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Dynamic Spectrum Management: a Perspective for Polish Armed Forces

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Dynamic Spectrum Management: a Perspective for Polish Armed Forces

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Abstract: The Dynamic Spectrum Management is a key to increase the spectrum efficiency usage in rapidly growing demand for spectrum in military operations. In the paper, the main results of national project concerning DSM proposals for Polish Armed Forces are presented.1 Two

concepts have been proposed and demonstrated. Coordinated DSA uses the frequency broker for centralized management of spectrum resources available for operation time, and decentralized one uses OSA solutions for spectrum sharing. In both demonstrators, the radio nodes are equipped with some cognitive functions, but the main effort was concerned to present DSM possibilities to use on the tactical and battlefield MANETs. The experiments show significant increase of spectrum efficiency and jamming resistance for both DSM solutions. CDSA concept is ready to introduce in military networks based on legacy radios, assuming that they have an ability to implement OTAR procedures. To introduce in practice the OSA concept some research and legislative activities are needed, both in national and international perspectives. It concerns policies definitions, descriptions language agreement, new security procedures elaboration and agreement, etc. Keywords: Dynamic Spectrum Management; Coordinated Dynamic Spectrum Access, Opportunistic Spectrum Access; Frequency Broker, Cognitive Radio

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