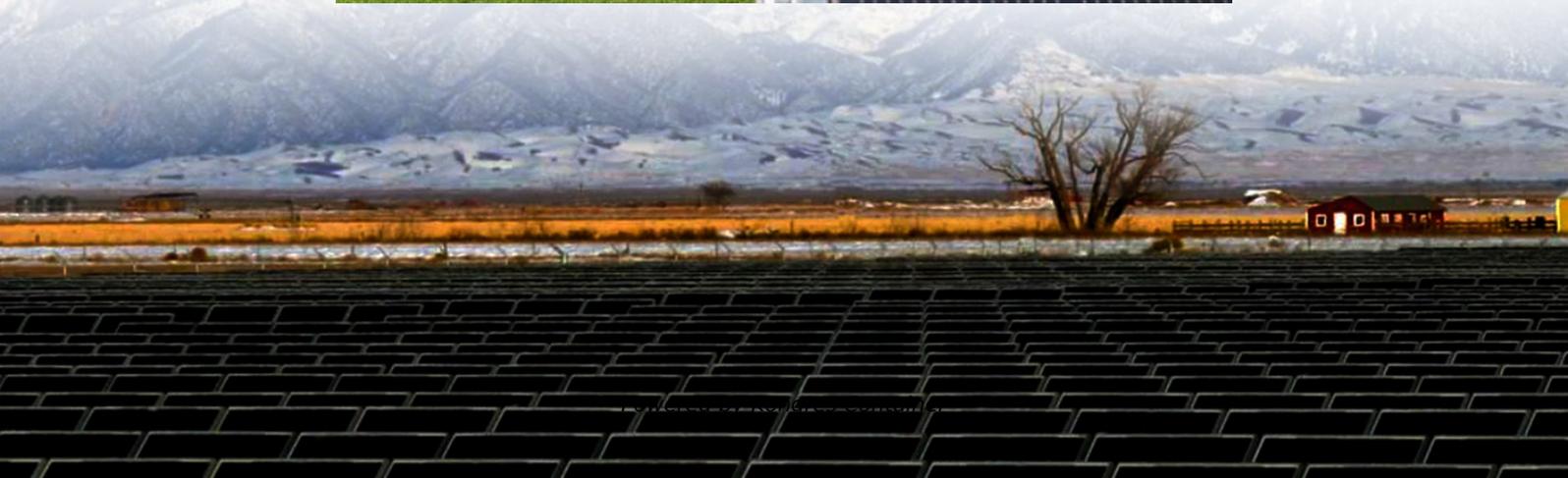
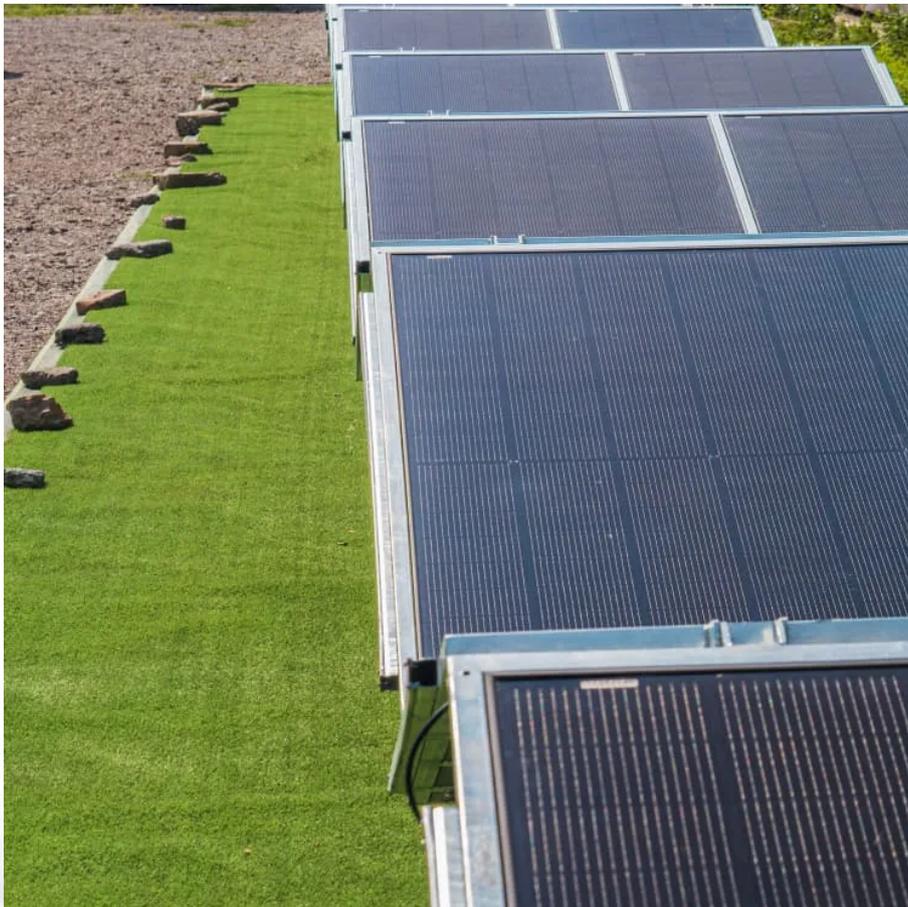


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Low-altitude intelligent integration and communication base station hybrid energy



Overview

This paper studies an integrated sensing and communications (ISAC) system for low-altitude economy (LAE), where a ground base station (GBS) provides communication and navigation services for authorized unmanned aerial vehicles (UAVs), while sensing the low-altitude airspace to monitor the unauthorized mobile target. How can a low-altitude management platform support integrated sensing & communication (Isac)?

Through capability openness, sensory data can be shared with a low-altitude management platform. Ultimately, the communication, navigation, sensing (CNS) requirements of low-altitude applications can be met. ZTE's Efforts in Verifying Integrated Sensing and Communication ZTE has been actively exploring and applying ISAC.

What is a ground base station (GBS)?

With ISAC, the ground base station (GBS) provides communication and navigation services for authorized aircraft, while sensing the low-altitude airspace to monitor unauthorized targets.

What is low-altitude intelligent transportation?

In the context of the burgeoning low-altitude economy, low-altitude intelligent transportation (LAIT) has emerged as the focal point of research. This study comprehensively explores the current state, challenges, and future development prospects of LAIT from three key aspects: system architecture, infrastructure, and critical technologies.

Why do low-altitude transportation systems need interconnected networks?

In low-altitude transportation systems, connecting aircraft, infrastructure, monitoring devices, and user terminals into a highly interconnected network facilitates real-time sharing and processing of information. This ensures flight safety and makes system operations more efficient and secure .

Why do we need communication base stations?

Communication base stations or other auxiliary facilities are needed to improve the accuracy of perception and positioning. For low-altitude navigation, high-frequency and high-density low-altitude activities require a more digital and refined aircraft navigation mode.

How can a low-altitude transportation system be a sustainable CPS?

Integrating advanced technologies such as artificial intelligence (AI), cloud computing, the Internet of Things, and 6G networks with low-altitude transportation systems can create highly intelligent, autonomous, interconnected, and sustainable CPS, such as LAIT [32, 33].

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