LINCOLN LABORATORY
MASSACHUSETTS INSTITUTE OF TECHNOLOGY

1.0 TOPIC TITLE:

Web Application for Labeling Objects in Images

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. The requirement is that this tool be written as a web-based front end, with the back end implemented as either Python, Java, or C++.

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 web-based tool will improve the labeling process with regards to data coordination, software management and an improved suite of labeling features. Regarding data coordination, a web tool will store the data and appropriately assign unlabeled data without requiring continuous coordination among labelers. In terms of software management, a web tool allows labelers to contribute without installing software and ensures everyone is using the same up to date labeling tools. Thirdly, a new labeling web application provides an opportunity to create new labeling features, specifically pixel segmentation features.

A web application that speeds up the data labeling process will 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.