Benjamin Button

Intelligent wearable camera for kids and parents.

About the client

Benjamin Button is an early stage startup with offices in Bratislava and Berlin. It's a passionate team, or, as they call themselves, a family, working hard to win in the consumer electronics market for kids.

The challenge

The product owner came to us with a first revision of their wearable camera PCB, which had some issues. The Lemberg team was happy to brainstorm together with the client on the best lean development approach as well as designing the whole solution architecture from scratch, which would include firmware, apps and cloud.

Delivered value

Our first project was to develop firmware that would run on the first pre-crowdfunding Benjamin Button prototypes as well as a web app to control and configure the camera. We understood the importance of this milestone because this prototype experience would define how likely the early adopters were to buy this product in the future.

The first release included the following features: video recording in 720p and storing the file on an SD card, ability to download stored video via USB or Wi-Fi connection (web browser), control of exposure settings, indoor/outdoor video modes, hardware reset and video start/stop recording via mobile phone, and LED indicator lights behavior to visualize device states like fully charged, low battery, low memory, recording on.

The process

Given that the client already had the first revision of their PCB, we did our best to reuse this asset and develop firmware for the prototypes on top of it. Our team was challenged to work with video streaming limitations on the hardware side and had to find optimal solutions for how to tackle this with the help of software.

By the end of this project, we had provided the client with suggestions on how to improve their bill of materials (BOM) as well as logs for operational temperature and data processing load to be further considered in the next electrical design revision.
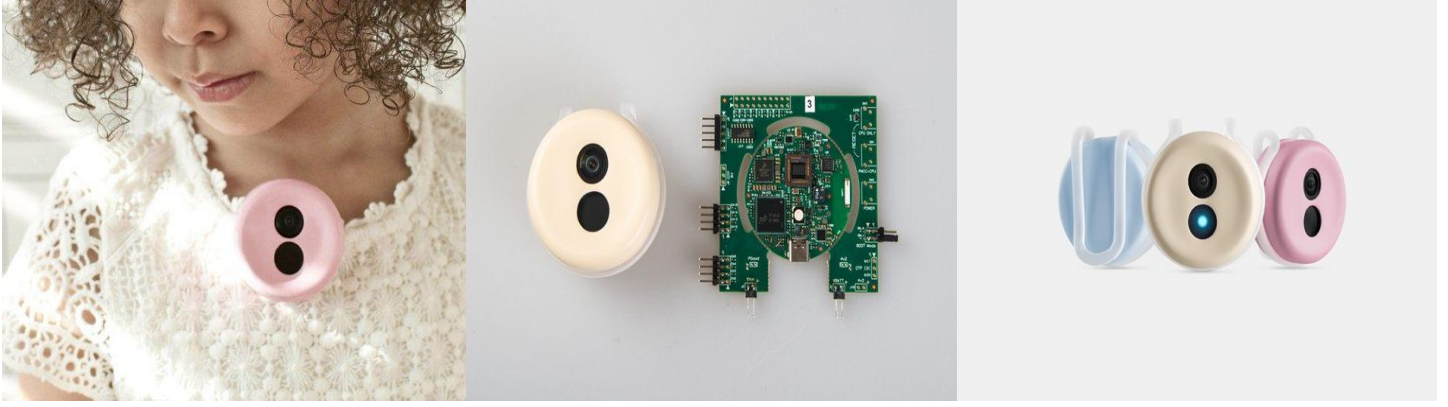
Services

Embedded software development
API development

Technologies

C/C++
FreeScale i.MX6 Solo
Yocto project
Embedded Linux
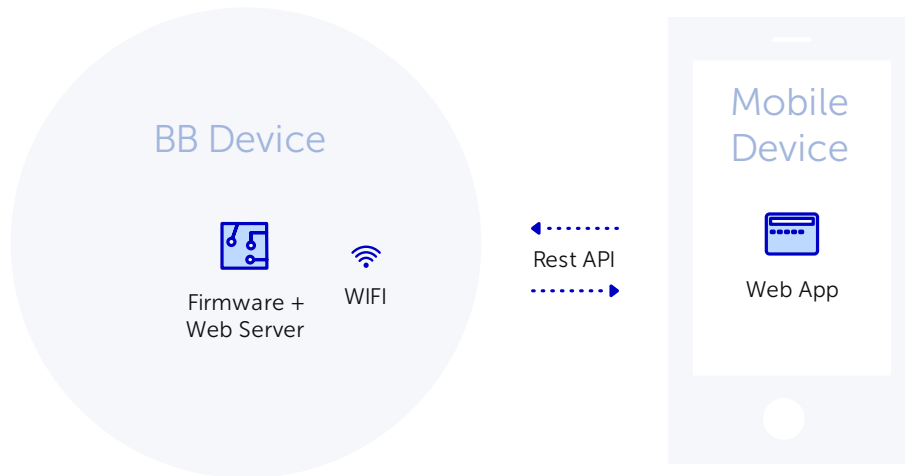Gstreamer multimedia framework
REST API

Industry

Consumer electronics

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How it works

Lemberg delivered firmware as well as the web app to control and configure the device camera.

BB Device

Firmware + Web Server

WIFI

Rest API

Mobile Device

Web App

LEMBERG

> " Working with Lemberg was a great lesson for a
> startup like Benjamin Button. We never thought
> we would win such a proactive partner and
> problem solver in one. For a firmware solution,
> Lemberg will always be our first choice. "

Dominik Orfanus
Chief Experience Officer at Benjamin Button

About Lemberg Solutions

Lemberg is a technology consulting, software & hardware
engineering company. Startups and established businesses rely
on our industry expertise to build new products and deliver
digital transformation.

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