## Region 8 AdHoc Committee on New Student Contests — Lee Crudgington

**Goals:**

The IEEE Region 8 AdHoc Committee on New Student Contests has been tasked with identifying and developing new ideas for student contests in Region 8. The goals of the programme are as follows:

- Provide an activity for student members, which inspires learning, collaboration, the development of new skills and fosters technological innovation.
- Develop valuable experience which will enhance the job prospects of the participants, help to spread awareness of the importance of engineering skills and the positive impact that new technologies and engineers have on society.
- Enhances IEEE Student membership across Region 8 to ensure sustainability of student communities.

**Progress against goals since the last report:**

- **Ambassadors** – ***105*** ambassador registrations from 27 Region 8 Sections. Ambassadors have the role of promoting the contest in their sections, student branches and universities; and assisting the core team with local logistics.
- **Judges** – ***133*** registrations from 33 Region 8 Sections. Judges are tasked to evaluate the entries to their randomly allocated entries, exclusive from their personal IEEE section.
- **Participants** – ***39*** registrations from selected Region 8 Sections. ***23*** new members joined IEEE specifically to participate in the contest. This is a share of 67% of applicants.
- **Finalists** – ***15*** teams selected for final evaluation by judge panel with valid entries.

Based upon the responses to both the Ambassadors and Judges phase, a subset of 17 participating IEEE sections are selected to compete in the contest this year. These include: Benelux Section, Egypt Section, France Section, Germany Section, Greece Section, Italy Section, Kuwait Section, Mauritius Section, Nigeria Section, Oman Section, Portugal Section, Romania Section, Spain Section, Sweden Section, Switzerland Section, United Arab Emirates Section, United Kingdom and Ireland Section. These participating sections were detailed extensively via E-Notice, social media and on the website in advance of registration opening.

**The design and ideas phase**, where students will plan, design, simulate and justify their proposal is complete and the evaluation of the submissions has concluded. We are shortly due to begin ***Phase 2 –the build phase***, where selected participants will receive an Arduino Nano microcontroller, funded by Region 8, to develop their idea. Students may build their design at home, or may use their university laboratories to extend the hardware using passive and active components on a breadboard.

- The final entries will be judged via a video submission, where the device is demonstrated and explained. A high-resolution photograph of the entry and a copy of the code will also be required for judging. Judging criteria has been agreed by committee and is available on the website.

- Ambassadors have been requested to provide detailed feedback on their experience with the contest to date, so that the process can be streamlined in potential future iterations of the contest. Active ambassadors will receive a certificate of appreciation and may be asked to join the core team in future iterations of the contest.

**Subcommittee Specific Issues**

The nature of the pilot programme necessitated us to restrict the entries to a subset of all Region 8, to avoid overwhelming the resources of the judging and administrative team. Going forward, if the programme is deemed successful, we aim to open this contest to all of Region 8 with ExCom support in future iterations of the contest.

**Points of Concern**

Covid-19 related supply chain delays and the worldwide semiconductor shortage may delay deliveries of the development hardware to students and/or slightly increase the retail price of the equipment. This situation is being monitored closely by the team and timeline adjustments made accordingly.

**Proposals for improvements/Other Issues to report**

Greater awareness and support from section chairs and/or section student activities representatives, in order to raise the profile of this contest in future.

IEEE
Advancing Technology for Humanity

IEEE Region 8

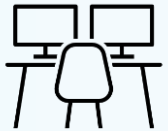
# *New Student Contests Ad-Hoc*

IEEEDuino

www.ieee.org

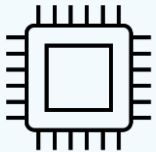
## Objectives of the New Initiative

- Provide an activity for student members inspiring learning, collaboration, development of new skills and technological innovations.
- Develop valuable experience, enhance job prospects, spread awareness of the importance of engineering skills to student members.
- Provide links with industry and with IEEE technical societies, creating technical communities and job opportunities.
- Enhances IEEE Student membership across Region 8 to ensure sustainability of student communities.



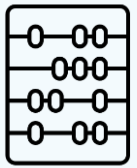
## New Initiative Student Contest

- **Hardware design and build competition, using Arduino.**
- Open-source, low-tech, inexpensive hardware, and easy to learn.
- Develops team-working skills after months of social distancing off campus.
- Student members are invited enter the contest, in teams of up to three.
- Win great prizes for both winning and participating.
- The contest has the title of '**IEEEduino**'.



# IEEEduino Challenge

- **Contest is delivered in two phases**:
- *The design and ideas phase:*
  - Participants asked to prepare a four-page proposal of their idea.
  - Submissions will be selected to participate in the build phase by judging panel.
- *The build phase:*
  - Selected participants will receive an Arduino Nano and development kit.
  - Students may build their design at home, or may use university laboratories
- Final entries will be judged via a video submission.



## IEEEduino Challenge

- **Theme will vary each year**
- 2021 theme: humanitarian technologies to combat COVID-19.
- Future themes: AI, Embedded ML or Tiny ML, Smart Cities…
- First iteration: pilot programme, in a number of Region 8 sections which show interest in participating and have volunteer ambassadors.
- Future programmes will be opened to all of IEEE Region 8.

# IEEEduino Challenge

- **Progress to Date**
  - **Ambassadors** – ***105*** registrations from 27 Region 8 Sections.
  - **Judges** – ***133*** registrations from 33 Region 8 Sections.
  - **Participants** – ***39*** registrations from selected Region 8 Sections. ***23*** new members joined to participate.
  - **Finalists** – ***15*** teams selected for final evaluation by judge panel.




# IEEEduino Challenge

- **Judging Criteria**
  - Judging completed by four randomly selected judges on each entry
  - Teams reaching threshold score are selected to receive hardware and progress to the next stage.

IEEEDuino 2021 Stage 1 Judging Criteria

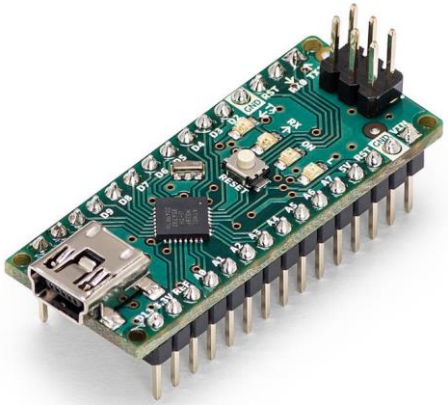
| Category | 0 -- 3 | 3 -- 6 | 6 -- 8 | 9 -10 | Points/10 |
|---|---|---|---|---|---|
| Design and Research (0-10 pts) | Neither realistic nor well researched | Either not realistic or poorly researched | Realistic and adequately researched | Realistic and extensively well researched | |
| Innovation & Originality (0-10 pts) | The idea is already known in this form | The idea is an adaptation of an existing concept | The idea is substantially original and/or innovative | An innovative and original idea that provides a fresh perspective on the problem | |
| Practicality and Usefulness (0-10 pts) | Ineffective solution | Minor aspects are effective and useful | Most aspects are effective and useful | A fully effective and useful idea that greatly contribute to fully solve the problem provided | |
| Achievable Within the Timescale (0-10 pts) | Extremely unlikely to be completed | Over-ambitious within the timescale | Significant effort and resources needed | Feasable within the timescale with good time and resource management | |
| Total | | | | | |
| Comments | | | | | |

# IEEEduino Challenge



# IEEEduino Challenge

- **Next Stage**
  - **Build Phase –** Distribute hardware and development kits to selected teams.



# IEEEduino Challenge

- **Timeline**
  - **November 2021** – Delivery of Hardware and Build Phase.
  - **December 2021 –** Final Scoring and Leaderboard Announcement.

- **The IEEEDuino Team**
  - George Michael (Cyprus)
  - Rawan El-Jamal (Lebanon)
  - Mohammad Hossein (Portugal)
  - Simay Akar (Turkey)

# Thank You