Human identification

GeneMapper *ID-X* Software v1.7

Forensic data analysis and NDIS Expert System software

With over 20 years of validated, real-world use, Applied Biosystems™ GeneMapper™ *ID-X* Software is an automated genotyping software designed to meet the demands of forensic casework and databasing. The software draws on the history of consistent performance, shaped by forensic scientists and dedicated R&D, evolving with the future in mind. The latest addition to GeneMapper *ID-X* Software brings advanced functionality for estimating the number of contributors in a DNA mixture. Applying multiple algorithms from Applied Biosystems™ GeneMapper™ *PG* Software, this feature utilizes a range of methods from simple maximum allele count (MAC) to more advanced machine learning techniques. This enhancement offers forensic analysts the flexibility and precision needed to interpret complex DNA mixtures with confidence.

GeneMapper *ID-X* Software is recognized as an expert system by the U.S. National DNA Index System (NDIS) for use on offender samples and known reference

samples, underscoring its reliability and compliance with industry standards. With its robust multiuser database configuration, GeneMapper *ID-X* Software helps ensure that projects, settings, and results are securely stored on a central database host computer. Client computers can easily connect to this host to create and analyze projects, maintaining consistent analysis settings across multiple users. This centralized approach not only enhances efficiency but also supports technical and case reviews.

Leveraging decades of experience, analytics, and STR advancements, GeneMapper *ID-X* Software helps deliver actionable insights, enabling confident interpretation and decision-making.

NDIS
Approved

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Database

GeneMapper *ID-X* Software v1.7 utilizes a PostgreSQL™ database. The PostgreSQL database implementation was designed in compliance with Center for Internet Security™ CIS Benchmarks™ guidelines. The incorporation of the database includes new features and maintenance improvements in GeneMapper *ID-X* Software v1.7. Your lab will now be able to schedule automated database backups (Figure 1). Additionally, manual (*ad hoc*) database backups and the restore function are available along with a scheduled backup feature. The need to manually increase table space no longer exists with the PostgreSQL database that auto-increments in size on an as-needed basis. Finally, there has been no change to the analysis algorithms as a result of this database change. Your lab can rely on the same consistent results as you upgrade between software versions.
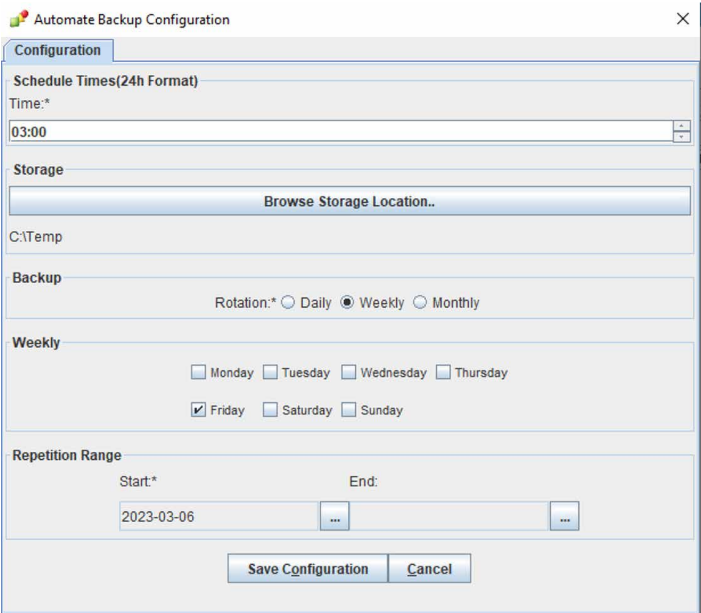

Figure 1. The automation backup configuration menu contains options to best suit your laboratory requirements.

Interface and ease of use
User-friendly plot view

With the plot view introduced with GeneMapper *ID-X* Software v1.7, you can visualize and configure sample plots to focus on relevant data, and most importantly, annotate directly on sample plots (Figure 2). These notes can be moved anywhere within the dye channel by clicking and dragging. The notes are auditable and all changes are recorded. The notes are printed on the PDF export and associated printouts.
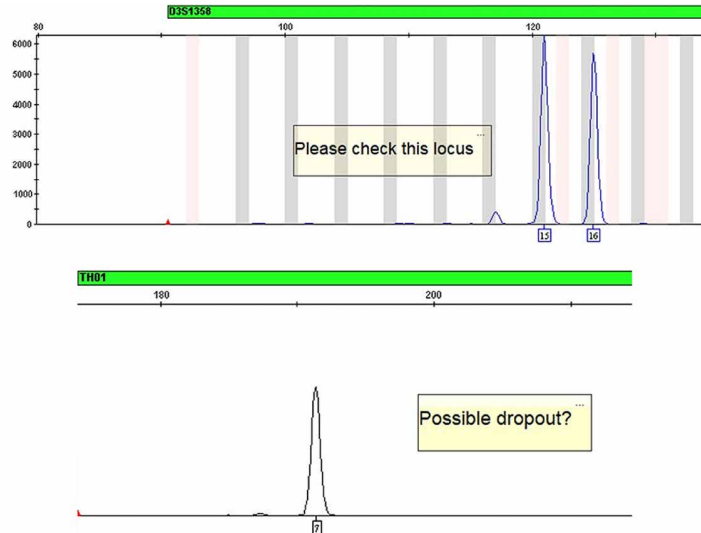

Figure 2. Example of annotation directly on an electropherogram.

Support for multiple projects and plots

Open multiple projects simultaneously (Figure 3) for a more fluid, comprehensive analysis. Easily compare samples across all open projects using the Profile Comparison tool as well as compare annotation differences between multiple projects. You can open electropherograms in separate windows and compare them side by side, rather than scrolling back and forth between the two different profiles.
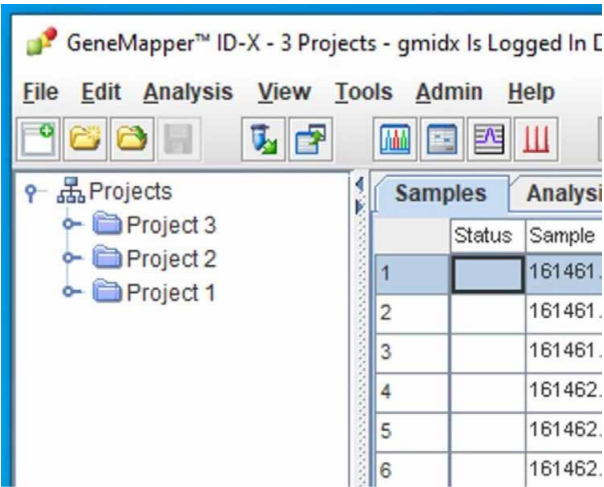

Figure 3. Multiple projects are open at the same time in the left-hand navigation panel.

Estimating contributors with advanced algorithms

GeneMapper *ID-X* v1.7.3 offers a variety of algorithms to estimate the number of contributors to a DNA mixture, a crucial step in the interpretation process. From straightforward methods like MAC and total peak count to techniques such as machine learning with decision trees, you can guide the estimation process with transparency. Regardless of the method you choose, each one is designed to be traceable and easy to explain.

With one click, GeneMapper *ID-X* v1.7.3 Software easily integrates with GeneMapper *PG* Software, offering a complete forensic DNA analysis solution. Extending the trusted GeneMapper *ID-X* brand, GeneMapper *PG* Software features probabilistic genotyping designed to bring clarity, deep insight, and confidence to your mixture analysis.

User base of instruments supported

As technology advances, GeneMapper *ID-X* Software v1.7 helps set you up for success in adapting to those changes. The software is supported on both Microsoft™ Windows™ 10 and Windows™ 11 operating systems. GeneMapper *ID-X* Software v1.7 is compatible with files from Applied Biosystems™ SeqStudio™ Flex Genetic Analyzers and the Applied Biosystems™ RapidHIT™ ID System. The software helps ensure continuity of analysis from your existing platforms—Applied Biosystems™ 3500 Series Genetic Analyzers and SeqStudio™ Genetic Analyzers—as well as files produced by Applied Biosystems™ ABI PRISM™ 3730, 3130, 3100, and 310 Genetic Analyzers.

Additional user interface improvements of GeneMapper *ID-X* Software v1.7 are:

- **Auto-save**—you no longer need to worry about losing your edits if the server connection is unexpectedly closed; auto-save is configurable on a per-minute basis

- **Prepopulated analysis settings**—these can now be imported from the capillary electrophoresis (CE) plate document; you can add the analysis method along with panel and bin sets, and settings will transfer over to the GeneMapper *ID-X* Software when an instrument file is imported

- **Printing**—the 10-page spool print limit has been removed, improving PDF export efficiency

- **Verified print job capability**—print up to 500 pages,

significantly increasing previous capacity

- **Analysis settings on plot**—choose parameters to display on the profile plot, such as analytical threshold, analysis threshold, panel, and size standard

- **Stutter visualization**—filtered stutter can now be visualized in grayed-out form, indicating the presence of a peak that was filtered due to stutter settings

- **Displayed peak height ratios**—on-the-fly peak height ratio calculation has been expanded from a single dye channel to any two peaks in the sample plot

Optional analysis features

Additional analysis options that can help you save time in both primary and secondary data review:

- **Allele-specific stutter**—using parameters developed by your own laboratory

- **Marker-specific filters**—including marker-specific peak amplitude threshold (PAT), homozygous and heterozygous minimum peak height, maximum peak height, minimum peak height ratio, and cutoff (Figure 4)

- **Spectral pull-up filter**—with the click of a few buttons, you can enable pull-up detection and separately choose to remove pull-up peaks rather than just labeling them

- **Additive stutter**—the ability for the software to include the effects of both forward and back stutter during peak evaluation
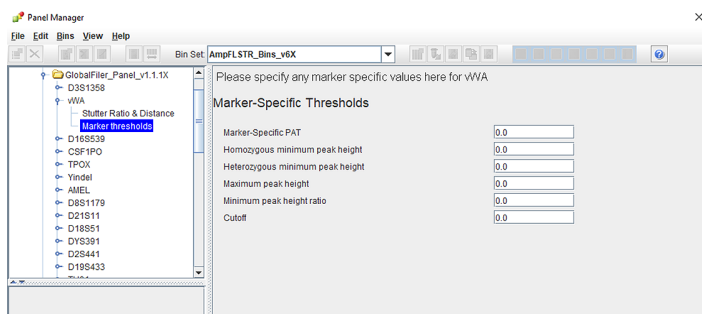

Figure 4. Menu options for incorporating marker-specific thresholds based on laboratory requirements.

Validation

Thermo Fisher Scientific has validated GeneMapper *ID-X* Software following the DNA Advisory Board (DAB) Quality Assurance Standards (July 1, 2020) and guidelines from the Scientific Working Group on DNA Analysis Methods (SWGDAM, December 5, 2016). Each laboratory using GeneMapper *ID-X* Software should perform its own appropriate internal verification or validation studies to establish interpretation criteria and demonstrate that the software is appropriate and fit for its own human identification uses.

Ordering information

Description	Cat. No.
GeneMapper *ID-X* Software v1.7, full installation	A71700
GeneMapper *ID-X* Software v1.7, client installation	A71701
GeneMapper *ID-X* Software v1.7, full upgrade	A01700
GeneMapper *ID-X* Software v1.7, client upgrade (1 license)	A01701
GeneMapper *ID-X* Software v1.7, client upgrade (5 licenses)	A01705
GeneMapper *ID-X* Software v1.7, client upgrade (10 licenses)	A01710

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