Open-source firmware market

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Abstract. In this talk, we will present how any embedded system, in the form of open-source firmware, could exist as a standalone product on the market. We will first go through the business model behind our project for industrial metal detector, as a use case, and then the idea to put our IP as open-source firmware in the center of that project. At its core, it has two open-source firmware products: control logic for metal detection and security solution for creating an ecosystem of trust. Main benefit of having industrial products, based on open-source firmware, is the increased security and trustworthiness. Finally, we will briefly discuss how similar approach is applicable in the rapidly growing market of digital security products, sensors nodes, home automation gateways, and a variety of other connected devices that are widely known as IoT products.

Introduction

Open-source software products exist today in every field, from scientific research to office suites and communication software and are widely used by individuals, academia, and businesses. However, currently the open-source approach mainly drives either components (building blocks) or tooling products. Instead of being a complementary part of product development, we have decided to put open-source firmware at the driver seat of the end product. We believe such an approach can be applied to any product based on embedded device. And since embedded systems are everywhere today, this new approach could have wide applications to the way they are engineered and built.

The challenge, however, with industrial products is the high cost of initial investment, to bring the product from prototype to market. The reasons for the high cost can be many, but the main ones are:
- cost of development
- cost of compliance

Can we, as an engineering company, bring the cost of compliance down? No, most definitely not. Even if we can solve compliance from the very first try, it is already extremely costly. Then, could we optimize the cost of development by making our product centered around open-source firmware without the R&D process being compromised and the quality of the product suffering?

Our answer is yes.