



CREATE

INNOVATION AT THE CORE



Introduction

From smart railway stations and connected lighting to high-speed train carriage WiFi and data security frameworks, Cisco CREATE (Collaborative Research and Emerging Technologies) focusses on finding effective and innovative technology-based solutions to some of the most pressing real world challenges of today.

Headquartered in London, CREATE is one of Cisco's global Internet of Everything (IoE) Innovation Centres and home to close-to-market research and proof of concept initiatives.

The centre acts as a hub for trailblazing applied research, with a focus on technologies and market opportunities surrounding the IoE technology model. Our primary role is to grow and develop UK-based innovation.

For more information on Cisco CREATE and some of our projects visit the <http://ciscocreate.co.uk> website.

The Team

The Cisco CREATE team is made up of a group of leading innovators, industry experts, developers and researchers who work on a variety of exciting projects, from inception through to reality, throughout the UK.

It takes different perspectives to envision the future, so here at CREATE we collaborate with industry partners, start-ups, government, research institutions and universities.

We're building on the ideas and creativity of UK talent to develop technology solutions that add value to the UK: be that public sector, businesses or citizens.

OUR PROJECTS



RAPTOR



The RAPTOR initiative was set up to build a digital ecosystem, made up of new businesses which could develop real-time and smart urban applications.

This exciting project aimed to provide a unique opportunity for start-ups, by giving them access to vital grants and expert mentoring.

Over the course of a two-year project, fourteen UK-based SMEs successfully completed an intense eight-week Incubation Programme at Cisco CREATE. This gave them the opportunity to connect with key players in transport, retail, urban environment, technology and the public sector.

By being part of this project, these start-ups were able to progress their original ideas and flourish into successful businesses.

They included Presence Orb, which uses WiFi networks to help businesses better understand how customers use their premises and amBX who has developed intelligent lighting control technology.

KILTR created a new media platform focused on arts and culture and Passforce has produced an app for creating, managing, and distributing digital coupons, event tickets, boarding passes and loyalty cards.



Caption

LaaS



Lowering the cost of lighting and reducing energy consumption, while at the same time developing a more responsive and adaptive lighting environment, were the key aims of the pioneering Light-as-a-Service (LaaS) project. This has been achieved through a two-year collaborative R&D exercise between amBX, Pure LiFi, University of Strathclyde and Cisco.

Part-funded by Innovate UK, this ground-breaking initiative led to the development of a combined Power-over-Ethernet/Light-over-Ethernet protocol that removes the need for separate power and data networks for lighting systems.

This is set to open a whole new spectrum of digital innovation and completely transform the way we think about light.

Lighting is one of the highest fixed power requirements for both public buildings and commercial properties. However, with Laas' intelligent approach light settings adjust depending on external factors, such as the time of day or outside weather conditions.

Not only are there significant cost savings for businesses, but innovative applications too. Lights can be tuned in office buildings for optimal performance, to stabilise sleeping patterns in hospitals and to enhance learning in schools.

StaaS



Imagine walking to catch a train when you receive a notification on your smartphone that the service is running fifteen minutes late. By way of an apology, the train operator offers a complementary hot drink to passengers, who get a voucher sent to their phone.

Meanwhile, coffee shops and security staff in the station are also sent an alert, so they are aware that a large crowd is possibly heading to the food and beverage outlets.

The Stations-as-a-Service (StaaS) project, which has been in development at CREATE over the past two years makes this vision a reality. One of the most innovative projects

seen by the transport industry, it was recently granted the prestigious Rail Exec award for the Most Interesting Approach to Train Operations.

Co-funded by Innovate UK and the Rail Safety and Standards Board, StaaS seeks to create a new operational and commercial model for railway stations by bringing together technologies from areas such as building management, Internet of Things and Big Data.

By sharing data relating to four distinct groups - train operators, retailers, passengers and station security staff, StaaS has the potential to deliver significant improvements in station management and customer experience.





CONSERVE



The Contingency Operations for Strategic Infrastructure and the Vulnerable (CONSERVE) project is building a system that will help authorities, emergency services and citizens respond more effectively to flooding and other emergencies.

By pooling data held by public sector agencies and private operators, CONSERVE will obtain a view of risks and failures across water, energy and transport systems.

An incident occurred recently in a large city where a water purification plant broke down. The access road was iced over and un-gritted, as it was not on the local authority plan, and therefore the engineers struggled

to reach the facility and the city ran out of clean water. This issue could have been averted with full mapping of key infrastructure and interdependencies between city and infrastructure operators.

CONSERVE is initially being developed for Glasgow where Cisco's virtualisation solution will collect data from the City Observatory and Scottish Water, and send actionable information to first responders via mobile apps. If successful, CONSERVE will create a first-of-its-kind service for other cities to build on, as climate change and rapid urbanisation significantly increase the risk of flooding and damage in cities across the globe.

SWIFT



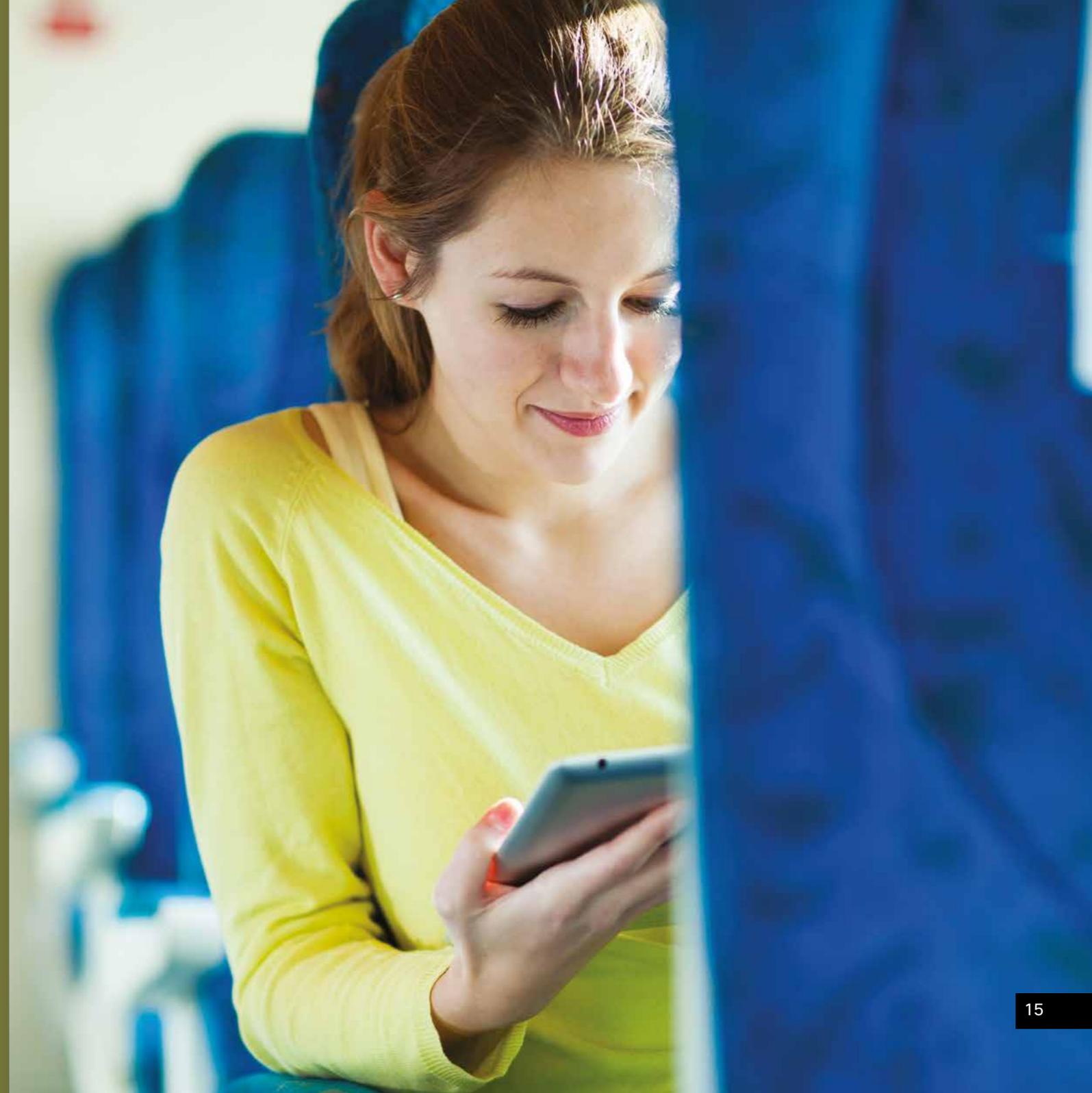
The Superfast-WiFi-In-carriage-for-Future-Travel (SWIFT) project aims to deliver high quality and high-speed WiFi broadband to rail carriages.

Not only is this state-of-the-art offering expected to improve the experience for passengers accessing the Internet, it will also open up a range of significant opportunities for operators and retailers too.

Current levels of WiFi service on UK trains generally leave passengers feeling frustrated, but CREATE has proved in a lab environment that this does not need to be the case. Through the use of trackside backhaul nodes in a real-life environment, SWIFT will deliver a service comparable to the best Wi-Fi hotspots and completely transform our experience of train journeys.

By attracting more Wi-Fi users, SWIFT's advanced analytics will deliver new insights into passenger sentiment and customer profiling. Non-intrusive apps will allow the delivery of customer-tailored incentives and rewards to passengers, and also enable the provision of personalised travel information and timely updates on travel disruptions not achievable with current on-train Wi-Fi.

The SWIFT proposition will also include tools for proactive train management through real-time feedback and incident reporting, and allow integration with online services in stations (linked to the StaaS project) to create a unified experience for passengers across their entire journey.





aSSURE

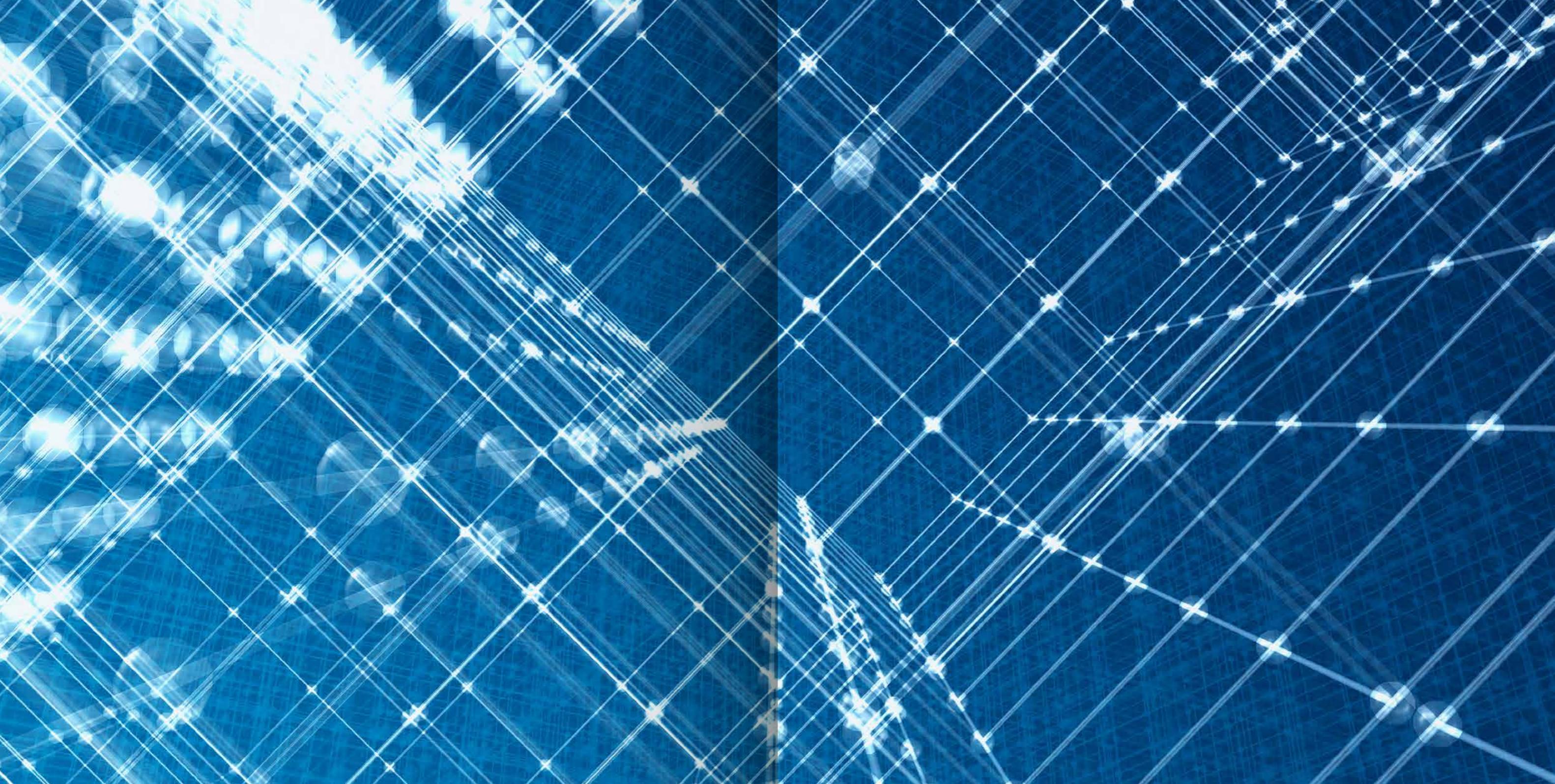


In our increasingly connected world, security is a growing issue. And with the Internet of Things (IoT) becoming a reality rather than a pipe dream, we're seeing new business models, technologies and architectures which in turn create new vulnerabilities and threat vectors.

In response to this trend, CREATE is developing an innovative framework from the ground up that will allow different approaches to security based on the class of device being connected.

From ATMs to water meters, IoT devices range in their levels of sophistication. CREATE is working to develop industry-wide models that are tested and verified to provide the security assurance to enable a high level of trust in IoT solutions.

This exciting and important project will address a critical barrier to IoT adoption by helping to strengthen data security for both businesses and consumers.





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