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AIR-RMLD

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AIR-RMLD is a DRONE SOLUTION Company that specializes in Drone Flying and Drone Development. AIR-RMLD was founded in 2018 by three partners, each specializing in their own field of expertise. Their main speciality is aerial industrial gas-pipeline inspection, therefore the name AIR-RMLD – aerial remote methane leak detection, but they have developed into a drone solution company that develops or controls almost anything that flies without a pilot. With various partners, the company works mostly in Croatia and the Balkan region, but also in Germany, Israel, Kazakhstan, and Saudi Arabia. Because the primary focus of the company is gas pipeline inspection, the company's growth is measured in inspected kilometres of gas pipelines, and the yearly growth. For the time being, AIR-RMLD has successfully inspected over 800km of gas pipelines and discovered dozens of potential leaks. The company has broadened its offering and developed into numerous different fields of expertise in Aerial Industrial inspection.

History

AIR-RMLD was founded by its three core members, Davor Sladović, Ivan Vidaković and Milan Domazet. Davor Sladović with his long experience (20 years) in engineering and GAS pipelines worked and collaborated on several projects with Milan Domazet, who has over 10 years of experience as an automation engineer, project manager, hardware and software developer, and has successfully completed dozens of engineering automation projects. Davor had the notion of outfitting a drone with a methane gas sensor one day, while Milan was working on his own drone project at the time.



They agreed that they should try to make a “Proof-of-concept” and invited Ivan Vidaković to join them on the team. It was 2018, and Ivan Vidaković was a pioneer in UAV flying and development, but already had almost 10 years of experience in drone flying, especially in the film industry. In three months, they developed POC and tested it in a real-world setting. The sensor weighed 5kg that day, and the drone had a wing span of over two meters.

Because of great results of POC and testing, they presented their results to PLINACRO (Croatia national gas distributor) and the feedback was great, but they said it should be commercialised.

AIR-RMLD was founded in a matter of months, in May 2018, by its three core Team Members.

Gas Pipelines

After a successful presentation and POC, it was time to fully dedicate themselves to the AIR-RMLD project. Milan and Ivan, started working full time at AIR-RMLD with Davor's full support. They redefined the Drones, found new lighter and better Laser Methane sensor and AIR-RMLD was ready for commercialization.



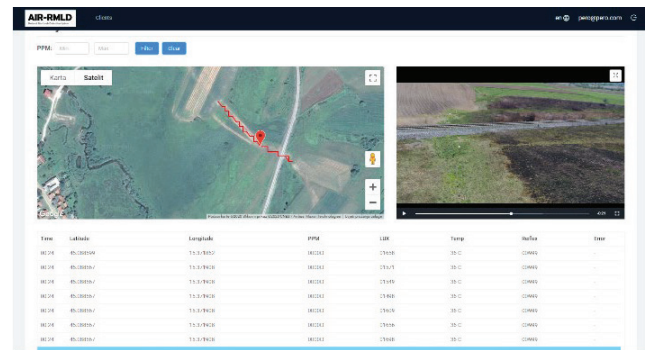
By the end of 2018 it was fully tested and presented to several gas distributors, local and national, and agreed for several projects in spring 2019. In May 2019 the project and the company were presented at the annual meeting of the GAS industry in Opatija (HSUP) and received great feedback. By the end of 2019, AIR-RMLD inspected 100 km of Gas Pipelines for 5 five local Croatian distributors and 30 km for national Gas Distributor (PLINACRO) and was awarded the contract for spring 2020 for the most difficult terrain in Croatia, the Velebit Mountains. It was the first mountain drone to inspect gas pipelines.



The gas pipeline business is growing annually and is also expanding into foreign markets, such as Slovenia and Hungary, and at the end of 2021 into the German market, with the Leipzig distribution part. Gas pipeline inspection remains the main component of AIR-RMLD's business and the heart of the company's development.

AIR-RMLD offers a unique service, with planning software, mission drone execution parameters and its

own in-house developed data visualisation software called ARMLD-GIS, which is already being used in several other projects.



Postal drone delivery

We began negotiations with Croatian Post and its drone delivery project in autumn 2019 as part of our corporate objective to transition from a service and product firm to a DRONE SERVICE COMPANY. The project was on a very tight timeframe, with very few deliverables, however it was planned and delivered in 8 weeks.

The requirements were an autonomous drone delivery to an island on the Croatian coast that has a post office. The decision was made for the Zadar post office (Gaženice) and the Preko post office (Ugljan Island). The flight is 8 km long and was completely autonomous from take-off to landing.

On the other hand, it was a problem to get all the permits in such a short time, but this was also managed and the project was pursued fully and legally. This project is now on hold, but there are exciting plans to connect many Croatian islands to the mainland via continuous drone supply lines.

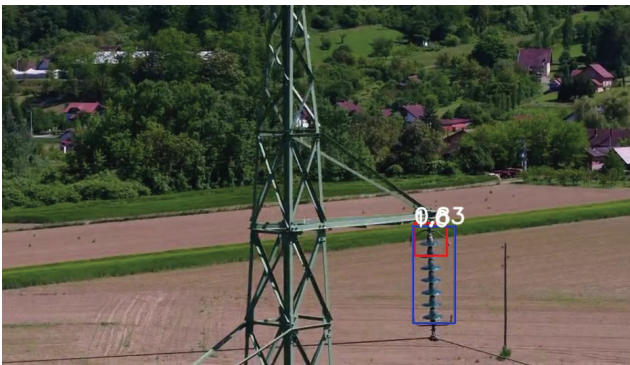


Powerline inspection

Other industrial inspections, particularly in difficult-to-reach locations, and important infrastructure were added to the company's expansion. The ELECTRIC POWERLINES are a better description of these criteria. A company's development should not involve only one

possible aspect (such as inspection), but should include other added value products that customers should appreciate. Thus, we included AI (artificial intelligence to our projects).

Project was: *Improving transmission line maintenance using drones and artificial intelligence and the AI part was done with our partner company that fully developed dataset needed for this project.*



AI was used for detection for asset management, with a dataset developed specifically for this purpose. The idea is to have a predictive asset management cycle with automatic detection of rust, missing parts, insulators and vegetation around the power lines and poles.

The project was a huge success, and there are currently efforts to include this method and parameters into normal asset management.



Project 02 – reforestation

Since the European Union adopted carbon footprint legislation and raised awareness of the carbon pollution and ecological aspects, many companies have started to collaborate with ecological parameters. Both technical and biological firms began to investigate many areas of possible decreased carbon pollution. BIOTA biologists and its spinoff PROJECT 02 have thoroughly tested and manufactured “seed bombs” that can be simply launched in difficult to reach regions and produce a huge number of these balls quickly.

The next important step was figuring out how to scale this up and reforest difficult-to-reach areas, such as those affected by wildfires. PROJECT 02, in collaboration with AIR-RMLD, created a drone equipped with a “seed launcher” that can effortlessly fly to different parts of the land and deploy seeds. According to calculations, 1 hectare (10 000 square meters) requires the deployment of 5000 seed bombs. One drone can reforest 2 hectares every day, and the future idea is to create a fleet of drones, Swarm, to quickly and easily forest a location.

PROJECT 02 successfully forested more than 90 000 square meters in 2021 and 2022, and the objective for the next year is to treble that amount.

Conclusion

AIR-RMLD is on a mission to become a full-service DRONE SOLUTIONS provider capable of delivering both projects and services, no matter how difficult or unusual the project.