

## The e-KSF tool - Access Speed for NHS organisations

**April 2005**

The e-KSF tool is deployed to the NHS over the internet. This has significant benefits – no software needs to be installed on NHS machines, we can update the tool and the underlying KSF data directly, and we can run aggregated reports on data remotely. However, internet deployment does mean that the e-KSF tool is reliant on a certain minimum level of IT infrastructure within the NHS.

### **A word on online applications vs websites**

The e-KSF tool is an online application rather than a static website (it's more like a piece of software you'd normally install onto your computer) so even on fast internet connections it will run slightly slower than a basic website. This is because (1) the e-KSF tool needs to perform calculations to work out what data to display to users and (2) data needs to flow *both* from the user to the e-KSF database, *and* from the database to the user.

### **What affects the speed of the e-KSF system?**

There are five main factors which affect how fast the e-KSF tool works. The first two of these are under the control of the e-KSF team, and the last two are under control of the NHS.

1. **The design of the e-KSF tool itself** – a well-designed tool will minimise the number of calculations that are required for any user process, and where possible “pre-calculate” results using indexing of data. The e-KSF design team works hard to minimise calculating time – working in milliseconds because a few milliseconds multiplied by thousands of users can be significant. The tool has also been designed to minimise the amount of graphical data sent to the user (the system is largely text-based), which also speeds up the user experience.
2. **The capacity of the e-KSF hardware** – we current run four dedicated website and database servers for the e-KSF tool. These are scaled to cope with approximately 10000 concurrent users (the exact number depends on levels of usage by each user, so this is an estimate – more users result in a slower experience). This is sufficient for the current uptake levels – we have around 30000 people using e-KSF at the time of writing, so 1 in 3 of these can be online at the same time. As our user population grows, we have plans in place to upgrade servers and internet connectivity to maintain performance.
3. **The speed of the internet** – as data is transferred from the e-KSF servers to the user over the internet, the basic speed of the world wide web is a factor. For example, all internet websites tend to run slightly slower in the afternoon (as the USA population comes online and adds to the amount of traffic on the internet). This is, however, usually a fairly minor factor.
4. **The network speed within the NHS organisation** – each NHS organisation is accountable for the flow of data from the “internet front door” of the

organisation to the user's PC. The speed of this data flow, and hence the speed of the e-KSF tool, is generally dependant on two factors:

- a. The type of connection that the NHS organisation has to the internet (for example, a dedicated cable connection is far more useful than a dialup connection). The exact connection requirements will depend on the size of the organisation and the level of internet use within it, and will generally be covered by Connecting for Health projects. **It is this factor more than any other which tends to affect the speed of the e-KSF tool.**
  - b. The internal network speed in the organisation – how quickly data can be transferred from the organisation's servers to individual PCs. This is often a significant factor where lots of people are using the e-KSF in one room – we find that internet access can be slow in these situations because of limits on the amount of data that can be transferred into and out of the specific training room, for example.
5. **The performance of the user's PC** – Obviously, the user's PC needs to be connected to the internet to use the e-KSF. Higher specification computers process the data from the e-KSF tool more quickly than older machines, and also have better hardware and software for displaying data on-screen. There is no specific minimum hardware specification for using the e-KSF tool, although a "Pentium" processor would be sensible for all modern software use. As a rule of thumb, a PC built in the past 4-5 years should have no problems running e-KSF. The minimum software specification for a user's PC includes Internet Explorer 6, and is explained in more detail below.

### **What is the minimum requirement for using e-KSF?**

The following appears as a section in our "e-KSF briefing document for IT strategists" paper, available at [www.e-ksfnow.org](http://www.e-ksfnow.org).

- **Client**
  - Being web-based, there is no specific software required on client computers, other than an internet browser. Internet Explorer 6 or above is required. The free "adobe acrobat reader" is required to view printable forms available on the system.
  - A screen resolution of 1024x800 is recommended (although the tool will function on screens of 800x600).
  - Client PCs need access to the internet (note – this is an internet-based tool, not an NHSNet-based one). For maximum value, all staff would have access to internet-based computers. However, the tool can be implemented with only manager-type users having access.
  - The e-KSF has been developed for Windows (PC) machines only.
- **Network**
  - Although the e-KSF tool will function over dial-up (56kbps) networks, ADSL (broadband) or cable connections are strongly recommended.