



MANETS FOR Department of Defense

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Personal Feeling

- ▶ I decided to work on this because I think this can benefit our troops who are still fighting overseas
- ▶ As someone who has served in the military, I feel any advantage we can give to our troops to ensure they can come home to their family is worth our time
- ▶ After September 11th the United States have been deployed to many countries to ensure we stop terrorism from harming people
- ▶ Of course I am not just talking of people in the United States, but for everyone around the world
- ▶ The United States have become a beacon of hope for so many other countries in the world, but the price is the lives of young men and women who serve

Personal feeling continue

- ▶ I feel that this war on terrorists have lost the flare of what we had in the past
- ▶ For example, in WWI and WWII people would sacrifice and give what they can for our troops
- ▶ However, now it more about people fighting our an idea and complaint instead of pitching in and helping
- ▶ After I was injure in the war I felt how useless I am I cannot even run anymore
- ▶ I decided to go back to school so I can learn and develop technologies to help our troops so they can come hope and see their family

Change in the way of combat

- ▶ Combat is not the same as it was during WWI and WWII
- ▶ We learn from past wars that communication is the most vital aspect
- ▶ Without communication military unit cannot call in a Medevac and save an injure soldier
- ▶ Of course there are many other reasons but I want to point this reason out because it personal to me
- ▶ Since the war started our technologies have change; in every vehicle that our troops uses we have a blue force trackers so we they can communicate with base station faster
- ▶ However, for short radio transmission they still uses radio from 70's or 80's to communicate with each other

Radio equipment

- ▶ The radio they uses are not reliable at all
- ▶ It need to be fill with special encryption in order to do this they need to be connected to a small encryption machine to be link up to get the encryption they need
- ▶ However, with such old equipment the encryption fill can be drop if the batteries come lose for a few second
- ▶ The Department of Defense have been trying to remedy this situation with new technologies...one of which is MANETs

MANETS

- ▶ Mobile Ad-hoc Network
- ▶ The reason why they want to use this is because it is easy to maintain communication with all the other vehicles in a convoy and in case of an attack if the communication from the blue force tracker is damaged they can still maintain a communication with the other vehicles using MANETS
- ▶ Since 2003 the government has been giving a lot of grant for researchers to develop MANETS and tighten securities so it can be used in combat

The following are some papers I found in the area of MANETS

- ▶ I am not saying any of these are being look at by the Department of Defense
- ▶ These are just a few papers I find interesting in this subject

CACMAN

- ▶ Certificate Authority(CA) is one of the most important entities of Public Key Infrastructure(PKI)
- ▶ CACMAN is to make clients play a more active role in CA services by giving them some responsibilities, namely, caching valid certificates for their usage and giving them to other clients when necessary
- ▶ This paper use NS-2 simulation
- ▶ This is just a framework for CA in MANETS

MANETS papers

- ▶ AN intelligent on Demand multicast Routing Protocol for MANETs
 - ▶ Instead of sending to multiple unicast, Multicast minimize the network parameters line bandwidth consumption, sender and router processing, and delivery delay
- ▶ Internetworking Tactical MANETs
- ▶ Developing a BDSR scheme to avoid Black Hole Attack based on Proactive and Reactive Architecture in MANETs
- ▶ A Game Theoretic Approach for security and Quality of Service Co-Design in MANETs with Cooperative Communications
- ▶ Delay Modeling for Broadcast-Based Two-Hop Relay MANETs

More MANETS papers

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- ▶ A survey on various privacy and security features adopted in MANETS routing Protocol
- ▶ InterMR: Inter-MANET Routing in Heterogeneous MANETS
- ▶ A Novel Session Recovery Mechanism for Cluster-Based Signalling Architecture for Conferencing in MANETS

Thoughts

- ▶ With so much interest in MANETS I needed to focus on one area so I decided on Area such as security and fast network reconnection
- ▶ This should be area where any research who thinking of MANETs for military uses should focus on.

Comments?