

Large-Scale Android Network Experiment Harness — Use Cases and Requirements

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1 IDENTIFICATION & SIGNIFICANCE OF THE OPPORTUNITY

Interference alignment

It requires several steps to incorporate IA into the TMACN operations. The first step is to identify IA opportunities.

In this project, we propose to design a software suite, which enables distributed interference alignment cooperations among tactical edge mobile nodes. Since most existing military waveforms operate in slotted or TDMA mode, THE SYSTEM assumes a operational slotted network without IA as the baseline. In order to be backward compatible with existing tactical protocols, where initial slot assignment is assumed to be performed by methods used in existing TMACN, such as SRW. Thus, each node possesses a series of time slots. The system level gain from IA comes from enabling other transceiver pairs to share time slots assigned to node ??.

In THE SYSTEM, IA cooperations among multiple nodes are accomplished in four steps.

First, IA opportunity identification. Each node maintains a neighbor table based on

Second, IA mode selection.

Third, training and feedback based on the mode selected.

Fourth,

- 2 PHASE I TECHICAL OBJECTIVES**
- 3 PHASE I WORK PLAN**
- 4 RELATED WORK**
- 5 RELATIONSHIP WITH FUTURE RESEARCH OR RESEARCH AND DE-
VELOPMENT**
- 6 COMMERCIALIZATION STRATEGY**
- 7 KEY PERSONNEL**
- 8 FACILITIES/EQUIPMENT**
- 9 CONSULTANTS**
- 10 PRIOR, CURRENT OR PENDING SUPPORT**