Rogue DNA Forensic Lab
Facial Analysis & Recognition

Rogue DNA's Forensic Lab suite (RFL) provides the following functions. Data can be seamlessly exchanged between each module:

- Face recognition & partial face recognition
- Fingerprint recognition and compliance with biometric standards
- Fingerprints & facial images – conversion of paper prints to electronic
- Biometric Application Server
- Document authentication

The Facial Analysis & Recognition module is designed to provide the following functionality:

- Full face recognition
- Partial face recognition
- Facial image ageing
- Face composite sketching

Where appropriate, each module communicates directly with the others. Thus for example the face recognition module will automatically pick up and process images created by the ageing or sketching modules. Details of each module are as follows:

1 The face detection and recognition system is the result of many years experience in the forefront of face recognition development. Key features include:

- Accesses external databases containing facial images, subject to the location of image fields being known.
- Operates in read-only mode so data security is protected.
- High speed searches are extremely fast - typically greater than 1m records per second, depending on hardware.
- Encodes numerous characteristics of a face (static, live, or video) and matches it against a number of databases and watchlists. Returns an array of thumbnail images of matches above a defined threshold.

- The application is available in 32-bit and 64-bit versions, enabling it to access databases of many millions of records.
- Multi-language switch changes the user interface to any language

2 The composite sketching module takes a witness description and saves it such that the face recognition module can seamlessly pick it up and process it.

An eFit-V Composite Sketch

- The sketching module is based on the advanced eFit-V software application that's used around the world. EFIT-V is a unique software product that creates near photo-realistic colour images of criminal suspects from eyewitness testimony.
- Uses an intelligent, interactive process in which the eyewitness selects the most appropriate facial shape from a library and then overlays it with photographs of features.The size and shape of eyes, nose, mouth, etc can be adjusted independently. Initial seeding includes face-shape, age, gender and ethnicity. Dynamic features such as wrinkles, laughter lines, etc, can be added to a composite.

3 The facial ageing module takes a facial image and allows the user to specify how many years older the face should be aged. This can help with face recognition and witness identification. Faces can also be adjusted for race and gender.

Ageing of a 20-year old face at 40 and 60 years old. Hair can be added if required, although the face recognition software doesn't use this

4 RFL can convert old facial images on paper or held electronically to be compliant with current standards. In doing so it will correct the alignment of the image, standardize, brightness, remove redeye, etc, to optimize it for matching processes

RFL Face Recognition works with all major databases, including Oracle, SQL Server, DB2, and MS Access. RFL keeps its own database of encode strings so data integrity is not compromised.