Cloud for training and simulation: the right approach
Training can no longer be viewed as an add-on or an afterthought. It is an integral part of defence capability: a means not just of improving technical skills and readiness, but fostering collaboration, enabling coalitions and promoting common capabilities. Training offers the simplest and most efficient way of integrating new teams into the existing community. And of course excellence in training contributes directly to success in the field.

Today’s simulation technology provides increasingly realistic and effective means of training individuals and teams, enhancing the readiness of our forces and reducing operational risk. But greater dependence on traditional thick-client IT for training has a downside: complex costs which can be hard to predict, lack of flexibility, reliance on specialist support skills, and issues with application interoperability and multi-site operations.

In a stable or slow-moving world, these challenges might be met with long-range infrastructure planning and a divide-and-conquer approach. However, the sophisticated and fast-moving defence environment no longer has the luxury of long planning horizons or guaranteed certainties around the types of IT capabilities it will need at any one time or place. Here, the business buzzword ‘agility’ has real weight.

The complexity and velocity of modern defence operations also mean room for error or delay is becoming a thing of the past. The technologies we use to provide training have to be utterly reliable and always available. But there is also a need to contain costs and show value for money. Governments have a low tolerance for waste and a suspicion that any non-standard solution is a result of gold-plating when boilerplate would do just as well.
Today’s technology must be designed around working seamlessly with other systems, enabling people to collaborate effectively whenever they want, wherever they are.
All these considerations point to a single type of solution: the exploitation of existing, largely commercial, technologies and know-how to create a sustainable service that scales and adapts to future needs while avoiding capital investment in favour of pay-as-you-go service usage. In a word, Cloud.

In pure business terms, cloud is essentially a flexible, scalable, pay-per-use model for the way IT services are delivered and consumed, typically through short-term contracts. With its pay-as-you-go model, cloud moves many IT costs from capital expenditure to operating expenditure; its ‘elastic model’ means available IT capability can be flexed to mirror changing business demand; it enables IT consumers to have much greater transparency over their costs.

Benefits of a cloud based approach
- Improved co-operation and collaborative working among allies.
- Exploiting economies of scale to reduce costs per participant / per course.
- Reduced dependence on scarce physical assets.
- Reduced set-up times for training courses.
- Improved consistency of training.
- Easy entry for new participants.

Cloud ensures that applications and data are available to users any time, any place, anywhere.

Cloud’s elastic model means IT capability can be flexed to mirror changing operational demand, while turning capital spending on IT into an operating cost.
Cloud computing has moved steadily into the mainstream. It is generally accepted that cloud adoption can and does create substantial business benefits through reduced capital expenditure and increased business agility. The question for most organisations today is ‘when’ rather than ‘if’, and a large number of enterprises have already made the journey.

A recent survey of 100 CIOs and IT managers by Vanson Bourne, commissioned by Fujitsu, shows strong success rates for their early cloud projects. The executives report that, on average, they have experienced 24% cost savings on their projects, with some achieving as much as 40%. Of those that reported savings, 71% said cloud services met or exceeded their expectations.

We believe that when it comes to training and simulation in the defence setting, successfully negotiating the path to cloud requires a revision of the typical business priority set. In the defence community context, there are two criteria which dramatically differ from the commercial world – and even from comparable large-scale public sector organisations. These are security and supportability.

Cloud has to be delivered with absolute security, the highest resilience and the best performance. And it must be exceptional value for money.
Extraordinary security

Every non-public cloud will be secure – in some sense, to some level. But security is a continuum, and cloud suppliers’ understanding of acceptable risk levels may be calibrated very differently from yours. A commercial organisation might tolerate a certain level of data loss and purchase cyber insurance to cover such an eventuality. In some settings, a serious data breach is followed by some embarrassing press releases and a resignation or two – when, that is, word gets out in the first place. Clearly, a cloud built on these kinds of assumptions will not be fit for the defence sector, where information risk is measured on a very different scale.

Losing data from a military simulation exercise, or allowing non-authorised access to such a system, can have serious strategic and political implications. The potential damage caused by a leak or an injection of data is unknowable. Worse, the penetrated organisation may not even know its systems have been compromised. A disruptive hacker could mount a service denial attack, tweak training scenarios or introduce spurious game conditions which invalidated all the grounds and goals of an exercise, wasting massive resources and degrading the training department’s ability to create new materials. Any unauthorised user of the system would be able to observe, record and analyse every action taken during an exercise, giving potential enemies a lavishly illustrated, automated playbook revealing the organisation’s tactics and capabilities. And you would never even know they had been in the room.

The complexity and velocity of modern defence operations mean cyber security is key.
Mainstream cloud providers tailor their security standards to the markets they serve. Fujitsu has been working with the Defence and National Security communities for 50 years and we know well that the undoubted value of commercial technology needs special handling when it is put to these purposes. Our cloud technology for this sector is secure by design. Rather than attempting to secure or harden an existing commercial offering, we have reused technologies, architectures and designs to create a completely new platform which we call Fujitsu Fabric.
Users need the same swift and secure service, no matter where they are or what device they are using.
We are seeing a change in emphasis from regarding training exercises as one-off events (albeit ones which reuse elements from previous events) to a more configurable, controllable training capability built on standardised toolsets, models, roles and structures. To make training an integral, daily part of your operations, you need to move away from an event management model to a service usage model. While every training exercise must be carefully designed and validated before being used, the resources used to deploy the exercise should be tried and trusted. In short, the ability to deliver training should be a utility. In this way, training experts can focus on content rather than administration.

This mirrors Fujitsu’s approach to providing IT as a service. We provide secure cloud capabilities which can be consumed as-needed. We also provide a comprehensive service wrapper, so that the resources you are using are fully supported at all times. That means live troubleshooting and performance optimisation. We enable training teams to focus on training, not technology.

Professionally managed, networked simulation is the way ahead for training. With the right cloud services, defence organisations can meet changing internal needs while responding to external developments. The journey starts here.
Fujitsu Fabric for Training and Simulation is a unique solution to the challenges described here. It’s a platform, so you can choose to consume by the hour, user or task. Since it’s a cloud-based service, you can meet short-term needs for more users or upgraded applications as and when those needs arise. Training provision becomes much more manageable and transparent. There’s also the opportunity to reduce your reliance on expensive thick client devices, since Fujitsu Fabric for Training and Simulation runs just as well on thin clients and is device-agnostic.

Fujitsu Fabric Training and Simulation is a private cloud based platform that enables users to train individually or as part of a networked team utilising synthetic software such as Bohemia Interactive Simulations VBS™ v3.4. The platform relies on the synthetic software to provide High Level Architecture (HLA) / Distributed Interactive Simulation (DIS) compliance and access to Live Virtual Constructive but in addition can utilise core components such as the GATEWAY, ACCESS and SENSOR COLLECT. These core components are part of the Fujitsu Blocks Reference Architecture and can be offered to increase the security operating environment if required. These blocks provide enhanced fine grained security control, behavioural monitoring and access control.

Fujitsu Fabric Training and Simulation differs from standard training and simulation platforms as it removes the reliance on expensive high end workstations and moves the workload into the data centre. This allows training to become more manageable, agile and supports operation in a Joint environment. It allows for near real-time management of licences (where the software licence allows).

Fujitsu Fabric Training and Simulation can deliver training scenarios in real time (depending on connection) and even change scenarios in flight, where the software allows. Users can pause a scenario on one device and pick it up again on another, and users get instant secure access to the training they need, when and where they need it.

Fujitsu Fabric is the result of more than two years working closely with our Defence and National Security customers to understand the requirements for today’s flexible workplace.
Fujitsu Fabric Training and Simulation as a base solution is designed to operate at OFFICIAL. With the addition of predefined capability Blocks, this platform can support OFFICIAL-SENSITIVE, SECRET and above. All classifications depend on physical security controls and accreditation requirements.

Fujitsu Fabric Training and Simulation enables users to keep up with resource hungry training and simulation software as it develops. There is no need to make expensive hardware upgrades or prioritise scarce resources. This platform allows for immediate access to recorded vignettes and exercises for after-action reviews which can be stored for further review. Fujitsu Fabric Training and Simulation PaaS includes state of the art 3D graphics and simulation enablers including the best of breed from Brocade, Citrix, NVIDIA, RES and Fujitsu.

Flexible, secure access to Training and Simulation resources:
Fujitsu Fabric enables the delivery of a fully flexible Training and Simulation environment giving your people instant, secure access to the Training and Simulation resources they need, when and where they need them. The result is the delivery of a Force Multiplier effect by optimising the provision of existing and future Training and Simulation resources.

- A secure cloud based Training environment designed and built with the highest possible levels of security at its heart.
- Anytime, anywhere access from any device, replacing the traditional classroom approach with a virtual classroom.
- Adaptable, agile solution delivering Training and Simulation exercises in real-time with the ability to change the scenarios ‘in-flight’.
- In-built licence management and monitoring ensures transparency and full accountability to evaluate effectiveness of every training exercise.
- Fully maintained and supported by Fujitsu’s global capabilities, conforming to the Ministry of Defence’s Defence Line of Development capability integration.