

## **Project name**

Interoperable argument maps

## **Deliberative Tool “Process Card” Information**

### **Intended Uses**

#### **Primary intended use**

- Deliberative Policymaking
  - Swarmcheck is being used in many public policy consultations and citizen panels in Poland. In groups of 6 - 40 participants.
- Collective fact-checking
  - Swarmcheck is being used as a tool for user collaboration in the TITAN app. TITAN is a web app under development in consortium with 14 international partners. It is an AI chatbot for coaching citizens of Europe against disinformation with critical thinking assessment, microlessons, and the collaborative environment for debating information from the web (project end date 31 August 2025)
  - It is simultaneously developed as an AI-assisted collaborative fact-checking tool for debating claims from the web and AI automatic assessment of the truth.

#### **Primary intended users**

- Citizens
- Researchers, Managers, Knowledge-workers

#### **Primary intended context**

- Structured discussions
  - Online deliberation, collective fact-checking
- Public policy deliberation processes

#### **Out-of-scope use cases**

- Non-anonymous discussion - Swarmcheck is designed to focus on expressed reasoning rather than on who expresses it to avoid biases involved in social decision-making contexts.
- Non-argumentative discussion

## Structure

### Inputs

*You must provide a way to programmatically import these inputs where appropriate for interoperability. Ideally provide an example. E.g. Seed statements, participants, moderation*

- In general, input for argument map database are: nodes (theses, sources, notes) and edges (support, attack, rephrase, source, condition, refutation, equivalence, exclusion)
  - Discussion starts by stating the initial thesis statement. Participants can choose argumentative action for (eg. supporting, undermining) and therefore create their own thesis that others can address. While formulating thesis system proposes theses from the database to participants to reuse.
- For the project:
  - JSON argument map in AIF (Argument Interchange Format) - upload/download
    - Theses (nodes) relationships (edges)
  - Plain text (discussion/unstructured argumentation from another deliberative software)
    - (optionally - main thesis of the discussion)

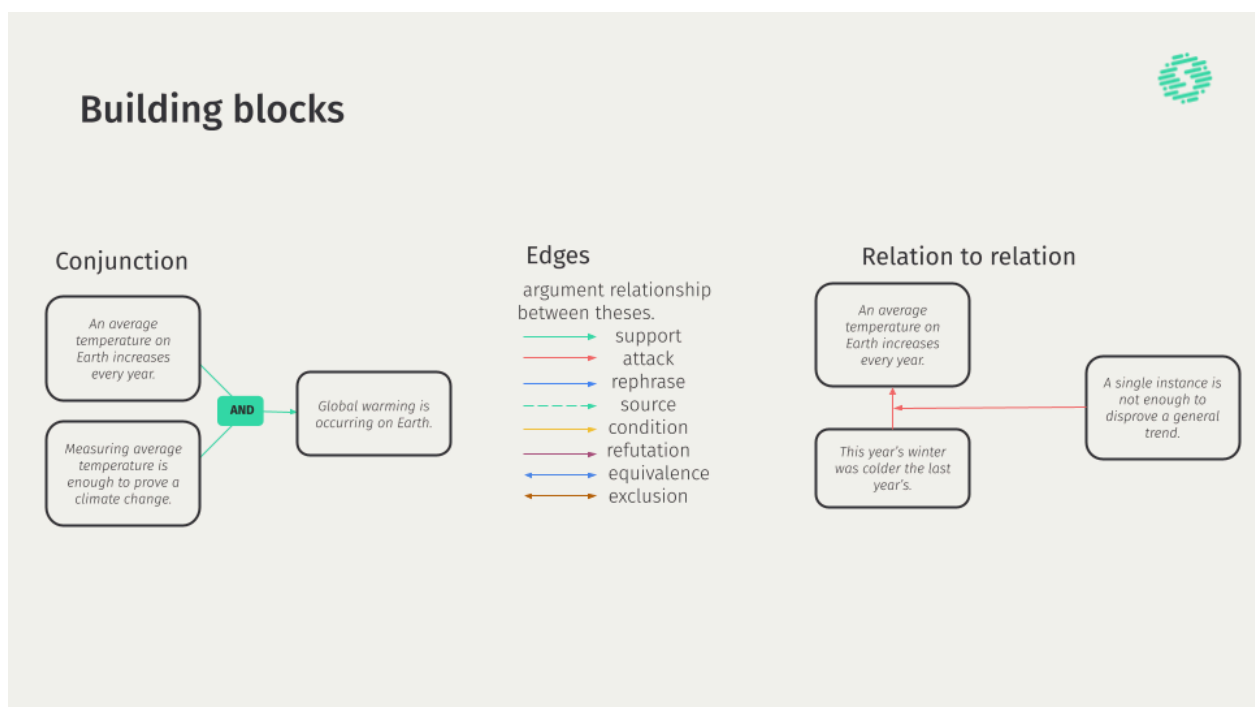
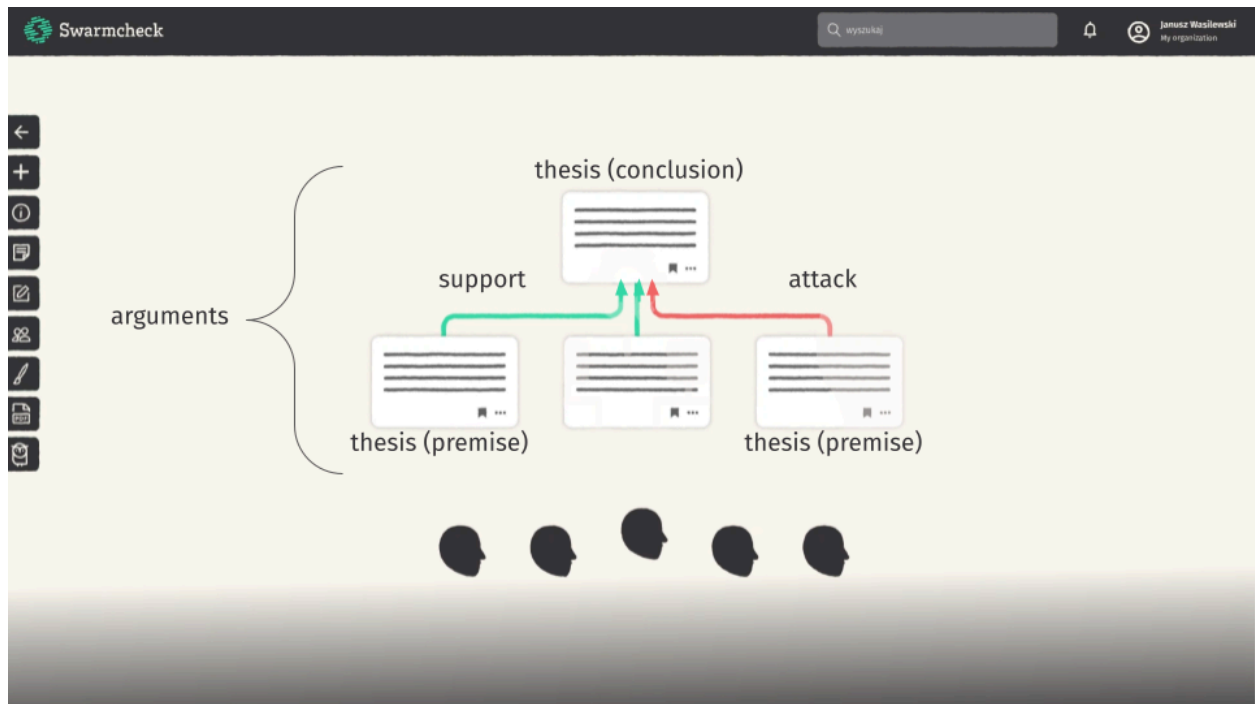
### Outputs

*You must provide a way to programmatically export these outputs for interoperability. Ideally provide an example. E.g. Vote counts, report(s), group informed consensus ranking of proposals, opinion groups, etc.*

JSON file with

- Argument map with S.O.L.I.D. claims.
- “S.O.L.I.D.” Claims (nodes) are:
  - Singular
  - Optimal
  - Logical
  - Indicative
  - Definite
- Additional data:
  - Sources (source nodes)
  - Notes - (free-form nodes)
- Relationships (edges)
- Argument weights (numerical value of the strength of claim derived from structure of argumentation) - if available
- Dates of creation of nodes and edges
- Statistics (votes, Delphi estimates, comprehension results, weights, summary) - if available

## Construction of argument in Swarmcheck



## Additional impacts (state changes)

What else happens to participants or others as a result of the process, beyond the direct outputs? E.g. People learn about the spread of opinion.

- Summary of the discussion - the most important information will be made available in an easy way, e.g. the most popular claims, the most supported claims, the most undermined claims, the most controversial claims
- Visualization of the collective reasoning - arranging the discussion in a logical structure with arguments allows for a better understanding of the context and the issues presented
- Knowledge building - Accumulating reusable arguments over time could gradually build society's capacity for productive disagreement and consensus-building.
- Decision based on voting or weighting of a structure supporting claims for selected claims - if voting is enabled in discussion
- Delphi estimates - average and standard deviation - for the Delphi plugin only

## Details

### Principles & Rationale\*

*What are the guiding principles and rationale behind this approach and process?*

- Anonymity- Every entry in the Swarmcheck system is anonymous which gives freedom of expression. Nobody knows the authors of the arguments supported or debunked so personal likes, prejudices, or hierarchy in the group are meaningless. Only the quality of the argument counts.
- Transparency - The arrows of logical relationships linking the arguments, clearly and lucidly show the logical structure of the discussion. There is no place for doubt as to what someone is arguing for or referring to. Only substantive and precise statements have their place on the map.
- Reusage - Swarmcheck enables the reusability of argumentation by linking claims that have the same meaning. (Linking graphs by the same node). The hundreds of discussions collected in the Swarmcheck database allow to identify arguments that have already been formulated and complete them on your discussion map. This allows participants to benefit from the knowledge accumulated by other users. One can be inspired or learn about others' critical comments to have a greater context of the bigger, global discussion.
- Asynchronicity - One does not have to be part of the specific discussion group that meets at a specific time to use the argumentation generated by others and to contribute to many future discussions at the same time.

## Benefits

*What are the reasons to use this process or include it in a larger process? What are difficult challenges that it addresses?*

- Improving critical thinking of users - Argument mapping is one of the best tools to improve critical thinking. [See studies](#)

- Argument mapping approach enables more structured, rational deliberation compared to unstructured discussion. The visual format makes it easier to see connections between ideas.
- The anonymity and asynchronous nature of Swarmcheck discussions can lead to more equal participation by reducing the influence of social hierarchies and allowing people to contribute at their own pace.
- Following own curiosity and interests - graph structure in contrast with plain text, allows participants to decide which paths of the discussion to follow based on their interest and expertise without the need to read all discussion.
- Exposure to diverse perspectives claim by claim through the platform can reduce polarization and build mutual understanding that there is a lot more nuance in certain policies than political identity would dictate.

## Intentional Limitations

*What are the limitations of the process which are expected by design?*

- The process is limited to argumentation.
- Discussions in different languages are separate
- Swarmcheck has two spaces for discussion: public and private. All public discussions are open-access and include the sharing of arguments. Private discussions can source public discussions but public discussions cannot source private discussions.

## Assumptions

*What assumptions must be true for the process to be applicable and effective?*

- The key assumption is that participants are willing and able to engage in the type of rational, critical discourse that argument mapping is designed to facilitate. However this deliberative ideal is not always met in practice. The plugin that transforms plain text into argument maps can improve the incorporation of different modalities into this form of deliberation.

## Explanation Overview

*[optionally include diagrams, if appropriate]*

Following is a set of screenshots illustrating how example discussions are stored and what argument maps look like.

Discussion folders

## Projects

Available Projects: 4

## Discussions

Available discussions: 4

CREATE DISCUSSION

BROWSE ALL ARGUMENTATION  
of organization: Effective Altruism

Choice of language...

Any

### AI takeoff speed

Discussions on AI takeoff speed

Author: Marcin Woźniak  
Created at: 19.6.2023



### Problems with Human Feedback in training transformative AI.

Let's explore the risks of training AI models with human feedback.

Author: Marcin Woźniak  
Created at: 2.8.2023



### Problems with Human Feedback in training transformative AI.

This is a description of the map you can type the agenda of the meeting, explanation or anything you like.

Author: Marcin Woźniak  
Created at: 14.2.2024

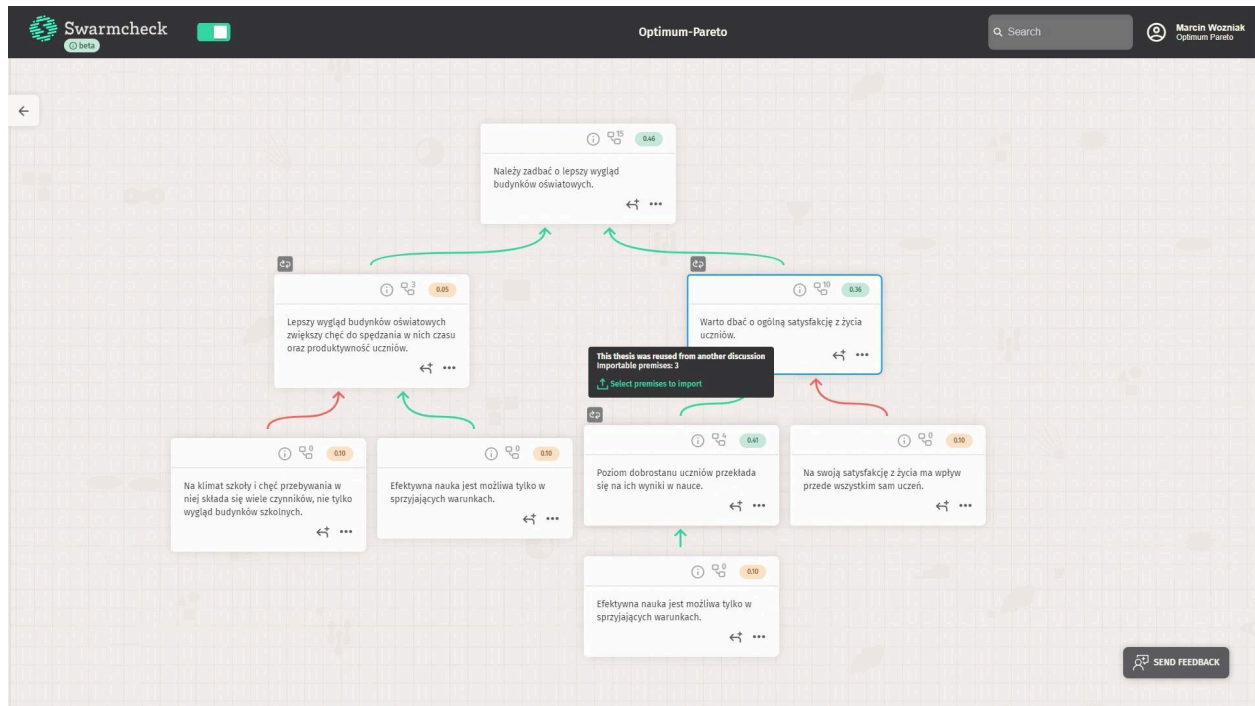


### Workshop AI takeoff

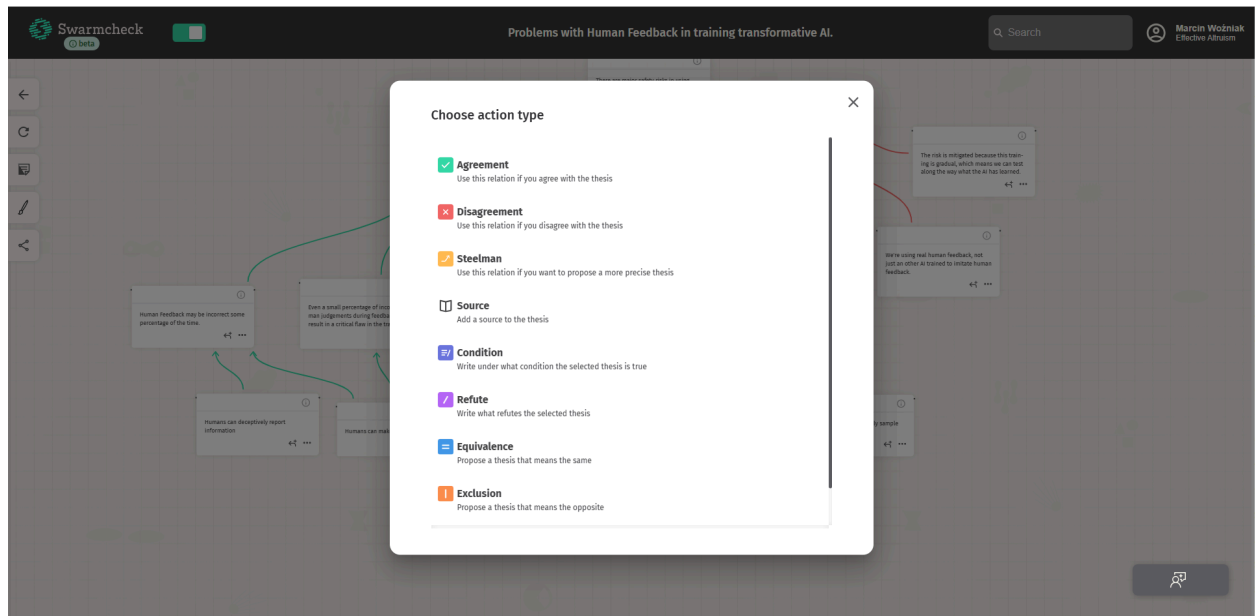
Author: Marcin Woźniak  
Created at: 16.2.2024



## Discussion graph interface



## After choosing thesis users can select action type



S.O.L.I.D. algorithms help formulate useful and reusable claim (under R&D)

The screenshot shows the Swarmcheck interface with a discussion on "Optimum-Pareto". A central modal window displays a claim: "There is plenty of available means by which one can contribute to the improvement of global health." Below the claim, it says "because:" and provides a text input field with the word "no". A red error message states: "It seems that the sentence does not contain any verb. Try to formulate a thesis which is a correct declarative sentence." Below the input field is a button labeled "Add an assumption" and a green button labeled "CREATE ARGUMENT". The background shows a network of nodes and edges, with some nodes containing text like "Spending \$7,500 on 1,500 malaria nets through the Against Malaria Foundation is enough, on average, to prevent one death." and "People in poor countries routine from diseases that are relatively treat, given the right staff and equipment."

“Stack view of discussion”

The screenshot shows the Swarmcheck interface with a discussion on "High-Impact Careers". The view is a "Stack view of discussion" showing a conclusion and several premises. The conclusion is: "People who want to make a difference with their career can work on whichever social problem that most interests them." Below the conclusion are four premises, each with a status icon (green checkmark or red X) and a score. The premises are: 1. "One should consider their personal fit for the job if they want to make difference with their career." (score 0.82, green checkmark). 2. "If someone wants to make a difference with their career, they shouldn't ask which problems suit them the most, but rather which global problems need attention." (score 0.48, red X). 3. "If one chooses a social problem they wish their career to be focused on only on the basis of personal interests they might end up choosing a low-impact area." (score 0.65, red X). 4. "Social impact crucially depends on which area one works in." (score 0.30, red X). The background shows a network of nodes and edges, with some nodes containing text like "Working at a health charity focused on one of the most cost-effective global health interventions makes much more impact than working at a randomly selected one."