

ProKNX Enabling Privacy Through Their AI-based Voice Control Device For Home Automation

Introduction

Digital or voice assistants have found their way into the lives of people for everyday activity. Multiple recent market studies continue to show that the activities of consumers are concerned about sharing their daily life in return for the services of a voice assistant. As technology advances and machine learning (ML) techniques evolve to run on smaller, devices the door opens for cloud free solutions where privacy is the primary concern.

Situated in the South of France, a dynamic IoT start-up called ProKNX is disrupting the status quo. In 2017 the two founders, used their own funds and years of R&D to launch realKNX Aragon, the first voice-controlled smart home assistant that works completely on-device, and has no requirement for the cloud, or even an internet connection to function.

The assistant, available in English, German, or French, is wired into a new or existing KNX Home Automation system. The first Aragon prototype enabled users to control lights, blinds, and heating by using natural voice commands. Further developments of the technology have enabled users to integrate Aragon to control Sonos speakers and smart televisions.

The assistant is powered via both Arm technologies and Sonos (formerly Snips), an AI voice platform for connected devices that provides private-by-design voice technology. Sonos (formerly Snips) facilitates the voice control by using ML to understand and comply with commands said in a thousand different ways. As a result, the end-user needs almost no learning period to use the device successfully.



From this ambitious idea to put the interests of the user first, ProKNX has gone on to also develop high-quality, off-line smart home devices for hotels and offices. To make realKNX Aragon more adaptable, ProKNX has expanded the gateways supported from their proServ-KNX gateway, to also include the GIRA X1/HS, JUNG SVS and the IKEA Trådfri gateway. These gateways are plug and play and require no interaction from the user. The integration of the IKEA gateway allows an easy retrofit solution in any building.

Their innovative technology won awards in Germany from the prestigious Smarthome Deutschland conference for one of the best new smart-home products on the market in 2020 and 2021.



Fig.1 The Aragon PoE is flush-mounted and fits into a standard switch-box, it is powered over PoE.



Fig. 2 The latest version, Aragon WL, is the table-top model, it uses Wi-Fi and cable connection and is powered by a USB charger.

Aragon for hotels

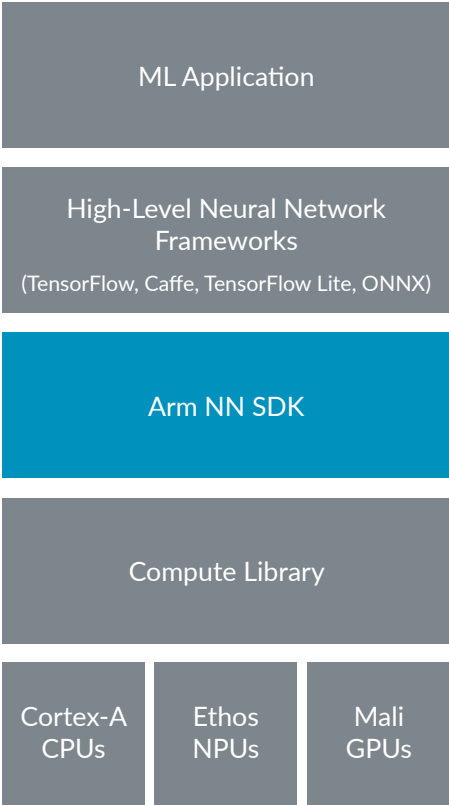
ProKNX has launched Aragon for hoteliers who wish to develop a unique and memorable experience for their guests. Clients can ask for room service, order cleaning, and control media devices with their voice alone. The vocabulary integrated into Aragon is the most complex on the market, making voice control easy to use for all guests. The technology behind Aragon guarantees the privacy of the customers, therefore helps to build a relationship of trust between guests and their hotel. Aragon includes a graphical rapid development environment for automation and integration, so the cost of installation is kept to a minimum.

Aragon for Aging-in-place (AAL)

The percentage of elderly in the general population is predicted to steadily augment in the near future. As the world edges toward a population skewed more heavily to those in their advanced years, home automation will become an essential factor in facilitating the well-being of society. With this rapidly increasing market segment in mind, ProKNX has created Aragon for aging-in-place to allow the elderly to remain independent in their homes for a longer period of time.

Aragon can be a life-changing technology that is easily adopted by seniors. The device allows people to gain back their independence and improve their quality of life, thus decreasing the strain on all facets of the community, from relatives and healthcare workers, to care-homes and social services. With the aid of a voice-controlled home help system, everyday tasks become easier and require far less effort.

Aragon has also been developed to trigger a cry for help when the phrase "I need help" is vocalised by the user. A nominated person outside the home can then be contacted on their mobile phone as soon as an unusual event occurs.



Why Arm?

Using a quad core Cortex-A7 based chip was necessary to balance the need for low cost, adequate performance while maintaining a low power envelope as fans are out of the question for both designs for ambient noise and reliability reasons. The choice of the Cortex-A7 also opens the door for using the Linux distribution of choice and all the high-quality ML middleware and tools that are easily available on the market from the Cortex-A ecosystem of partners and directly from Arm.

Summary

Arm believes that sparking the world's potential is about more than just bringing ideas to life—it's about inspiring our partners, engineers, and developers to push the boundaries of what's possible wherever computing happens. From its initial desire to protect privacy, ProKNX has turned its ideals into reality. Consumers can now use a smart home voice assistant in their daily life without giving up their privacy. What's said at home, stays at home. Welcome to the future of voice assistants, where surrendering your privacy is not an obligation.

More Information

<https://proknx.com/en/home/>

ProKNX is a widely known French company in the KNX Home Automation sector. They are extremely innovative and constantly striving to come up with better solutions to meet the high expectations of their customers.

