an organisation.

Kenno is built around modules that pose questions about the responsibility of automation projects. The questions are worked through in conversation at a workshop that brings together experts from different fields.

A Kenno workshop is not a box-ticking exercise. It does not give a ready-made answer to whether an automation project is responsible or not. The starting point of Kenno is to bring together people from different backgrounds to reflect on the project's goals and whether they are being pursued in appropriate and responsible ways. Conversations held with Kenno are well suited to locating potential friction points in automation and help address them. The value comes from shared discussion and shared observations, which support more responsible and more impactful work.

This handbook supports the use of the modules and the organisation of the workshop, helps document the discussion and any necessary actions, and guides you back to key questions at different stages of the automation project.

Kenno can be found at **kenno.datafiedlife.co**

WHAT IS KENNO BASED ON?

Kenno was developed in the BROKERS project at the University of Helsinki, with Proof of Concept funding from the Research Council of Finland. BROKERS promotes socially sustainable practices in the development of algorithmic systems. Kenno was developed by Joonas Aitonurmi, Juuli Hilska, Tuukka Lehtiniemi, Minna Ruckenstein, Teppo Vesikukka and Kelly Yen. Kenno is available under a Creative Commons BY-NC-SA 4.0 licence
.
Kenno is based on the Data Ethics Decision Aid (DEDA) developed at the Data School of Utrecht University, and in particular on DEDA for Media, ver-

sion 0.5. The Finnish version of DEDA can be found here: www.repair-research.fi/deda. We thank Karin van Es and Mirko Tobias Schäfer of the Data School for their collaboration and for permission to develop DEDA further.

The development of Kenno has been supported by a group of experts in digitalisation and responsibility from central government, municipalities, companies and non-profit organisations. We thank all the experts who have used versions of Kenno and taken part in our workshops.

THE KENNO HANDBOOK AND MODULES

Handbook

This handbook contains workshop instructions and information about the modules. In addition, the handbook includes fillable document templates as appendices:

- **The Project summary** is intended for preparing the workshop. It is used to record the goals of the automation project, the problem it aims to solve, and the results and outputs expected from the project.
- Each module has its own **document template** for recording the discussion, agreed actions and identified friction points. This information is useful later when you want to return to the module's themes or questions.

We recommend preparing a separate handbook for each automation project reviewed with Kenno. This way, documentation of the project's responsibility is created in the workshops while the project's own handbook is being filled in. The documentation gathered in the handbook clarifies questions of responsibility and makes it easier to respond to difficult questions or friction points.

MODULES

The hexagonal modules that support the workshop contain questions on different themes. The modular format makes it possible to adapt a Kenno workshop to your own needs: modules can be included in or left out of the discussion as needed, and the order in which they are covered can be changed. In each workshop, the selected modules are worked through one at a time. During the discussion, the observations, actions and friction points without a clear-cut answer are documented in the handbook.vIn addition, the **Values module** is filled in at the workshop, where the values related to the project are recorded at the start of the workshop.

HOW TO RUN A KENNO WORKSHOP

WHEN SHOULD YOU RUN A KENNO WORKSHOP?

A Kenno workshop is particularly useful at the start of an automation project, or when ethical problems arise or people involved in the project voice doubts or concerns. Ideally, the workshop takes place early in the project. At that point, the insights it produces can still shape the project's design, help in considering alternative implementations, or sometimes even lead to a decision not to continue the project.

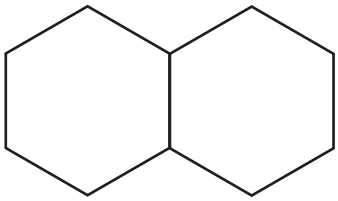
When a project is updated or the responsibility of ongoing projects is reviewed, you can return to the module questions and the handbook documentation. The modular format means the workshop can be run with different emphases at different stages of the project.

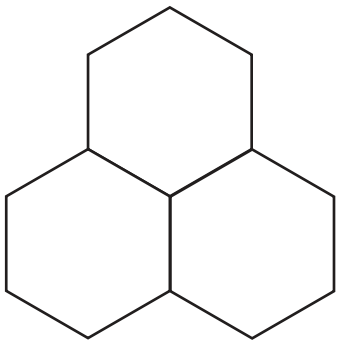
HOW SHOULD A KENNO WORKSHOP BE ORGANISED?

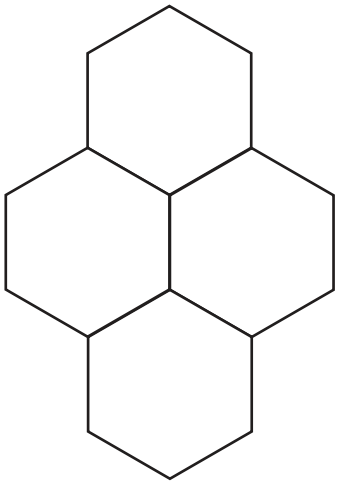
A Kenno workshop works best when the discussion takes place in groups of 4 to 8 people. A larger group of participants can be divided into several smaller groups, each of which holds its own Kenno discussion.

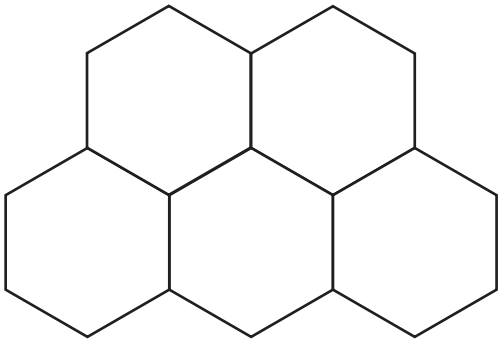
Working through the Kenno modules in the order presented in this handbook is a good starting point for a workshop. If all the modules and their questions are covered in one go and without rushing, the workshop will take at least a few hours.Thanks to its modular format, the workshop can be split across several sessions and the modules can be covered by theme. It is a good idea to think in advance about the best way to go through the modules, which combination and order of modules best supports your goals, and which questions deserve more time. The modules and the handbook help with this.

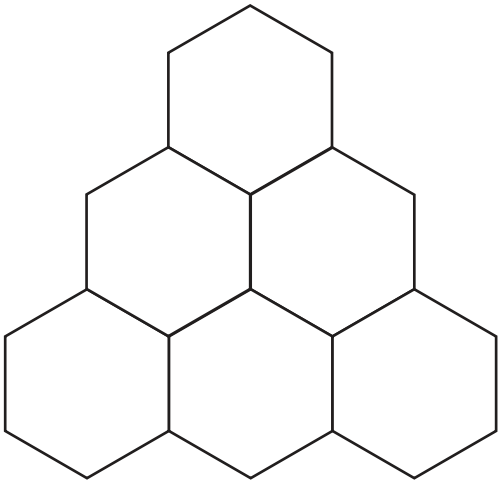
In addition to the order, the placement of the modules can also be varied. Although the questions can lead to deep reflection, the modules and their arrangement also invite experimentation and play. For example, interesting questions and observations may emerge when two or more modules and their answers are looked at side by side.

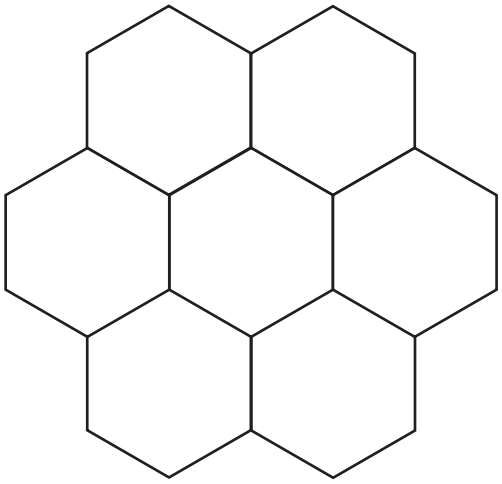












WHO TAKES PART IN THE WORKSHOP?

Kenno workshops have the greatest impact when experts from different fields take part. When experts are not only talking among their own professional group, the choices related to the project are discussed in the way responsibility requires, that is, with many voices. In a successful workshop, the same table might include, for example, a lawyer, a data scientist, a designer, a customer service representative, a manager and a specialist in a particular field. Participants may be directly involved in the automation project under development, or the project may affect their work or the field they represent.

Before the workshop, the organiser should consider whether the group represents a sufficiently wide range of perspectives and whether any essential group is missing. Even if it is not possible to include, for example, the different groups of people affected by the project, the system's end users or supervisory authorities, the missing perspectives should be kept present in the workshop in one way or another. At the start of the workshop, you might go through which groups are represented and ask participants to keep the missing perspectives in mind.

HOW DO YOU PREPARE FOR A KENNO WORKSHOP?

Invite participants to the workshop in good time and explain its purpose to them. **The Project summary**, filled in beforehand, is shared with all workshop participants well in advance so they can prepare.

If the group of participants is large, it is a good idea to divide it into small groups in advance.

Each group should have the following for the workshop:
- The handbook prepared for the project, in digital and/or printed form
- The modules printed in A4 or A3 size and cut out in advance
- Pens and note-taking materials
- A computer and a large screen
- A quiet space, a table and chairs
- A game piece to show participants which module and question is being discussed

At the workshop, each group sits around its own table so that group members can see each other and the modules placed on the table.

DO YOU NEED A FACILITATOR?

It is worth appointing a facilitator for the workshop, meaning a person who guides the course of the workshop. Ideally, the facilitator is an outsider who is not involved in the project. This allows the facilitator to assess whether the questions are being answered clearly and whether everyone's views are being heard. It is important that the facilitator has sufficient support from the participants. They keep the workshop on schedule, are a good listener and can ask follow-up questions when needed. The facilitator makes sure that participants understand the questions correctly, do not cut corners or talk for too long, and record the most important points of the session. If the workshop is split into several small groups, it is worth considering whether more than one facilitator is needed.

Ideally, each group has a designated note-taker whose task is to record the observations, actions and friction points that come up in the workshop. It is recommended that participants leave their computers and phones out of the workshop entirely. With a note-taker present, everyone else can focus on the discussion. The note-taker can document the discussion directly in the module documentation templates found in the handbook. Make sure that participants can see what is being written in the handbook, for example on a screen.



THE KENNO WORKSHOP IN A NUTSHELL

Opening the workshop (together)

1. The facilitator briefly goes through the **Project summary** document with all participants.

2. The themes and contents of the modules are reviewed together so that everyone knows which themes will be discussed.

Discussion (in small groups if needed)

3. First, discuss together what the project's three core values are. Write them down on the **Values module**.

4. Next, go through all the modules selected for the workshop. Record your observations in each module's documentation template, found in the handbook.

Workshop summary (together)

5. The facilitator asks the groups to share the key observations from their discussions, for example which issues sparked the most discussion, what the most important follow-up actions are, whether there were any surprises during the discussion, and how the work went.

6. Finally, the facilitator and the people responsible for the project tell participants how the outputs will be made available to everyone, how the

KENNO MODULES

Kenno consists of modules containing questions focused on a particular theme. The content and emphasis of a Kenno workshop can be shaped through the choice of modules and the order in which they are covered.

A standard workshop includes all the Kenno modules, covered in the order presented below. In this case, the Values module is followed by the Choices and Responsibilities module, and the workshop ends with the Outcome module.

The modularity of Kenno offers many other ways to run the workshop, for example:

- The modules can be covered in any order and on any schedule. You can select only a specific module or modules for the workshop if you want to use the time to focus on certain types of themes.
- Thanks to their shape, the modules can be arranged in different ways. Different arrangements show which questions are central to the project, or whether there are friction points between modules that have a decisive effect on the project.
- The standard workshop described above can also be held in parts. For example, half of the modules can be covered in the first workshop and the other half in a second workshop.



KENNO MODULES

MODULES

Choices and Responsibilities



Automation



Data and Data Management 1/2



Data and Data Management 2/2



Dependencies 1/2



Dependencies 2/2



Communication



Participation and Transparency



Expertise and Autonomy 1/2



Expertise and Autonomy 2/2



Sustainability



Resistance



Outcome



SUPPORT MODULE

Values



INTRODUCING THE KENNO MODULE THEMES



VALUES

The Values module is filled in first and can be placed in the middle of the table. This module helps participants identify, through shared discussion, the values that are important and essential to the project.



CHOICES AND RESPONSIBILITIES

The module on this theme looks at the fundamental questions of the project: why is the project being carried out, what is it aiming for and what does it seek to achieve? Responsible algorithmic automation also involves identifying responsibilities within the organisation: who decides, who implements, and are the key choices and responsibilities aligned?
This module should be covered first, immediately after the Values module, regardless of the other modules chosen or their order.



AUTOMATION

The module on this theme looks at the automation being implemented in the project. Automation can be algorithmic or rule-based and can be implemented with different technologies. What matters is that the module explains and builds an understanding of why the automation is being done, how it works and what it is intended to replace.



DATA AND DATA MANAGEMENT

The modules on this theme deal with the data the project needs and uses. Why is data being collected, how are its quality and currency ensured, and how is it used? Data is one of the most important factors behind successful automation, so the module focuses in particular on what makes the data used high-quality for the needs of the automation in question. This also helps examine biases and whether they are desirable or undesirable for the project.

Note! The questions on this theme are split across two modules!



DEPENDENCIES
The modules on this theme look both at the project's dependencies on other systems and at the dependencies the project creates. Here, systems refers broadly to wholes in which technology, data, people and processes interact: for example information systems, automation solutions, registers, platforms or other digital tools. This module helps map out the consequences of dependencies and ways to prepare for them.

Note! The questions on this theme are split across two modules



COMMUNICATION
The module on this theme considers how the project's goals, operating principles and impacts are, and should be, communicated to different audiences, such as employees, citizens, customers and users. The questions help consider whether communication aspects have been thought through, and what kind of communication serves the project's goals. At its best, communication builds trust and helps identify and address possible concerns and misunderstandings.



PARTICIPATION AND TRANSPARENCY
The module on this theme focuses on the impacts of the automation project on stakeholders, meaning employees, citizens, customers and users. The questions help assess who has the opportunity to influence the project's design, implementation and evaluation. The key is to consider how different perspectives are taken into account and how the workings of the automation project can be made transparent to those it affects.



EXPERTISE AND AUTONOMY
The modules on this theme look at how the project and the systems it produces change the organisation's division of labour, the roles of experts and people's ability to use their own judgement. The key questions concern human skills, responsibility and decision-making power in relation to the recommendations or decisions produced by automated systems.

An automation project and its impacts often look very different from one role to another, so it is also essential to consider how the impacts on different groups of employees and stakeholders are identified and taken into account.

Note! The questions on this theme are split across two modules



SUSTAINABILITY
The module on this theme looks at the environmental impacts of the project from the perspective of its entire life cycle. The focus is on the use of energy, hardware and other material resources, and on how the choices made in the project now affect sustainability and resource use over the whole life cycle.



RESISTANCE
The module on this theme considers the criticism, concerns and dissenting views directed at the project. These perspectives may also come up during the workshop. Responsible development involves understanding different views and the reasons behind them. The questions help consider how resistance can be responded to openly and constructively.



OUTCOME
Outcome
The module on this theme goes through the conditions for moving forward with the automation project based on the discussion held in the workshop. The observations made are important for the responsibility of the automation project as a whole. Concrete actions may also emerge throughout the workshop, in which case they should be written down immediately in the handbook's documentation templates.
This module should be covered last, after the Resistance module, regardless of the other modules chosen or their order.

PROJECT SUMMARY

The person responsible for the project fills in the project summary before the Kenno workshop. The summary is sent to every participant in advance so that everyone is aware of the project's goals. The summary is also used in the workshop.

Project name:

Project team	Name	Role

What is the project about?

What are its goals and what problems does it solve?

What are the intended outcomes of the project for the organisation itself? And for its stakeholders (customers, citizens or other organisations)?

For organisation	For stakeholders

Projects that use data and algorithms are invariably connected to organisational values, meaning the principles that guide the organisation, and to societal values, meaning what society as a whole is striving for. From the perspective of the person responsible for the project, which values (up to five) are central to this project?

1.
2.
3.
4.
5.

PROJECT SUMMARY

What data is used in the project? Fill in the table.

Data	Source

Who or what does the project affect directly and indirectly?

Has the project consulted the data protection officer (e.g. regarding a DPIA)? What was the outcome?

CHOICES AND RESPONSIBILITIES

QUESTIONS

1. How did you arrive at this automation project and the system you are planning?
2. Were alternatives considered? Why were they not chosen?
3. Who makes the decisions in this project? How are responsibilities and obligations divided?

DISCUSSION

ACTIONS AND RESPONSIBILITIES



CHOICES AND RESPONSIBILITIES

You can continue your answers on this side →

FRICTION POINTS

REFLECTION

AUTOMATION

QUESTIONS

1. What tasks, processes or decision-making does the planned system automate?
2. What is the automation meant to achieve?
3. Can you explain how the automation works?

DISCUSSION

ACTIONS AND RESPONSIBILITIES



AUTOMATION

You can continue your answers on this side →

FRICTION POINTS

REFLECTION



DATA AND DATA MANAGEMENT 1/2

QUESTIONS

1. Why is the data you use necessary for reaching the project's goals?
2. Could the system be built without collecting and using personal data?
3. Does the data have other uses, now or in the future?

DISCUSSION

ACTIONS AND RESPONSIBILITIES

DATA AND DATA MANAGEMENT 1/2

You can continue your answers on this side →

FRICTION POINTS

REFLECTION

DATA AND DATA MANAGEMENT 2/2

QUESTIONS

4. Is the data of good quality? How is that quality ensured?
5. How do you make sure the data does not contain unwanted features such as bias?
6. What new data does the system produce, and is all of it needed?

DISCUSSION

ACTIONS AND RESPONSIBILITIES

DATA AND DATA MANAGEMENT 2/2

You can continue your answers on this side →

FRICTION POINTS

REFLECTION

DEPENDENCIES 1/2

QUESTIONS

1. Which other systems and digital infrastructures does the planned system depend on?

2. Does the system create new dependencies or vulnerabilities for the organisation?

3. If the geopolitical situation changed, in what ways would the system or its operation be at risk?

DISCUSSION

ACTIONS AND RESPONSIBILITIES



DEPENDENCIES 1/2

You can continue your answers on this side →

FRICTION POINTS

REFLECTION

DEPENDENCIES 2/2

QUESTIONS

4. What other risks may relate to the suppliers of the system or its parts? How can those risks be managed?

5. How have you accounted for bias in parts designed or built elsewhere?

6. How does this project take into account the new dependencies the system creates?

DISCUSSION

ACTIONS AND RESPONSIBILITIES

DEPENDENCIES 2/2

Voit jatkaa vastauksia tälle puolelle →

FRICTION POINTS

REFLECTION

COMMUNICATION

QUESTIONS

1. What do your target groups know about the planned system? What would be worth them knowing?

2. How is the planned system communicated about now? And once it is finished?

3. What has been agreed about communication with your partners? Who is responsible for it?

DISCUSSION

ACTIONS AND RESPONSIBILITIES



COMMUNICATION

You can continue your answers on this side →

FRICTION POINTS

REFLECTION



PARTICIPATION AND OPENNESS

QUESTIONS

1. How will the knowledge and skills of stakeholders be put to use in designing the system?

2. What concrete opportunities to influence the work are offered to stakeholders?

3. What can happen if stakeholders do not take part in designing the system?

DISCUSSION

ACTIONS AND RESPONSIBILITIES



PARTICIPATION AND OPENNESS

You can continue your answers on this side →

FRICTION POINTS

REFLECTION



EXPERTISE AND AUTONOMY 1/2

QUESTIONS

1. How does the planned system change the division of work in the organisation?

2. How do the system and the automation it produces change how responsibilities are divided?

3. How does the system change job tasks or the nature of the work?

DISCUSSION

ACTIONS AND RESPONSIBILITIES



EXPERTISE AND AUTONOMY 1/2

You can continue your answers on this side →

FRICTION POINTS

REFLECTION

EXPERTISE AND AUTONOMY 2/2

QUESTIONS

4. Are the purpose and the operation of the system understandable to everyone?

5. Is it possible to depart from the results the system produces or the decisions it makes?

6. What new knowledge and skills are required of employees?

DISCUSSION

ACTIONS AND RESPONSIBILITIES



EXPERTISE AND AUTONOMY 2/2

You can continue your answers on this side →

FRICTION POINTS

REFLECTION

SUSTAINABILITY

QUESTIONS

1. Does designing the system involve choices that affect the environment and the use of resources?

2. Do the ways the system is used affect its environmental impact? How can more sustainable ways of using it be supported?

3. Are the resources used justified in relation to the benefits sought? And in relation to the system's life cycle?

DISCUSSION

ACTIONS AND RESPONSIBILITIES



SUSTAINABILITY

You can continue your answers on this side →

FRICTION POINTS

REFLECTION



RESISTANCE

QUESTIONS

1. Mikä on suurin vastalause, jonka järjestelmän toteuttamiselle voi esittää?
2. Millaista vastustusta järjestelmän käyttöönotto voi aiheuttaa? Mitä vastustuksesta voi seurata?
3. Miten vastustukseen ja sen seurauksiin on varauduttu?

DISCUSSION

ACTIONS AND RESPONSIBILITIES



RESISTANCE

You can continue your answers on this side →

FRICTION POINTS

REFLECTION

LOPPUTULEMA

QUESTIONS

1. Milloin järjestelmän toteutusta voisi pitää menestyksenä?
2. Miten alkuperäistä suunnitelmaa tulisi muuttaa, jotta sen kanssa voidaan jatkaa eteenpäin?

DISCUSSION

ACTIONS AND RESPONSIBILITIES

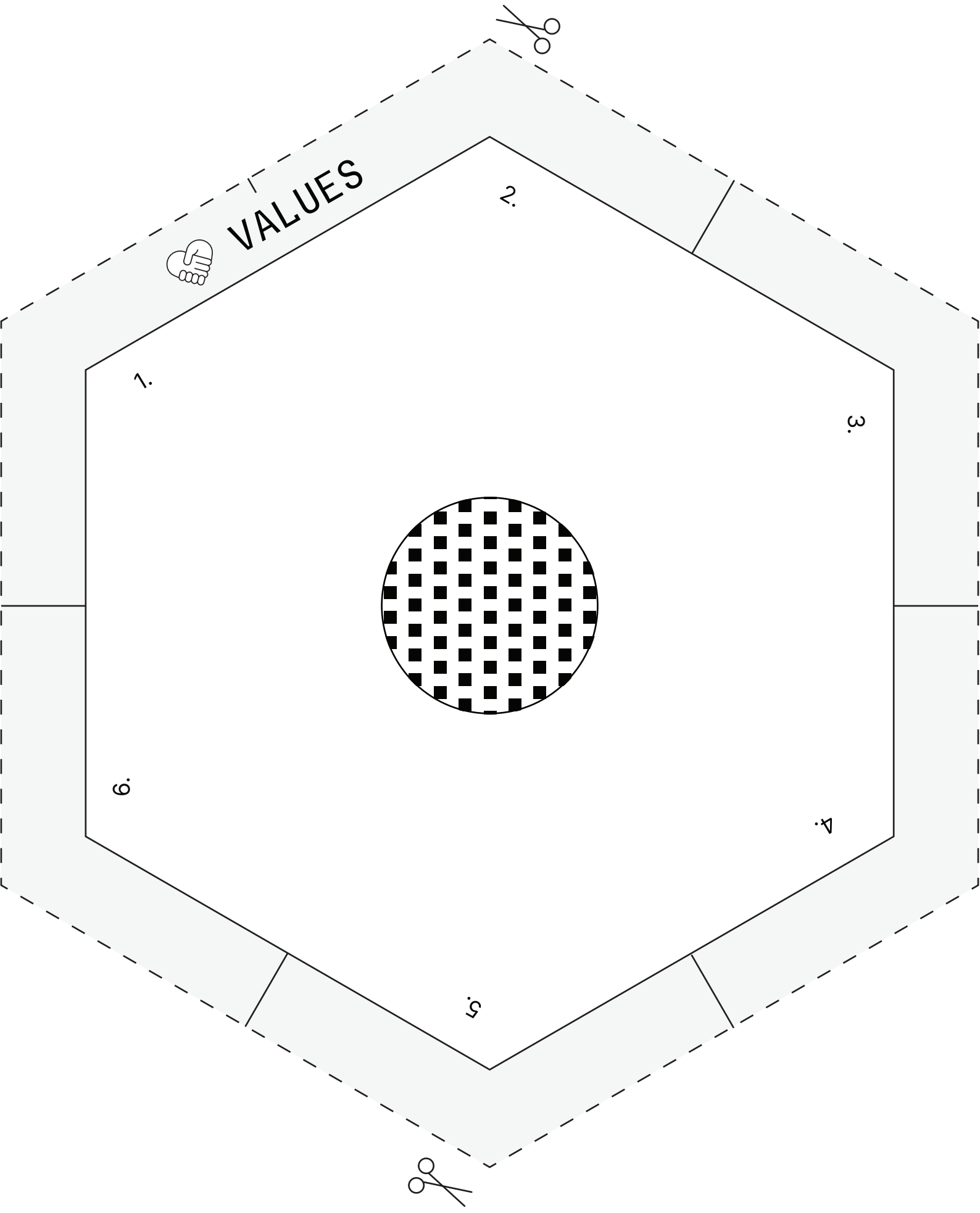
LOPPUTULEMA

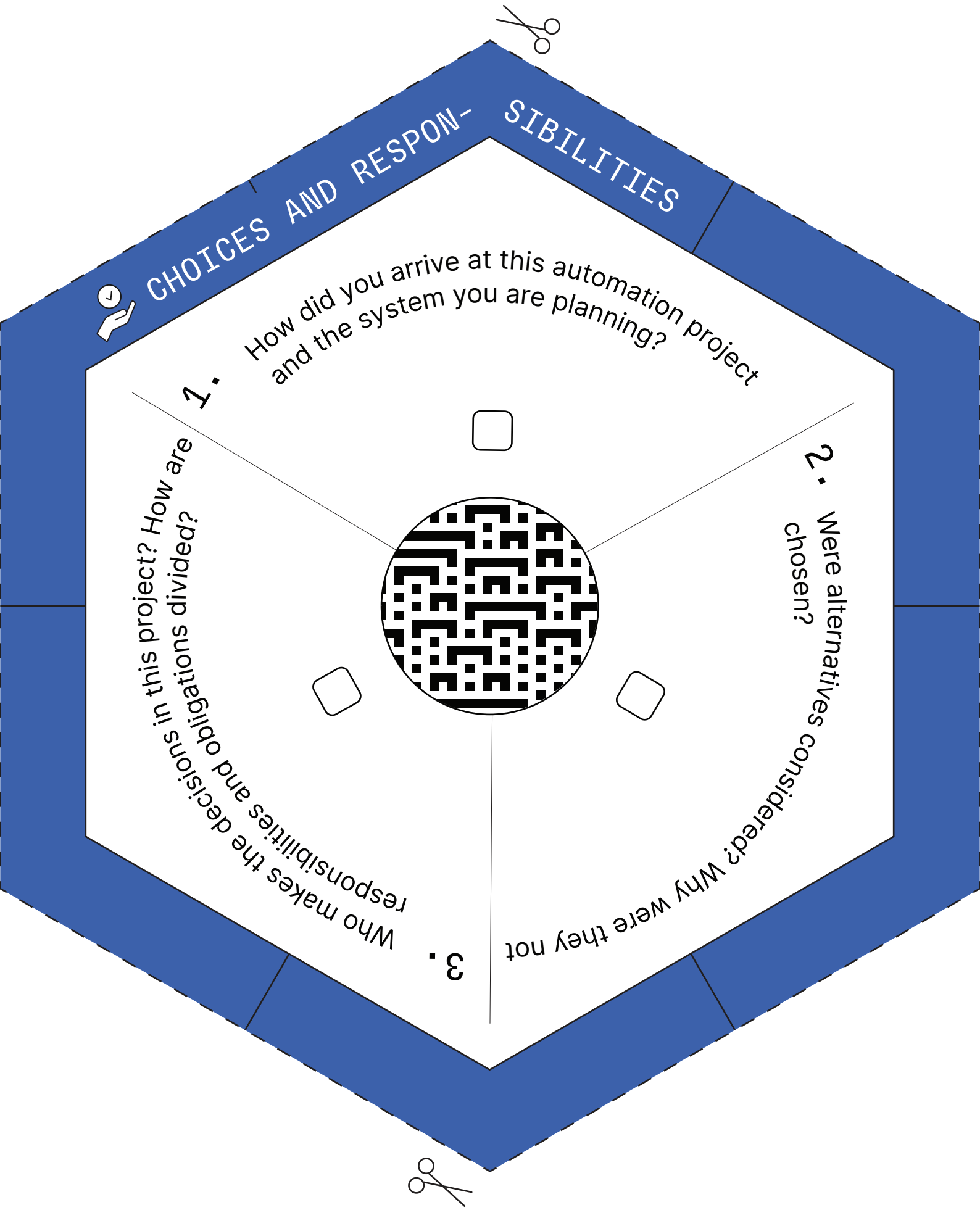
You can continue your answers on this side →

FRICTION POINTS

REFLECTION

MODULE: VALUES




CHOICES AND RESPON- SIBILITIES
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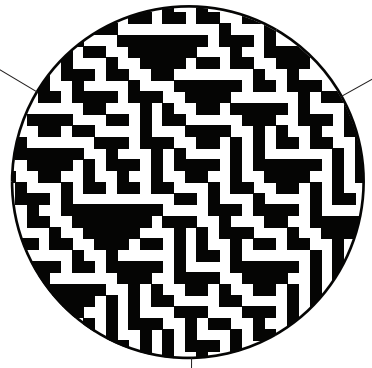
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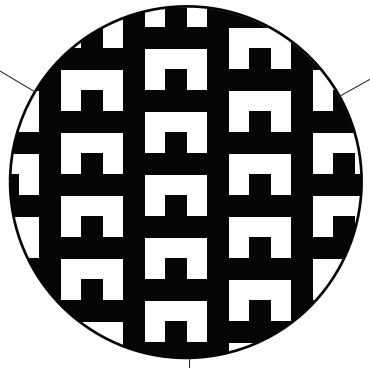


DEPENDENCIES 1/2

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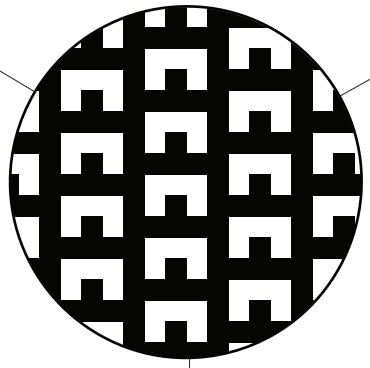


DEPENDENCIES 2/2

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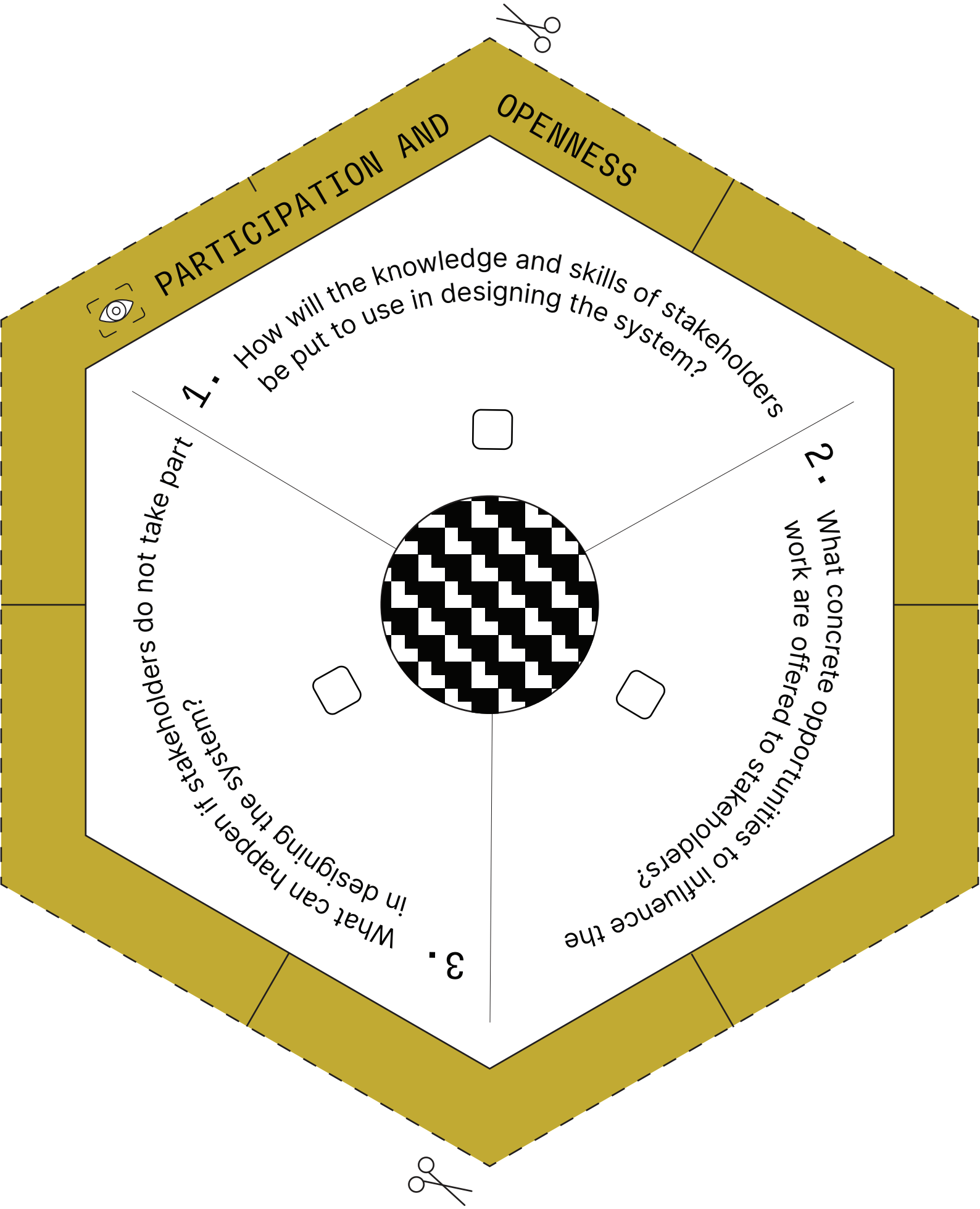


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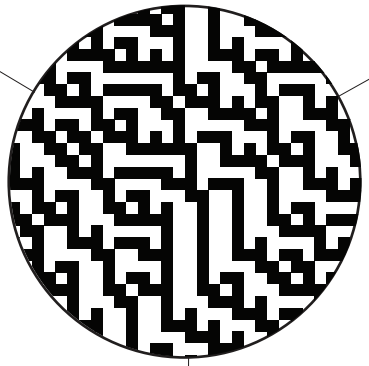

PARTICIPATION AND OPENNESS
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2. How do the system and the automation it produces change how responsibilities are divided?

3. How does the system change job tasks or the nature of the work?

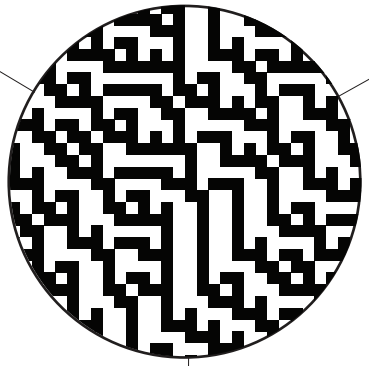


EXPERTISE AND AUTONOMY 2/2

4. Are the purpose and the operation of the system understandable to everyone?

5. Is it possible to depart from the results the system produces or the decisions it makes?

6. What new knowledge and skills are required of employees?



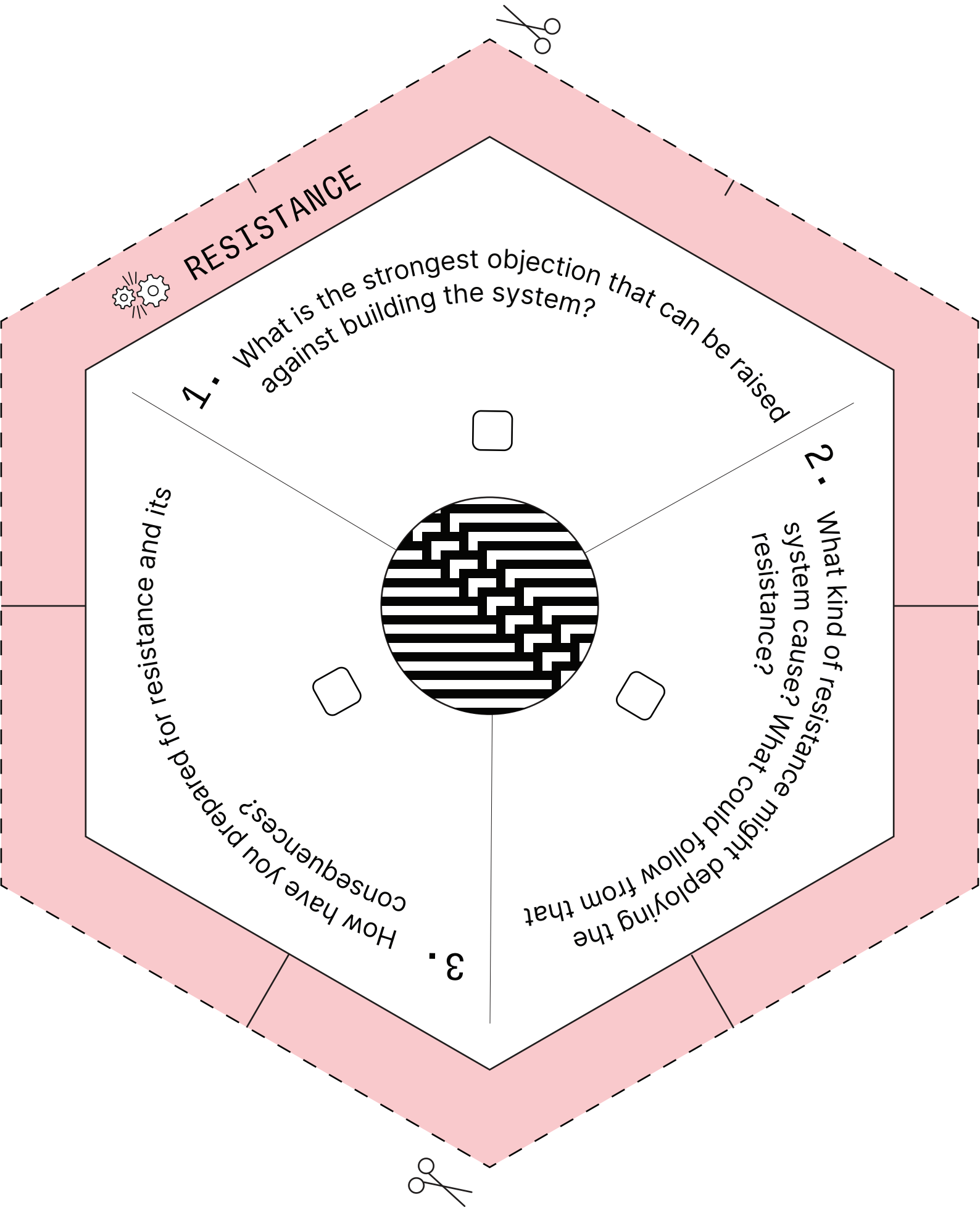
SUSTAINABILITY

1. Does designing the system involve choices that affect the environment and the use of resources?

2. Do the ways the system is used affect its environmental impact? How can more sustainable ways of using it be supported?

3. Are the resources used justified in relation to the benefits sought? And in relation to the system's life cycle?

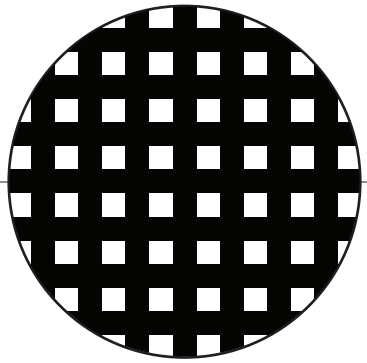
MODULE: RESISTANCE



MODULE: OUTCOME

OUTCOME

1. When could building the system be considered a success?



2. How should the original plan be changed so that you can move forward with it?