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From Smart Robotic Swarms to Autonomous Drone Hunters with Onboard AI

Martin Saska*

I. EXTENDED ABSTRACT

The aim of the talk is to show new perspectives of smart autonomous flying robots with onboard artificial intelligence. Recent progress in drone technology and swarm intelligence opens new opportunities for deployment of micro aerial vehicles in our everyday lives. As examples, cooperating groups of drones scanning hidden parts of historical buildings interiors and the eagle. One flying robot hunting for unauthorized drones will be presented. Help us to dream up new breathtaking drone applications and we will turn your visions into reality. **The invited talk was given at the Future Port Prague, 18/31/8.**

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II. RELATED WORK

For more information on the research of formation driving approaches see [1], [2], [3], [4], [5], [6], [7], [8], [9], while swarm algorithms are described in [10], [11], [12], [13], [14], [15], [16]. Relative localization among multiple drones is proposed in [17], [18], [19], [20]. UAV control design is described in [21], [22], [23], [24]. Algorithms for visual navigation of robots can be found in [25], [26], [27]. Travelling salesman problem and orienteering problem are solved for MAVs in [28], [29], [30]. Details concerning the project of documentation of historical buildings can be found in [31], [32]. An overview related to the MBZIRC competition is presented in [33], [34], [35], [36].

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The author is with the Department of Cybernetics, Faculty of Electrical Engineering, Czech Technical University in Prague. martin.saska@fel.cvut.cz

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