FINGER POWER

Finscan's fingerprint recognition systems for the marine market promise to increase security and make lost keys a thing of the past. The Bio eStart is their latest development **TOM HASKER REPORTS**

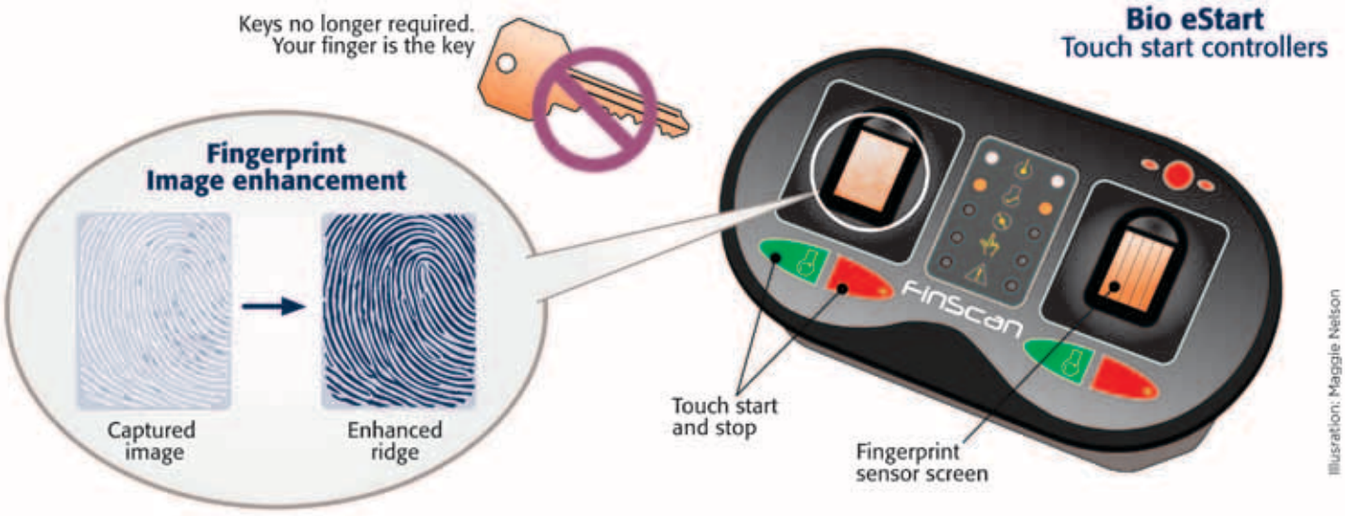

Illustration: Maggie Nelson

A captured fingerprint image is enhanced and compared to confirm authorisation

Conventional boat ignition systems use keys to give authority to start the engines. Now, though, an Australian firm, FinScan, has developed a new system — the Bio eStart — to start and stop up to four engines from a single unit using fingerprint authorisation. The idea is to free the user from having to remember and keep keys close to hand.

The major benefit of any biometric starting system is the extent to which authority can be issued to several people, for example, where there are joint-owners or a large family sharing a boat.

Bio eStart can store up to 1,000 fingerprints — allowing plenty of scope for different user need such as engineers and boatyard workers who may need permission from time to time to start the engines for maintenance and yard work. With the Bio eStart they can be given appropriate permission while the work is done, then have the permission removed once the work is complete. This also prevents the possibility of a loaned key being copied while it is out of sight of the owner, leaving the boat open to theft.

Fingerprint technology relies on identifying the ridges and troughs that exist in a person's skin and which make up unique patterns. Two well-established steps underpin all automatic fingerprint recognition systems, ranging from optical sensors to thermal, electric field and capacitive sensors which all rely on sensing differences between skin and air at the point of contact with the finger pad.

To cope with the challenges of the marine environment, and because of its good speed of identification, FinScan opted for the capacitive sensor technique as the operating system for the Bio eStart.

Once an image has been generated, the second stage of the authentication process uses a computer algorithm to find the unique distinguishing characteristics of a fingerprint and then compares it to the record held on file. Any smudging of the image or distortion is taken into account before the comparison with the file copy is made.

The image is then enhanced so that the ridges and air gaps can be clearly identified by the software. If a match exists then permission to start the engine is given — if not, it is denied.

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Product essentials

- The Bio eStart is aimed at POD engine drive installations. Volvo Penta's IPS and Cummins Zeus drives can have three or four engines installed. Starting is simplified by biometric authorisation.
- One thousand fingerprints can be stored allowing for additional authorised users of the boat.
- Not using keys allows permission to be given to maintenance and boatyard workers for a time and then removed.
- Wiring harnesses for Volvo Penta's — Electronic Vessel Control, Cummins Mercruiser's — Smart Craft, Caterpillar and MAN engines can all operate with the Bio eStart.