



## Services Definition

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## ABOUT TELECOMS CLOUD

Telecoms Cloud is an online, cloud-based, API-driven telecommunications platform. It's an engine for internet connected devices, giving developers the tools they require to incorporate scalable, highly-available telecoms functionality within their applications, using Telecoms Cloud's global infrastructure under the bonnet, rather than investing in their own expensive and cumbersome hardware setup. Our network is like a balloon that never pops – as our customers' requirements scale up and down, so does the Telecoms Cloud.

Using our REST API and just a few lines of code, developers can add functionality such as Inbound and Outbound Calling, Call Recording, Call Queuing, IVR Menus, Fax, Voice Conferencing, Mobile push notifications, SMS, and much more to their applications. We like to boast that our network is the best in the world, because we've selected the "best-of-breed" of partners to work with and secured long-term relationships that create a reliable platform for our customers. We are trusted daily by many high-profile organisations in both the public and private sectors, including many NHS trusts in the UK, other government departments and large blue-chip organisations all over the world.

For more information, visit [www.telecomscloud.com](http://www.telecomscloud.com)

## ESSENTIAL COMPANY INFORMATION

Company Number: **08092142**

VAT Registration Number: **GB 175 6924 69**

Data Protection Registration Number: **ZA036519**

D-U-N-S Number: **21-842-5805**

Telecoms Cloud holds *Public and Products Liability Insurance* to the value of **£1 million** and *Employer's Liability Insurance* to the value of **£5 million**. Copies of corresponding certificates can be downloaded from the following URL: <https://www.telecomscloud.com/policies-documents/>

## TELECOMS CLOUD NETWORK ARCHITECTURE

At Telecoms Cloud, we operate one of the biggest and best cloud telecommunication networks in the world, run across multiple international secure sites with extensive physical and network security. Our cloud is spread across the world and contained in multiple secure ISO 27001 and PCI DSS certified data centres with accredited redundancy and resilience and an SLA-backed reliability guarantee. We can certify to level IL2 and IL3 (HMG IA Standard No. 1 – Technical Risk Assessment) and we are certified to the ISO 9001:2008 standard of quality management.

Instead of needlessly and expensively reinventing the wheel, we've teamed up with the "best-of-breed" providers from around the world to bring together their infrastructure and management coupled with our technology, ideas and engineering designed by Chartered Engineers and Chartered IT Professionals.

We have a high-performance and redundant IP network, with a core consisting of two geographically separated Cisco 7609 routers with dual SUP720-3BXL supervisory engines and distributed forwarding throughout providing 40Gbps and 48mpps per 48 port 10/100/1000 Ethernet card.

This is backed up by a total upstream connectivity of over 10Gbps provided by six different Tier 1 providers (Level3, Deutsche Telekom, Interoute, PCCW-BTN, Telia and Tiscali) and a further 6Gbps of connectivity to LINX, LoNAP, SFINX, DEC-IX & AMS-IX.

There are many competitors who offer similar services, but many are just resellers or sometimes even resellers of other resellers who ultimately do not control or operate their own network, or have low-level SS7 connectivity and peer at the most important internet exchange points. Without this, it would be much harder to give customers both high reliability and low-level network features.

Our network is designed with a number of open-source and proprietary systems, all built in-house and interconnected with over 1,200 carriers in 200+ countries worldwide.

Telecoms Cloud is a member of LINX, RIPE and LoNAP, and operates an extensively peered network. Our expertise spans across IP, SS7, x25 and TDM.

## VOICE PLATFORM

Telecoms Cloud operate in the United Kingdom both as a Ofcom licensed Public Electronic Communications Provider and Public Public Electronic Communications Network.

Internationally, where possible, Telecoms Cloud owns the network infrastructure, licenses and number ranges, allowing us full control over every call. In countries in which Telecoms Cloud does not have its own numbers, it has long-term agreements with local Tier 1 carriers. Telecoms Cloud only provides services in countries with stable regulatory frameworks, ensuring accountability and maximum uptime.

In the United Kingdom we have thousands of lines using Local Loop Unbundling (LLU) across 770 geographically separated sites (Every UK Digital Local Exchange (DLE)) fed directly from 559 Marconi System X's and 211 Ericsson AXE10's Telco carrier grade switches) and servers located in every major telephone exchange around the United Kingdom.

This ultimately means that our infrastructure is close to our customers, at their local exchange whilst having complete resilience with our distributed infrastructure that is spread around the country, taking advantage of BT's huge fibre network as our backbone whilst offering a service that is local to our customers, using local phone numbers.

As call routing is controlled by the national trunk exchanges, if a DLE were to fail we can simply fail over to another exchange. This approach spreads our risk and increases our resilience, redundancy and reliability without concentrating a significant part of our infrastructure at a few locations – unlike many of our competitors who have their infrastructure in shared co-location facilities in major cities and suffer from power shortages, congestion and high running costs, as well as being at high risk from civil disturbances, radiological events, chemical weapons and terrorist attacks.

Internationally, Telecoms Cloud collects traffic from the local PSTN networks in the individual countries on the Telecoms Cloud network footprint. In these countries, Telecoms Cloud interconnects directly with one or more local network operator(s) who host our switching and routing equipment, creating a fully meshed telecommunications cloud. All critical systems on the Telecoms Cloud network are configured in geo-redundant active/standby pairs for immediate and stateful failover in case of failure.

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## FAX PLATFORM

Telecoms Cloud has built one of the biggest and best fax platforms in the world. Since 1997, we have been continually improving and adding to the power of our fax services to continuously offer cutting-edge and market leading features to our customers – creating new innovation in a legacy technology.

Our expertise spans over 20 years operating a large, redundant and scalable fax platform, used by many national and international organisations. Customers use the Telecoms Cloud for a wide range of services, from inbound fax services that are then sent onwards by email, Secure Fax services that digitally encrypt faxes for viewing on a 256-bit encrypted portal, to outbound faxing for transactional sending of faxes to multiple destinations, worldwide.

This means that our network has to be both resilient and redundant while having the scalability to scale to a customer's requirements as and when they need it. To achieve this, fax operates as an overlay on our voice network, offering both T.38 functionality and traditional TDM/ISDN technologies, giving customers who need the choice access to different networks as they see fit.

## MESSAGING PLATFORM

Telecoms Cloud operate a highly reliable and technically robust mobile messaging delivery infrastructure, interconnecting into 1,200 different mobile network operators in over 200+ countries to deliver enterprise mobile communications services. This network, combined with local country connections, ensures reliable delivery and low latency and at competitive rates for our customers.

As a Public Electronic Communications Network we operate a network that includes SS7 STPs and link nationally and internationally with other operators. Telecoms Cloud is also a holder of mobile numbering in the UK and selected international locations to ensure we have control of the entire value chain for our customers.

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## SECURE FAX SERVICE

SecureFax™ is designed for applications that require the contents of faxes to be kept completely secure. When receiving confidential documents, credit card numbers, bank details, or even contracts or legal communication, you are quite often required either by law or Data Protection to keep this information secure and in a confidential manner. This is especially true for faxes in the healthcare sector which contain patient-identifiable information.

The fax services offered by many of the other G-Cloud suppliers are not suitable for NHS and public body use because they transmit stakeholder and patient-identifiable information in plain text over the public Internet via email. Unlike these services, SecureFax receives customers' faxes into a purpose-designed secure environment and never breaks the law by transmitting sensitive information in an insecure manner. SecureFax is popular with many bodies who enjoy piece of mind with 256-bit encryption, perfect for Information Governance, Caldicott principles & Safe Harbour compliance.

When faxes are sent by email (Fax to Email), there is the potential that the message can be intercepted at some point in the chain. As email is usually plain text, there is no encryption used. As such, there could be potential risk of disclosure to unauthorised parties of confidential information.

SecureFax is a safe, secure fax service that encrypts each fax upon reception. When you receive a fax on your fax number, you are sent a generic email informing you that a fax has been received. You can then login to our secure site (**256-bit encrypted**), and download the fax to your computer, tablet or mobile device. This ensures that every part of the process is secure, and encrypted, and that every one of your faxes is kept secure to the same standards as online banking, credit card standards and other similar secure online systems.

SecureFax is an incredibly simple system both to setup and to use. Setup is quick and easy, and there are no per-seat license costs to worry about; the service is used simply by logging in to our secure 256-bit encrypted web portal using any modern web browser.

## FAX SERVICE FEATURES & BENEFITS

- 256-bit encryption via secure web portal and REST API
- Receive faxes in TIFF or PDF format
- No software to install, hardware to buy, or vendor lock-in
- Receive multiple faxes simultaneously – never hear an engaged tone!
- Bring your existing fax number, or choose a new one from any area in the UK
- Send & Receive faxes from any connected device; desktop computer, tablet, smartphone etc.
- Searchable Fax inbox – a digital archive of every fax you've ever received
- Unlimited secure document storage for the life of the account
- Save money on line rental, equipment, electricity, paper and toner
- Paperless faxing is more secure – less opportunities for unauthorized parties to read documents than when faxes are printed on receipt
- Send faxes via email from up to 50 registered email address, or via secure online portal
- Automatically retry 5 times if recipient is engaged when sending
- Receive email notifications when faxes have been successfully sent
- One-month minimum contract, with free trial available for testing

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## INBOUND SECURE FAX CALL FLOW

1. A document is sent to the customer's Secure Fax number, either from a traditional physical fax machine or from another electronic fax service.
2. The fax is received by the Telecoms Cloud network and converted to a .TIF or .PDF file, before being stored in Telecoms Cloud's secure encrypted storage.
3. The email address(es) associate with the recipient fax number are located in Telecoms Cloud's database and receive a notification that a fax has been received.
4. The recipient receives this email notification (containing no identifiable information about the fax content or sender) and logs in to the secure 256-bit encrypted web portal using the correct username and password combination.
5. The fax document is decrypted and downloaded to the end-user's machine as a .TIF or .PDF document.
6. For API integrations, a script running on the customer's systems makes authenticated HTTP GET requests at regular intervals to query for any new faxes received, retrieving a secure download URL allowing systems to automate receipt.

## OUTBOUND FAX CALL FLOW

1. The customer either saves an authored document as a PDF file, or scans in a physical document saving as a PDF file.
2. The customer logs in to the 256-bit encrypted secure web portal using the appropriate username and password combination.
3. The customer enters the recipient fax number(s) into the web portal UI and specifies the PDF file from their local machine.
4. The document is securely uploaded to the Telecoms Cloud network where it is validated and converted into fax format.
5. The fax is sent from Telecoms Cloud's redundant fax servers to the recipient's fax machine

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## SMS TEXT MESSAGING SERVICE

Telecoms Cloud's SMS Text Messaging Service allows customers to harness the full power of the Telecoms Cloud network within their applications to send bulk text messages to any handset in the world, taking advantage of our direct SS7 connections into all the main UK network operators and compatibility with over 800 mobile networks worldwide.

Customers can build powerful applications to send messages such as appointment confirmation and reminders, authorisation codes for Two-Factor Authentication systems, alerts and marketing information.

Messages are delivered within 60 seconds and their submission and delivery status can be checked by using the unique ID assigned to each message submitted to the platform.

### OUTBOUND SMS FLOW VIA REST API

1. An HTTP request is made to the Telecoms Cloud REST API which POSTs JSON data containing the recipient number, the number the SMS is being sent from, and the message text itself
2. The Telecoms Cloud API receives and validates the request, then dispatches the SMS to the given mobile number. It returns a unique `sms_id` which you can use in your application to check delivery status
3. The recipient receives a text message within 60 seconds.

### OUTBOUND SMS FLOW VIA WEB UI

1. Customer visits <https://my.telecomscloud.com/> and logs in to the secure portal with their username and password
2. Customer selects SMS from the main menu
3. Via a simple web form, the customer enters the recipient number and the body of the text message, and then presses send.
4. For bulk submissions, the customer can upload a TXT or CSV file with a list of recipient numbers for sending.
5. The Telecoms Cloud network dispatches the message(s) to the specified number(s).

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## TELEPHONE PREFERENCE SERVICE (TPS) LOOKUP SERVICE

The Telephone Preference Service is the UK's central opt-out service for marketing calls established by Ofcom and run by the Direct Marketing Association. It comes in three flavours; the Telephone Preference Service (TPS) for consumers, the Corporate Telephone Preference Service (CTPS) for businesses and the Fax Preference Service (FPS) for fax numbers.

Any organisation making unsolicited marketing phone calls is required by law to check every number is not listed on the appropriate register before dialing. Failure to do so can result in fines of up to £500,000 from the Information Commissioner's Office (ICO).

Telecoms Cloud's lookup service is updated **daily** with data direct from the Telephone Preference Service. It allows customers to query a given number and receive back confirmation that a number either is – or is not – registered with the service in question. Requests can specify either the TPS, CTPS or FPS databases to query, or query all 3 in one go and receive back an array of 3 results.

### TPS LOOKUP VIA REST API

1. An HTTP GET request is made to the Telecoms Cloud REST API which contains the number to be checked.
2. The Telecoms Cloud API receives and validates the request, then looks the number up in the Telephone Preference Service database, which is updated daily for maximum accuracy.
3. If the number is registered on the TPS, the API returns true, otherwise it returns false

### TPS LOOKUP VIA WEB UI

1. Customer visits <https://my.telecomscloud.com/> and logs in to the secure portal with their username and password
2. Customer selects TPS from the main menu
3. Via a simple web form, the customer enters the telephone number to be checked and presses "Check Number"
4. The web interface responds with the result of the query.

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## CALL RECORDING SERVICE

Recording telephone calls can prove to be very useful for a number of reasons. From keeping evidence of important transactions, to being able to listen how your call centre deals with certain types of calls, to helping to reduce complaints by hearing both sides of a discussion, recording phone calls is becoming much more widely adopted.

Telecoms Cloud records telephone calls as an independent third party and within the telecoms network itself, making it an ideal candidate for scenarios where independence and verifiability are essential.

Telecoms Cloud's call recording service is branded "Record Your Call".

### OUTBOUND CALL RECORDING CALL FLOW

1. Outbound telephone calls made by the customer are preceded with the Record Your Call access number in order to route the call through the Telecoms Cloud network for recording.
2. Based on the Caller ID presented by the customer calling, the customer's account details are loaded from the Telecoms Cloud customer database and a new recording is established under the customer's account.
3. The customer enters the telephone number of the person or business they wish to dial, and then presses the # key.
4. The call proceeds as normal and once the call is complete, both parties hang up as normal.
5. Record Your Call saves the recording as an MP3 and makes it available for immediate download via the secure 256-bit encrypted web portal.

### INBOUND CALL RECORDING CALL FLOW

1. All telephone numbers supplied by Telecoms Cloud are compatible with our call recording platform, meaning Call Recording can be enabled with the click of a button on any number.
2. Where enabled, calls made to the customer's service number(s) are recorded and made available for immediate download via the secure 256-bit encrypted web portal.

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## COMPANY OVERVIEW

Telecoms Cloud Limited is a British company with headquarters in Liverpool, England and additional offices in London. It was founded in 2012 by our current owners, Matt Wilson and Paul Freeman-Powell.

## COMMERCIAL UNIQUE SELLING POINTS

- British company made up of a team with over 20 years' combined experience in Telecoms
- Established brand name with a disciplined approach to managing costs, keeping operational costs low, ultimately feeding back to customers in the form of lower prices
- Track record of success with hundreds of thousands of meaningful subscribers
- Expertise, knowledge and know-how of the Telecoms market with a customer- and data-centric approach
- Self-developed systems with little royalties payable to third parties, system integrators, networks or brand holders; we own a significant amount of our own intellectual property.
- We develop mutual beneficial partnerships with suppliers
- Not tied to, and independent of, any single operator or network

## TECHNICAL UNIQUE SELLING POINTS

- Self-designed and manufactured carrier-grade systems with no third-party licences or fees
- Instant & real-time network with ability to provision almost any service in real-time online and using our API (the best many of our competitors can manage is "same day" setup)
- We interconnect with an extensive set of networks at SS7 level
- Network Core based in several carrier-grade Data Centres
- Members of internet exchanges, Linx, LONAP and a member of RIPE, complete with our own IP numbering
- Operate under Ofcom's General Authorisation Regime, with millions of allocated numbers
- Dual SIP (IP Telephony) and TDM network capability (Traditional Telecoms) with a carrier-grade platform
- Customer self-provisioning/billing and self-service, via our real-time platform

## VOICE SERVICES

- Cloud voice services, Hosted PBX, phone numbers, Call Management (call forwarding, professional greeting, etc.)
- Voice-to-Text, Text to Voice
- Voicemail-to-Email
- Machine and Human Audio Transcription

## FAX SERVICES

- Internet Based Fax Solutions (Fax-to-email/Email-to-fax/Fax API)
- Secure Fax (256Bit Encrypted Fax Platform)

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## MESSAGING

- Inbound and outbound mobile messaging online and using our API (SMS)
- IP Messaging (mobile push/in-app messaging)

## DATA SERVICES

- Number lookup, cleansing and validation
- Landline and mobile number real-time validation
- Telephone/Fax Preference Service lookups (TPS, FPS, CTPS)
- Phone number distance calculation
- Long & short-term object storage
- Broadband availability checker
- Phone cell site lookup tool
- Dialing string/International calling procedures
- Transactional email sending

## CONNECTIVITY AND CO-LOCATION

- Machine-2-Machine SIM-only Data Plans
- Direct Connect (network infrastructure)
- Co-location (customers peering with TC)

## MANAGEMENT AND CONTROL

- Web/API service to instantly provision services, fetch call metadata, collect content (call recordings, faxes etc) and control the underlying network

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