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S.O.N.İ.A(SPACE OBSERVATION AND NAVIGATION İNTELLIGENCE ASSISTANT)

Abstract

Astronomical research often requires observing stars and asteroids in the night sky. However, light pollution in urban environments can hinder such observations. Consequently, researchers frequently relocate to remote mountainous regions with minimal artificial light for optimal data collection and astrophotography.Although there are many difficulties here, we present to you S.O.N.I.A (Space Observation and Navigation Intelligence Assistant) for these difficulties. S.O.N.I.A is an advanced drone designed to enhance human capabilities, primarily developed for applications in scientific research. Its working principle is to support critical human needs in rugged terrains and ensure long-term research. S.O.N.I.A can be controlled remotely and works with both solar energy and a battery. The drone is equipped with a removable solar panel, enabling the charging of both its internal power system and external small electronic devices The main feature of S.O.N.I.A is that it is AI-integrated. It can verbally respond to humans, helping in problem-solving and issue resolution. Also, through the pressure and temperature sensor integrated into the drone, the current weather conditions and altitude can be determined. Since all these processes are integrated with AI, S.O.N.I.A is user-friendly and ensures that users can do their research more easily. Additionally, to ensure easier research and a better experience of viewing stars in the dark, S.O.N.I.A is equipped with an optical scope. This reduces light rays around the user and allows them to observe stars more comfortably and with a better experience. Since S.O.N.I.A is capable of connecting to the internet, it also features a map and an S.O.S. signal function for critical situations.It can share the current map plan with users through GPS signals and provide easier navigation, and at the same time, the S.O.S. signal function can send the GPS coordinates as a voice message to places like the police or emergency services. S.O.N.I.A is primarily designed for space stations and researchers. The use of carbon fiber material in its construction ensures that it is resistant to various climate conditions, damage, and fire, while also making it lighter for flight and transport. The ability to use S.O.N.I.A both with a remote control and from a phone increases its capabilities and makes it a true help for researchers and geologists. In the future, more portable versions could be applied for educational and amateur researchs.