

Electrical and Computer Engineering JACOBS SCHOOL OF ENGINEERING



BeamArmor: Seamless Anti-Jamming in 5G Cellular **Networks with MIMO Null-steering**



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Why O-RAN (Open-Radio Access Network)?







Traditional black-box Single vendor, not programmable

O-RAN cellular ecosystem Multi-vendor and programmable

Enables operators to improve flexibility, customizability, agility, & performance in RAN



Source- ABI Research

BeamArmor: Overview

Jamming poses a significant threat to both cellular networks and military communication devices





BeamArmor: Lab Setup with srsRAN



BeamArmor is a practical real-time controller for monitoring and nulling jamming attacks using MIMO

Block Diagram: O-RAN + Controller

Anti-Jamming Demonstration



