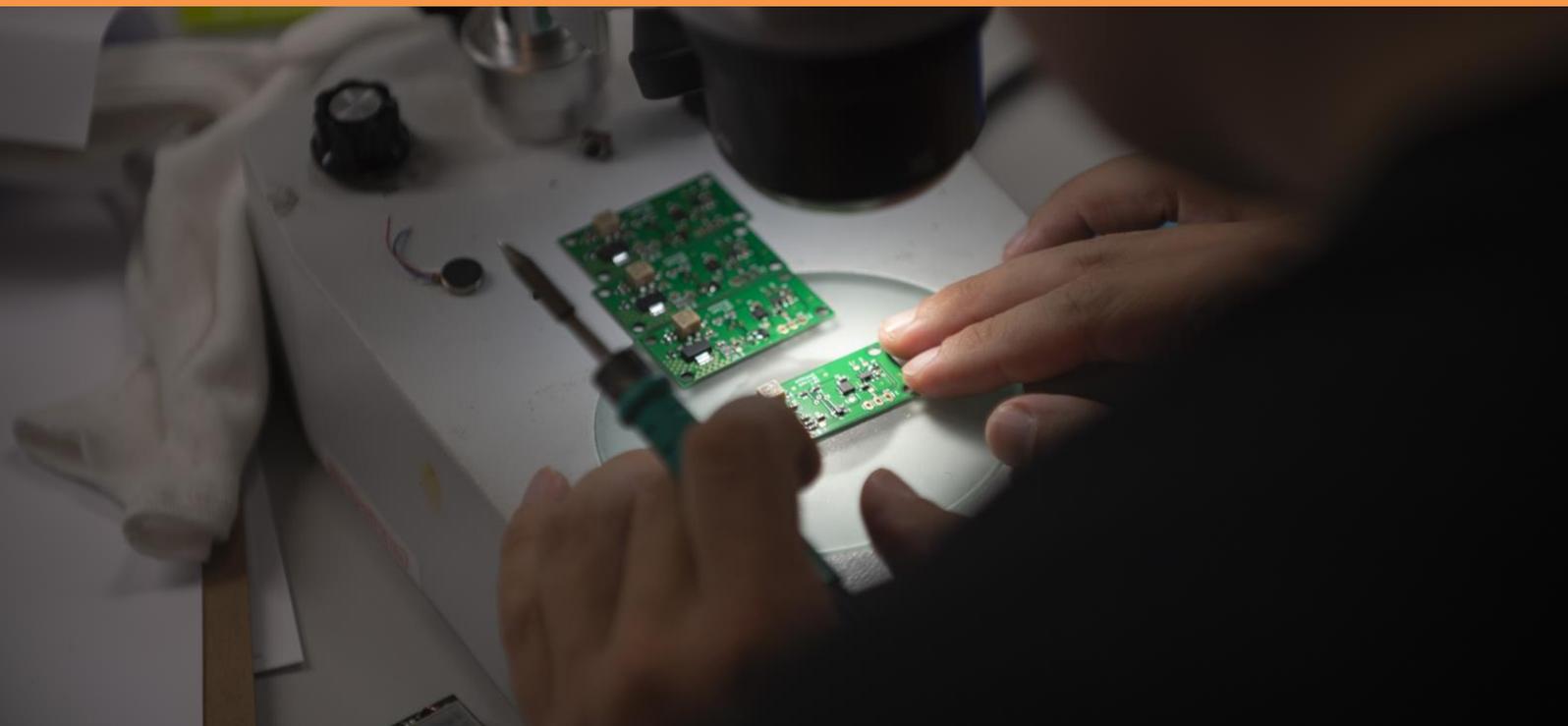# Top 5 tips prototyping hardware

Prototyping process in a business environment

aconno™

Successful prototyping

5 tips prototyping hardware

Prototyping in hardware development can be a resource and time-intensive process. Often even good work prior to the hardware implementation phase would not save you from a few iteration steps on the hardware prototype. Making the development process most efficient around that iteration phase should therefore be a top priority.

1. Know your challenges and analyse the use-case

A good approach before starting the development phase is to understand the client's use-case and also help him to understand what he really needs. As an example, constructing a high-precision PT 100-based temperature measurement system with 10.000 measurements per second and a battery lifetime of at least two years can be a big challenge. But maybe the client only needs the temperature of a big manufacturing hall a few times per hour. That makes the entire product approach much easier and more feasible.

2. Define your wording

Communication in the initial phase of a development process is very important, between engineer and client as well as between engineer and engineer. Since we are all human and everyone interprets the information he gets, misunderstandings are natural. So, make sure you are all on the same page when you talk about for example a Proof of Concept, not meaning a ready-to-sell product.

3. Do your paperwork

A good prototype always requires an academic approach at its start. So, deriving a concept, do a market search for suitable components, selecting those that fulfil the requirements you set for a device, studying their datasheets in depth. Every piece of information you gather in that phase will save you precious time later on.

4. Know your tools and gear

During the design phase, many software-based tools like simulation or CAD programs will be used to derive a prototype which then can be constructed. It is imperative that you know what the tools you are using are capable of to save valuable time. Measurements are equally important. So, you should know the strengths and weaknesses of your measurement tools. Interpreting imprecise measurements lead to conclusions that in the worst-case bring you back to the beginning of your development, even if that would not have been necessary.

5. Stay frosty!

Maybe the most important one. Big projects come with a huge level of responsibility, which can lead to stressful situations. Stay cool and maintain the thought that brought you here, developing awesome stuff with your team.

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