

BUILDING BLOCKS FOR THE FUTURE

UPDATING THE ECS-SRA

by JOSH GRINDROD

The Electronic Components & Systems (ECS) Strategic Research Agenda (SRA) is a living document: updated each year, it provides ARTEMIS, AENEAS and EPoSS with the opportunity to set out their common vision for a digital Europe and outline the key application areas, challenges and solutions. In addition to her background in semiconductor physics and several years of experience as project officer at VDI/VDE Innovation + Technik GmbH, Elisabeth Steimetz is currently Office Director of EPoSS. At EFECs 2019, she outlined the work being done on the 2020 ECS-SRA update and how this can shape new collaborations.

FITTING THINGS TOGETHER

"I started working for EPoSS in January and got volunteered to take over the ECS-SRA chair shortly after," Elisabeth laughs. "In previous years, the chairs came from ARTEMIS and AENEAS, so it was EPOSS's turn in 2020. My first thoughts were, 'Oh, my god! What do I have to do?'; but it turned into a great experience. In the ECS-SRA team, we feel that the three associations are working closely together regardless of which association the members come from. This is a really good working atmosphere and I received a lot of help from the co-chairs Patrick Cogez from AENEAS and Patrick Pype from NXP"

As the initial ECS-SRA was released in January 2018, only relatively minor updates took place in 2018 and 2019. These included expanding the long-term vision, which contains surveys on emerging technologies that will have significant potential for the European ECS landscape ten years into the future and beyond. "For the 2020 minor update, the structure and the teams working on the different chapters were established. We had one replacement in the core team, but everything was already more or less set up and fortunately stayed the same," says Elisabeth. "A challenge actually came towards

the end, as we received eleven different chapters and had to merge them into one concise document without any mistakes."

THE FIRST MAJOR UPDATE

Having successfully brought these chapters together in a cohesive whole, attention has now turned to the 2021 update – the first major revision since the original publication. "At the end of September, we discussed the changes that will come next and came to the conclusion that we need a revised structure for the major update," Elisabeth says. "We're discussing the team and what topics must be added in order to prepare us for the coming years. If you're doing an update, you always add things. It gets longer and longer if you never skip anything. For next year, we want to make it more concise, but this is going to be a real challenge."

As for the new topics, she's quick to name artificial intelligence as the most important area that requires more attention. Nevertheless, it's important to keep the core of the document in sight. Elisabeth: "The ECS-SRA 2021 must still focus on electronic components and systems. There will be other instruments and organisations taking care of the software development of AI, but it is necessary to connect these different worlds. We need to collaborate more with other associations beyond ours and align their roadmaps with ours."

"We want to cover the topic of sustainability more in-depth. Topics that are not that prominent in the current SRA, like agriculture and climate change, need to be better covered. What do we consider necessary for a better future? Our work covers technical things that need to be improved, but the ways in which we approach matters and communicate them to the outside world also need to be worked on."

By and for the community

One such opportunity to share ideas took place at EFECs 2019 in the form of six ECS-SRA related workshops. In the three parallel ECS-SRA sessions (Technology Trends, Application Trends and Broadened Scope), the future content of the ECS-SRA 2021 was the focus. As the moderator of the latter, Elisabeth not

only oversaw talks and a panel discussion with those involved in the SRA update but also sought to make affairs more interactive. At the end, guests were invited to add stickers to a diagram showing different application areas, with the sticker's colour representing their field and its placement showing where they believe opportunities for collaboration lie.

"For me," says Elisabeth, "there were two real highlights in the Broadened Scope session. One was integrated photonics, as this will open a whole lot of new opportunities for the ECS community." The workshop agreed, with many stickers being placed at the interface of integrated photonics and electronic components and systems. "The same is true for flexible manufacturing, as applications are getting more and more specific. Especially in healthcare, a lot of applications use a combination of flexible and standard ECS components to run the sensors. I see potential there."

"On the software side, I learnt that it's tremendously important that we come to more standardisation of software codes," Elisabeth continues. "It's like Lego blocks. The principle is that you have to break down software into small pieces that you can then combine. But they need to be modular and generate safe and secure software for Internet of Things: less data but a higher level of security. There's definitely a need to further improve security while simultaneously reducing computing power. It's already in the SRA but will have to be stressed more."

As a whole, things are looking highly positive for the 2021 update. "I'm proud of the fact that the three associations cooperate without anybody saying, 'there should be more from this or that community'. We found a great way to bring things together for the greater good," Elisabeth says with a smile. "I'm also happy that we had a different format for the ECS-SRA workshop this year. Rather than just reporting on what we've done, as was our approach in the past, we got a lot more interaction and feedback this year. My intention is to collect input for the future and to get even more people involved in the ECS-SRA. The goal should be to make us all feel that this is not the document of just a few people but of the whole community."