

Response to Dick Stroud's blog: "IT and oldies" on 20plus30 site

In response to Dick Stroud's blog "IT and oldies" (10th October 2008), Dick wonders at the wisdom of using an unfamiliar logging on procedure on something aimed at older users. Specifically we're talking here about use of GrIDsure password replacement technology to front-end new over 55s networking site Finerday, which has adopted GrIDsure in place of the tried-but-no-longer-trusted password system.

Now normally I'd agree with Dick. However it appears that the early users of Finerday of all ages, have had little problem with this new system. In the first week of the site going "live" (in pre-launch beta form), 2000 people - of which 26% were over 55 - managed to set up their own GrIDsure-based 'Personal Identification Pattern' without any apparent problems. Howard Bashford, MD of Finerday confirms they've had no complaints.

As co-inventor of GrIDsure and chairman of the company starting to introduce it to the world, I believe we have created the only real secure-yet-simple alternative to fixed code authentication, but also accept we're attempting to bring about something of a culture change. After all, passwords (and other fixed codes like PINs and combinations) have been around "for ever", at least where computers are concerned.

Fortunately though, GrIDsure seems to be one of those things that many people just "get" straight away. Others may need a little more explaining in order to get up and running, but in a test of the system by 50 members of the public at University College London, the conclusion was that GrIDsure was as easy to use as passwords. But then, who knows? Maybe there's a "Marmite" reaction waiting out there for GrIDsure. Some people may love it, some not (I'm a Bovril man personally). But one thing's clear - we need a way to authenticate ourselves, and I don't see anything better being offered.

But hey - isn't the problem here that Finerday just happens to be one of the early users of GrIDsure? When it's "out there" on many other sites - particularly security-conscious ones used for web banking etc. - then people will already be familiar with it.

Dick suggested to me that perhaps Finerday could have started users with ordinary passwords, so they can see the site etc., then allow them to upgrade their security using GrIDsure. Sure that could work, I agree. On the other hand, hats off to Howard B and his team for wanting to pioneer something new. They're trying to create a "walled garden" where say grand-parents can swap pictures and news with their grand-children in a state of complete cyber safety. The Finerday team apparently did its own testing beforehand and concluded GrIDsure was easy enough for its hoped-for user-base to pick up. And maybe there's an argument here that new users, who *haven't* been using passwords for years, may (paradoxically) be more open to new things?

So why did we create GrIDsure? Well clearly there was a crying need for a secure means of identifying ourselves online. How on earth did the Internet get invented without such a system? OK yes, there wasn't e-commerce and so many opportunities for ripping people off online. But now, thanks to the army of fraudsters furtively creeping around in cyberspace from their safe havens, often thousands of miles away, and using malware to record what we type or can see on screen, fixed code security has gone. It's no longer able to protect us. Worse than that, such codes can be captured by criminals and used to impersonate us.

So in coming up with GrIDsure we believe we've created a system which allows us all to strongly authenticate ourselves online (and in many other situations) without the need for additional hardware.

What I'm trying to say here is that yes, a new system takes maybe a few seconds to get used to the concept (literally), but we believe it's worth it – and of course the *next* time a user sees it, it'll be a piece of cake.

One of the benefits is that we're hoping to free people from the burden of having to remember more and more "strings" of either characters, words or images, for everything from accessing websites to getting through their front doors (OR having to stroke unhygienic-looking fingerprint readers, with their lack of reliability and potential for civil liberties issues etc).

In a world where many older people have mastered the intricacies of predictive text inputting systems on mobiles, GrIDsure is actually easy-peasy.

What do you actually do? Just choose a handful of squares on a little Sudoku-like grid, as if you were a child drawing a pattern on a piece of graph paper. In other words, create a "shape", which helps you remember the squares you chose, in the right order. Then whenever a GrIDsure display appears, simply read off new random numbers which appear in your chosen squares (your "shape") - creating a new secure "one-time" code every time.

Apparently the brain prefers graphics to cold strings of numbers or letters, and can recall a shape on a grid far more easily. Another way of looking at this (and something we soon realised we'd stumbled upon) is the fact that many people "remember" phone numbers, PIN codes etc. without really thinking about it, by overlaying a pattern on the keypad in their minds. (We've heard of Americans finding UK ATMs hard to use, for this reason, as apparently they're configured differently; I think it's done on purpose to protect our balance of payments.)

A system like GrIDsure offers high security, not only for everyday password or PIN replacement, but if implemented in the right way can (according to recent tests by an independent lab) exceed the highest Government standards for password security.

Without boring you with too many figures, to crack an ordinary 4-digit fixed PIN would take a crook a mere 10,000 guesses, whereas a four-square (4 digit) GrIDsure PIP/pattern on a 5 X 5 grid offers 390,625 possible variants (making it an estimated 40-100 times "stronger" than standard Chip & PIN), while a 5-digit pattern has 9.7 million pattern combinations, and a 6-digit (quite easy to use) offers 244 million! We'd therefore argue that someone with six cards in their wallet could use one "Personal Identification Pattern" (PIP) for all of them, instead of struggling with individual PINs, making life a lot easier.

GrIDsure might also improve disability access. Last year the Leonard Cheshire Foundation highlighted the fact that many wheelchair users struggle to use Chip and PIN terminals in shops and banks, and end up having to give their PINs to friends or carers to input for them, wrecking the security.

Now imagine instead a wheelchair user being able to glance at his/her mobile phone which (offline) has created a one-time GrIDsure code. The disabled cardholder reads this to the checkout person, completing the authentication process without compromising security. It is also a belief, though we have yet to formally test this, that mobiles equipped with suitable GrIDsure software could read out one-time codes to blind users. Yet if such a phone were lost or stolen, it would pose NO risk to security whatever, as only the authorised user can read/hear the code numbers from the grid (which by the by, also saves a user having to use a separate PIN).

To quote a real-life case, PR man Tim Arnold suffers from a condition known as tuberous sclerosis, which in his case means he can't remember PINs. He's been in the news recently with a dispute involving Tesco, which apparently wants him to use a PIN, not a signature. However Tim tells me that he could certainly remember a "shape" on a grid, and would have no trouble transferring the one time code to the key-pad in a shop. In fact he thinks GrIDsure, if adopted widely, could be just what he's been looking for – something he can use, while keeping Tesco happy.

In GrIDsure we now have the technology to create (without additional hardware) one-time codes which strongly authenticate us, but without giving out information a fraudster could use to impersonate us.

Imagine the following. Someone claiming to be from your credit card, bank, council or utility rings up (and who knows, these days it could even be Gordon Brown!). What's any savvy person's initial response? Presumably: "How do I know you're really who you say you are?" This kind of thing is probably a little way off, but in theory GrIDsure could allow both ends of this conversation to prove their identities to the other, simply and securely. In our humble opinion, this is something an increasingly online and phone-based-services world badly needs.

So as I say, new things can take a bit of getting used to, but here is something which we genuinely believe - once it's "out there" in more applications - will really make life easier.

As a final example of how to make life simpler, take the current, somewhat convoluted set of systems used to authenticate credit/debit card users. There's Chip and PIN, for use over-the-counter. Then there's Verified by Visa (or MasterCard's version, SecureCode) which requires yet another password. And in the future there will be use of the decidedly clunky "sleeve reader" (currently being used by two big banks to increase security for online banking) which we believe APACS wants us to use with cards in the future. Far more to learn, get used to and memorise!

Now imagine instead having just one GrIDsure PIP and your card. You wouldn't need any of the above:-

* In a shop, you'd just input a four-digit code (which the till display would give you – actually very "Chip and PIN-like, using the normal keypad etc).

* Over the web (where Chip and PIN is obviously useless right now, because of security risks with fixed PINs) you could also use your card, combined with a similar GrIDsure one-time code (perhaps generated on your mobile phone).

In other words, just one "secret" (your GrIDsure PIP) and your card would be all you need. Wouldn't that make life simpler and more secure...

Finally, if I may be permitted to mention this, we're about to launch our own software to allow individuals or companies (via Active Directory) to put GrIDsure on their machines in place of standard Windows passwords. If Dick or anyone else, would like to become so equipped, we'd be only too pleased to get you set up.

We all have this "GrIDsure Logon" on our own laptops, and rejoice in the fact that no-one looking over our shoulders (because of repetitions on the grid) can work out what our patterns are.

Warren East, MD of big Cambridge technology company ARM (they license the designs for most of the world's mobile phone chips) was kind enough to refer to GrIDsure as "The next cats' eyes", and another friend of the project, Professor Richard Weber, Director of the Statistical Laboratory in Cambridge calls it "One of the most beautiful ideas I have ever seen".

All we can say is, why not give it a try? There's a demo on www.gridsure.com and a simple flash 'movie' at www.gridsure.com/slideshow. If you have any comments or questions, let me know (jonathan@gridsure.com).

Jonathan Craymer, GrIDsure Ltd.