



The Hub Platform Technologies

Best practice today future-proofed

The Hub is open to all new technologies which it reviews every day. This allows us to include encryption technologies if required or biometrics instead of contactless depending on the end2end solutions being requested. The Hub was set up to integrate with any technology on the market with the basis that it best achieves the client brief and prevents where possible, proprietary and expensive dependencies. As a middleware software solution with a unique Mission Control, The Hub Platform is agnostic to any user-facing device as well as any hidden back-office feed and function. This open philosophy and plug-in capability are based on a global open technology mission that believes it's vital to not reinvent and yet equally vital to stay open to the new and transformational technology solutions of others. Here are the guiding principles of The Hub technology Platform:

- **Provide choice at every level.**
The Hub lets you defer design decisions as late as possible. For example, you can switch persistence providers through configuration without changing your code. The same is true for many other infrastructure concerns and integration with third-party APIs.
- **Accommodate diverse perspectives.**
The Hub embraces flexibility and is not opinionated about how things should be done. It supports a wide range of application needs with different perspectives.
- **Maintain strong backward compatibility.**
The Hub's evolution has been carefully managed to avoid breaking changes between versions. The Hub supports a carefully chosen range of third-party libraries to facilitate maintenance of applications and libraries that our solutions depend on.
- **Care about API design.**
The Hub team put a lot of thought and time into making APIs that are intuitive and that hold up across many versions and many years.
- **Set high standards for code quality.**
The Hub Platform puts a strong emphasis on meaningful, current, and accuracy. It is one of the very few projects that can claim a clean code structure with no circular dependencies between packages.

In conclusion, The Hub Platform is willing and open to integrate and then enable any technologies as listed here so long as they are, secure, reliable and scalable with a minimised cost of ownership to the client. In the download section, we have provided some insights as to where these technologies become relevant and how we plug them in.



Secure remote management of hardware devices:

The Hub Platform can securely, with encrypted code, remotely manage any digital device and components in real-time and 24/7. Our mission control dashboard enables central management of all digital devices and operations such as mobile, www, tablet, self-service car parking machines, ticket issuance machines, ticket gate access readers, digital signage and all EMV payment terminals. This is only going to increase with the Internet of Things and chips in everything.



Software apps for all devices:

As stated in The Hub introduction we have a full range of capabilities that can be quickly and cost-effectively integrated with any customers existing legacy Apps, or via new Apps designed to deliver the full range of platform capabilities. The last three Android and iOS Covid-19 test apps took less than 4 weeks to build and then plug into our existing platform to be supported with a 24/7 and real-time NHS accessible mission control.



APIs both back and front office for end2end flexibility:

The Hub Platform has been developed using a Java Spring Framework platform, designed to integrate with many external applications and digital services. Our API gateway enables rapid implementation and easy connectivity and has already been used over the last 10 years to issue 40m tokens and over £400m of transactions.



Instant messaging and connectivity:

The Hub software provides a gateway for SMS, MMS, text, email and encrypted messages. This connectivity keeps customers in touch at all times and provides real-time visibility into any service performance.



AWS (Amazon Web Services) Cloud provides global reach:

The Hub Platform is integrated with AWS and the full range of capabilities can be integrated with any customers existing legacy App's, or via new App's designed to deliver the full range of platform capabilities.



Smart chip-based security:

All data and devices on The Hub Platform are highly secure using a private-public key exchange model with a combination of digital encryption and physical security. This was a global first as an encrypted and highly secure in market EMV smart card and phone issuance. Uniquely it also included over the air 'perso' of Mastercard chips in any device using private/public key encryption.



Secure RFID:

Smart technologies are a driving force in the adoption of the Internet of Things. The Hub Platform has many examples and an increasing number of partners delivering this capability. We recently launched a highly secure dynamic RSA QR coded mobile certification for Covid-19 antigen and antibody testing to go global in under 6 weeks.



AI (Artificial Intelligence) designed or automated:

AI is a system's ability to correctly interpret external data, to learn from such data, and to use those learnings to achieve specific goals and tasks through flexible adaptation. The Hub Platform has been open to doing this from its foundation. This intelligence is automating what was time-consuming and manual work to save costs and release resource as a more productive means of work.



Biometrics

The Hub is open to allow biometric integration which is increasingly requested for say dual authentication of legacy systems with Biometric identifiers both physiological as well as behavioural. Physiological characteristics are related to the shape of the body e.g. fingerprint, palm veins, face recognition, DNA, palmprint,

hand geometry, iris recognition, retina and odour/scent. Behavioural characteristics are related to the pattern of behaviour of a person, including but not limited to typing rhythm, gait, and voice.



Digital Wallets where lifestyle meets payment:

The Hub Platform offers a fully configurable digital wallet capability often referred to as a Wallet Service Provider spanning card and digital identification, certification and payment technologies. The Hub enables a business to become a merchant and in doing so can reduce PSP fees.



Blockchain:

Blockchain is a decentralized, digital ledger consisting of records called blocks that are used to record transactions across many computers using public-key cryptography. Data stored on the blockchain is generally considered incorruptible and The Hub Platform used this cryptography protocol to issue EMV payment devices certified by Mastercard.



Internet of Things (IoT):

The Hubs technical architecture and third party connectivity platform is coupled with proven remote device management capabilities which means the platform is ideally suited to powering and managing digital devices across the increasing world of the IoT...

...and there is more to come which we are always open to 'plug-in' to add further value cost-effectively as is the way with 'The Hub of Things'.