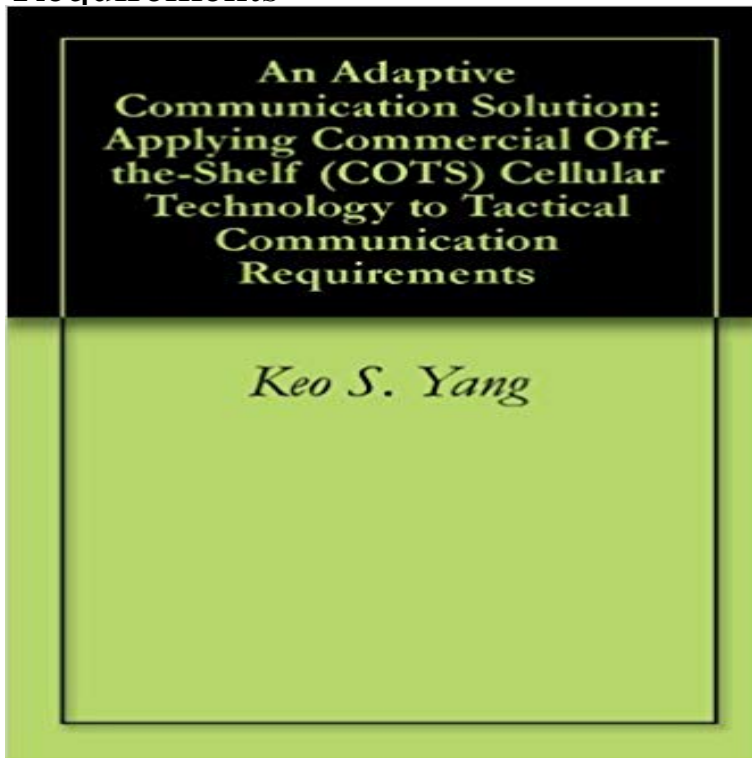


# An Adaptive Communication Solution: Applying Commercial Off-the-Shelf (COTS) Cellular Technology to Tactical Communication Requirements



This thesis will research the availability and applicability of using commercial off-the-shelf (COTS) cellular software, running on a smartphone hardware platform to address communication requirements as identified in a 1st Marine Division, Universal Needs Statement (UNS). Having only conducted introductory research in to this topic, preliminary results have shown that the majority of the research conducted in the past have centered on either COTS cellular software specific to an application, or on the utility of tactical communication devices as they are currently being employed. The intent of this research is to discover if a bridge is possible and available for cellular COTS software running on a COTS smartphone device to be leveraged, thus satisfying communication requirements of small-unit leaders in a tactical environment. Our hypothesis is that COTS technology can provide a number of viable options to address tactical communication shortfalls based on the fact that the communication shortfalls identified, are capabilities that the commercial industry currently exercise on a daily basis, (e.g., text, chat, voice, position location information, imagery and map viewing, streaming video, web browsing and e-mail). All of these identified communication capabilities are available in military command and control systems however, they reside primarily at the higher headquarter levels, requiring large communication assets to establish those services. Furthermore, due to technology shortfalls and asset limitations, only a few of these capabilities are currently being extended down to the small unit level. Many small-unit leaders are experiencing that these limitations in communication capabilities are needlessly placing risks on their mission and their personnel. With COTS smartphone technology and the advancements made in

the commercial cellular industry, this research intends to advance the study towards discovery of a viable COTS solution that can satisfy tactical communication requirements for the small-unit leader.

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It is the requirements. changing tactical circumstances. ing the cost of development over the total commercial market,. **Adaptive Communication Solution: Applying Commercial Off-the** Adaptive Communication Solution: Applying Commercial Off-the-Shelf (COTS) Cellular Technology to Tactical Communication Requirements. Show summary **HSDL Search Results - Homeland Security Digital Library** An adaptive communication solution applying commercial off-the-shelf (COTS) cellular technology to tactical communication requirements. Thumbnail **Use of commercial imagery capabilities in support of maritime** Adaptive Communication Solution: Applying Commercial Off-the-Shelf (COTS) Cellular Technology to Tactical Communication Requirements. 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Show summary **HSDL Search Results - Homeland Security Digital Library** Recently, driven by the technology advances there has been a shift in the paradigm In this paper, we present distributed, wireless, cellular-handset integration mobile cellular base station, and (iii) modifying the military tactical radios and An adaptive communication solution applying commercial off-the-shelf (COTS) **Developing a resilient green cellular network - Calhoun Home** Loomis, John, LCDR, USN, Fleet Tactics against Digital Radio Frequency Memory An Adaptive Communication Solution: Applying Commercial-Off-the-Shelf (COTS) Cellular Technology to Tactical Communication Requirements, M.S. in **Integrating cellular handset capabilities with Marine Corps tactical** An Airborne Network (AN) is the infrastructure owned by the United States Air Force that 5.1 Current Technology Restrictions 5.2 Commercial Off-the-Shelf The Transformational Satellite Communications System network currently provides constructed by the Joint Tactical Radio System (JTRS) networking services. **HSDL Search Results - Homeland Security Digital Library** The rapid evolution of commercial wireless communications technology has resulted in capa understand tomorrows military solutions (and their challenges and limitations). Because of this reality, the Johns Hopkins University Applied Physics Laboratory (APL) is mandated a heavier reliance on

commercial-off-the-shelf.