

Indoor Positioning Systems for UAV Localization: A Review

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Abstract. In modern technologies, mini unmanned aerial vehicles (UAVs) are taking a major part. But most of the time it is a huge problem to detect the location of UAVs in indoor environments. This is a review of studying Indoor Positioning Systems for UAV Localization with several technologies. These days, indoor localization of Mini UAVs employing wireless technology is crucial for both military and civilian purposes. Here, it tries to offer a thorough analysis of localization methods employing the most widely used wireless technologies. In circumstances when indoor GPS is unavailable, UAV localization often depends on vision-based methods combined with mechanical sensing, such as a visual navigation system or simultaneous localization and mapping (SLAM) using 2D/3D cameras or laser optical viewfinders. This work compiles many studies and solutions for localizing Mini UAVs in interior settings and the results of a survey done with an example which relevant to this topic.

Keywords: *UAV, Mini UAV, Indoor Localization, Signal Processing, IoT, Wireless Communication, Wireless Positioning*