Anodyne Professional Development Systems (APDS) will develop an AR device called Optical Micro Navigation Infrared Sensor (OMNIS) for the Defense Logistics Agency. APDS will begin evaluating the capabilities of modern AR devices for their effectiveness in a RFID-enabled warehouse environment. Physical components will be rated based upon their durability, scratch resistance, weight, and safety. The software of these devices will be run through a series of evaluations to measure latency and frame rate, and to check for security issues. Upon the completion of these evaluations, APDS will transfer these devices to a warehouse environment. APDS will build a test environment in which warehouse employees will use the AR headsets to locate objects inside the warehouses, to gain information about objects inside of containers without having to consult manifests, and to receive notifications about new shipments arriving. Data will be gathered on the warehouse employees using the AR headsets in common tasks. This will allow APDS to quantify what sorts of productivity gains are to be expected from using the system in production, and to build a usable product in Phase II.

Augmented Reality (AR) is an emerging technology that will boost productivity and accuracy for the logistics industry. Recent developments in commercial AR devices, such as the Microsoft HoloLens and Meta 2, show that the capabilities of AR devices are quickly becoming useful to real world applications. **Anodyne Professional Development Systems (APDS)** will develop an AR device called **Optical Micro Navigation Infrared Sensor (OMNIS)** for the Defense Logistics Agency. Following the funding of this proposal, APDS will begin evaluating the capabilities of modern AR devices for their effectiveness in a RFID-enabled warehouse environment. Physical components will be rated based upon their durability, scratch resistance, weight, and safety. The software of these devices will be run through a series of evaluations to measure latency and frame rate, and to check for security issues. Upon the completion of these evaluations, APDS will transfer these devices to a warehouse environment. APDS will build a test environment in which warehouse employees will use the AR headsets to locate objects inside the warehouses, to gain information about objects inside of containers without having to consult manifests, and to receive notifications about new shipments arriving. Data will be gathered on the warehouse employees using the AR headsets in common tasks. This will allow APDS to quantify what sorts of productivity gains are to be expected from using the system in production, and to build a usable product in Phase II. Six months after the funding of Phase I, APDS will provide a report to the DoD on the findings and recommendations for the Phase II product.

In order to provide accurate information, industrial equipment will need to be modified with sensors to work the AR units. APDS will report on collected time data to ensure the OMNIS is providing the highest possible efficiency upgrade*. APDS will draft

have a thriving market. shown an increase the market exists for AR headsets that there is a new market for these headsets. While AR devices are powerful on their own, combining these headsets with external

sensors such as small Radio Frequency Identification tags has the potential to transform entire warehouses into AR facilities. Facilities who invest in this AR technology have the potential of eliminating unproductive workers who will no longer need to visit manifests computers to obtain locations of crates within the warehouse. Andone Professional Development Systems will