

Mobile Wireless Investigation Platform

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Abstract : The paper presents the research of a kind of autonomous mobile robots, intended for work and adaptive perception in unknown and unstructured environment. The objective are robots, dedicated for multi-sensory environment perception and exploration, like measurements and samples taking, discovering and putting a mark on the objects as well as environment interactions-transportation, carrying in and out of equipment and objects. At that ground classification of the different types mobile robots in accordance with the way of locomotion (wheel- or chain-driven, walking, etc.), used drive mechanisms, kind of sensors, end effectors, area of application, etc. is made. Modular system for the mechanical construction of the mobile robots is proposed. Special PLC on the base of AtMega128 processor for robot control is developed. Electronic modules for the wireless communication on the base of Jennic processor as well as the specific software are developed. The methods, means and algorithms for adaptive environment behaviour and tasks realization are examined. The methods of group control of mobile robots and for suspicious objects detecting and handling are discussed too.

Keywords : mobile robots, wireless communications, environment investigations, group control, suspicious objects

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