

**1.0 TOPIC TITLE:**

Socet GXP Plugin for AI-based Image Labeling

**2.0 SUMMARY:**

Our research in Artificial Intelligence (AI) requires the creation of a graphical user interface to assist operators in the labeling of objects contained in sensor imagery. We have a requirement that this tool be written as a plug-in for Socet GXP, interfacing with a backend database to store the annotated metadata.

**3.0 BACKGROUND:**

MIT Lincoln Laboratory's Intelligence and Decision Technologies Group (Group 104) creates novel machine-learning algorithms to support the Department of Defense. Often these are supervised learning algorithms that require labeled images. A Graphical User Interface (GUI) will improve the labeling process with regards to data coordination, software management and an improved suite of labeling features. Often the GUI of choice for image analysts is the Socet GXP product from BAE Systems. Regarding data coordination, this labeling tool will store the data and appropriately assign unlabeled data without requiring continuous coordination among labelers. In terms of software management, the tool ensures everyone is using the same labeling tools and provides an opportunity to create new labeling features.

A labeling application, implemented as a Socet GXP plugin, will speed up the data labeling process and increase the time that researchers have available to spend on developing state of the art machine-learning algorithms.

Additional concept ideas that support this challenge are also welcome.