

# Cloud & Edge Software Framework

*"ASDI is working on a developing the next version of our scientific instrumentation device FieldSpec5. Rhoynar Software was hired to consult with our IoT Software Architecture and how it would interact with the cloud. Rhoynar team went above and beyond their commitments and delivered the Software Solution on time. Really impressed with their work ethic, dedication and commitment to the success of this launch.*

## **Business Challenges:**

ASDI Inc. is a company that specializes in spectroradiometers, and they needed to upgrade their equipment with the latest technology. Rhoynar software was chosen for this project because of their extensive experience developing device software architecture. We were building our next generation spectroradiometer and this involved expertise from cloud side and from edge compute side.

The entire operating system for the device was re-written, with new IoT architecture, remote support through the cloud, over-the-air update capabilities, telemetry for the devices and GPS based device tracking informations. We wanted to ensure that the Software Architecture would last for a long time and will be supported in the long run. The team at Rhoynar understood this business need and helped us in selecting the right set of architecture that was quick to prototype and scalable to support in the long run.

## **Results:**

Rhoynar Software Team was engaged for 1.5 year project, and they built a team dedicated to solving this problem. The team was experienced in Cloud Software Development, IoT Software Development, Embedded Devices integration, working with different remote sensors, Mender.io based OTA updates, and Automation/DevOps.

Rhoynar Software team dedicated their resources and committed to delivering the project on time. They spent most of the time designing an architecture based on IoT design principles (Remote Procedure Calls [RPC], Event Driven Architecture[EDA]), C/C++ cross platform development. Their automation and DevOps experience came in handy and the solution they delivered were easily testable and deployable.

## Project Details:

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- **Technology Stack used by Rhoynar Software Team:** NodeJS for backend web-services, Angular for front-end. The device software had a lot of components different languages including C/C++, Python, NodeJs and each of these modules were containerized using Docker. [mender.io](https://mender.io) was used for OTA update implementation. Automation and CI/CD were developed by using Jenkins.
- **Team Structure:** Rhoynar Software had a dedicated team of 8 senior engineers to work on our solution. They were divided into three teams: one for Web Services, another for the Embedded Device Software and yet another for DevOps and Automation. A Product owner/Program Manager was deployed to oversee the project. All teams together were overseen by an experienced architect who understood the business requirements well and worked with ASDI Inc to deliver a quality product
- **Agile Methodology:** Rhoynar Software was very open to adopting agile methodology and they used scrum for the project. The team had daily stand up meeting, sprint planning meetings where we discussed the next set of functionality that needs to be delivered in a given timeframe.
- **Maintenance:** When the project was completed Rhoynar Software team continued to support us for a few months. They helped in integration of new devices, fixing issues and also help with performance testing. End result: The solution developed by Rhoynar Software team saved ASDI Inc more than 50% of their existing deployment costs as it enabled remote deployments across several devices.

## Technologies Used:

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## Our Guarantee:

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At Rhoynar, we believe in providing honest and exemplary customer service to our clients. We understand that the client may have hesitations in employing any consulting company for any internal project. *Will the solution meet all our needs? Do they really have the expertise and experience in delivering this solution? What if it is not extensible and requires constant upkeep? Will adequate training be provided to our staff after the project is over? What if the technologies they use become obsolete? Will they consultant have enough expertise in the said domains?*

We guarantee that we will meet your project requirements and deadlines. If for any reason we are unable to deliver, you don't pay us a penny.

We take pride in meeting all the customer expectations on time and this has made our customers very happy with our services. This is why over 90% of our new business comes from referrals by existing customers.

Call us now for a free discussion on how we can assist you with your automation needs.

## Conclusions:

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Rhoynar Software is a technology company built to solve specific problems. We have expertise in building device software architecture, IoT cloud integration and DevOps. We have worked on several projects, each with unique challenges and we have been successful in solving unique challenges for the customer. We have built robust, scalable technologies that can continue to evolve as the product grows.

## Contact Us:

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