

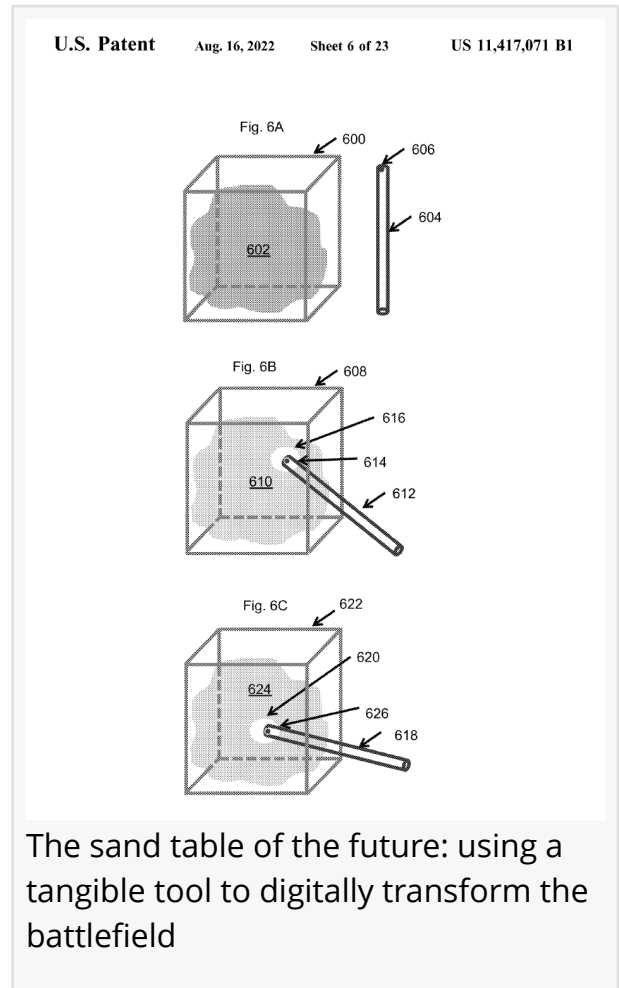
# A 25th Major Improvement to the Integrated Visual Augmentation System

*The sand table of the future: using a tangible tool to digitally transform the battlefield*

USA, August 31, 2023 /EINPresswire.com/ -- For centuries, sand tables have been used for military planning, wargaming, and teaching military tactics. In an article published on 25 August, [TPMI](#) discussed US 11,207,133 which provides revolutionary technology to interact with holograms by using tangible tools. This revolutionary technology will enable precision interaction between the physical world and the virtual world.

If the '133 patented technology is integrated into the [IVAS](#), it would enable a Colonel the ability to use a tangible tool to point out a specific spot or route on a virtual sand table created from the One World Terrain (OWT) to enable precision force movements. Observers would be able to follow the lines that the Colonel has traced using his tangible pointer tool into the virtual terrain. The Colonel would be able to see the big picture and designate specified routes where the company commander should lead his company. Since the '133 patented technology enables precision mark up, the Colonel will grow to love his tool.

TPMI is on a relentless path towards improving technology specifically for the US Army. While the '133 patent provides the capability to markup the battlefield using a tangible tool, US Patent 11,417,071 goes one step further by enabling the tangible tool to perform a transformation of the actual data comprising the battlefield. As the tangible tool moves in position and orientation, the 3D virtual world is manipulated and displayed on an extended reality head display unit. The '071 patented technology enables a user the ability to select from an array of tangible tools and virtual tools to interact with the virtual world.



Imagine the Colonel using his tool to not only mark up the virtual volume, but also to manipulate the virtual volume too. The Colonel could grab a virtual tank with his tangible tool and re-orient it to a more appropriate orientation. The Colonel could use his tangible tool to carve a hole into a virtual bridge mimicking damage. The Colonel could use his tangible tool to grab a virtual air defense system and turn it upside down indicating that it is no longer functional. Thus, the '071 patent enables not only a markup of the battlefield, but a transformation of it. The Colonel will grow to use his tangible tool even more!

Together, the '133 patent and '071 patent represent a major breakthrough in the ability of a user to interact with a virtual volume. The battlefield is complex and dynamic. TPMI's technologies will directly help senior Army leaders to see the big picture of the battlefield and analyze the complexities of war in real time. Army leaders will have an improved understanding of where to move forces and when to time an attack to maximize lethality.

Integrating TPMI's '133 and '071 patented technologies into the IVAS is an essential next step towards enabling Army personnel to have the ability to interact with the OWT. TPMI aims to work with [PEO Soldier](#) and PEO STRI to integrate this novel technology into the IVAS.

About the author: Dr. Robert Douglas is one of the few known retired Infantrymen who have 80+ USPTO awarded patents. This article discusses only a small subset of the vast array of technology in the '071 and '133 patents. This was the 25th patent discussed in this series of articles that is relevant toward improving the military/ IVAS. More to come.

Dr. Robert Douglas

TPMI

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