

# Leading chip analysts and consultants



## Introducing SiVenture



### Our team

SiVenture is a team of specialists working together in analyzing chip security, integrity and quality. We have the skills and knowledge needed to manage your risks and support both your technology and business.

We can help you identify problems and solve them. In order to manage risk and ensure chip security and integrity, you need the right combination of skills, experience and equipment. SiVenture has those skills and the laboratory equipment needed for testing, analyzing and evaluating any kind of chip technology.

### Our history

SiVenture brings together a team with smart card security expertise built up over many years. Our experience includes the development of Mondex and MULTOS technology, Javacard implementation, and ITSEC level E6 certification.

SiVenture's unrivalled capability is drawn from a solid base of experienced mathematicians, physicists, cryptographers and smart card professionals able to tackle any problem you can throw at us.

### Our mission

SiVenture provides in-depth knowledge and experience, giving you, the client, the confidence you need to ensure that your risks are well managed. We use a range of sophisticated technology and equipment to assess security and provide a risk analysis of any kind of chip.

SiVenture is here to help you avoid potential disasters. Our people, processes and technology ensure you are as protected as possible.

Drawing from our skilled and experienced personnel, SiVenture provides services in two key areas: Consulting and Laboratory Services.

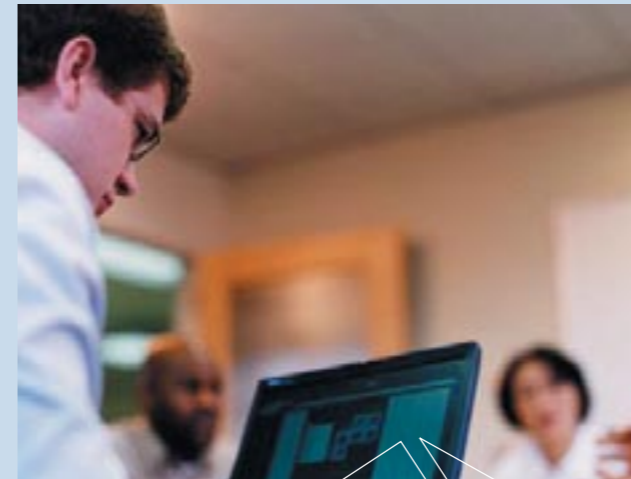


## Consulting

### Why you need to assess the risks

Smart card use is growing rapidly. Not only are smart cards and tokens being used for payment and loyalty systems, but the growing need for telecommunication and identity applications are also pushing the limits of current technologies and security systems. Increasing microprocessor capacity creates new opportunities but at the same time opens the door to problems and threats that were previously unknown. New highly specialized attack techniques are being developed and publicized in tandem with the evolution of chip technology and its applications.

Unresolved weaknesses in underlying cryptographic implementation and in other chip-based security measures can undermine the entire security of an operation and have the potential to destroy customer confidence.



### What SiVenture adds

SiVenture looks at your security from an independent point of view. Because we did not design your technology and we understand the attacker's approach, we can find the faults that may remain undetected by an internal test team. Then we can help you fix the hardware or software, enabling you to produce a better product and we can test it again until you are satisfied.

We are skilled at security evaluation and know how to support you through the arduous and complex procedures needed to achieve required industry standards. We help clients through workshops and training programs to create the documentation needed to gain accreditation. SiVenture also runs a range of workshops – from board level (explaining threats and the meaning of our security tests in non-specialist language) to engineering, giving practical and needed support.

SiVenture offers its customers an independent, specialist view of the strengths and weaknesses of smart card chip hardware, software and crypto design. Using innovative analysis techniques, as well as more traditional methods, our team is able to simulate new forms of attack, anticipate vulnerabilities and help you devise countermeasures to protect your customers' systems and information.

SiVenture is on the cutting edge of technology. We are leaders in high security, real world projects covering chip hardware, platform software and operational lifecycle.

## Laboratory Services

### What SiVenture offers

SiVenture's eight separate laboratories in Maidenhead offer a range of security, fault and quality analysis services for all chip types. Our equipment includes a comprehensive set of tools for preparing, de-processing, probing and modifying samples. This includes a wide range of microscopy – optical, focused ion beam, scanning electron and atomic force as well as comprehensive electronic measurement and signal analysis tool-sets.

Our team of professionals use these laboratory facilities to help find and solve your problems. We provide you with the additional comfort of an independent, objective assessment. Our developer knowledge and “attacker” mindset are particularly relevant for designers, developers and manufacturers.

We can carry out our analysis independently or in conjunction with the original architects providing executive management with the assurance that the risks underlying their products and services are well managed.



SEM Microscope



Optical Microscope

### > Micro-machining and nano-technology

Micro-machining and nano-technology require processes beyond those conventionally possible. SiVenture's submicron imaging tools and our capability to machine with a 10nm ion probe, means we can prototype even the smallest structures. Using our Scanning Probe Microscope, we can image and manipulate down to individual atoms.



Focused Ion Beam (FIB)



Scanning Probe Microscope

### > Failure and process analysis

Our specialists understand the fabrication processes involved in semiconductor manufacturing. SiVenture undertakes tasks ranging from defect classification to the causes of individual failures. Such expertise requires a wide range of techniques, such as FIB cross-sectioning, selective layer deprocessing by RIE, optical and SEM microscopy.

#### Our Maidenhead facilities include:

- Schlumberger IDS 3PX FIB system
- Oxford Plasmalab 80 RIE system
- Wet chemical lab
- CSM and UV optical microscopy
- Hitachi S-4700 FE-SEM

### > Circuit edit

Integrated circuit design is so complex that it is almost impossible to get it right first time, every time. You need complex and accurate testing designed to reveal errors that require hardware modification before you go to market. This means a prototype IC (integrated circuit) must sometimes be rewired on chip. Redesign and remanufacture is costly. SiVenture is able to edit the first silicon to test redesign ideas.

Our services can help you eliminate at least one design cycle, leading to shorter time-to-market – something that is becoming ever more critical in a fast-changing industry.

When you need to rewire your chip at short notice, we have a state-of-the-art FIB (Focused Ion Beam) service you can use that ensures your modifications can be made on time and within budget.

#### Our Maidenhead facilities include:

- Schlumberger IDS 3PX FIB system
- Operator experience ranging over 10 years
- Ability to provide new tracks, add probe points and undertake failure and process analysis
- Hitachi S-4700 FE-SEM

## Laboratory Services

### > Specialized device processing

Our Maidenhead laboratory contains much of the equipment required for specialized processing of research structures. The entire facility is clean to class 10,000 and spaces are available for class 100 processing.

### > Circuit and device testing

We can help you to fix your designs by implementing repairs to non-functioning devices. Before we get to that stage we need to understand the circuit characteristics in order to determine the physical rewiring needed. SiVenture has a range of electrical test equipment – digital storage scopes; parameter, signal and spectrum analysers and more – able to provide the answers before and after FIB circuit edit.

#### Our Maidenhead facilities include:

- Probe station
- Shielded probes
- Full electrical test equipment suite
- Highly experienced electronics engineer



### Clients

We have an international client base built on long-term relationships. We support our clients and meet the individual needs of each one. Our business is founded on the expertise and skill of our staff, and on trust and integrity.

SiVenture's clients include some of the world leaders in silicon chip design and manufacturer, smart card operating systems and application development as well as government departments and evaluation houses.

### NDS

SiVenture is part of NDS Group plc, quoted on the NASDAQ (NNDS). We believe that our unique blend of experience and expertise combines to support the demands for secure and reliable chip technology they – and our other customers – require.



## How to contact us

If you would like to discuss how SiVenture can work with you to provide a secure and safe environment for your processes and services, contact us.

Unit 6  
Cordwallis Park  
Clivemont Road  
Maidenhead  
Berkshire SL6 7BU

Tel +44 (0)1628 6513 66

Fax +44 (0)1628 6513 65

[ghiggins@ndsuk.com](mailto:ghiggins@ndsuk.com)

[www.siventure.co.uk](http://www.siventure.co.uk)

