LEVERAGING IMAGERY COLLECTION AT THE TACTICAL LEVEL

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Introduction

During the Joint Pacific Multinational Readiness Center's (JPMRC's) Rotation 24-01, the 3rd Infantry Brigade Combat Team (IBCT), 25th Infantry Division (ID) sought to operationalize and exploit commercial imagery in a large-scale combat operation fight. The goal was to leverage commercial imagery as a dependable collection platform to cue other sensors to support brigade targeting and decision making. Several challenges and obstacles emerged, among them a time-intensive request process through multiple bureaucracy chains and self-imposed barriers to dissemination that made it difficult to harness commercial imagery's advantages. This article discusses the 3rd IBCT attempt to use commercial imagery at the tactical level. Moreover, it illuminates the challenges encountered and provides recommendations to aid future use of commercial imagery to gain a relative advantage during large-scale combat operations.

The National Geospatial-Intelligence Agency (NGA) and the National Reconnaissance Office (NRO) are the two organizations that manage satellite imagery collection requirements for the Department of Defense (DoD). The NGA drives collection efforts and ensures collection aligns with national intelligence requirements; the NRO then allocates space-based assets and ground systems to meet those requirements.[1] During the Global War on Terrorism, it was routine for units to receive satellite imagery consistently as tactical priority intelligence requirements were often nested with national intelligence requirements. However, with the operational shift from counterinsurgency to large-scale combat operations, relevant satellite imagery has become more difficult to obtain at the tactical level as units struggle to tie fluid local collection requirements to national level requirements.

The DoD incurs no added financial cost to obtain national technical means imagery, but competing priorities limit their ability to fulfill dynamic requests. Commercial imagery, however, has become widely available and increasingly relevant on the contemporary battlefield, so a solution to the challenge of competing priorities is to purchase imagery from these commercial entities. The DoD has contracts to purchase commercial imagery with requests using the same submission process as requests to obtain national technical means imagery.

Companies such as MAXAR Technologies, Planet Labs, and Black Sky are leading providers of commercial imagery solutions. Using these products can bring transparency and awareness to the battlefield, making it difficult for disinformation campaigns to be successful.[2] This effect has been demonstrated in the Russo-Ukraine War, where MAXAR has consistently provided services that facilitate Ukraine's targeting of Russian Forces.[3] These commercial imagery solutions have enabled Ukraine to stay ahead of, or at least keep pace with, its adversary.

The power of modern-day commercial imagery is twofold. First, the scaling of commercial satellite constellations allows almost continuous observation with visual, radar, and electromagnetic sensors, which enables the industry to provide low-latency coverage.[4] Second, commercial imagery is inherently unclassified and can be shared rapidly across echelons and with allies and partners.[5] When used properly, commercial imagery can greatly enhance targeting and awareness across the joint and combined force.

Exercise Preparation

In preparation for the JPMRC 24-01 rotation, the 3rd IBCT, 25th ID sought to leverage commercial imagery to enhance situational awareness and targeting operations. Lessons learned from Ukraine and the Middle East were the driving

force of this initiative. The brigade required access to low-latency imagery to aid the commander's decision making and support the targeting process as an initial cueing sensor. The plan was for the brigade to develop a direct relationship with MAXAR Technologies, allowing it to request imagery directly from the provider and receive timely support.

The intelligence team, however, was unable to execute this plan for several reasons:

- Establishing a direct request relationship with MAXAR could violate NGA or intelligence oversight policies.
- The cost of commercial imagery collection was more significant than anticipated.
- NGA's imagery collection requests were likely to take priority over the brigade's requests.

Instead, the 3rd IBCT obtained low-latency imagery of JPMRC exercise training areas using the 25th ID collection management team, following the established request process. The brigade initiated requests for collection 60 days before JPMRC 24-01 began.

Certified collection managers do not typically reside below the division level. To acquire a geospatial intelligence collections account and the required credentials, requestors had to complete up to four months of training across multiple installations. Once submitted by the brigade, the imagery requests traveled through an arduous chain of vetting and validation at the division, corps, army command, and combatant command levels before making their way to the NGA where the final determination about support for the requests was made.

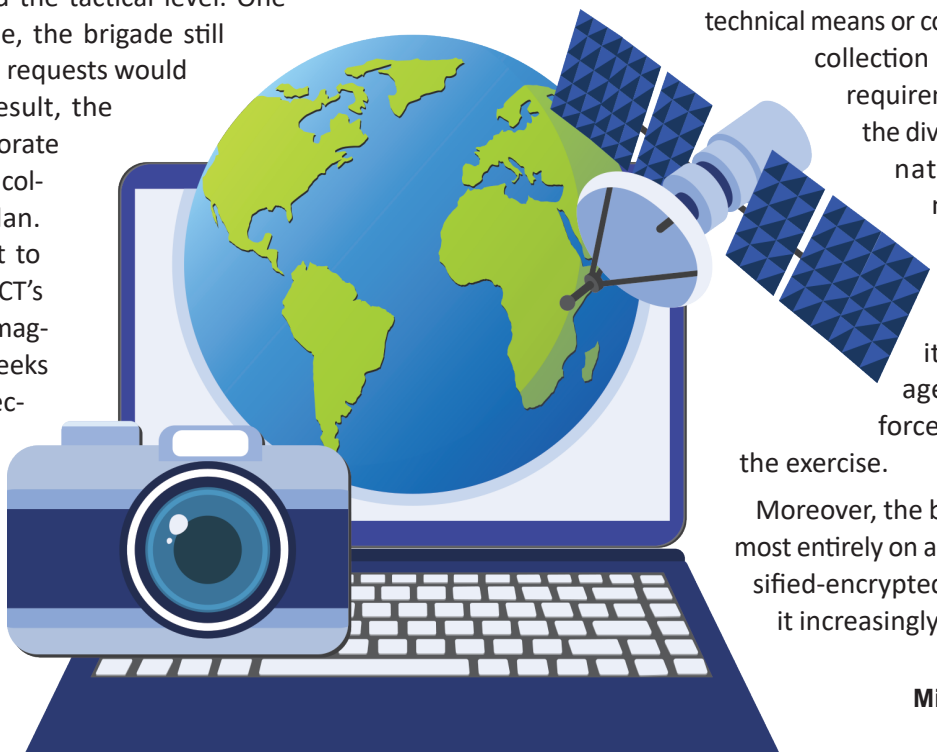
Knowledge gaps in the request process across echelons degraded awareness of the status of the 3rd IBCT's requests. Typically, the NGA notifies users when to expect support for collection requests; however, during JPMRC 24-01, this information never reached the tactical level. One week before the exercise, the brigade still did not know whether its requests would receive support. As a result, the brigade could not incorporate commercial imagery in its collection and targeting plan. While the NGA did elect to support some of the 3rd IBCT's collection requests and imagery began to populate weeks before the exercise, collection management teams across echelons were unaware that the imagery was available until a few days before the exercise.

Exercise Execution

Upon confirmation of the imagery's availability, the 3rd IBCT attempted to retrieve it for processing, exploitation, and dissemination (PED) with the aim of using perishable information from the low-latency imagery to help drive operations and targeting. However, once the 25th ID conducted its initial PED, only individuals with an approved nondisclosure list (NDL) account were authorized to view the imagery due to interpretations of DoD intelligence oversight policies regarding collecting information on U.S. persons, complicated by training on U.S. soil. The 3rd IBCT immediately submitted applications for the NDL accounts, and, in the meantime, the division collection team obtained an exception to policy that allowed the 3rd IBCT's intelligence Soldiers to view the commercial imagery that fell within the 25th ID's purview.

PED operations proved to be slow and cumbersome. The large-scale combat operations environment in which the 3rd IBCT found itself was extremely fluid, and the commercial images provided little value to decision making and targeting. Moreover, inconsistent receipt of commercial imagery added to the challenge. For example, the brigade might receive images of half of the training areas one day and none on another day. This made using the imagery as a sensor or cuing apparatus complicated. As before, knowledge gaps across echelons made it difficult to anticipate when the brigade could expect support.

The final challenge the 3rd IBCT encountered involved the classification of the imagery the team received. Commercial imagery is inherently unclassified; however, all the imagery received was classified. An investigation revealed that the imagery collected to support JPMRC was derived from national technical means instead of commercial assets. The team discovered this occurred because the imagery requests 3rd IBCT sent stated that either national technical means or commercial imagery collection would satisfy the requirements. As a result, the division only received national technical means imagery, which unfortunately limited the team's ability to share imagery with partner forces participating in the exercise.



Moreover, the brigade worked almost entirely on a secure but unclassified-encrypted enclave, making it increasingly complex to share

classified imagery with subordinate elements. Operations officers and commanders throughout the brigade did not have regular access to the SECRET Internet Protocol Router Network. Therefore, even if the imagery had been more relevant to decision making, the classification barrier alone would have disrupted the brigade's ability to share it promptly with key players across the team.

A Way Forward

While commercial satellite imagery has the potential to provide tactical formations with a pivotal advantage, adversaries that are willing to pay can leverage similar capabilities. For example, in 2020, Iran purchased low-latency commercial imagery to enable its targeting of Ain al-Asad Air Base in Iraq following the killing of Islamic Revolutionary Guard Corps General Qassem Soleimani. The subsequent attack resulted in over 100 American Service members injured. Reporting does not identify the company from which Iran purchased the imagery; however, we know that Iran acquired the imagery on the same day as the attack.[6] The bottom line is that by using commercial imagery, an organization with fewer barriers and the means to pay can maintain real-time awareness to help drive operations and targeting.

Solutions to these challenges are worth exploring, as finding a path that effectively manages this resource at the tactical level could prove critical on the future battlefield.

Recommendations for the IBCT. The following are recommendations for using and exploiting commercial imagery at the IBCT level in the future.

Request Access for Brigade Collection Managers. Although it takes time and training, brigade collection managers should be encouraged to obtain the credentials to request commercial imagery. This training does not currently decrease the request chain requirements, but it allows brigade-level intelligence professionals to advocate more effectively for their commanders' information requirements.

Close the Knowledge Gap. Battalion-, brigade-, and division-level intelligence professionals should educate themselves on the current imagery request process. Understanding this process can help intelligence professionals manage their commanders' expectations and better identify the lead times required for imagery requests. Many U.S. Army divisions have NGA representatives attached to their organizations. They are a wealth of knowledge and can play a pivotal role in closing knowledge gaps within organizations.

Communicate a Shared Understanding of the Required Imagery Classification. The tactical element requesting imagery should clearly communicate its need for national technical means or commercial imagery and the desired classification level of the product. Once analyzed and exploited, even commercial imagery can become classified above the end user's clearance, making sharing with partners on the ground difficult. All parties must understand whether they should distribute an intelligence product or only basic imagery. The requesting element needs to systematically describe and fully justify its collection requirements. This offers a further rationale to authorize requesting capabilities at the brigade level.

Train Intelligence Analysts and All-Source Intelligence Technicians. Division, brigade, and battalion intelligence analysts should receive training on accessing and disseminating commercial imagery. They should also be well versed in using NGA and NRO tools such as iSpy[7] and learn how to quickly access and disseminate unclassified imagery. If tactical formations are going to use commercial imagery to drive tactical targeting, they cannot depend solely on the two or three brigade-level geospatial intelligence imagery analysts to meet all needs.

Recommendations up and out. The following are recommendations for using and exploiting commercial imagery at levels above the IBCT in the future.

Treat National Technical Means and Commercial Imagery Requests Differently. It may be valuable to begin differentiating national technical means from commercial imagery. Currently, the process for requesting national technical means support and commercial imagery support is the same. Establishing separate request processes for national technical means and commercial imagery might allow tactical formations to use commercial imagery more effectively.

Shorten the Request Chain. The current multi-layered review process for tactical formations to request imagery through NGA is lengthy and cumbersome. While it serves an essential purpose, auditing the process to determine where it could be shortened would enhance tactical formations' ability to leverage the resource. Additionally, as the battlefield becomes more fluid, tactical formations may require more direct communication with commercial imagery companies to keep pace with proficient adversaries. These commercial imagery requests may not require the same level of vetting as national technical means.

Conclusion

The 3rd IBCT, 25th ID's efforts during JPMRC 24-01 illuminate the current obstacles to operationalizing commercial satellite imagery. Although the 3rd IBCT received several packages of national technical means imagery during its JPMRC rotation, the information needed to be more timely to be of operational value to decision makers. A challenging request, dissemination, and classification process made it difficult for imagery to support decision making and targeting on a fluid battlefield. Nonetheless, with informed intelligence professionals, refined processes, and mitigated systemic barriers, commercial imagery is a resource that could provide a relative advantage. This may be critical as tactical formations look to outpace adversaries on an increasingly transparent battlefield.

Endnotes

1. “About Us,” National Geospatial-Intelligence Agency, last modified October 30, 2024, 11:20, https://www.nga.mil/about/About_Us.html; and “About the National Reconnaissance Office,” National Reconnaissance Office, https://www.nro.gov/About-NRO/.

2. Maxar Technologies, “New Documentary on Ukraine Underscores the Importance of Maxar’s Commercial Satellite Imagery and Capabilities,” *Maxar Technologies Blog: Earth Intelligence*, March 02, 2023, https://blog.maxar.com/earth-intelligence/2023/new-documentary-on-ukraine-underscores-the-importance-of-maxars-commercial-satellite-imagery-and-capabilities.

3. Ibid.

4. Gary Dunow, “The Game-Changing Role of Commercial Satellite Imagery and Analytics in Ukraine,” *Maxar Technologies Blog: Earth Intelligence*, April 12, 2023, https://blog.maxar.com/earth-intelligence/2023/the-game-changing-role-of-commercial-satellite-imagery-and-analytics-in-ukraine.

5. Sandra Erwin, “U.S. Military and Allies Get a Feel for the Value of Commercial Satellite Imagery,” Space News, August 13, 2023, https://spacenews.com/u-s-military-and-allies-get-a-feel-for-the-value-of-commercial-satellite-imagery/.

6. Nathan Strout, “Report: Iran Used Commercial Satellite Images to Monitor US Forces Before Attack,” C4ISR Net, March 1, 2021, https://www.c4isrnet.com/intel-geoint/2021/03/01/report-iran-used-commercial-satellite-images-to-monitor-us-forces-before-attack/.

7. Adam Goodman, “NGA Brings Products Closer to Action in Middle East,” *CHIPS*, March 2, 2020, https://www.doncio.navy.mil/CHIPS/ArticleDetails.aspx?id=13225. iSpy is “a web-based, image-viewing application that provides tools for imagery analysis and exploitation.”

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