

IDENT1[®]

Technical bulletin

February 2006

Flat screen options for IDENT1

The IDENT1 contract with Northrop Grumman (NG), providers of the technology for the IDENT1 platform, was finalised in November 2004 and specified that 21" CRT monitors would be supplied for bureau workstations as part of the baseline provision, with the option of upgrading to a 21" LCD monitor at an additional cost. At the time there were some concerns over the quality of LCD monitors compared with CRTs when used for detailed imaging work such as fingerprint comparison and editing, and also whether the additional

cost of large LCD monitors represented best value for money.

However, since that time, the LCD market has moved on and PITO and NG have been working together to find the best solution.

The ACPO National Fingerprint Board User Design Team conducted a trial with PITO of a range of LCD flat screen monitors suitable for IDENT1. The objective was to ensure that there are no adverse technical or business implications arising from introducing flat screens for fingerprint work with IDENT1.

A report has been produced and submitted to the IDENT1 Project Board that confirms the screens are suitable for

IDENT1 imaging work. The Project Board has approved the recommendation that the LCD monitors are fit for the purpose of imaging work.

PITO will now also be offering each bureau the choice of 19" LCD monitors at no extra cost. Each model within the baseline provision would have almost identical viewable screen areas. The User Design Team is currently working on the IDENT1 Human Computer Interface (HCI) to make more efficient use of the display space than was possible with NAFIS.

PITO will be contacting bureaux to establish their workstation preferences – one of the baseline models, or upgrading to a larger LCD at an extra cost.

The future of Ten-Print scanners

Northrop Grumman and PITO have decided upon the successor for the ten-print scanner – the Epson Expression 10000XL, together with Mentalix fingerprint utility software.

The decision comes after careful consideration of the engineering options available, balanced against other factors such as the increased deployment of Livescan.

When choosing the right scanners for a critical identification system such as IDENT1, the quality and reliability of input devices are even more critical than that of workstation screens. For example, not only does the optical quality of the scanner have to be very high but the mechanical drive also has to maintain geometrical accuracy and withstand repeated high volume usage.

Most commercial scanners use belt drives which slip, stretch and degrade and so higher precision gear drives are required. There are also specific requirements for processing the captured

images and for interfacing the devices to workstations.

The Improvision IS520 ten-print scanner has been the workhorse of the NAFIS era. These were specially engineered scanners designed specifically for the business of fingerprint automation. They are based on a Ricoh scan engine, with mechanicals and electronics custom engineered by Improvision and special driver hardware and software to comply with the exacting image quality standards of fingerprinting.

The work plan originally set out in the IDENT1 contract featured Improvision scanner upgrades to include duplex scanning (automatically capturing palm images from the rear of the ten-print form in one pass), as well as upgrades to enable features such as contrast adjustment on a finger-by-finger basis at capture.

However, the significant cost of the upgrades and time requirements have looked increasingly questionable in the light of progress towards a national basis

for Livescan provision throughout England and Wales (in addition to that which already exists for Scotland). To compound this, as the AFIS market has moved generally in the direction of Livescan, investing in an increasingly niche capture device looks risky from a long-term maintenance perspective.

The chosen replacement scanner – Epson Expression 10000XL with 100-sheet input tray – is slower in operation than the Improvision at approximately 22 seconds for the front side of a ten-print form. However, as Palms should now be captured as a matter of routine, the fact that the 10000XL will automatically capture the back and front in approximately 46 seconds, without the form having to be manually 'flipped', means that this should not adversely impact the overall capture process.

In all other relevant respects the Epson/Mentalix combination is superior.
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Its higher resolution and colour depth facilitate better contrast adjustment and increased functionality, while reducing dependence on a niche device. The combination also offers the flexibility to change to improved scanners in future without having to

modify system software or device drivers. Balancing the considerations, Epson/Mentalix was a clear choice. A similar analysis is now being carried out around the choice of mark scanners for future deployment.

Using non-standard equipment with IDENT1

Some bureaux have been asking about 'ergonomic' mice and keyboards for personnel who, for health and safety and ergonomic reasons, need to use different peripheral equipment with their IDENT1 workstation.

Northrop Grumman (NG) is developing a solution to this issue and PITO is drawing up a policy statement to accompany this work. The intention is for this peripheral equipment to be the exception rather than the rule for connection to IDENT1 workstations.

From a bureau point of view, there are various elements to consider and these will form part of the PITO policy and the NG solution for this equipment, eg:

- | The force will need to buy their own 'ergonomic' mice or keyboards to suit local requirements;
- | The 'ergonomic' model selected would need to be 'plug and play' to connect to a PS/2 port, and there would be a set procedure for implementation. The installation process would be clearly defined by NG for local force IT personnel to follow when connecting the appropriate peripheral;
- | NG would not be responsible for replacements, maintenance or servicing of these ergonomic peripherals;
- | The force would need to notify NG which particular approved model was being used, so that any future changes will be compatible with IDENT1 developments.

New Mark scanners pilot under way

A new Mark scanner has been identified for use on the IDENT1 system. The new scanner is being introduced for a number of reasons:

- | The original HP scanner, carried over from NAFIS, is nearing the end of its life, so a new model needed to be identified to replace it
- | The introduction of a new scanner, together with a new version of the scanner driver, is intended also to reduce the number of incidents of Mark scanner locks experienced by users
- | The previous replacement model of scanner has not been well received by users due to the slow scanning speed.

In order to ensure that these issues are addressed, Northrop Grumman is carrying out an operational pilot of the Epson Perfection 4990 with a new Mentalix driver. The new scanner has a smaller footprint and an integrated transparency adapter. The outline plan for this is:

- | Scanners have been installed at the Hendon Data Centre (1), Thames Valley (2), the Met (1) and the Demonstration Suite at Solihull (1)

- | The scanners installed at the bureau sites are being piloted for a minimum of one month and the number of incidents relating to Mark scanner lock-ups is being monitored and compared with the number of like incidents prior to the scanner upgrade
- | On completion of the pilot it is not proposed to remove the scanners from the pilot sites (provided that the users are happy with the new scanner)
- | A nationwide roll-out of the new scanner will form part of the Phase 2 roll-out to bureaux.

As a further interim measure Northrop Grumman is piloting the use of the new scanner driver with the existing scanners to assess whether it results in performance improvements. The new driver has already been installed on a scanning workstation on Merseyside that is known to experience a significant number of lock-ups. The performance of the scanning workstation is being monitored over a month and the results compared to a similar time period. If a performance improvement is seen, then the new driver could be installed at all bureaux.

Phase 1 hardware detailed

Below are the specifications for the hardware now rolled out to all bureaux in England and Wales. We hope you will find this useful for reference.

IDENT1 Workstation

HP Compaq Business Desktop DC7100

Model: HPDC7100CMT
CPU: Intel Pentium 4, 3.0 GHz
Memory: 1GB PC3200 DDR400 DIMM
Storage: 40Gb serial ATA 7200 RPM
16X/40X DVD-ROM Drive
HP USB Optical Mouse
Standard Keyboard
SuSE Linux Operating System

Main memory 2 to 32 GB
Remote 'lights-out' management

IDENT1 Bureau RAID Sun StorEdge 3310 SCSI Array

Configuration will vary according to bureau size
Up to 1.752 TB capacity
Redundant Ultra 160 interfaces @ 160 Mbytes/second
Remote management

IDENT1 Bureau Server

SunFire V440

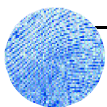
Configuration will vary according to bureau size
One to Four Ultra SPARC IIIi, 1.593 GHz
CPU's

IDENT1 Tape Library

SDLT600

Media capacity 9600 GB (compressed) with 16 cartridges
Data transfer rate 36 MB/second
Remote management.

Visit the Identification micro-site www.pito.pnn.police.uk/microsite/identification



Contact the project team

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