Invitation to Bid

I. Statement of Purpose

The Alabama Department of Forensic Sciences (ADFS) has recently obtained Federal funding through the National Institute of Justice aimed at improving the capacity of the forensic DNA Databank laboratory within Alabama. The State of Alabama is utilizing Federal funding provided by NIJ to procure instrumentation associated with the capillary electrophoresis and DNA analysis of offender samples routinely encountered in the forensic DNA databank. The addition of a capillary electrophoresis instrument will increase the overall efficiency of the DNA Laboratory by allowing a greater number of samples to be processed through DNA analysis and electrophoresis. The resultant increase in the overall infrastructure of the DNA Laboratory's through the implementation of this new instrumentation will contribute significantly to the overall goal of increasing laboratory capacity and insuring that DNA backlogs of forensic offender samples are minimized.

This invitation to bid (ITB) has been issued by ADFS in an effort to obtain Bids from qualified vendors for the purpose of purchasing one (1) capillary electrophoresis instrument for the analysis of offender samples routinely encountered in forensic science.

Qualified vendors will submit cost proposals that accurately detail how they meet each of the technical specifications outlined below, in addition to the submission of their overall bid cost.

The failure of any vendor to include any information that is requested within this ITB may lead to rejection of the bid for non-responsiveness. By responding to this proposal a vendor attests that it is capable of shipping the capillary electrophoresis instrument within 30 days of an award.

II. Minimum Specifications for Capillary Electrophoresis Instrument

All qualified vendors wishing to submit a response to this ITB must meet the following minimum specifications and provide any relevant documentation which demonstrates their compliance with each of the following mandatory requirements:

1. The instrument must be a 16-capillary, fluorescence-based genetic analysis system. It must be fully automated from polymer loading and replacement, DNA separation, detection, and data analysis. Run conditions must be optimized for several applications, such as *de novo* or comparative DNA sequencing and DNA fragment analysis. A full complement of chemistry kits, software, and accessory products should be available from the vendor.

2. The instrument must be capable of analyzing multiple runs of samples—16 samples per run. The system must be fully automated from polymer loading to analyzed sequence or size-called results. The instrument must use a computer workstation for instrument operation and data analysis—specifically a Dell® Workstation running Windows® XP or higher operating system, a powerful computing platform necessary for receiving data from the instrument at a high rate. The Windows XP operating system should also be designed for networking with a larger laboratory management-computing environment.

3. The system should use software for sample import and instrument control that can regulate the functions of the instrument and automatically process the data once the instrument has detected it. It must also provide several options for instrument diagnostics and automatic import of sample plate information.

4. The instrument must use analysis software and algorithms that perform either basecalling for DNA sequencing or size calling for DNA fragment analysis. One application software type must be included with the purchase of the instrument system, the other must be available to be selected as an add-on kit. Data files should be generated in industry standard ABIF format, which must be viewed on a Windows® computing system.

5. The instrument must operate without user intervention (unattended) for 24-hours with a sample processing throughput greater than 500 sequencing or 500 fragment analysis samples per 24-hours.

6. The system must be able to detect and analyze five fluorescent dyes simultaneously.

7. The instrument must have:

   • Sixteen capillaries

   • Automated polymer delivery system

   • Autoloading of samples performed from either 96- or 384-well microtiter plates.

   • CCD detection technology and a spectrograph for color separation

   • Simultaneous dual-side illumination detection system to maximize signal uniformity and sensitivity that in turn reduces the requirements placed on the user for sample preparation and cleanup.

   • Active temperature cooling/heating that can maintain temperatures from 18 to 65 degrees C.

   • A thermally stable detection region of the capillary array

8. Reagents optimized for use with this instrument must be available through the instrument's vendor.

9. The vendor must supply application-specific kits that are optimized for the instrument in the area of human identification, agriculture, molecular microbiology, and genetic disease research.

10. The instrument must possess DNA analysis software that was developed specifically for human identification applications.

11. Key features of the analysis software must include the following:

- Single software Assistant System that allows user to review actual peak data for manual review and troubleshooting purposes thus speeding up data analysis review.
- Sample Data Quality Control designed to identify potential contributors to a mixture and perform blind QC checks helping to ensure high quality data.
- Multi-User database allows multiple networked clients to access central repository of data dramatically streamlining data management.
- Extensive security, auditing and eSignature functionality designed to protect data integrity and provide support for control of technical records.
- Command Line interface provides automated integration with 3rd party software.
- Automatically detects and labels spikes speeding up data review.
- Automatically evaluates analysis requirement status and allelic ladder quality prior to analysis of unknown samples which prevents time intensive reanalysis.
- Provides analysis summary report so users can quickly determine the overall status of the run

12. The CE instrument system must possess a second year limited warranty on parts, labor and travel, in addition to the standard one year warranty provided with its purchase and be supported with on-site installation and training.