Final Submission

Welcome to the first ever Engineering Design Competition (EDC) by Science to Products Africa Initiative (S2PAfrica).
African Problems, African Minds
Save the date: February 15, 2022.

Submission deadline: February 1, 2021

General Submission Overview

1. All final submissions must have gone through the selection process. ***Only proposals that have been accepted for the competition can complete this final stage.***
2. All applicants must have resided in Africa in the last 4 years on the closing date of the call.
3. All applicants must be students or recent graduates of a university in West Africa on the closing date of the call.
4. All applicants must be between the ages of 18 - 25 years old.
5. All applicants must provide the information outlined in the template below using the submission form link before the deadline **February 1, 2022 12pm (GMT)**. The Solution Name should be the same as in the approved proposal. Please do not submit multiple copies of the form. Each applicant can send in ONLY ONE submission, before the final deadline, to be considered for the competition.

If you have any questions, please feel free to engage us on our social media platforms or email **edc@s2pafrica.org**.

VIDEO

1. Summary Video of your solution. (Required)

In 3 - 5 minutes, share the crucial details of your project. A video will help our judges understand your solution, and we highly recommend you include images, GIFs and video clips from your work. *(Maximum 5-minute video)*

Your summary could answer these questions:
1. What problem did you commit to solving?
. Why was this project useful or interesting?
3. What theories guided the design, development and execution of your solution?
4. Who was your target population?
5. What is the current state of your solution (e.g., idea, design, prototype)?
6. What are your future goals for the Solution?

To provide a Vimeo or YouTube video link summarizing your solution:
Enter URL here _____
Please ensure the video privacy settings are set to public.
Max: 5 minutes

Note:
Your videos should be in the best possible quality to showcase your excellent work. Footage could include clips of your simulations/sketches/diagrams and/or prototypes, e.g., 3D printed parts.

Submitting poorly filmed or produced videos could affect your project's outcome. Please note that successful videos may be shown to external investors and sponsors.

Features of poorly made videos include poor lighting, shaky shots, soft focus, inappropriate or messy background and wrong aspect ratios.

Here are some suggestions/tips to guide your video creation:
1. Lighting: Ensure video clips are filmed in well-lit environments to avoid dark/grainy footage. If your video is set in a dark room, judges may not adequately see your work.
2. Steady shots: Make sure cameras are properly set-up to avoid shaky shots. Always use a tripod.
3. Focus: Ensure you camera lens is properly focused on your subject/material, to ensure sharp images.
4. Background: Carefully choose an appropriate backdrop for your shots, when in doubt keep it clean and simple.
5. Aspect ratio: Ensure your videos are properly framed for broadcast. 16:9 is a standard for professional looking videos.

FORM

Application: 2. Introduction

Solution Name (Required): *This name should match the Name entered in the proposal.*

Team Lead Email (Required): *Enter the original team lead email used to submit application*

Team Members (Required): *Enter the names of all the members of your team.*

One-line solution summary Required): *Describe your solution and how it works in simple terms. What is it? What does it do?*

Summary Statement of the Problem being Addressed (Required): *Your summary could answer these questions: 1. What problem did you commit to solving? 2. Why was this project useful or interesting? 3. What is the intended outcome or impact – on knowledge, practice, economy, society or national development.*

The primary delegate for this project should sign this application

I certify that **[Your Name   ]** is a student at **[Your Institution   ]**. I began my studies on **[Start Date]** and expect to graduate on **[Expected Graduation Date   ]**

Signature _____

Which Categories does your solution most closely address? (Required)

Select the dimension(s) to which your solution is most aligned. Visit our website (https://s2pafrica.org/edc/categories) for the most up to date list of categories.

 Harness ignored energy
 Keep the lights on
 Localization
 Integrated solutions
 Autodesk
 High efficiency devices
 Micro-Grid Solutions
 Innovation
 Creativity

Application: 3. Theory, Design, Development, Execution.

Describe the core theories that power your solution.

Every successful EDC solution must include engineering design theory —whether new or existing—as a key component.
You could list University courses that team members have taken, which either directly or indirectly supported your Solution.
You could provide examples of applicable theories e.g., The Yam Pounder's Rotor is based on Strength of Materials, Elasticity, Theories of Failure.
The Fan example is based on Dynamics of Fluids.
If your solution is a new technology or a new application of an existing technology, describe the theoretical background and how it is used.
Maximum 50 words

Provide evidence that this theory works.

If your solution utilizes widely used and accepted design theories, describe how and where it's already used. Consider identifying existing products, providing links to academic papers or some other form of publicly available evidence, if available.

What is your solution's stage of development? (Required)

- o Concept: An idea being explored for its feasibility to build a product, service, or business model based on that idea
- o Prototype: A venture or organization building and testing its product, service, or business model
- o Pilot: An organization deploying a tested product, service, or business model in at least one community
- o Growth: An organization with an established product, service, or business model rolled out in one or, ideally, several communities, which is poised for further growth

Application: 4. Justification for Categorization and Use of Autodesk, and Special Skills (Innovation and Creativity).

4 (a). Justify your choice of Categories which your solution most closely address or belong?

Harness ignored energy
Keep the lights on
Localization
Integrated solutions
High efficiency devices
Micro-Grid Solutions

4 (b). Use of Autodesk and Special Skills (Innovativeness and Creativity) Justify your claim to the use of Autodesk, Innovation and Creativity:

Autodesk: Do you qualify for, and would you like to be considered for *The Autodesk Prize?* **Explain how you are qualified for this prize. How will your team use The Autodesk Prize to advance your solution?**

Describe how you used Autodesk.
In what way(s) did Autodesk software facilitate the development and/or design of your Solution? The prize will be awarded to the team that demonstrates expertise and knowledge of Autodesk software.
Maximum 100 words

Innovation: Do you qualify for, and would you like to be considered for *The Aspire Prize for Innovation?* **Explain how you are qualified for this prize. How will your team use The Aspire Prize for Innovation to advance your solution?**

Describe what makes your solution innovative.
Innovation is "change that creates a new dimension of performance". Taking an innovative approach is a key criterion for selection. Think about existing products and explain what makes your solution different. Compare your solution to solutions that aim to address the same problem. What makes your solution unique?
Maximum 100 words

Creativity: Do you qualify for and would you like to be considered for *The Creative Genius L.Prize for Engineering Design?* **Explain how you are qualified for this prize. How will your team use The Creative Genius L.Prize to advance your solution?**

Describe the creative elements.
Creativity is *"the use of the imagination or original ideas to produce an artistic work."* *The Creative Genius L.Prize in Engineering Design was established in November 2021 to encourage big ideas, develop futuristic mindsets and celebrate creative thinking. This prize aims to recognize, showcase and publicize the accomplishments of African Creativity. The prize will be awarded to an engineer-artist team that beautifully demonstrates their love for design and great imagination.*
Maximum 100 words

Application: 5. Current and Future Goals, and Limitations.

Current Goals and Barriers: What were your goals for the Solution? What barriers existed for you to accomplish your goals? In what ways could you possibly have overcome them?
We look for solutions that will have a transformational impact on millions of lives. Use this space as an opportunity to describe your impact goals and the limitations of your Solution, including specific financial and technical barriers
Maximum 150 words

Future Goals and Solutions to Barriers: What are your goals within the next year and within the next five years?
Consider addressing each barrier mentioned above individually. Highlight resources that you have or will pursue and explain how you will use them.
Maximum 150 words

Application: 6. Your Business Model & Funding

What is your business model?
Your business model describes how you provide value to the populations you serve, both in terms of impact and revenue. Think about your key customers and beneficiaries. What products or services do you provide them? How do you provide these products or services? Why do they want or need them?
Maximum 250 words

What is your path to financial sustainability?
Explain how you will bring in money to fund your work, whether through sustained donations and grants, selling products or services, raising investment capital, or a combination of all. In the long term, your revenue streams should cover your expected expenses.
Maximum 100 words

Fund raising:

(a) If you have raised funds for your solution or are generating revenue, please provide details.
For each funding source, please provide the name of the organization providing support, the amount and type of funding (e.g. grant, debt, equity), when you received the funds, and any other relevant details. For revenue sources, describe each source and the amount earned in the past 12 months. Please provide any monetary amounts in US dollars. As with the other application questions, your answer will be publicly viewable, so use discretion when sharing financial information.
Maximum 100 words

(b) If you seek to raise funds for your solution, please provide details.
Describe how much funding you seek, the type of funding (e.g. grant, debt, or equity), by when you hope to raise the money, and any other relevant details. Please provide any monetary amounts in US dollars. As with the other application questions, your answer will be publicly viewable, so use discretion when sharing financial information.
Maximum 100 words

(c) What are your estimated expenses for prototyping?
Describe how much funding you seek to get your Solution prototyped.
Maximum 50 words