



TAPAS community challenge

powered by Siemens

Frequently Asked Questions

Mission

Innovation has always been the driving force behind Siemens' business success during the past 160 years. But today, innovation does not happen in closed corporate labs anymore. In a world where disruption has become the new normal, we need fresh ideas from outside the company – we need you and your creativity! This is why we created the open source development platform TAPAS – your freely programmable muscle for Raspberry Pi. TAPAS gives you the freedom to let your fantasy run wild – be it in drones, audio amplification, robotics or motion control. Since great ideas need to be seen, we created the “TAPAS community challenge” that gives your idea the audience it deserves.

And what's in it for you?

The TAPAS community challenge will not only give you a deep insight into cutting edge digital products from Siemens, but also we will make that technology available to you for free!

You will have the opportunity to share your ideas with Siemens' digital experts; receive feedback to your ideas; work with the TAPAS board at home on your idea; visualize your application and as a finalist present your idea to a top industrial and academic audience (we will take care of the travel costs)! The winner team will get a 5.000 Euro cash prize! You will have the opportunity get to know us personally. And maybe even create a cool business out of your idea!

The technology

Power converters are THE link between the digital and the physical world. They are the key component in almost all smart grid applications, e.g. photovoltaics, battery storage, etc..

We believe that “Software Defined Inverters” (SDIs) are the future of power converters. They achieve universality with a single, fixed piece of hardware where the overall functionality is defined via software (changes) only.

Most of the standard power converters use conventional (IGBT or MOSFET) technology, which usually produces a low quality and low fidelity output signal. While this may be ok for some applications, e.g. for standard motors drives, it is not really useable in advanced applications, e.g. audio amplification or robotics. In contrast, the GaN (Gallium Nitride) technology behind TAPAS allows for a high fidelity smooth output signal. This feature makes TAPAS to some degree universal – acting more like an ideal amplifier than a traditional inverter. This gives rise to applications in AC and DC drives, DC/DC power conversion, audio, robotics, magnetic field control, battery charging, and many others.

This is a completely new methodology that we follow here at Siemens and it allows you to create applications by writing code instead of developing hardware.

Your smartness and creativity combined with our technical background and resources: together we can make the future happen! Do you have ideas on how you would like to use the TAPAS board? Join the TAPAS community challenge!

When does it happen?

The challenge will start on Monday, February 26th, and will end with an Award Ceremony on Friday July 27th 2018.

26.02.18 Launch of the Challenge

26.02. - 24.06.18 Challenge runs

You apply for a TAPAS board by entering ideas on how you would use the TAPAS board. Keep in mind- you will discuss with the community and will have to convince the Siemens experts in order to get the voucher for your free TAPAS board. The last boards will be sent out 01.06.18.

24.06.18 Challenge closes

Last day to upload the visualization of your TAPAS project (short description, video clip, link to the source code) to join the competition for the round of finalists.

06.07.18 Selection of Finalists

Notification of the 5 finalist (teams): invitation to the Siemens CKI (Center of Knowledge Interchange) Conference at the Friedrich-Alexander University Erlangen-Nuremberg (FAU) in Germany (we cover the travel costs).

26. + 27.07.18 Pitching & Award Event

For the 5 finalist teams: Visit Siemens in Erlangen, get a presentation training and pitch your results at the award ceremony.

Where does it happen?

Working on your project will take place wherever you like.

After receiving the TAPAS board from Siemens, you will work independently with your team on the idea you handed in. In parallel you might discuss and develop your idea further via the TAPAS community forum.

Your presence will be required only at the pitching and award event. The event will be held in Erlangen, Germany.

Am I limited to use certain technologies or program languages?

No. Feel free to use any technology and surprise us. You can find a few example projects on <https://github.com/SDI-SoftwareDefinedInverter/TAPAS>

Do I get help?

During the coding phase you get support from both, the community and experienced Siemens experts. If you have questions regarding TAPAS and software please use the issues tracker on <https://github.com/SDI-SoftwareDefinedInverter/TAPAS>. If you need help with your project, you may post your question on the ideas page where you present your project.

You can ask us anything. We'll try to help wherever we can.

Who is hosting the TAPAS community challenge?

The TAPAS community challenge is hosted by Siemens in cooperation with the Center of Knowledge Interchange (CKI) at FAU. The final round and award ceremony will be held at FAU and will be part of the yearly CKI Conference. This years' topic of the conference will be "Advanced Power Electronics".

Who can apply?

Everyone, no matter if you are a student, a professional, a maker or anyone else who feels encouraged to join the TAPAS community challenge.

We will, however, only be able to send TAPAS boards to eligible participants. To be eligible you need to have the required skill-set to operate TAPAS safely. We therefore can only send TAPAS to participants over 18 years and with a solid technology background, be as a maker, student or scientist. Due to tax and shipping reasons currently only states of the European Union are allowed to receive TAPAS.

We are working on expanding this authorization and will inform you via this channel and on our Community Website.

Do I transfer any rights to Siemens by submitting my contribution?

No, the results remain the intellectual property of the participants. We encourage everyone to use appropriate open source licenses so the community and the experts have a fair chance to judge your ideas. For detailed information about licenses and rights, please refer to our Terms & Conditions.

How do I register?

Sign up: <https://challenge.tapas.sdi.tools/>

Is it free?

Yes! You will get the TAPAS board for free and we will take care of the travel costs of the finalists to Erlangen (Germany)

How does team building work?

Teams should consist of 1 to 3 persons. Please make sure to build a team with the right mixture of skills! All team members should register on the TAPAS community challenge to join the discussion on the community webpage.

How and by whom are the results evaluated?

Anyone in the community can comment your idea. Siemens experts will continuously screen the ideas and select the ones which get a TAPAS board to realize their project.

The results of the project need to be uploaded to the TAPAS community website latest on June 24th 2018.

Based on the following criteria, a group of Siemens experts will then select a group of 5 finalist teams who will be invited to the CKI conference at FAU Erlangen on 26./27.07.18 There, a jury from Siemens and FAU will announce the winning idea.

Evaluation criteria are:

- creativity (how unique is your idea)
- impact & scale (how much impact has your idea on the world, how big can it get - "one" or millions of potential users)
- style (how much appeal has your idea to the world in terms of visuals, wow & coolness)
- market readiness (how mature is the prototype, how straightforward is it to commercialize your idea)

Can I win anything?

Of course! The best team will receive a EUR 5.000 award. And if you convince us, we will be offering internships, jobs and thesis opportunities.

How will I get further information?

You will get more information on everything you need to know via Email after the registration and also during the implementation phase. If you are selected for the round of finalists, separate information will be sent to you. Also information is provided on the TAPAS community website <https://challenge.tapas.sdi.tools/>

If you have further questions, write us an old fashioned email and we'll make sure to reach out to you asap:

support@challenge.tapas.sdi.tools

We are looking forward to meeting you, seeing your creative solutions develop and making the most of the event! If you have not registered yet, do so now!

<https://challenge.tapas.sdi.tools/>