

Future Combat Systems (FCS) Communications Modeling and Simulation (M&S)

Gary Comparetto

703-983-6571 • garycomp@mitre.org

DARPA/ATO



Problem

- The focus of the DARPA FCS Communications Program (FCS-C) is to provide the enabling technology to develop the FCS communications system.
- In support of this, the FCS-C program will demonstrate the capabilities of the FCS communications components via modeling and simulation (M&S), with a special emphasis on network and communications technology scalability.

Background

- The FCS program will provide the Army with an affordable system capable of overwhelming lethality, strategic deployability, self-sustainment, and high survivability
- The DARPA FCS Comms Program (FCS-C) is a key part of the FCS development
 - The focus of this program is to provide the enabling technology, and system integration and demonstration needed to develop a communications system capable of achieving high data rate/low latency communications, having robust A/J and LPD characteristics

Objective



- Our objective is to define and demonstrate a M&S framework that will be used by the technology development contractors and independent analysts to investigate the performance of alternative routing and MAC layer routing schemes in mobile ad hoc networks.



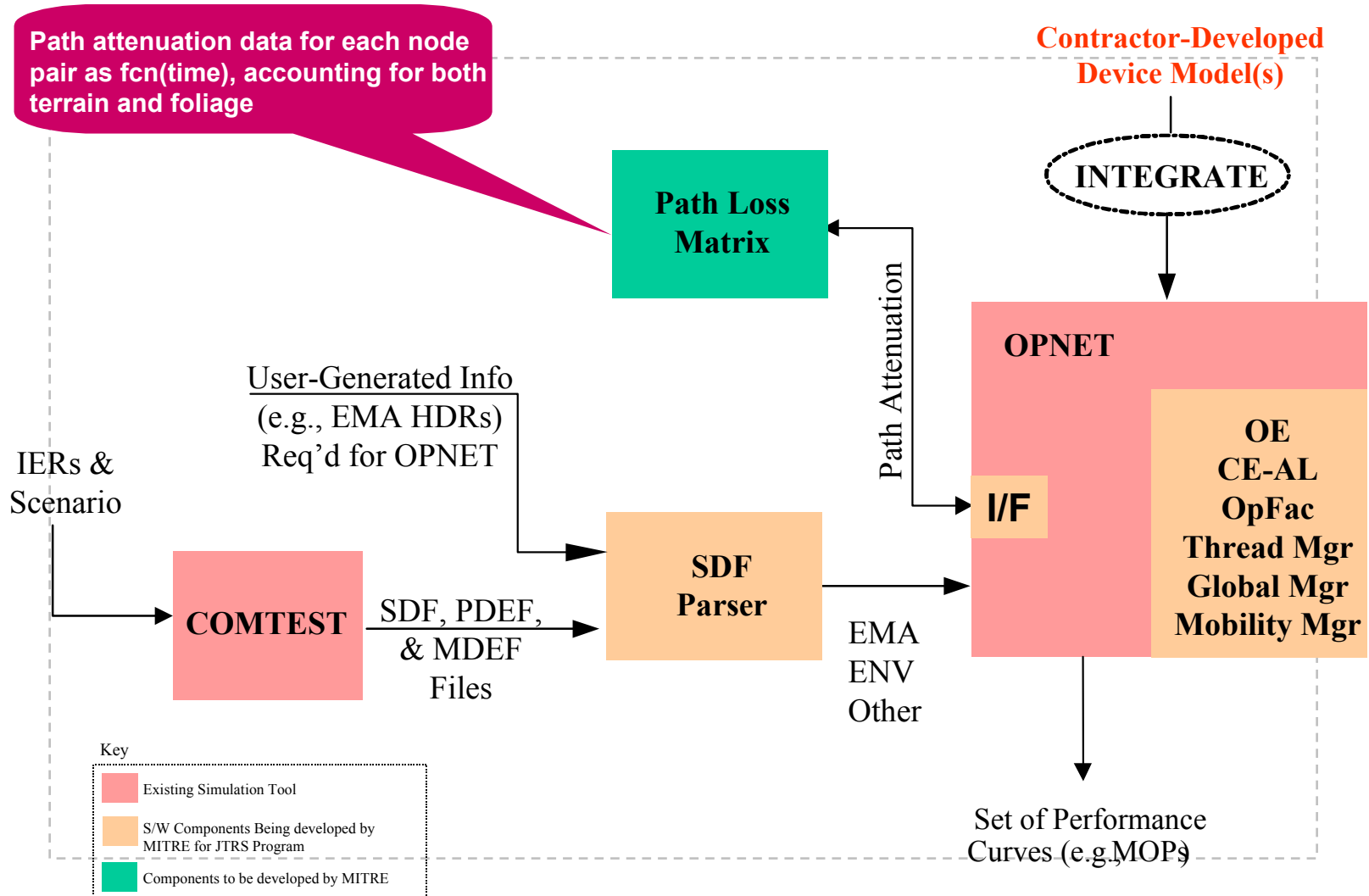
Activities



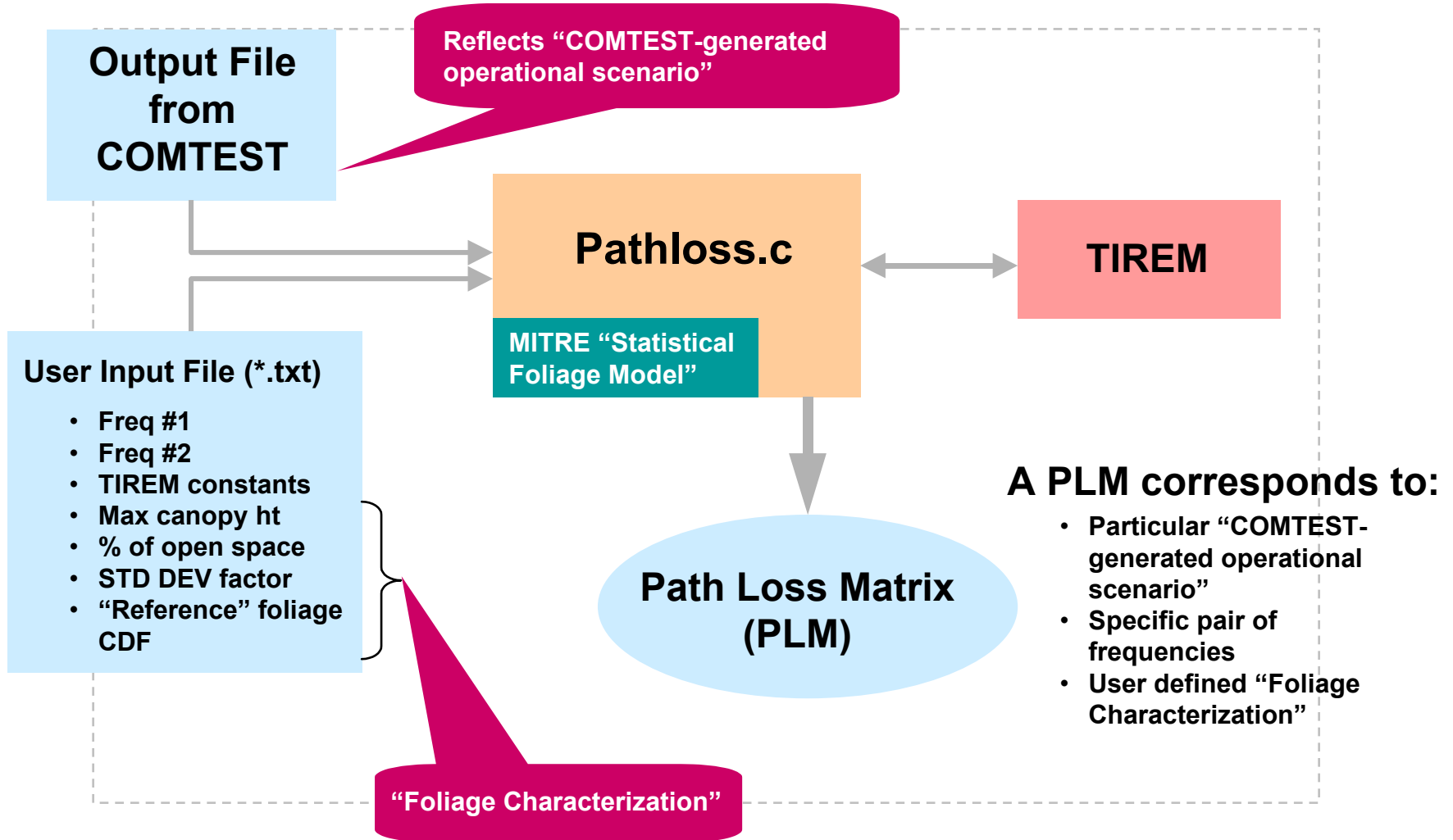
- Our activities this year include:
 - Formulation of the M&S plan
 - Development and implementation of a model and accompanying data to represent foliage and terrain-induced attenuation
 - Integration of applicable M&S capabilities being developed for the JTRS program
 - Generation of representative operational FCS scenarios
 - Exercise the M&S environment using contractor-provided FCS protocols



Highlight - M&S Environment



Highlight - PLM Generation



Impacts

- Our activities this year will help ensure that the communications and networking technologies being developed under the FCS-C program are meeting performance and scalability objectives
 - The M&S effort is the only way that scalability can be evaluated
 - The results of several field demonstrations will be used to help validate the results generated.

Future Plans

- Continue to exercise the FCS M&S environment in order to quantify the performance of emerging routing and MAC layer protocols in a variety of operational scenarios
- Expand the capabilities that account for terrain and foliage-induced path attenuation