

Military Usage Scenario for 802.16 MMR

IEEE 802.16 Presentation Submission Template (Rev. 8.3)

Document Number:

IEEE C802.16mmr-05/030

Date Submitted:

2005-11-11

Source:

D. J. Shyy, Shawn Duffalo

MITRE

Mclean, VA 22012

Voice: +1-703-983-6515

Fax: +1-703-983-7142

E-mail: djshyy@mitre.org

Venue:

IEEE 802.16 Session #40, Vancouver, BC, Canada

Base Document:

None

Purpose:

To help shape the direction of MMR SG

Notice:

This document has been prepared to assist IEEE 802.16. It is offered as a basis for discussion and is not binding on the contributing individual(s) or organization(s). The material in this document is subject to change in form and content after further study. The contributor(s) reserve(s) the right to add, amend or withdraw material contained herein.

Release:

The contributor grants a free, irrevocable license to the IEEE to incorporate material contained in this contribution, and any modifications thereof, in the creation of an IEEE Standards publication; to copyright in the IEEE's name any IEEE Standards publication even though it may include portions of this contribution; and at the IEEE's sole discretion to permit others to reproduce in whole or in part the resulting IEEE Standards publication. The contributor also acknowledges and accepts that this contribution may be made public by IEEE 802.16.

IEEE 802.16 Patent Policy:

The contributor is familiar with the IEEE 802.16 Patent Policy and Procedures <<http://iee802.org/16/ipr/patents/policy.html>>, including the statement "IEEE standards may include the known use of patent(s), including patent applications, provided the IEEE receives assurance from the patent holder or applicant with respect to patents essential for compliance with both mandatory and optional portions of the standard." Early disclosure to the Working Group of patent information that might be relevant to the standard is essential to reduce the possibility for delays in the development process and increase the likelihood that the draft publication will be approved for publication. Please notify the Chair <<mailto:chair@wirelessman.org>> as early as possible, in written or electronic form, if patented technology (or technology under patent application) might be incorporated into a draft standard being developed within the IEEE 802.16 Working Group. The Chair will disclose this notification via the IEEE 802.16 web site <<http://iee802.org/16/ipr/patents/notices>>.

Military Usage Scenario for 802.16 MMR*

Dr. D. J. Shyy and Shawn Duffalo

MITRE

*Note: Briefing compiled in collaboration with ARMY CERDEC.

Outline

- Introduction
- Military Usage Scenario for 802.16 MMR
- Military Requirements for 802.16 MMR
- Conclusion

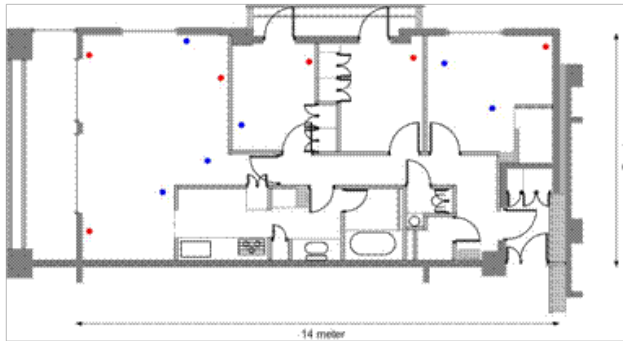
Introduction

- The 802.16 Mobile Multi-hop Relay (MMR) Study Group (SG) is in the process of soliciting contributions in the area of service scenarios and network topologies.
- This briefing presents the military usage scenario for 802.16 MMR
- The briefing also presents the military requirements

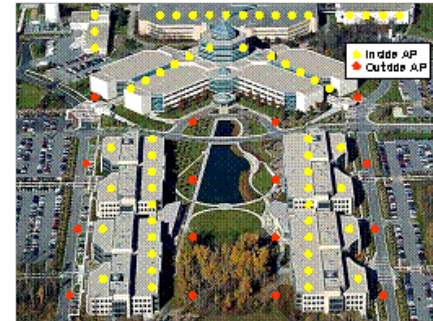
Military Usage Scenario in 802.11s

- The 802.11s (Mesh Networking) has 5 usage scenarios*
 - Military scenario is one of them
- Each usage scenario presents its own unique requirements
- The scenarios and their requirements are intended to help develop the standards texts and provide as a baseline for network simulations

Residential / Consumer Electronics



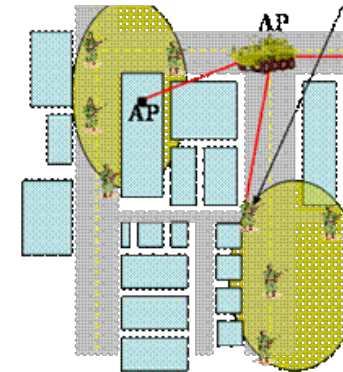
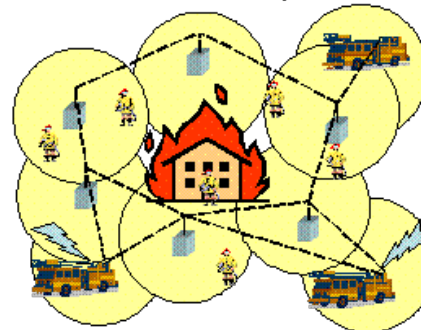
Campus/Community/Pubic Access



Military



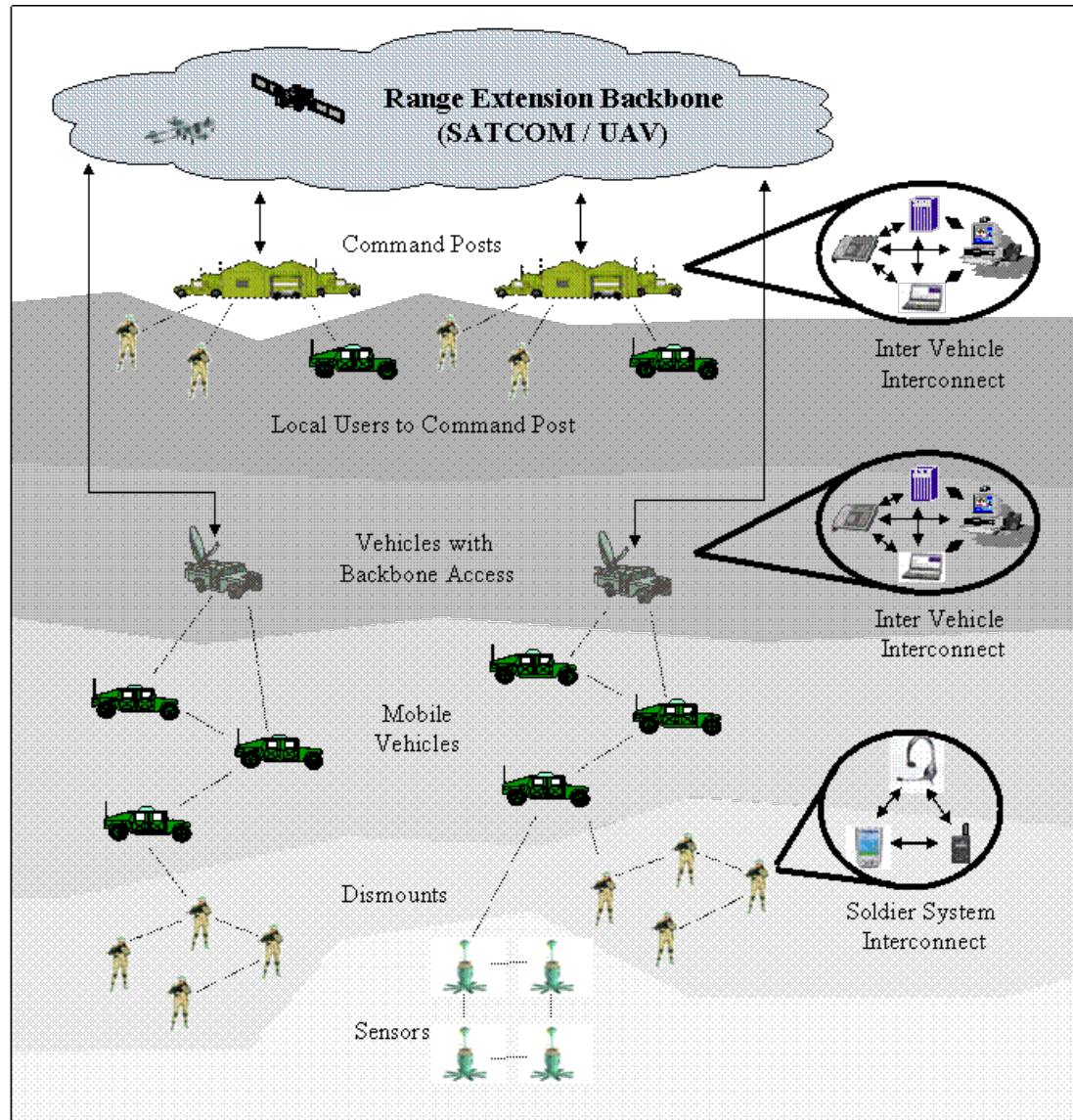
Public Safety



Why Considering Military Usage Scenario?

- Military has a strong buying power if the 802.16 MMR products meet their requirements
 - Government would like to leverage on commercial products with some military enhancements
- Military helps advance the technological envelope
 - ARPANET Internet
 - MANET
 - 802.11s
 - Spread spectrum commercial CDMA
- Today's military requirements could become tomorrow's civilian requirements
 - Public safety and first responders

Military Usage Scenario for 802.16 MMR



Military Requirements for 802.16 MMR

- The majority is 2 hops from the BS with a small number being 3 hops
- Support BS/relay mobility
- Support handover with relay
- Security and QOS
- Support multicast traffic
- Consider the device willingness to relay
- Compensate for variable radio link capacity
- Minimize battery power consumption
- Military frequency band

Conclusion

- It is a win-win situation (for commercial and military) if the 802.16 MMR group adopts military usage scenario
- Consider military requirements when developing the PAR for 802.16 MMR