

Turkish Journal of Electrical Engineering & Computer Sciences

Turkish Journal

of


Electrical Engineering &
Computer Sciences

A Communication Module and TDMA Scheduling for a Swarm of Small Submarines

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 [Keywords](#)
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Abstract: Swarming algorithms usually require fast and reliable local information distribution among neighbouring nodes. Additionally, many applications also require global information distribution in the shortest possible time. We show that communication links with a range which is small compared to the size of the swarm offer many advantages. We propose a system using low frequency radio communication as a viable alternative to acoustic communication. A time division multiple access algorithm is presented together with results from simulations. The presented system can be effectively used in large scale swarms of small submersibles.

Turk. J. Elec. Eng. & Comp. Sci., **15**, (2007), 283-306.

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