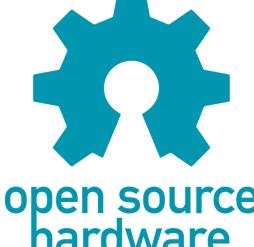
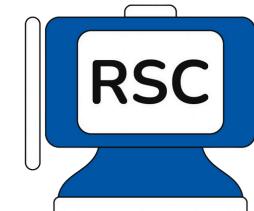


# SAY HI TO THE RSC (V4.1)



## THE STUDY BUDDY YOU (CAN) BUILD (AND FIX)!

Matevž Zorec, Farnaz Baksh, Feiazie Baksh, Ali Badshah

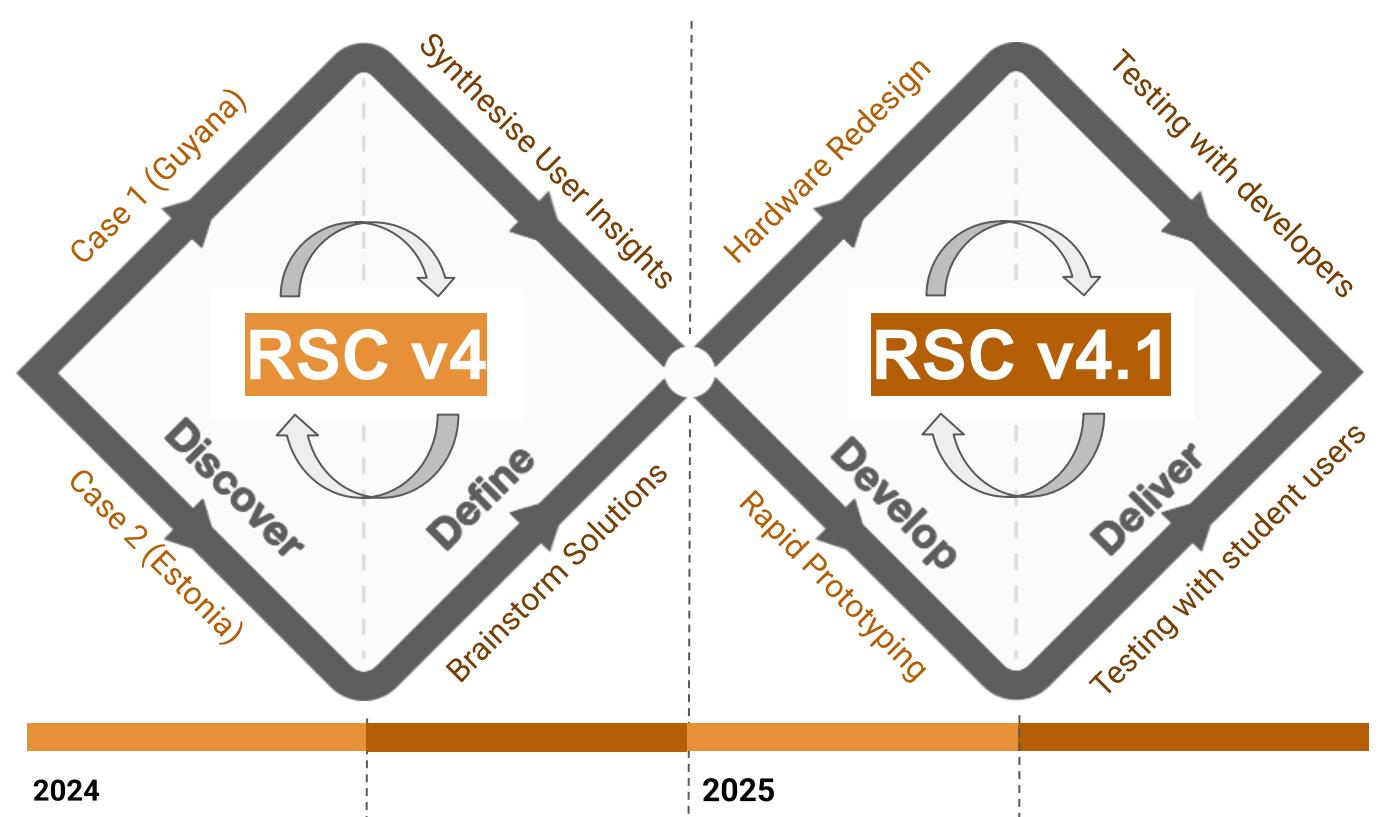


Personal companion robot designs often overlook ease of (dis)assembly. We found that students appreciated quality-of-life solutions that improve buildability, ease of maintenance, and enhance serviceability.

[rsc.ee](http://rsc.ee)

RSC V4.1 (2025)  
~385G, ~12CM  
~230EUR

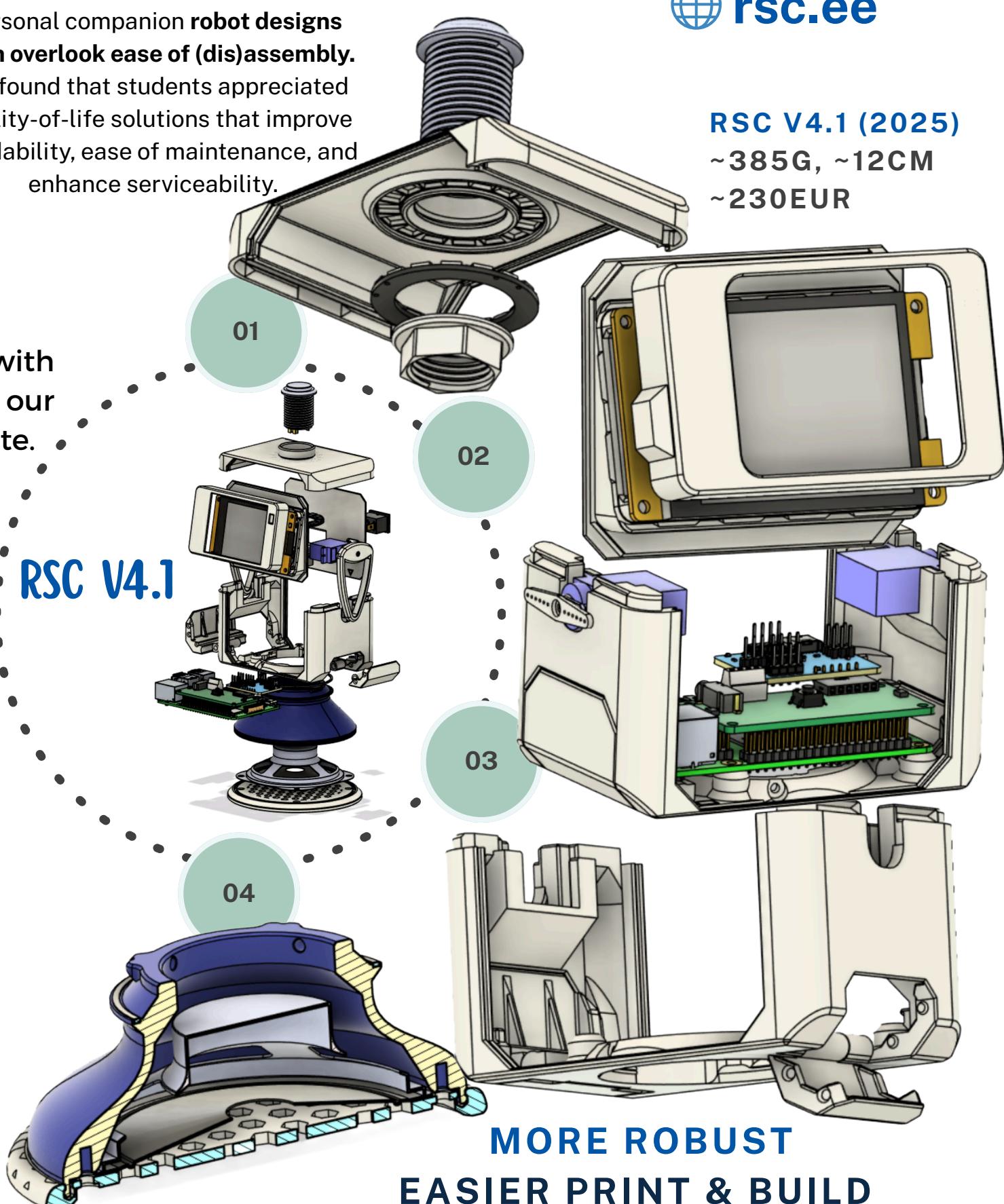
The Open Social Robot Study Companion (RSC) supports students with personalised prompts and feedback, aiming to enhance study sessions. In our design, we explore how RSCs can be made easier to build, use, and replicate. When replicating the RSC (v4), students found many challenges related to assembly complexity and longevity. With their feedback in mind, we refined the design in version 4.1 by simplifying the build, while upgrading durability - using the Double Diamond approach.



Co-creating the RSC using the Double Diamond approach with University Students (2024-2025)

**Discover & Define (2024):** Students found replicating RSC v4 challenging. Case studies in both Guyana and Estonia painted pain points when building and servicing the RSC (v4), plus incomplete documentation.

**Develop & Deliver (2025):** RSC v4.1 addresses the issues with an overhaul ft. Design for (Dis)Assembly (DfA/DfD) principles. v4.1 relies on one-way fits, reduced fastener dependence, and embedded fiducials. Print-in-place latches give tool-free access to peripherals. PCB Expansion Board reduces assembly complexities. The new docs page ([rsc.ee/docs.html](http://rsc.ee/docs.html)) helps guide builders. We continue iterating, validating updates with end-users.

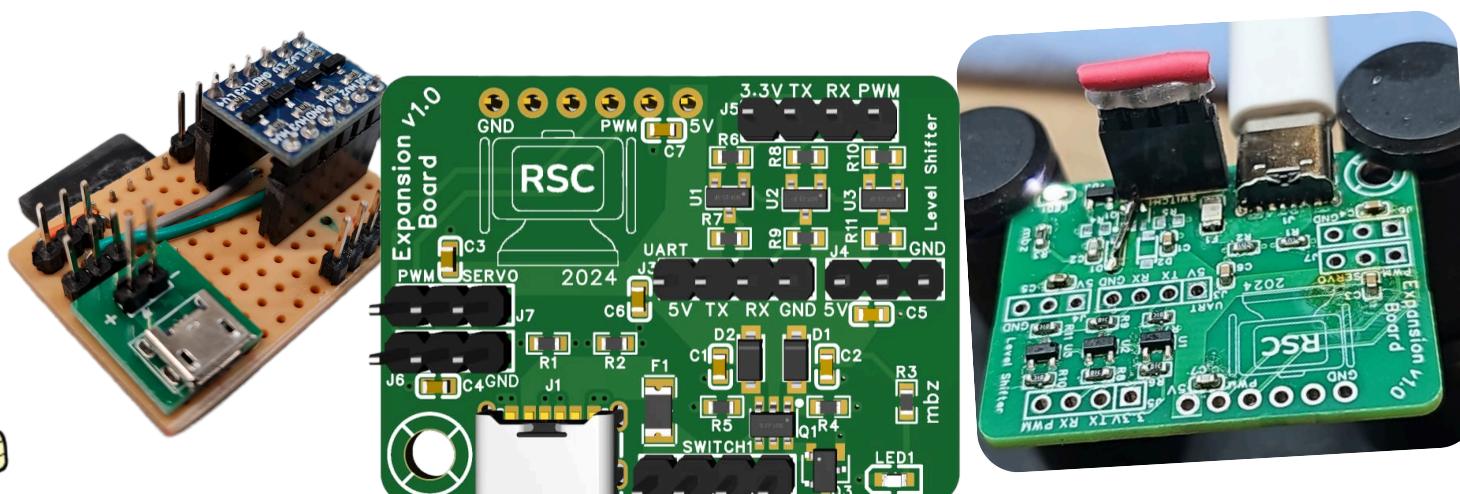
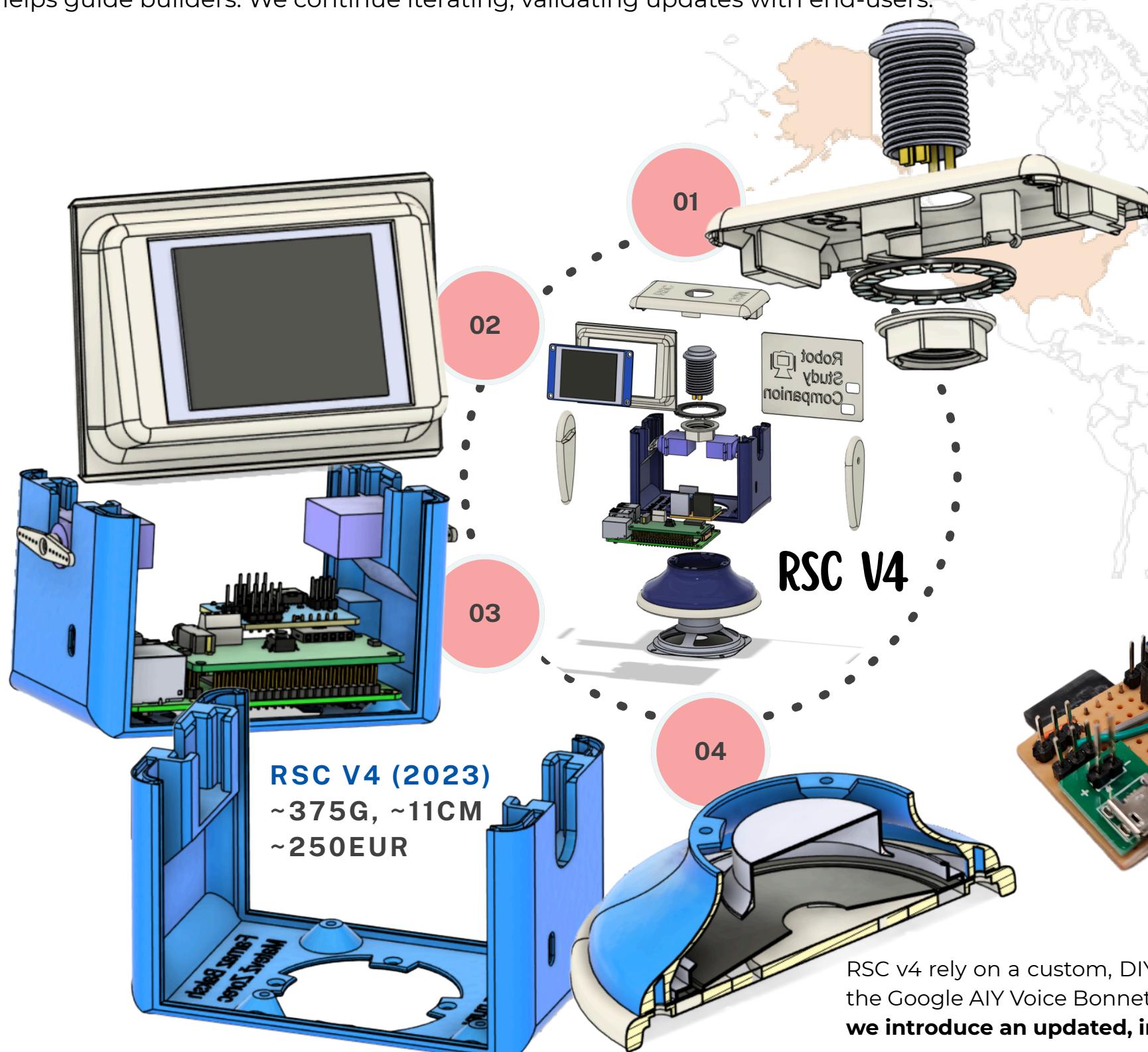


**MORE ROBUST  
EASIER PRINT & BUILD  
NEW FEATURES**

### Case 2: Estonia (Workshop)

Four students, one well equipped lab, one day build for RSC v4:

- assembly was time-consuming (screws, connectors), limited peripheral access
  - debugging led to peer-learning (soldering, group troubleshooting)
- Community-building was fun but ...
- docs unclear; troubleshooting = talk to expert/developer/peer
  - accessing peripherals requires disassembly
  - but v4 sliding panels ⇒ easier maintenance



RSC v4 rely on a custom, DIY expansion board that plugs into the Google AIY Voice Bonnet v2 (EOL 2023). In RSC v4.1, we introduce an updated, integrated PCB solution.

Help shape affordable open study companions and ed tech tools.  
[rsc.ee](http://rsc.ee)

