Master thesis – Modular mechanical engineering design tool (30hp)

Background
CAD is a design tool used by companies independent of size or type of product. The reason is that geometries are built with low-level functions such as points, lines, splines, planes etc. So even if the modeling detail of CAD has increased since it was introduced in 1950s, the working process is quite similar and thus creating and modifying detailed models are extremely time consuming nowadays.

Thesis description
In this thesis, the students have the opportunity to develop the future functionalities on the ongoing development of a modular design tool. The geometric objects will be stored as classes and instantiated in CAD in an object oriented fashion, allowing for a much degree of reuse and thus reducing the lead-time. The thesis will be run in parallel with a customer order on a customized version of iCAx software. The students will be part of the planning phase of the current order and suggest improvement possibilities for the next version of the software. We currently have a couple of ideas we wish to share and evaluate with the students before choosing the final description of the thesis.

The thesis students will work on a conceptual level in order to evaluate various possible solutions, following the agile software development methods. The work will include architectural work as well as actual programming. A simplified GUI will be built for proof of concept demonstration.

About the company
New design methods for modular CAD have been developed at Linköping University. The researchers behind the new design paradigm have launched a spin-off company to commercialize the ideas. iCAx is situated in LEAD which is a business incubator with the mission to successfully commercialize companies with high growth potential.

Qualifications
This project aims at Master of Science students with a background in computer science related subjects.

Time period - 2014 Q1-Q2
Number of thesis students – 2

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