

EMBEDDED OR IOT PRODUCT DEVELOPMENT LIFE CYCLE

Embedded and IoT products

Hardware + software Based on processors or microcontrollers Perform predefined functions

The development of any product

idea

commercial production

4 MAIN STAGES

of development life cycles for IoT and embedded products

STAGE 1

PLANNING AND ANALYSIS

Define your business idea and transform it into a feasible concept. Consider and analyze the following points:

Idea



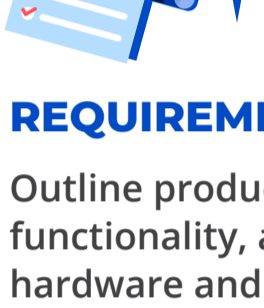
THE NEED

Whether you need to build an entirely new solution or reengineer one already available by adding functionality or launching a new version.



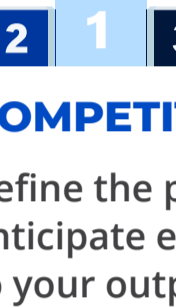
TARGET AUDIENCE

Who your end users are, their characteristics (gender, age, profession, etc.), in what circumstances they will need your product and what benefits they will get from it.



REQUIREMENTS

Outline product's functionality, appearance, hardware and software components based on the needs of your target audience.



COMPETITORS

Define the price policy and anticipate end users' reactions to your output as judged by competitors' results. Learn from their mistakes.

Concept

STAGE 2

DESIGNING

As soon as you have a **viable concept** for an embedded/IoT solution, you can move ahead with **designing the prototype**.



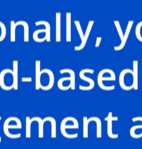
Create the product's **architecture** based on the collected requirements.



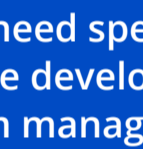
Assemble a **development team**



Embedded software engineers



Hardware engineers



PCB layout engineers



Mechanical engineers



Additionally, you may need specialists experienced in cloud-based software development, security management and team management.



Choose Technical Resources

Hardware development kits

Processor modules, Microcontroller kits, etc.

Software development tools

Operating systems
Linux, RTOS

Languages
Python, C++, JavaScript

IDEs, SDKs
PyCharm, WebStorm, Qt Creator

STAGE 3

IMPLEMENTATION

Once the concept is **proven to be viable**, it's time to turn it into reality. At this stage, you **create a prototype** — a working model of your IoT or embedded product that can be tested and extended by new features.

α

ALPHA PROTOTYPE —

a **raw product** that reveals functional issues and requires certain adjustments.

β

BETA PROTOTYPE —

a version that is **ready for production**.



You should also find investment opportunities for future production.

STAGE 4

COMMERCIAL LAUNCH

At this point, you have a real-life product that can be launched to mass production. This stage is also quite complicated: you can't start the production immediately, and your work will not finish when the product is manufactured.

YOU SHOULD:

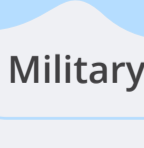
- Procure the spare parts and set up the manufacturing process**
- Produce the product**
- Perform post-manufacturing testing**
- Assemble produced boards into their cover**
- Deliver the product to end users**
- Ensure post-production support and**

WHY CREATE EMBEDDED AND IOT SOLUTIONS?

You can hardly find an industry that doesn't use or can't benefit from embedded or IoT products.



Healthcare



Military



Manufacturing

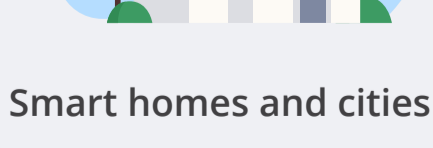


Automotive

Smart devices to monitor processes, avoid significant equipment failure and downtime and improve efficiency



Aerospace



Smart homes and cities



The functionality of embedded and IoT devices has become more complicated nowadays, which is why the development process has turned into a challenging task.

SaM Solutions has successfully completed numerous embedded and IoT projects for small and large companies. We provide all types of IoT and [embedded services](#), including consulting, Linux device driver development, complete custom development from idea to launch and long-lasting maintenance.

Don't hesitate to contact us at sam-solutions.com