



rocket dePloyed deEp Reconnaissance ANd Transmission system (OPERANT)

Zippermast GmbH in cooperation with Fraunhofer Ernst-Mach Institute (EMI), T-Minus Engineering B.V., Unmanned Teknologies Applications S.L., Microflown Avisia B.V. and Technikon Forschungs- und Planungsgesellschaft mbH has submitted the project proposal „OPERANT“ for the European Defence Fund 2023 programme.

Recent conflicts highlight the importance of fast-decision-making processes at every level of combat management. We identified a lack in digitalization and automatization on the lower tactical levels on the “last mile” of the battlefield.

With OPERANT, we provide a solution to deploy a distributed acoustic sensing capability deep into the adversary domain (Observe). Although we use rocket deployment now, we highlight that the system design aims at withstanding high-g force allowing other harsh deployment methods. Upon detection of relevant information, the system autonomously calls for other components providing means to verify the information (e.g., visual identification).

OPERANT system design includes a height-adjustable smart mast system combined with pan-tilt unit enabling line-of-sight supporting multiple sensor units as generic platform solution. The open electrical and mechanical interfaces qualify OPERANT’s components for multi-purpose multi-mission scenarios minimizing the logistic overhead coming with simultaneous use of different commercial systems. Communication benefits from distributed communication nodes with height-adjustable antennas spanning a mobile ad hoc network (MANet) including the observation point and a headquarter or a command post. Extractability and retractability of the mast minimize visual recon options during radio silence.

Transporting information from an uncontrolled or contaminated area to a secure environment allows key personnel to concentrate on evaluation and analysis (Orient) without endangering them. With OPERANT, we uniquely access the deep adversary military territory and bring the information to the decision-maker (Decide). Putting the pieces together, we believe that OPERANT enables acceleration of the well-established combat operation’s OODA (Observe, Orient, Decide, Act)- loop applied during military campaigns.

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