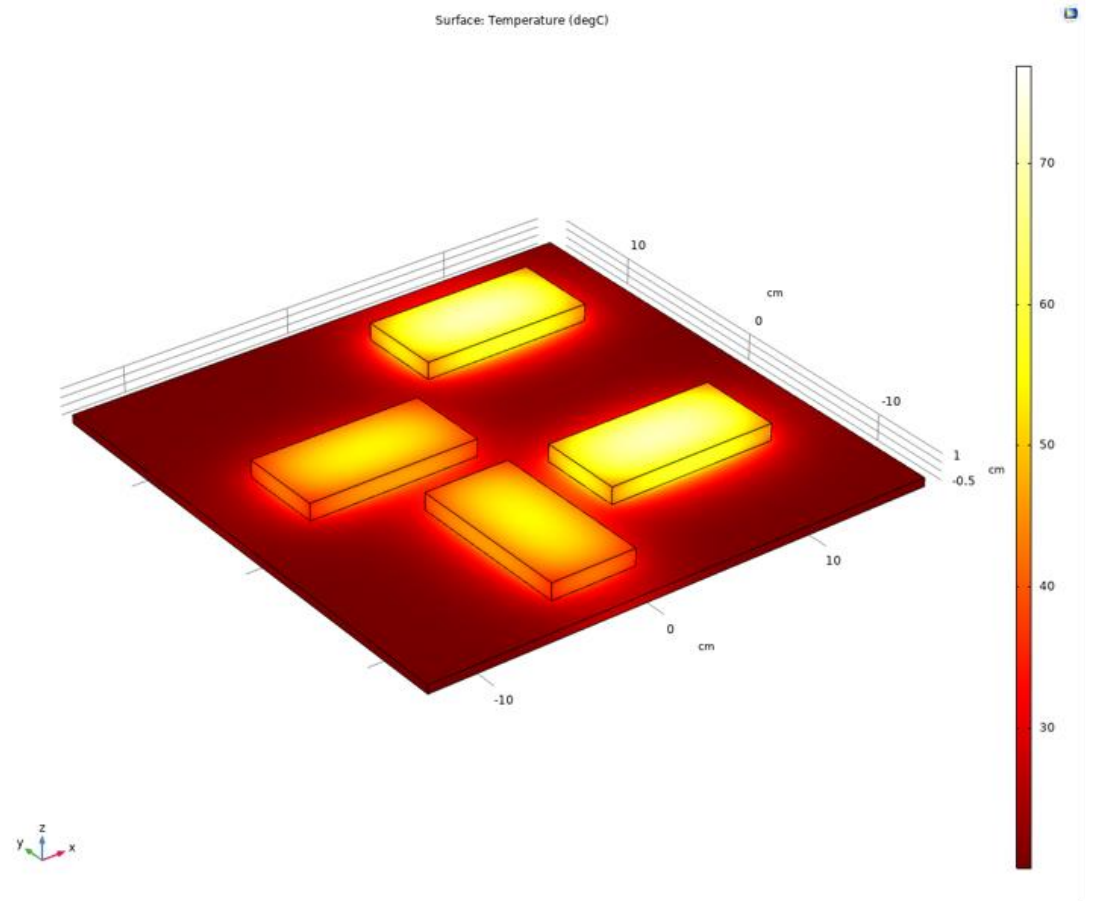# Independent analysis of thermal performance of HFx compute unit

A HydroFlux AB Project

Our Problem

- We have – Prototype with components which heat up under use

- We want – Add two microchips to the prototype which
  1. Remains as close to other components as possible.
  2. Minimizes loss of efficiency from overheating components

Surface: Temperature (degC)

Your Task

1. Create a numerical model simulating the performance of the prototype

2. Add the two microchips to the prototype to optimize their efficiency

3. Write a **technical** report to HydroFlux AB, detailing and discussing your solution

Practical Details

- You will in groups measure and simulate the prototype using COMSOL MultiPhysics, making use of the Heat Transfer module.
- Create a **technical** report, meaning we are mainly interested in your solution and discussion around this solution. The methodology is less important to us. See the written instructions for more details.
- You will perform the project and write the report in **English**, in groups of three.
- For the report, you are limited to **six** pages, including figures and appendix but not including front page. Do note that figures and text should still be legible on printed A4 paper.
- There is no right answer. We expect you to think creatively within the boundaries of the problem to find the best possible solution.

The Equipment

- To the left, a FLIR® TG267 thermal camera

- To the right, HF$_X$ BladeEdge compute unit without the two microchips attached

Message from the boss (Krister)

- Kindly close COMSOL after use to allow other students to use your occupied license.

- During the project, you have access to COMSOL between 8am-12am during the workweek. During other hours, the licenses will be used by another course.

- Please deactivate the fluid flow module in COMSOL as this is to be used by the previously mentioned course too.

And now: A quick demo