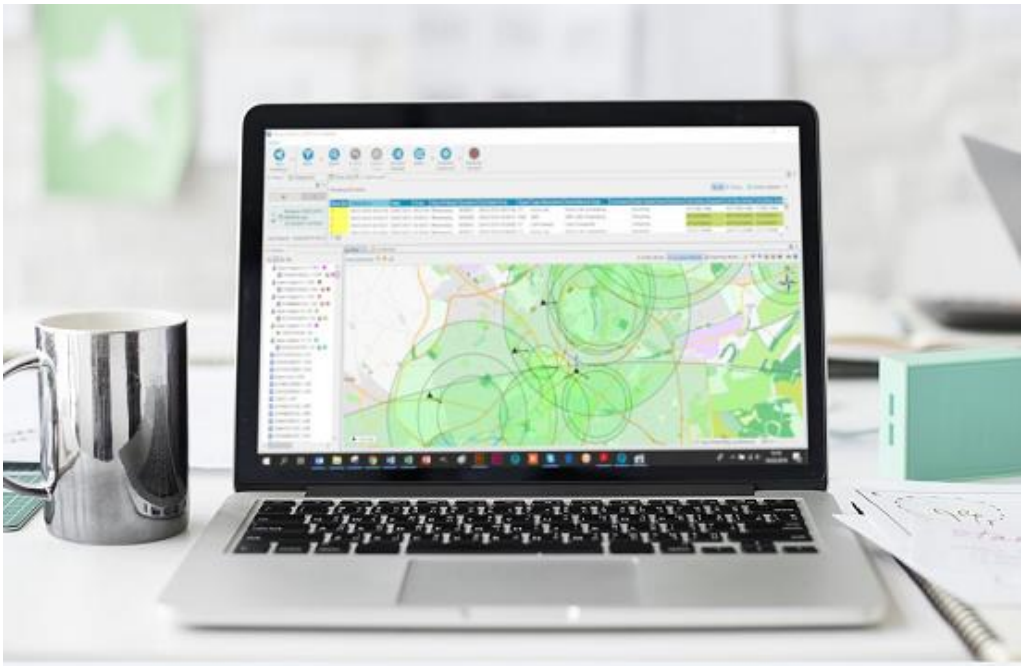
www.chorusintel.com
support@chorusintel.com

Chorus
connection detection

Data Cleansing and Analysis for Law Enforcement



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Introduction

Chorus Intelligence is a UK provider of data analytic solutions to law enforcement. Our technology is a solution for automatically cleansing, combining and connecting complex data sets including call data records and device downloads to answer key investigation questions immediately using mapping, visualisation, and courtroom ready reports.

This document will provide an overview of our company, our products and explain why Chorus are the industry leaders in data analysis.

Company Overview

History

Like all great software companies, Chorus started life in our founder's shed back in 2011. Back then, our CEO, Boyd Mulvey, had a vision, to fundamentally change the way police investigations were carried out and make manual data analysis a thing of the past. Starting with one employee and one customer, Chorus has grown to be the industry leading data cleansing and analysis tool used by UK law enforcement.

About Us

Fast forward a few years and Chorus has a suite of award-winning products that are designed and supported by our expert team, including ex-police Analysts, Investigators, and forensic specialists. Used by the majority of police forces and all of the counter terror units in the UK, Chorus has been used effectively in some of the highest profile cases the UK has seen recently.

We also provide a range of accredited training courses to help you understand and analyse different types of data that can be used as intelligence in criminal investigations.

Security Policy

At Chorus, we work hard to ensure that we conduct our business in a way that gives our customers confidence that our operations are secure, continuously improving, and designed to meet the expected levels of quality. We have obtained the following certificates and standards that allow us to demonstrate our commitment to our customers and information security.

ISO27001

ISO27001 sets out the requirements for establishing, implementing, maintaining and continually improving an information security management system.

ISO9001

ISO9001 is aimed primarily at giving confidence in the products and services provided by an organisation and thereby improving customer satisfaction.

Cyber Essentials Plus

Cyber Essentials Plus requires organisations to have a number of technical and procedural controls in place to improve their information security in order to mitigate common internet-borne cyber-attacks.

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Police Assured Secured Facilities

Chorus' head office in Woodbridge has been deemed a Police Assured Secure Facility (PASF) after an external audit by a UK police force.

Security Clearance

All our staff are either security vetted to NPPV3 and SC clearance levels or it is under way.

Privacy Policy

Chorus use submitted information to provide our services and products to our customers. This data is only used for its intended and stated purpose. This includes financial information for the production of invoices and receiving of payments for services provided.

Protecting your information

In order to protect your information, we have in place the following methods of protection:

- Monitored Firewall protection
- Malware protection on all platforms
- Encryption on data at rest and at point of use
- Auditing for data integrity on an ongoing basis

Information backups

Chorus have a backup policy in place. We retain backups for a maximum of six months. Upon receiving a request to remove data of a personal nature, this will be completed by removing all reference and data from the production environment. The full deletion of this data will be achieved after the retention period stated above has been reached.

Please consult our website to read our full privacy policy.

Our Products

Our product suite is designed to help Analysts, Investigators and SPoCs to solve more crime by cleansing data and spotting the connections between it.

Chorus Analyser

Chorus Analyser is the industry leading data cleansing and analysis tool used by UK law enforcement.

It enables you to create courtroom-standard briefing documents from the most complex data in minutes. By so doing, it helps Analysts work more effectively, highlighting previously hidden connections and opening up new lines of enquiry, putting actionable intelligence in the hands of Investigators *fast*.

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Chorus Analyser has the ability to ingest all forms of digital data. From communications and ANPR data, to RF survey data and handset downloads, Chorus Analyser can cleanse and format them all. Chorus Analyser also has the ability to overlay each data type in one customisable dashboard to help you spot links and find out what happened around the time of an offence.

Data Cleansing

Chorus Analyser can cleanse up to 10 million rows of data quickly and efficiently. The single application handles all data, for example call data, handset downloads, financial records, ANPR data, and RF survey data. It saves costs by eliminating time spent cleansing and formatting.

Connection Detection

Chorus Analyser can uncover links *within* and *between* cases. Using a simple desktop tool, it enables Analysts to view the output data as heat maps, survey maps, cluster maps, network diagrams and geo maps.

Report Generation

Chorus Analyser enables Analysts to produce reports in minutes rather than days. The full and robust audit trail allows them to be used evidentially.

Chorus Investigator

A dashboard for Investigators to instantly see the who, what, where, and when of a case at the push of a button.

Chorus Investigator is designed to help Investigators review the information available to them at a high level to help answer key questions and develop lines of enquiry, *fast*. We understand that time is critical in the early stages of an investigation, so Chorus Investigator is the latest edition to our industry leading data cleansing and analytics portfolio to help law enforcement in their fight against crime.

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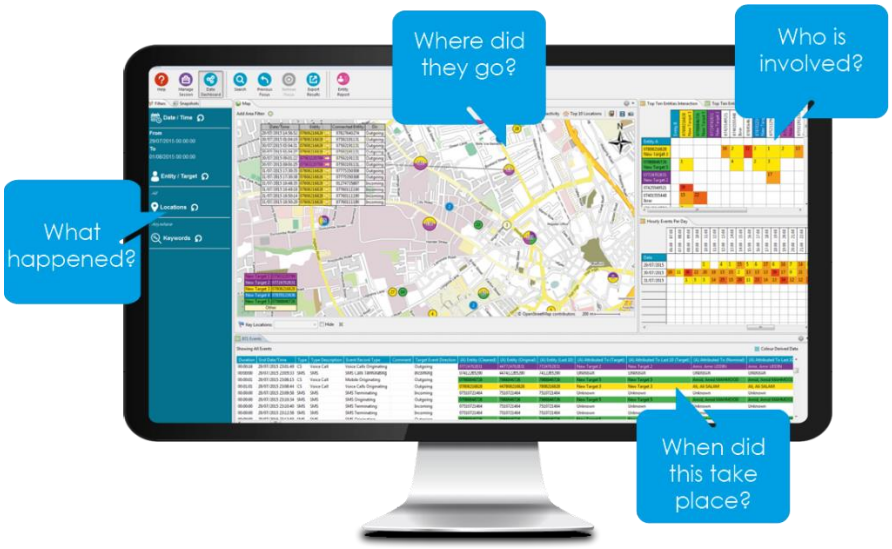

Chorus Investigator has lots of easy to use functionality that helps to answer key investigation questions.

Filters

Filters enable you to quickly select the data you want to see before visualising. Filter by Date and time, Individuals, phone numbers and locations.

Reports

A number of easy to read reports will display on the dashboard identifying: Top locations, popular contacts, call frequency and activity of individuals.

Mapping

Instantly see what happened around the time of an offence using the integrated mapping. Investigator map exports can be used evidentially.

Product Comparison

Functionality	Analyser	Investigator
Data Handling		
Comms Data (CDRs)	✓	✓
Handset Downloads	✓	✓
ANPR	✓	✓
Financial Data	✓	
RF Survey Data	✓	
Wi-Fi Data	✓	
Oyster Card / Travel Data / Sat Nav Data	✓	
Live Trace Data	✓	
Photographs with Metadata	✓	✓
Any Data in Excel formats (.csv, .xlsx etc)	✓	
Cleansing	✓	✓
Automatic Upload and recognition of data types	✓	✓
Transparent and auditable cleansing rules	✓	Audit available
Manual intervention at the formatting stage if required	✓	
Remove duplicates	✓	✓
Colour Code Subjects	✓	✓
Merging and consolidating data	✓	✓
Overlay data to visualise together	✓	✓

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Functionality	Analyser	Investigator
View Nominals and Subjects differently	✓	✓
Large Quantities of data across numerous files	✓	✓
Merging datasets	✓	✓
Importing Forms	✓	✓
Filtering by:	✓	✓
Date / Time	✓	✓
Entity	✓	✓
File	✓	
Attribution	✓	✓
Event types	✓	✓
Keywords (Exact and Fuzzy)	✓	✓
Days of the Week	✓	
Remove collateral data	✓	
Capability / Visualisation		
Custom Templates	✓	
Association Chart built in	✓	
Export to i2	✓	
Swap Between Sessions	✓	
Focus mode for quick analysis	✓	✓
Snapshots of data panes / map	✓	✓
Timeline	✓	
Mapping	✓	✓
Entity Mode	✓	✓
Location Mode	✓	
Inactivity Mode	✓	✓
Exporting Maps	✓	✓
Customisable Map labelling	✓	✓
Filter by Entity	✓	✓
Filter by location	✓	✓
Filter by Start and End Cells	✓	
Add Pins / Labels and colour coded	✓	✓
Customise Pins	✓	
Multiple colour options	✓	✓
Show Cell Towers as black triangles	✓	
Colour / Greyscale Map	✓	✓
Show and customise Azimuths / Arcs	✓	✓
Animate movement	✓	✓
Schedules	✓	✓
Customise column layout	✓	✓
Customise event schedule	✓	
Extract data	✓	✓
Colour coding retained throughout	✓	✓
Reporting	✓	✓
Quick time Reports	✓	✓
Reports suite	✓	
Standard reports	48	10
Top Contacts	✓	✓
Top Cell Sites	✓	✓
Potential Meeting / Co-location	✓	✓

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Functionality	Analyser	Investigator
Activity reports (device, entity, locations)	✓	✓
IMEI / IMSI Swaps	✓	✓
Inactivity	✓	✓
Phone Life and Death	✓	
Entity directory and common entities	✓	✓
Heat Maps	✓	✓
Second Entity detection	✓	
Entity Chain	✓	
Sequential Number scan	✓	
Bulk / Flare message detection	✓	
Evidential	✓	✓
Cloud Hosting	✓	✓
Encryption	✓	✓
Hosting (Private and on Azure)	✓	✓
Technical Support and Training included	✓	✓

Training

Chorus Intelligence offer a range of accredited training courses to help you understand and analyse different types of data that can be used as intelligence in criminal investigations.

Courses will be suitable for Analysts, Investigators and Researchers.

All of our industry courses listed below (as well as our Chorus Analyser Superuser (advanced) course) have been accredited under the Continuous Professional Development (CPD) Standards to ensure that practical and academic qualifications do not become out-dated and Analysts and Investigators continue to up-skill themselves.

Available courses:

- Intelligence Analyst Training
- Introduction to Communications Data
- Effective Analysis of Communications Data
- Anonymity, The Deep Web and Cybercrime
- Open Source Research and Investigation
- Microsoft Excel to Enhance Analytical Support

Please contact training@chorusintel.com to learn more about our courses.

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Deployment Options

Chorus believes in being flexible and working with our customers to create innovative deployment solutions that meet business needs. As such, our software can be consumed in a number of different ways which are summarised below:

Standalone

Some users are mobile and not all environments allow network and internet connectivity, so it's good to know you can use Chorus on a laptop or desktop in a standalone configuration.

Chorus On-Premise

Maximise your investment in on premise infrastructure by deploying Chorus in your enterprise environment. Integrate with your local directory and analyse the data already stored on your network using Chorus.

Private Cloud

Enjoy all of the benefits of a secure, scalable and fully managed private cloud solution with Chorus Private Cloud. Hosted in UK PASF accredited data centers and administered by SC cleared technical specialists.

Azure Public Cloud

Chorus are a Microsoft Partner and our software can now harness the power and scalability of Azure. Deploy Chorus into your own tenant or let us work with you to build a deployment on Azure, we can even take care of the management and administration.

Using the Cloud Services

Trial Service

We offer a no-obligation free trial using a standalone machine (choice of a desktop PC with two screens or a laptop).

The trial will run for up to 3 months from the date of the initial training course. We will confirm the start and end dates to ensure clarity.

A maximum of 8 users will be trained during the trial phase. The number trained during the trial will be deducted from the training allocation if / when the customer proceeds to purchase a license (see Training and Education section) below.

Pricing

The capital (initial implementation hardware and software) and revenue (recurring cloud software licence/hosting) costs of the cloud are highly variable and depend upon the number of licences purchased, users required and preferred cloud deployment method.

Therefore, in order to have an accurate quote of the total cost, please contact accounts@chorusintel.com to discuss further.

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Other useful points to note:

- Each licence allows up to three named users (**one concurrent**).
- Three users will be offered a two-day training course for free per license purchased.
- Additional users can be trained at a cost of £300 per user (with a minimum of six people per two-day course).
- Costs exclude Value Added Tax (VAT) which will be charged at the prevailing rate.
- All Professional Service/Service Delivery elements exclude all business expenses (i.e. travel, accommodation, sustenance) which will be charged at cost.
- Minimum contract length is 12 months.
- Multi-year and payment in advance discounts of up to 15% are available (on license cost only).

Ordering and Invoicing

Assuming the trail is successful, finalise the number of licences and users required and the preferred deployment method and a full quote will be prepared.

Once happy with the quote, you need to complete a call-off contract, and this should be sent to accounts@chorusintel.com where it will be duly signed and returned.

Upon receiving a Purchase Order number, Chorus will raise an invoice with 30-day payment terms.

Onboarding and Service Migration

When you choose one of our cloud solutions, you will be assigned an Implementation Specialist and Customer Relationship Manger to guide you through the onboarding process.

Technical documentation will be provided to guide you through the technical changes and a full Project Plan will be created in partnership with your Project Management Office. Regular project meetings will be scheduled with the key stakeholders to ensure the project runs to plan. Your training requirements will be identified, and onsite training sessions organised to ensure your users hit the ground running.

Our Service Management team will work with you to define a support model and to familiarise your technical team with the application. Once operational acceptance is complete, we work with you to complete a period of user acceptance testing before the service goes live.

Offboarding

Should you choose to leave us, Chorus will work with you to define an offboarding project which we will support you through. This will include ensuring you have all the data you require and that all your data is permanently deleted from the Chorus Cloud environment along with the personal details contained within user accounts.

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Cloud Service Level Agreement

Service Description

The Chorus system provides customers with the ability to clean, process and interrogate event data. The event data is typically in the form of telecommunication records, handset downloads, financial transactions and ANPR data.

The Cloud solution enables the analyst to access the Chorus system hosted in the cloud securely from workstations connected to the customer's network. Software updates, maintenance and support can be carried out centrally either by Chorus support staff or by the Customer's internal IT and network staff.

Chorus Intelligence provide a number of Cloud options and is a certified Microsoft co-sell partner:

1. Chorus Private Cloud (fully supported and hosted by Chorus)
2. Customer's Azure Tenant (built and supported by the customer and / or Chorus)
3. Chorus provision the Azure Tenant (built by Chorus for the customer and supported by Chorus and / or the customer)
4. Chorus's Azure Tenant (fully supported and hosted by Chorus)

User Community

Chorus has a large community of over 2,000 users that we have regular engagement with to ensure Chorus is meeting their needs.

We also encourage the sharing of best practice and information regarding the changing of data types and technology, so we keep pace with the industry.

Communications

The Chorus help desk is the first point of contact regarding information about the system and for help and support. In addition, a Customer Relationship Manager is assigned to each location and can be used as a point of escalation, for commercial considerations and for training requests.

Although the system is reviewed regularly, users are encouraged to contact the Chorus help desk and their Customer Relationship Manager as and when required.

Downtime is communicated via email and will normally include seven days' notice followed by a final update.

Unplanned notice will be directed at the lead customer / super user via phone and followed up by email to the community.

An issue tracking and ticketing system is used by the Chorus help desk.

Contact Details

Chorus Support can be contacted via our help desk number and email.

Role	Phone Number	Email
Chorus help desk	020 3597 7350	support@chorusintel.com

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Service Hours

We offer support during UK working business hours between 08:30 to 17:30 Monday to Friday (UK business days only).

All emails sent outside of the helpdesk operating time will be dealt with on the next UK business working day.

Availability

For options 1 and 4 above availability is targeted as follows.

Availability Target	Planned Downtime	Notice for Downtime
99.0%	3 days PA	7 days

As Chorus is considered a non-critical system, service credits are not available.

Customer Responsibilities

Customers have the option to either direct support calls from their own internal help desk to the Chorus help desk or to call the Chorus help desk directly.

Physical (or remote) access to the system is desirable to allow Chorus support teams to perform upgrades and maintenance. However, some customers will prefer to do this themselves and the pros and cons can be discussed and decided during implementation.

If issues are raised concerning cleansing rules to raw data, the customer may be required to provide anonymised data samples where rules are or may be affected prior to any development starting.

Training and Education

The following training is offered free within the first year of every Chorus license purchased.

Basic Chorus Analyser Training

For every one licence, three users will receive a free two-day basic training course.

Superuser Chorus Analyser Training

For every four licences purchased, one user will receive a free one-day superuser (advanced) training course.

Chorus Investigator Training

For every one license, Chorus Investigator customers will receive a free half-day training course for two users.

On-Line resources, including User Guides, Videos and access to Webinars and User Forum are all available from the Client Area of the Chorus website.

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Impact and Priority Guidelines

Call Priority	Definition
Priority 1	Case will be assigned a "very high" priority if the issue seriously impairs the normal processing of the system or if there is a system outage
Priority 2	Case will be assigned a "high" priority if there is a significant impairment to the normal working system. This would mean that normal and necessary work cannot be accomplished. The situation would be caused by an incorrect or failed function in Chorus, which is urgently needed in the current situation. This case type requires immediate resolution.
Priority 3	Case will be assigned a "medium" priority where a workaround has been implemented and / or a fix can be provided in the next software update.
Priority 4	Case will be assigned a "low" priority if it only causes a small impairment of the normal process cycle. This case type would be caused by a functional failure in Chorus which is not needed for daily business operations or if it is used occasionally. A fix could be provided in the next major software release.

Support Hours and Priority Definition

Resolution time assumes that the issue has first been identified and scoped and logged with the Chorus help desk. *Where Chorus Intelligence has no direct control over a customer's cloud installation, the resolution times below are estimates however, we will endeavour to work alongside the customer's internal support teams to achieve the fastest possible resolution. Where a customer has chosen to host on the Chorus Private Cloud (*1 above*) or the Chorus Azure Tenant (*4 above*), the resolution times below are fixed. If the issue requires development effort and a subsequent upgrade, this will be determined on a case-by-case basis.

Support Hours	Priority Definition	Response Time	Resolution Time
08:30 - 17:30	Priority 1	1h	Within 3 days *Depends on customer internal SLA
08:30 - 17:30	Priority 2	2h	Within 1 Week *Depends on customer internal SLA
08:30 - 17:30	Priority 3	4h	Next software update
08:30 - 17:30	Priority 4	Next day	Next software major release

Complaints Procedure

Complaints in the first instance should be sent to support@chorusintel.com. This ensures that the request is recorded and tracked. Once logged, a Customer Relationship Manager will be assigned to deal with the issue. If the outcome is not satisfactory it can be escalated to the Customer Relationship Director via support@chorusintel.com.

Business Continuity

In a customer hosted environment, continuity of the platform is the responsibility of the customer. Where the customer has chosen to use Chorus Private Cloud (1 above) or the Chorus Azure Tenant (*4 above*), business continuity is inherent in the platform. However, in the event of a disaster, Chorus Intelligence has the ability to provide a subset of key users with non-networked standalone units. This is an extra service outside of the cloud agreement and may attract a cost.

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Change Management

Requests for changes to Chorus need to be discussed with the Helpdesk and where necessary, followed up with detailed specification via the Chorus website https://chorusintel.com/client-area/chorus-product-feedback/

The change may be canvassed across the wider user community to gain support and then prioritised accordingly in the backlog of all changes. It should be noted that Chorus deploy a single version of the software to all customers and therefore a requested change for one customer may not be the priority for the majority.

Once the change is agreed a change request number is generated and the change will be handed over to the development team.

Chorus is typically upgraded three times a year and the agreed change will be scheduled accordingly.

Prior to release, the Customer Relationship Manager or the Helpdesk may demonstrate or include the requestor in pre-release user acceptance testing.

Security

All Chorus personnel with access to the system are security cleared.

All access to the system is by request only and is controlled by the customer.

Where the system is locally hosted by the customer Chorus personnel can be physically present on site if required.

No user data will be removed from the system unless agreed and authorised by the customer. Data can be sanitised by the customer prior to removal.

Below is a list of the systems and services on which this service is dependent:

Dependencies
• Windows Server 20xx OS
Interfaces
• Active Directory
• Microsoft Remote Desktop Services

Provision of the service

Cloud services vary according to each customer's needs. Please contact us to discuss in more detail.

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Case Studies

Operation Saracen – EMSOU

Chorus was used by Analysts from EMSOU to tackle an organised crime gang trafficking drugs around the UK. In this case, Chorus was used initially to spot calling patterns to identify the OCG structure and the main suspects involved. After surveillance and devices had been seized, Chorus was used to overlay CDRs, ANPR and vehicle tracker data to create a master sequence and to determine patterns in behavior. 1.4 million lines of data were analysed and 87 phones were attributed to 15 individuals.

126 call schedules were produced and 219 evidential maps within 4 weeks to secure guilty pleas from defendants. 17kg of class A drugs were removed from the streets and the OCG received 96 years of total jail time.

Operation Flat – GMP

A case involving the murder of an HGV driver. The investigation team at GMP used mapping in Chorus to outline the series of events that took place around the time of the murder by combining device data and call data records to secure convictions for those involved.

The main offender received a minimum of 30 years in prison with accomplices pleading guilty and receiving 7 years each. All maps were produced for CPS submission in under 1 hour.

Our Customers

Chorus work with the majority of police forces and law enforcement agencies in the UK, including all of the counter terror units. Please see below for a list of selected customers:

- The Metropolitan Police
- Police Scotland
- West Midlands Police
- Greater Manchester Police
- Thames Valley Police
- The Home Office
- The National Crime Agency
- East Midlands Special operations Unit (EMSOU)
- National Counter Terror Unit

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