Requirements Document

Title: Procurement of High-Speed Optical Coherence Tomography (OCT) System for Analysis of Poultry Tissue.

Brief Description:
This procurement is for a high-speed, research-grade spectral-domain OCT system capable of rapid 1D/2D/3D mapping of chicken tissues and subsurface muscle structures. The system must be turnkey and provide an imaging depth of at least 1 mm in tissue (or measured in water), an axial resolution better than 2.3 μm in tissue (or measured in water), and a maximum A-scan rate of at least 240 kHz. The OCT scan head must support longer working-distance objectives when required for expanded standoff distances, up to 25 mm.

Minimum Specifications / Salient Characteristics:

- A-scan rate must support up to 240 kHz for rapid data acquisition and efficient mosaic stitching.
- Must provide an imaging depth of 1 mm or greater in tissue or measured in water, and larger than 1.5 mm in air.
- Must provide an axial resolution of 2.3 μm or less in tissue (or measured in water) and up to 3.1 μm in air.
- Software: Must provide the application software and software development kit (C++) for data acquisition and system control.
- Must support a user-changeable objective lens configuration to adjust the working distance up to 25 mm.