Fruto

User Research report

Client

Alan Turing Institute

Project

Ethical Assurance Platform

Date

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Moderator

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Research description

Five users participated in usability testing sessions aimed at uncovering challenges and barriers within the Ethical Assurance Tool. Additionally, a preliminary workshop was conducted to explore motivations, responsibilities, and barriers associated with ethical assurance for AI systems.

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Summary

Objective & method

Type or research: Qualitative usability test with the use of a System Usability Scale (SUS).

Method: A qualitative usability testing session was conducted with five users to identify barriers and challenges in achieving the goal of creating an assurance case. A System Usability Scale (SUS) questionnaire was employed to benchmark the current usability of the platform.

Objective: Evaluate the platform's usability and the proficiency of users in completing tasks aligned with their goal.

User profiles

Number of users: 5

User groups

The potential end users of the product encompassed a spectrum of individuals, including researchers, developers, and digital consultants.

Limitations

Users interviewed represent different segments of potential users, evident in the varied System Usability Scale (SUS) scores. Granular themes per segment may not be as distinct due to the range in segments.

Usability Testing Scenarios

1 Sign up and create a new file

2 Create an assurance case

3 Identify help to support you with the creation of the assurance case

4 Log out and find your assurance case to continue

Summary

This report outlines the findings from the testing of the Ethical Assurance Tool, highlighting the identified issues and offering recommendations.

The **primary concerns** were primarily found within the **user guidance** when trying to create an assurance case, **usability issues** with the editor panel within the tool, lack of **information hierarchy**, inaccessible **language** and an unituative **homepage**. The average **SUS score** was **48.5** which indicates improvements are needed.

It was observed that people assumed the system was more complex than in practice. Even if a tool is easy to use, if users perceive a steep learning curve, they may approach it with apprehension.

However, we are optimistic that implementing the suggested changes outlined below will effectively address a number of issues and also give the platform the space to grow as it evolves.

User Journey

	Sign Up/Log In	Create New File	Learn & Understand	Create	Validate	Amend & Save	Return & Manage
Tasks / actions What is the user doing? What tasks do they need to complete?	User comes to the platform and signs up for an account.	Users starts to create new file.	User looks around the platform and tries to learn what is expected of them and what to do.	User creates goal, context, claims and evidence.	The user is unsure if they're inputting the right information and looks for support on the platform.	The user needs to amend the current assurance case.	The user returns a few days later to amend the case.
Touchpoints Where does this action take place? What platform are they using? What are the circumstances? Areas of the website?	Web: Sign up page	Web: New File Page	Web: Assurance Tool	Web: Assurance Tool	Web: Assurance Tool White Paper Git Hub AT Help & Guidance	Web: Assurance Tool	Web: Homepage
Pain points Is there anything that is frustrating for users at this point? What barriers do the users experience? What is holding them back?							
Thinking & feeling What is the user thinking? How does the user feel at this point? What emotions does the user experience?							
Opportunities What can we do in this step to help users? What could we introduce to satisfy the users' needs?							
Insights Rationale of proposed changes.							

Key Insights

1.Sign Up & Create New File

Key Findings

1. **Sign-Up:** Users found the sign up process "intuitive and easy "but found signing up without their email slightly 'odd'. One user explained it may affect their trust of the platform but others seemed to feel comfortable with the sign up process.

2. **Expectations:** Whilst users were creating a new file they explained they didn't have enough guidance on what to expect once the file was created and explained this felt 'ambiguous'.

3. **Transparency:** Lack of headings whilst creating a file left users slightly confused and they didn't grasp what the templates section was and the expectations of importing a file.

4. **Form standards:** Users faced challenges with unclear optional elements, input expectations, limited space for larger inputs, and the inability to proofread written information.

2. Users were confused due to a lack of explanations and headings, making it unclear how their inputs would affect the tool.

4. Users experienced frustration as they were unable to proofread their inputs.

4. Users were unaware that this action was linked to templates.

Ethical Assurance Platform

Select or create a case

Groups   Docs   Github   Logout

Create a new assurance case

Name

Description

Empty

Submit

Import an assurance case from file

Import

Import an assurance case from URL

Load JSON from URL

4. The import option and layout caused confusion among users who struggled to comprehend what was expected of them.
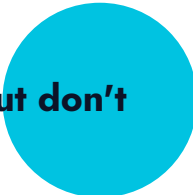
Participant Feedback

"Some information seems missing. I have no idea what the templates do"

"it's a bit annoying I can't see the full text"

"Unsure what to do, i've hit submit but don't know what it's doing"

2.Create an Assurance Case

Key Findings

1. **Accessibility of Language:** Users found the language used in the system to be inaccessible, leading to confusion regarding expected inputs and the meanings of input fields, despite their familiarity with the language.

2. **Information hierarchy:**
   a. Users assumed all the input and actions within the editor panel should be completed consecutively. They assumed the actions were placed intentionally due to their importance. This caused confused around delete, permissions and changing the colour.

   b. When clicking a node, multiple actions appeared—some affecting its state and others triggering additional actions. This occasionally led to misunderstandings and errors observed during the study.
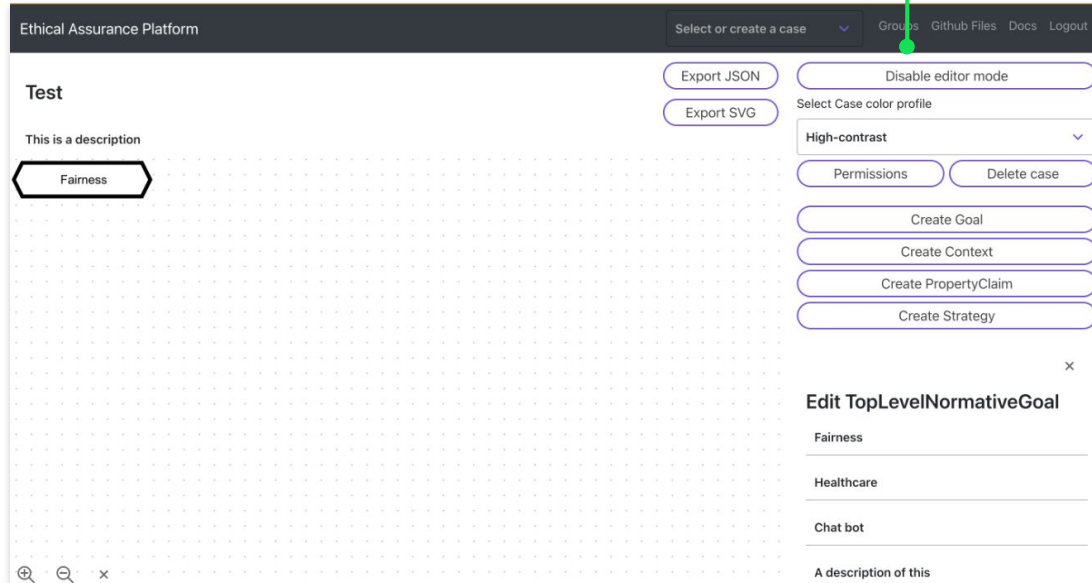
Key Findings Continued

3. **Visual Hierarchy:** Confusion arose due to visual weighting, spacing, and the absence of clear indicators in the editing panel, making it challenging for users to discern available tasks. Some users overlooked the 'edit' title, hindering their ability to clearly identify editable elements.

4. **Functionality:** Users encountered confusion with the parent linking functionality. While they grasped the concept in principle, they faced challenges in linking effectively, and certain options were not readily available. For instance, one user made an error and needed to attach a piece of evidence to another claim but was unable to do so.

5. **Guidance:** Users expressed a need for additional support throughout the flow to feel confident in their input and edits. As they progressed further, there was a growing requirement for clarification on specific elements, such as the meaning of "context."

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2. Users express finding the enabling of an editing panel unintuitive and anticipate it to be in editor mode by default.

Ethical Assurance Platform

Select or create a case

Groups Github Files Docs Logout

Test

Export JSON

Export SVG

Disable editor mode

Select Case color profile

High-contrast

Permissions   Delete case

This is a description

Fairness

Create Goal

Create Context

Create PropertyClaim

Create Strategy

2. All actions are perceived as important, creating cognitive load for users as they try to determine what is essential to complete the task.

×

Edit TopLevelNormativeGoal

Fairness

Healthcare

Chat bot

A description of this

1. Inaccessible language confuses user and creates apprehension.

2. Participants pre assumed the goal call-to-action affects the node selected.

3. Due to visual similarities and lack of weighting users overlook the meaning of input.

Users face challenges in viewing their entire text while writing in the description boxes and encounter difficulties in proofreading.

4. Parent functionality confused the user and they were not able to successfully complete this task.

Participant Feedback

"I would expect to have more autonomy making the links. The connections should be editable or made clearer."

"TopLevelNormativeGoal" is incredibly confusing. Why not just say create a goal or target or safeguard."

"Why is the colour important. Does this have some meaning later on, and do I need to be aware of it?"

3 & 4. Identify Support & Manage Assurance Cases

Key Findings: Support & Manage

1. **Support within the Tool:** When given the tasks to get support. Users assumed this would be within the tool itself before looking elsewhere.
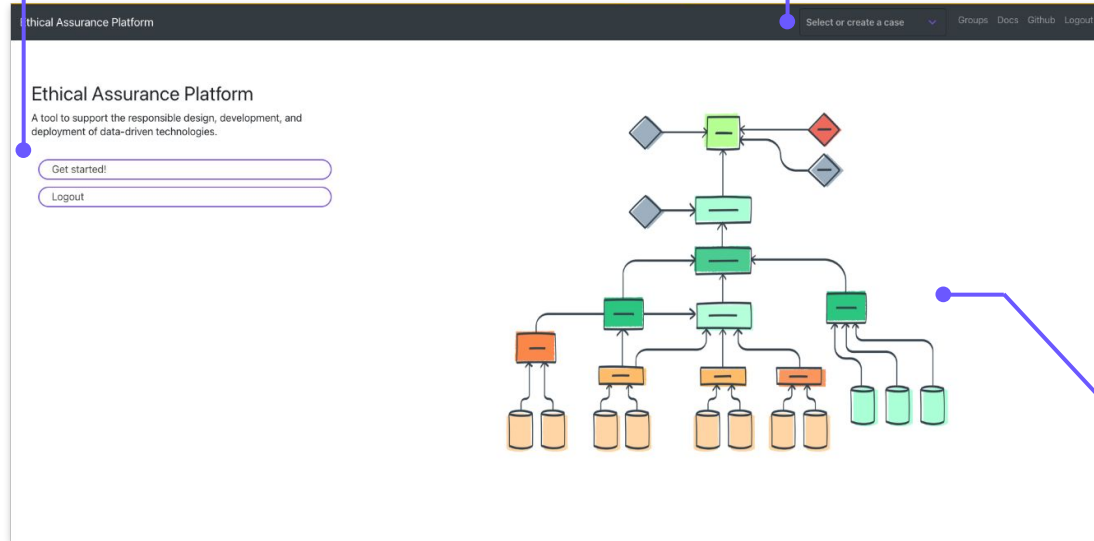
2. **Cognitive Load:** When users looked to the docs tab for support, they found the volume of information overwhelming. However, they also noted its usefulness when they discovered sections that provided guidance and they were able to complete the assurance cases with ease.

3. **Home Page Misinterpretation:** Users, upon logging out and back in, mistook the homepage for the login page due to its layout, large image, and login-like call-to-action buttons. It was only when searching for their assurance case that they realised it was the homepage.

4. **Assurance Case Location not Intuitive:** Users located the required list of cases, but found the process somewhat unconventional, expressing a preference for a more typical file storage system. Additionally, the current setup doesn't facilitate quick viewing and sorting of cases, particularly when the count exceeds 10.

2. Call-to-actions resemble a login page.

3. File organisation is unconventional, making it cumbersome to browse through multiple documents.

Ethical Assurance Platform

Select or create a case

Groups Docs Github Logout

Ethical Assurance Platform

A tool to support the responsible design, development, and deployment of data-driven technologies.

Get started!

Logout

2.The image misleads users, giving the impression that the homepage is a login page. This is because such images are commonly associated with login or landing pages.

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Search was used successfully but users commented it was a lot of effort to find information.

Trustworthy and Ethical Assurance Platform

Search

alan-turing-institute/Assura...
v1.01 10 4

Home   About   Introductory Resources   User Guidance   Platform Details   Community of Practice

About the Trustworthy and Ethical Assurance Platform

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Key Elements of the TEA platform

Element 1: Interactive Assurance Tool

Element 2: User Guidance and Documentation

Introductory Resources and User Guidance

Technical Documentation

Element 3: Community Infrastructure

ℹ️ **Info**

The Trustworthy and Ethical Assurance platform, or TEA Platform 🫖 for short, is an open-source and community-oriented tool that has been designed and developed by researchers at the Alan Turing Institute and University of York to support the process of developing and communicating trustworthy and ethical assurance cases.

To better understand the purpose and motivation of the TEA platform, we can consider the following question:

How should researchers and developers provide assurance that some ethical goal has been achieved over the course of a designing, developing, and deploying a data-driven technology, such as a machine learning model or AI system?

This is not an easy question to answer! As we pick it apart, we realise there are many more questions that need to be addressed:

- Which ethical goals are relevant to the technology (e.g. fairness, explainability, safety, sustainability)?
- How are these goals defined in the context of the project?
- How can a project team provide justified evidence that these goals have been achieved?
- Who should be engaged with as part of this process, and how should this engagement be structured?

1. A lot of information to sift through causes cognitive load when users are trying to find a small piece of information quickly.

Participant Feedback

"If we had something on the homepage, so I can see all my cases and delete cases as needed"

"Is this a tool or a website?"

"It's a lot to go through when all I need is one nugget of information"

Recommendations

Story Map

Sign Up/Log In	Create New File	Learn & Understand	Create	Validate	Amend & Save	Return & Manage
As a first-time user, I need clear understanding of my inputs to make informed decisions, ensuring I can effectively utilise the platform and enhance my overall user experience.	As a user stepping into a new task, I would appreciate a clear understanding of how my actions might influence the process. Transparency about the upcoming steps is valuable, especially since the methodology and tool are new to me.	As a first-time user of the tool, I need clear guidance and a quick understanding of what's expected, as I lack confidence and information on how to effectively use the tool.	As a busy user, I need to create an assurance case and know what to input at a glance because there is a lot of claims to work through and time is limited.	As a user lacking confidence in assurance cases, I require quick and accessible support to efficiently build a case because I don't have the time to go through extensive documentation.	As a user planning to frequently amend my diagram, I require a quick and intuitive process for making multiple changes because I am accustomed to platforms with intuitive diagramming features.	As a user managing cases, a more visual representation helps me understand the covered principles. This facilitates quick views for sharing or deleting, enhancing my ability to comprehend and manage cases effectively.

Phase 1

Update form standards.	Re-design homepage (Transparency & Information) / Update form standards	Update language to be more accessible. / Update visual hierarchy	Updated information hierarchy / Update visual hierarchy	Re-design homepage (Guidance before task)	Parent functionality	Re-design homepage (Manage Cases)

Phase 2

Log in with email	Onboarding Flow			Signposting page within the document page (i.e Diagram Guidance)	Error Management	

Phase 3

		Internal help within the platform				Permissions/Group feature iteration

Recommendations

- **Homepage redesign**
Redesigning the homepage for the platform will allow users to manage their files more conveniently. The homepage will include links to github, documents and everything that you would find in the top navigation bar. The homepage redesign will align more with user expectations of similar tools. This allows the assurance platform to grow and give ease of use and a hub for users to organise and view their files.

- **Accessible Language**
Throughout the platform the language needs to be updating to align more with the users understanding to avoid confusion and barriers to completing tasks.

- **Form Standards (including file creation & editor panel)**
To enhance user experience, incorporate clear actionable headings and explanations when inputting data into the platform. Ensure users understand word count, recognize optional elements, and have the ability to proofread longer input areas.

Recommendations

- **Information Hierarchy**
  In the editor panel, prioritise user actions based on frequency and importance, placing less crucial actions intuitively. This enhances user task completion and reduces confusion. Certain file management actions can be relocated to the homepage for added clarity.

- **Visual Hierarchy**
  Increase spacing between actionable areas and introduce distinct visual elements to provide clearer weighting. This enhances user comprehension, ensuring a more intuitive understanding of various actions and preventing confusion between calls-to-action in different areas.

- **Functionality**
  A more intuitive redesign of the node amendment functionality (the parent function) can instill user confidence in modifying diagrams. Coupled with language updates for accessibility, it will further aid understanding.

Additional findings

Additional Findings

■ **Relying on industry standards:** Participants started to fall back on their mental models of familiar tools such as miro. They assumed the same functionality applied and tried to move objects around and expected the diagram to be constantly in editor mode.

■ **Errors:** When users made errors there was no acknowledgment of the error made. This left the user questioning their action and trying the same action to find the same result (i.e keywords inputted incorrectly), this led to users becoming frustrated.

■ **Guidance:** Although users know the methodology they struggle to understand what to do. There are multiple points within the user journey this could happen, at the beginning within an onboarding flow and within the tool itself to support actions.

Additional Findings

■ **Learnability**
Users completed the assurance case creation process twice, indicating a high level of learnability on the second attempt. It was observed that users initially perceived the system as more complex than it actually is.

■ **Usage**
All users expressed a willingness to use the tool if it aligns with their expectations, with one mentioning it could replace their use of Excel if it functions well. Unfortunately this participant couldn't complete the task. This highlights the importance of accessible language and intuitive elements for those less tech-savvy who may use the platform.

■ **System Usability Scale**
SUS (System Usability Scale) is a questionnaire measuring perceived usability with scores ranging from 0 to 100. Higher scores indicate better usability; 68 is considered average, 70 to 84 good and 85 and above is excellent. The platform scored 48.5 which indicates usability improvements need to be made.

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