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AUTOMATING DRIED SAMPLE COLLECTION AND PROCESSING USING THE VIBRASWAB SYSTEM FROM BSD ROBOTICS

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Filter paper, often treated with FTA, is widely used in a variety of fields such as forensics, paternity testing and population studies as an efficient and stable sample storage medium. The typical sample collection procedure where FTA is used involves certain steps that are difficult to automate. We have evaluated a new line of technologies from BSD Robotics that aim to automate the dried sample process from sample collection to sample punching. The technology includes the new VibraSwab sample collection systems, which are designed to provide a standardised sampling method of donor buccal cells that aims to reduce the variability in sample recovery commonly observed with manual sample collection.

With the Type 1 system, which incorporates a VibraSwab device, filter paper encased in BioDisk cassettes and upgraded BSD Duet instruments to accommodate automated BioDisk punching, freshly collected buccal cells can be transferred immediately to BioDisk cassettes either manually or using the Transfer Station. The BioDisk punches are then processed using an FTA washing protocol.

The Type 2 system incorporates an alternative VibraSwab device, from which foam columns containing dried sample are punched directly from designated positions on the VibraSwab head and submitted for processing. Full 9-loci profiles were obtained from buccal samples on VibraSwabs heads that have been stored at room temperature for up to 19 days.