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 had 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 terrorizing from harming people.
- Of course, I am not just talking about 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 injured soldier
- Of course there are many other reasons but I want to point this reason out because it is personal to me
- Since the war started our technologies have changed; in every vehicle that our troops use, we have blue force trackers so we can communicate with base station faster
- However, for short radio transmission they still use radio from 70’s or 80’s to communicate with each other
Radio equipment

- The radio they use are not reliable at all.
- It needs to be filled with special encryption in order to do this, they need to be connected to a small encryption machine to be linked up to get the encryption they need.
- However, with such old equipment, the encryption fill can be dropped if the batteries come lose for a few seconds.
- 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 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 security 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 uses 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

- 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?