**IPV6 PROTOCOL IMPLEMENTATION INTO WIRELESS SENSOR NETWORKS**

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Wireless sensor networks (WSN) rapid development and their possible application area expansion naturally create the need for their interconnection with other types of networks predominantly based on the Internet protocol. Since IP-based networks started transition from the IPv4 to the IPv6 protocol, there is a need for the IPv6 protocol implementation into the WSN.

The main project goal is to successfully implement the IPv6 protocol into wireless sensor network environment through the entire protocol stack (including communication, routing and security mechanisms). Furthermore, the aim is to test performances of the implemented networking mechanisms in such environment.

The expected project result is to establish full connectivity and to integrate the IPv6-based WSN within the global IP network acquiring satisfying WSN performance (possible real-time operation). Verification and validation of the project results will be carried out by checking the connectivity with sensor nodes from the IP environment in addition to the performance comparison with the conventional WSN (without implemented the Internet protocol).

IPv6 protocol successful implementation into the WSN without performance degradation will enable their simple integration with other IP-based networks and significantly extend their practical application possibilities.