

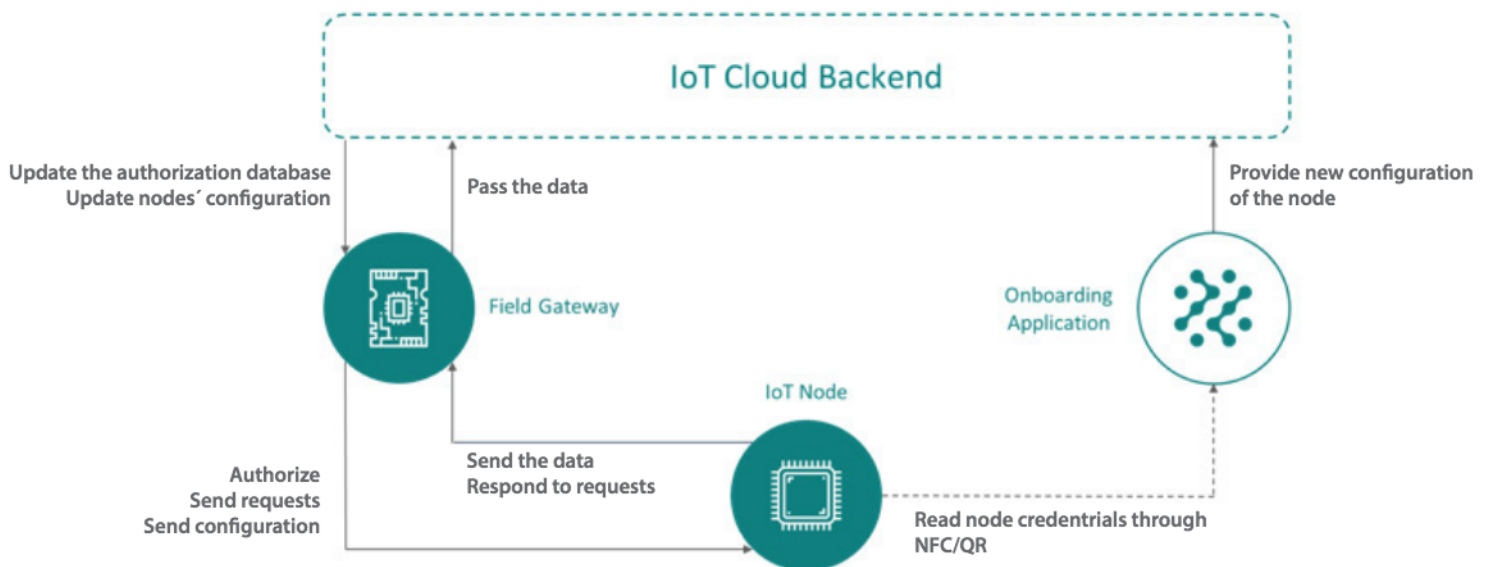
GOAL

Simplification of the onboarding process for IoT devices, considering the distributed characteristics of the target environment and the wireless communication requirement for the data exchange layer.

Challenge

DAC focuses on delivering a seamless onboarding procedure for attaching new IoT devices to local clouds. To do this, except for the procedure of passing the signature in the form public keys of new devices, the entire underlying infrastructure will be designed and implemented: small-footprint producer node with NFC module, onboarding application, cloud management infrastructure, and field gateway. All these components are parts of the onboarding toolchain.

Thanks to the developed procedure and infrastructure the user can be sure that the devices admitted to the local cloud have an identity, which can be confirmed, and are not malicious. Despite the security considerations, the onboarding process automates repeatable actions required to fully configure the node, making it user-friendly which results in reducing the overall engineering costs of the deployment and use of the system by around 40%-50%.



DAC is working on the IoT node implementation that is compliant with both Eclipse Arrowhead Framework and the developed onboarding procedure. DAC is also developing the onboarding application and cloud management infrastructure. Moreover, DAC is developing the performance assessment tool.



Engineering Phases



Results

Progressing digitization and digitalization of supply chain and the specifics of logistics industry brings interoperability of IoT systems to the top of technological challenges to be met in this dynamic industry. Various processes are being optimized and improved thanks to data collected, processed, and analyzed on different stages of value chain and by different stakeholders in parallel. Solving interoperability issues in complex supply chains will result in better connectivity, visibility and transparency.

When IoT solution provider develops the system to be installed on trucks of delivery company in order to ensure continuous monitoring of the transport conditions such as temperature or horizontal acceleration of the package (if there are some constraints), the cost and usability of the final solution are kept in mind. Flexibility of choosing different sensors would be a great benefit. Instead, IoT solution providers are forced to develop the whole, closed systems to address the connectivity issue between its components.

With the onboarding procedures being the subject of this project, IoT solution providers will get the freedom of utilizing different types of devices, with a variety of interfaces, provided by diverse manufacturers into connected systems following the needs of their end customers. Transportation companies will be able to install desired sensors on the go without costly and time-consuming procedures involving hardware integrators.

Results of this project will be validated and tested for food transportation, but it may be applied in any branch of logistics where moving freight from one place to another requires continuous monitoring of certain conditions influencing the quality of transported goods.

Partner Data



We solve modern business challenges with effective software and hardware solutions. The solutions we deliver to our customers are a result of the unique blend of research and management methodologies embedded in software development and hardware integration processes. Our team is ready to deliver the most advanced software solutions. We can lead the full cycle of product development and management as well as solve technological problems on demand. We specialize in Blockchain, IoT, Data Analytics, Enterprise Integration, AI/ML and DevOps for Mobility, Agro, FMCG, Automotive, and Logistics.

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